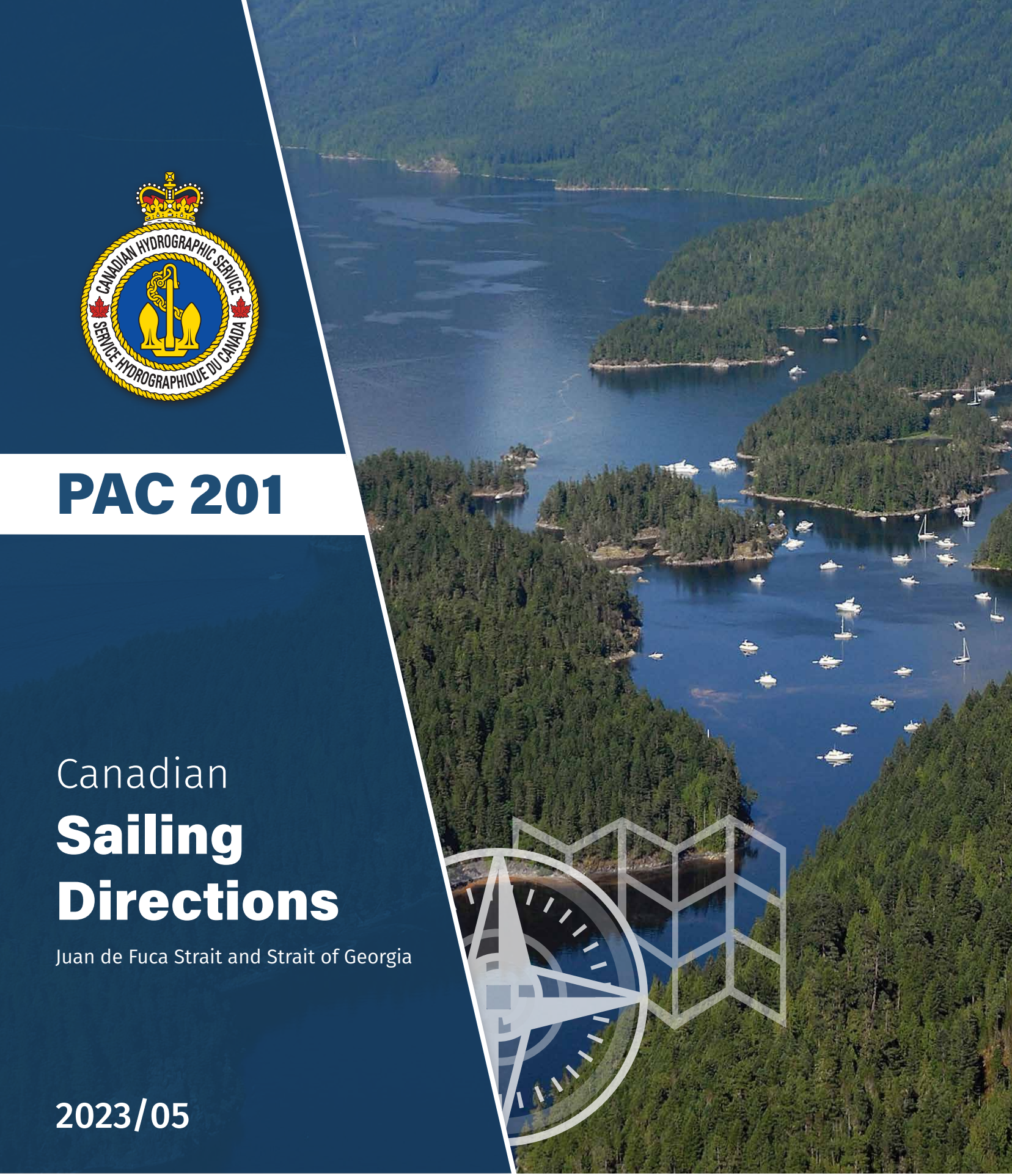


PAC 201

Canadian

Sailing Directions

Juan de Fuca Strait and Strait of Georgia

2023/05

Fisheries and Oceans Canada
Pêches et Océans Canada

Canada

Pictograph legend

 **Anchorage**

 **Current**

 **Radio calling-in point**

 **Wharf**

 **Caution**

 **Lifesaving station**

 **Marina**

 **Light**

 **Pilotage**

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The table below lists the changes that have been applied to this volume of Sailing Directions. This record of changes will be maintained for the current calendar year only.

Date	Chapter / Paragraph	Description of Change
03/2023	Chapter 2 Para. 7-37	Updates for Victoria and Esquimalt Harbour
03/2023	Chapter 2 Para. 146.1	A private, floating ODAS platform, with a yellow light, is approximately 300 m WSW of Staines Point.
03/2023	Chapter 5 Para. 97	Updates to Table 5.3 Major Port Facilities — Vancouver Harbour Western Portion (South Shore)
03/2023	Chapter 5 Para. 129	A private light exists on a dolphin, 0.25 mile ENE of Reed Point marking the turning basin, and has a sign reading “Underwater Obstruction Keep Clear 15m (50ft)”
03/2023	Chapter 8 Para. 167	After “Highway services are available” Delete: “and E&N…and Victoria”
03/2032	Chapter 9 Para. 317	A submarine pipeline (outfall), south of the breakwater, extends 0.4 mile offshore.
03/2023	Chapter 5,7,8 Para. 77.1, 40.1, 84.1 & 242.2	A new submarine cable (fibre optic) has been laid in various locations. See Connected Coast for more details.
05/2023	Chapter 1 Para. 126.2	Installation of an acoustic sensor mooring near Traffic Seperation buoy "J"
05/2023	Chapter 5 Para. 71.1	A CHS current metre is located 25m SW from Calamity Point Light in Vancouver Harbour approximately 2 m off the bottom.
05/2023	Chapter 5 Para. 269.1	A private ODAS light buoy is approximately 1 mile south of Woodfibre
		.
		.

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PREFACE

The First Edition of *Sailing Directions, PAC 201 — Juan de Fuca Strait and Strait of Georgia,* 2012, has been compiled from Canadian Government and other information sources. All hydrographic terms used in this booklet are in accordance with the meanings given in the *Hydrographic Dictionary (Special Publication No. 32)*, published by the International Hydrographic Bureau.

General information for the Pacific Coast is grouped within one booklet, *Sailing Directions, PAC 200 — General Information, Pacific Coast*, 2006. It contains navigational information and a brief description of the main port facilities as well as geographic, oceanographic and atmospheric characteristics.

The detailed description of the geographical areas is given in a series of volumes and booklets. Their limits are printed on the back cover of each booklet. **The appropriate descriptive booklet(s) should be consulted in conjunction with the *PAC 200 — General Information* booklet**.

The photographs are by TRG Graphics, Brentwood Bay, B.C.



Canadian *Sailing Directions* expand charted details and provide important information of interest to navigation which may not necessarily be found on charts or in other marine publications. They are intended to be read in conjunction with the charts quoted in the text.

Remarks

Buoys are described in detail only where they have special navigational significance, or where the scale of the chart is too small to clearly show all the details.

Chart references, in *italics*, refer to the largest scale Canadian chart. Occasionally a smaller scale chart may be quoted where its use is more appropriate.

Tidal information relating to the vertical movements of the water is not given and the *Canadian Tide and Current Tables* should be consulted. However, abnormal changes in water level are noted.

Names have been taken from the most authoritative source. Where an obsolete name still appears on the chart or is of local usage, it is given in brackets following the official name.

Wreck information is included where drying or submerged wrecks are relatively permanent features and are of navigation or anchoring significance.

Units and terminology used in this booklet

Latitude and **longitude** given in brackets are approximate, and are intended to facilitate reference to the chart quoted.

Bearings and **directions** refer to True North (geographic) and are given in degrees from 000° clockwise to 359°. The bearings of conspicuous objects, ranges and light sectors are given from seaward. **Courses** always refer to the course to be made good.

Tidal streams and **currents** are described by the direction towards which they flow. The **ebb** stream is caused by a falling tide and the **flood** stream is caused by a rising tide. **Winds** are described by the direction from which they blow.

Distances, unless otherwise stated, are expressed in nautical miles. For practical purposes, a nautical mile is considered to be the length of one minute of arc, measured along the meridian, in the latitude of the position. The international nautical mile, which has now been adopted by most maritime nations, is equal to 1,852 m (6,076 ft).

Speeds are expressed in knots, which mean 1 nautical mile per hour.

Depths, unless otherwise stated, are referred to chart datum. As depths are liable to change, particularly those in dredged channels and alongside wharves, it is strongly recommended these be confirmed by the appropriate local authority.

Elevations and **vertical clearances** are given above Higher High Water, Large Tides. In non-tidal waters they are referred to chart datum.

Heights of objects, distinct from elevations, refer to the heights of the structures above the ground. A statement, "a hill 18 m high" is occasionally used when there could be no confusion and in this case the reference will signify an elevation.

The *List of Lights, Buoys and Fog Signals* number is shown **in brackets** after the navigational aid (light, leading lights, buoy). The expression "seasonal" indicates that it is operational for a certain period during the year; mariners should consult the *List of Lights, Buoys and Fog Signals* to determine the period of operation. The expresion "private" means that the navigational aid is privately maintained; it will not necessarily be mentioned in the *List of Lights, Buoys and Fog Signals* and its characteristics may change without issuance of a *Navigational Warning*.

Time, unless otherwise stated, is expressed in local standard or daylight time. For the waters described in this booklet, local time is Pacific Standard Time (PST Z+8).

Deadweight tonnage and **masses** are expressed in metric tonnes. The kilogram is used to describe relatively small masses.

Public wharf is a wharf that is available for public use, though certain fees may be charged by local authorities. It may be shown as "Government Wharf" or "Govt Whf" on older charts.

Conspicuous objects, natural or artificial, are those which stand out clearly from the background and are easily identifiable from a few miles offshore in normal visibility.

The expression "**small craft**" refers to pleasure craft and small vessels with shallow draught.

Diagrams are large scale cartographic representations of harbours, wharves, anchorages, or marinas.

Pictographs are symbols shown at the beginning of the paragraphs to allow quick reference to information or to emphasize details. The Pictograph Legend is shown on the inside front and back covers of this booklet.



References to other publications:

Canadian Hydrographic Service (www.charts.gc.ca)

- *Catalogue of Nautical Charts and Publications (Pacific Coast)*
- *Canadian Tide and Current Tables*

Canadian Coast Guard (www.ccg-gcc.gc.ca)

- *List of Lights, Buoys and Fog Signals*
- *Radio Aids to Marine Navigation (Pacific and Western Arctic)*
- *Annual Edition of Notices to Mariners*

ABBREVIATIONS

Units

°C	degree Celsius
cm	centimetre
fm	fathom
ft	foot
h	hour
ha	hectare
HP	horsepower
kHz	kilohertz
km	kilometre
kn	knot
kPa	kilopascal
m	metre
mb	millibar
MHz	megahertz
min	minute
mm	millimetre
NM	nautical mile
t	metric tonne
°	degree (plane angle)
'	minute (plane angle)
"	seconds (plane angle)

Directions

N	north
NNE	north northeast
NE	northeast
ENE	east northeast
E	east
ESE	east southeast
SE	southeast
SSE	south southeast
S	south
SSW	south southwest
SW	southwest
WSW	west southwest
W	west
WNW	west northwest
NW	northwest
NNW	north northwest

Various

CCG	Canadian Coast Guard
CHS	Canadian Hydrographic Service
DFO	Department of Fisheries and Oceans, Canada
DND	Department of National Defence, Canada
DWT	deadweight tonnage
ETA	estimated time of arrival
ETD	estimated time of departure
HF	high frequency
HW	high water
LW	low water
M	million, mega
MCTS	Marine Communications and Traffic Services
NAD	North American Datum
No.	number
SAR	Search and Rescue
USA	United States of America
VHF	very high frequency
VTS	Vessel Traffic Services

Juan de Fuca Strait — Pachena Point to Royal Roads

General

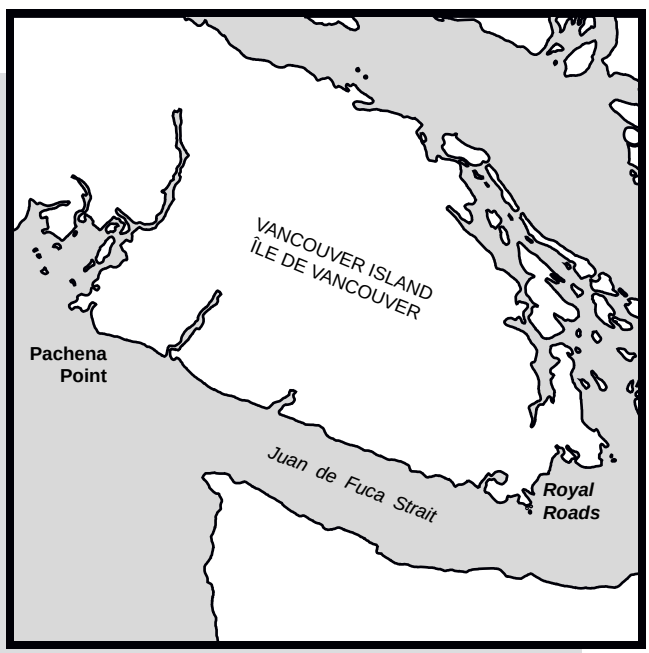
Charts 3461, 3602, 3606

1 This chapter describes Juan de Fuca Strait, Sooke Harbour, Becher Bay and Race Rocks. The United States coast of Juan de Fuca Strait east to Ediz Hook is briefly described; for complete information see *United States Coast Pilot 7*.

2 Juan de Fuca Strait is entered from the Pacific between Carmanah Point, B.C. *(48°37'N, 124°45'W)* and Cape Flattery, Washington *(48°23'N, 124°44'W)*, and extends about 60 miles E to Brotchie Ledge. It separates the SW coast of Vancouver Island from the NW coast of the State of Washington.

3 The **Salish Sea** refers to the inland marine sea comprised of Juan de Fuca Strait, Strait of Georgia, Puget Sound and their connecting channels, passes and straits.

4 Traffic through Juan de Fuca Strait is heavy and varied. In addition to local coasting vessels, large tankers from Alaska and freighters operating across the Pacific Ocean or through the Panama Canal have destinations in the Strait of Georgia and Puget Sound. Canadian and U.S. surface and submarine navy vessels transit and exercise in this area. Large car carrying ferries, smaller high speed passenger ferries, and cruise ships frequent these waters. Fishing boats, small commercial vessels, tugs, barges, and pleasure craft are numerous.



Juan de Fuca Strait and Approaches

5 The west boundary of **Juan de Fuca Strait** is a line between Carmanah Point, B.C. and Cape Flattery, Washington. The north boundary follows the shoreline of Vancouver Island to Gonzales Point, continues directly to Sea Bird Point (Discovery Island), and Cattle Point (San Juan Island). The boundary continues along a line from Cattle Point to Iceberg Point (Lopez Island), to Point Colville (Lopez Island), to Rosario Head (Fidalgo Island), then SW along Whidbey Island to Point Partridge and south to Point Wilson (Quimper Peninsula). The State of Washington mainland forms the south border of the Strait.

6 At its entrance and as far east as Race Rocks, a distance of about 50 miles, the Strait is about 12 miles wide, and

for a further 30 miles to Whidbey Island it is about 16 miles wide.

7 At the east end of the Strait *(Charts 3461* and *3462)*, channels lead north to the Strait of Georgia and the inland waters of British Columbia, and south to **Admiralty Inlet**, **Puget Sound** and **Hood Canal**.

8 On the north or Vancouver Island side, hills rise gradually and are for the most part densely wooded, although there are some large bare patches where extensive logging operations have been carried out, or where there has been devastation by fire. These hills do not attain any great elevation. On the south side are the **Olympic Mountains**, whose summits are usually covered in snow.

9 A compulsory traffic separation scheme for Juan de Fuca Strait and its approaches has been adopted by the *International Maritime Organization (IMO)*, and is described in *Radio Aids to Marine Navigation (Pacific and Western Edition)*. All vessels are required to use the scheme and comply with *Rule 10 (Traffic Separation Schemes)* of the *Collision Regulations*. This system is part of the Canada/United States *Co-operative Vessel Traffic System*.

10 A two-way route has been established south of the traffic separation scheme in Juan de Fuca Strait for smaller, slower moving vessels that normally do not use the separation scheme in the Strait.

11 **Caution. — In Canadian waters and fishing zones, provided it does not impede the passage of any vessel following a traffic lane, a vessel engaged in fishing may depart from certain provisions of *Rule 10 of International Regulations for Preventing Collisions at Sea* and fish in any direction in a traffic lane. A vessel engaged in special operations such as buoy tending or hydrographic surveys, provided it does not prevent any vessels using the route from navigating safely, may also depart from certain provisions of *Rule 10*.**

12 The traffic separation scheme in United States waters of Juan de Fuca Strait, east of Port Angeles, is part of the mandatory *Vessel Traffic Service Puget Sound*.

13 *Juan de Fuca Traffic Lane Separation light and whistle buoy J (180.8)*, 13 miles WNW of Cape Flattery, has **Racon** (— — —) and an Automatic Identification System (AIS).

14 *Juan de Fuca Traffic Lane Separation light buoy JA (180.9)*, 5 miles south of Bonilla Point, marks a turn in the Vessel Traffic Lanes.

15 *Juan de Fuca Traffic Lane Separation light buoy PA (187.5)*, *Race Rocks South Cautionary light buoy VF (189.5)* fitted with **Racon** (— • • •) and *Race Rocks East Cautionary light buoy VG (192)*, mark the limits of the traffic separation zones south and SE of Race Rocks. Give a wide clearance to and avoid contact with these buoys.

16 The **international boundary** between Canada and the United States runs along the west part of Juan de Fuca Strait, then north and eastward through Haro Strait and Boundary Pass into the Strait of Georgia.

17 *Vessel Traffic Services (VTS)* for Canadian waters in the approach to Juan de Fuca Strait west of longitude *124°40'W* are in the Prince Rupert Traffic Zone. Frequency is channel 74 (156.725 MHz).

18 The mandatory *Cooperative Vessel Traffic System (CVTS)*, based on an agreement between Canada and the United States of America, is in the waters to seaward of and through which the international boundary runs. These waters include Juan de Fuca Strait, Haro Strait, Boundary Pass, and the south end of the Strait of Georgia.

19 *Seattle CVTS Zone Juan de Fuca Strait,* containing all Canadian and United States waters east of longitude *124°40'W*, and south of a line from Church Point to Race Rocks light, to the intersection of the Canada/U.S. border at *48°17'06"N, 123°14'51"W*, then NE to Hein Bank, then to Cattle Point, is administered by *Seattle Traffic*. Frequency is channel 5A (156.25 MHz). **Calling-in points** in Juan de Fuca Strait are listed in Table 1.1.

Table 1.1 Calling-in Points — Juan de Fuca Strait

Number	Name	Description
1	Zone Limit	Line running north from *48°28'36"N, 124°40'00"W* to *48°34'58"N, 124°40'00"W*
3	Race Rocks	Line running 090° – 270° (True) through *48°17'54"N, 123°31'54"W*
4	Buoy VH	Line running 000° – 180° (True) through *48°22'32"N, 123°23'29"W*
5	Hein Bank	Line running from *48°22'00"N, 123°02'01"W* to *48°27'03"N, 122°57'45"W*

20 **Calling-in Point 1 Zone Limit** is the meridian of longitude *124°40'00"W* from the International Boundary to the Vancouver Island shoreline. This CIP is for changing from the Prince Rupert Traffic Zone to Juan de Fuca Strait.

21 **Calling-in Point 3 Race Rocks** is a line running 090°–270° through *Race Rocks* **light** *(189)*. This CIP is for changing from Juan de Fuca Strait to Sector One of *Seattle and Victoria Traffic*.

22 Sector One of the *Vancouver Traffic Zone* consists of the waters through which the international boundary runs north of a line joining Church Point, Race Rocks light, to the intersection of the Canada/U.S. border at *48°17'06"N, 123°14'51"W*, then NE to Hein Bank, then to Cattle Point. This sector is administered by *Victoria Traffic*. Frequency is channel 11 (156.55 MHz). **Calling-in Point 4 Buoy** *VH* is a

line running 000°–180° through *Victoria Harbour Cautionary light buoy (203)*.

23 **Calling-in Point 5 Hein Bank** is a line joining Hein Bank and *Cattle Point* **light** *(221)*. This CIP is for changing from the Vancouver Traffic Zone, administered by *Victoria Traffic*, to *Seattle Traffic* and the *Vessel Traffic Service Puget Sound*.

24 A brief description of *VTS* is in *PAC 200 — General Information — Pacific Coast*. Full details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*.

25 *Vessel Traffic Service Puget Sound (VTSPS)*, in United States waters east of Port Angeles, is mandatory and consists of three major components: a Traffic Separation Scheme, radar surveillance, and a Vessel Movement Reporting System. Details of this service are given in *United States Coast Pilot 7*. Proper operating procedures are contained in the *Vessel Traffic Service Puget Sound Operating Manual*, available free from:

USGC Sector Seattle
Waterways Management Division
Attn: Vessel Traffic Service
1519 Alaskan Way South
Seattle, WA 98134-1192
Email: psvts@uscg.mil
www.uscg.mil/d13/psvts/docs/userman032503.pdf

26 Due to heavy vessel concentrations, United States waters of Juan de Fuca Strait east of New Dungeness, San Juan Islands, Strait of Georgia, Puget Sound, and all adjacent waters, are a regulated navigation area. To enhance vessel traffic safety during congested periods, the U.S. Coast Guard may establish temporary special traffic lanes. For details see *United States Coast Pilot 7*.

27 **Military exercise areas** in the approach to, and in Juan de Fuca Strait are charted. For details of limits and other information consult *Notices to Mariners 1 to 46 Annual Edition*. **Observe due caution when navigating in the vicinity while exercises are in progress**.

28 A **wreck** (depth unknown) at *48°28'57"N, 125°17'06"W* may be hazardous to nets and towed underwater equipment.

29 A sub-surface **current meter** has been moored in the western approach to Juan de Fuca Strait since 1983. Its position and depth below surface are changed and advertised via *Navigational Warning*.

30 **Ferries** cross Juan de Fuca Strait between Victoria and Port Angeles and catamaran fast ferry services operate between Victoria and Seattle. Mariners are cautioned that the Port Angeles/Victoria ferry may deviate from charted standard route due to bad weather, traffic conditions, navigational hazards, or other emergency conditions.

31 The pilot boarding station for the *Pacific Pilotage Authority*, covering Canadian waters, is at *Victoria Harbour Cautionary light buoy (203)*.

32 The pilot boarding station for United States waters is off Port Angeles, about 1.4 miles NNE of *Ediz Hook* **light** *(190)*.

33 For details on how to obtain a pilot see *PAC 200 — General Information — Pacific Coast*.

34 Meteorological information for Juan de Fuca Strait is in *PAC 200 — General Information — Pacific Coast*. Meteorological tables for Pachena Point and Victoria, and a wind frequency table for Victoria, is in the Appendices.

35 Tidal predictions for Juan de Fuca Strait are given for Port Renfrew (8525), Sooke (7020), Victoria (7120), and Port Townsend (7160) in *Canadian Tide and Current Tables, Volume 5*.

36 Tidal differences for the west end of Juan de Fuca Strait, referenced on Port Renfrew (8525), are given for Neah Bay (8512) in *Canadian Tide and Current Tables, Volume 6*.

37 Tidal differences for the central portion of Juan de Fuca Strait, referenced on Sooke (7020), are given for Point No Point (7010), Sooke Basin (7024), Becher Bay (7030), Crescent Bay (7050), and Port Angeles (7060) in *Canadian Tide and Current Tables, Volume 5*.

38 Tidal differences for the central portion of Juan de Fuca Strait, referenced on Victoria (7120), are given for Pedder Bay (7080), William Head (7082), Esquimalt (7110), and Clover Point (7115) in *Canadian Tide and Current Tables, Volume 5*.

39 **Tidal streams** in the approach to Juan de Fuca Strait, south of La Pérouse Bank, are rotary, but effects of the California Current and wind on streams tend to give a predominant NW flow in winter. In summer predominant flow is reversed and sets SE.

Table 1.2 Tidal Streams — Approach to Juan de Fuca Strait

Position	Winter	Summer
48°11'N, 125°55'W	325° at 1 kn	160° at ½ kn
48°16'N, 125°46'W	320° at 1 kn	130° at 1 kn
48°22'N, 125°35'W	315° at 1 kn	115° at 1 kn
48°28'N, 125°23'W	270° at 1 kn	270° at 1 kn

40 In the vicinity of Swiftsure Bank *(48°35'N, 125°00'W)*, **tidal streams** are distinctly rotary and, under conditions of equal rise and fall, set east at HW, circling clockwise through south to west at LW, and continuing round through north to east again at HW. The direction of the stream, as well as its strength, depends upon range of tide. With a

strong ebb stream out of Juan de Fuca Strait the stream, from about 2 hours after one HW to 4 hours before the next, sets between SW and west, when it gradually changes, through west until at HW it is running nearly due north. From HW until 2 hours after, the stream is nearly slack, and changes quickly, through east, to south and west. See the table and diagram on *Chart 3602*. Observations give evidence of a permanent west-going current with an average velocity of ½ kn. This causes the NW stream to be considerably stronger than the one setting SE. Direction and strength of prevailing winds have some effect on velocities. SE streams do not exceed 1 kn except under the influence of strong west or NW winds, when an increase up to 1½ kn can occur, whereas NW-setting streams of 2 kn or more frequently occur with strong east or SE winds. Greatest velocity observed in the area is 3 kn.

41 In the vicinity of Umatilla Reef *(48°11'N, 124°48'W)*, **tidal streams** are only slightly rotary, the flood stream setting 345°, and the ebb 165° at about ½ kn. Non-tidal current shows a very distinct variation; during winter months it sets north at nearly ¾ kn, while in summer it sets south at less than ½ kn. Prevailing wind is east or SE in winter and west or NW in summer; south winds cause a stronger current than north ones. With strong SE winds the combined tidal and non-tidal currents attain 2 to 3 kn in a north direction. Greatest observed velocity at Umatilla Reef is about 3 kn.

42 Within Juan de Fuca Strait, times and rates of maximum current and time of slack water are predicted and tabulated as daily tables for current stations Juan de Fuca–West (9000) *(48°27'N, 124°35'W)*, Juan de Fuca–East (1100) *(48°14'N, 123°32'W)*, and for Race Passage (1200) *(48°18'N, 123°32'W)*. Secondary current station River Jordan (1110), referenced on Juan de Fuca (East), is about 7 miles south of **Jordan River** *(48°19'N, 124°05'W)*.

43 Predictions for Juan de Fuca–West are in *Canadian Tide and Current Tables, Volumes 5* and *6*. Predictions for Juan de Fuca–East, Race Passage and River Jordan are in *Canadian Tide and Current Tables, Volume 5*.

44 *Current Atlas, Juan de Fuca Strait to Strait of Georgia* is available from Canadian Hydrographic Service authorized chart dealers. A list of authorized dealers can be found in the Canadian Hydrographic Service chart catalogue or at www.charts.gc.ca.

45 Fluctuations in horizontal movement of water due to meteorological conditions can prolong the duration and increase flow of current in one direction, and have the opposite effect when direction is reversed. The current therefore may not turn exactly when predicted, but at these times the rate will be relatively weak.

46 In the central portion of Juan de Fuca Strait, i.e. Sooke Inlet to Race Rocks, the flood stream attains a greater rate along the Canadian shore than it does along the U.S. shore. The main flood stream runs south of Race Rocks, then turns north in a wide sweep and heads in the general direction of Victoria Harbour. On the flood, between River Jordan on the Canadian side and Pillar Point on the American side, the tidal stream runs at 2½ kn. The turn to flood takes place on both sides of the Strait at about the same time.

47 Between River Jordan and Pillar Point the ebb stream at spring tides runs at 3 kn on the north side of the strait, and at 2½ kn on the south side, with the turn to ebb about 30 minutes later on the north side.

48 When wind and swell oppose the tidal stream, a short choppy sea is raised near the west entrance of the Strait.

49 Tide-rips occur off prominent points and in the vicinity of banks. They are especially heavy off Cape Flattery, Race Rocks, New Dungeness, Point Wilson, along the north shore between Beechey Head and Esquimalt, and off Clover Point, Trial Islands and Discovery Island. **Under certain conditions these tide-rips can be dangerous to small vessels**.

50 From April 15 to September 30 numerous fishing vessels can be encountered inside the 100 m line on La Pérouse and Swiftsure Banks and in the approach to Juan de Fuca Strait. A smaller winter fishing season is also underway. Vessels may be trolling, towing nets or particularly at night, they may be at anchor. Because of the prevalence of fog and low visibility in this vicinity, vessels approaching these areas from any direction are advised to pass to the south and clear of the banks. Mariners obliged to cross these banks should navigate with extreme caution to avoid risk of collision with fishing vessels. Radar derived information concerning the locations of concentrations of fishing vessels can be obtained from MCTS Prince Rupert Traffic.

51 Within Juan de Fuca Strait, numerous fishing vessels using drift nets or purse seine nets can be encountered day and night from approximately July 1 to November 1. Drift nets can extend up to 550 m in length from the end that is attached to the operating vessel. The free end is marked by a white light. See *PAC 200 — General Information — Pacific Coast* and *Notices to Mariners 1 to 46 Annual Edition*.

52 Logging is a main industry therefore free-floating logs and deadheads are a constant source of danger in Juan de Fuca Strait. Danger is increased during freshets.

53 A **submarine cable** (fibre optic) is laid in Juan de Fuca Strait leading south from Fleming Bay *(48°25'N, 123°25'W)*, then east along the north side of the strait across the approach to Haro Strait. Submarine cables are laid in U.S. waters of Juan de Fuca Strait.

54 In the NW approach, between Carmanah Point and Cape Cook *(50°07'N, 127°56'W)*, the set of the tidal stream tends toward land and

is accentuated by in-draught into the large sounds, especially during strong winds from SE to SW. This part of the coast of Vancouver Island should be given a wide berth.

55 Approaching Juan de Fuca Strait from the south there is no inducement to hug the coast on to which a long rolling swell frequently breaks. This swell meeting SE gales of winter raises a confused sea. Cape Flattery and its off-lying dangers should be given a berth of at least 3 miles because of tidal streams and currents.

56 In thick or foggy weather it is very important to monitor soundings on the outer edge of the bank which is well defined. Approximate distance from land will then be known. When within 25 or 30 miles from Cape Flattery and the Vancouver Island coast, the steady NW set across the entrance of the Strait should be particularly guarded against, especially during winter when SE and S winds prevail.

57 During SW or west gales, it is more desirable to run into the Strait and seek shelter than to remain outside.

Juan de Fuca Strait — South Approach

Charts 3602, 3606

58 All ships and barges carrying cargoes of oil or hazardous materials, and all ships 1 600 gross tons and above solely in transit should steer clear of the designated Area to be Avoided (ATBA). For more information see www.olympiccoast.noaa.gov or *PAC 200 — General Information — Pacific Coast*.

59 **Cape Alava**, the westernmost point of the State of Washington, is 13 miles south of Cape Flattery. The seaward face is about 0.6 mile in extent. **Ozette Island** is flat topped with steep sides. Low, black rocks lie off its south and SE sides. **Bodelteh Islands** have high, bold seaward faces. Close west of the outer island is a whitish rock, 40 m high. **Umatilla Reef** consists of small, low, black rocks and some breakers. A breaker has been reported 1.1 miles NNE, and a rock with 1 m over it lies 0.3 mile east of the reef. The reef is difficult to locate, especially in thick weather. A lighted **whistle buoy** is 1.5 miles W of the reef.

60 **Anchorage** can be obtained off the SE end of Ozette Island. It provides fair protection from prevailing NW winds but the area is small and requires local knowledge to enter.

61 **Point of Arches** *(48°15'N, 124°42'W)* has cliffs extending 1.5 miles south from it and is fronted by numerous reefs. **Father and Son** are two rocks, 20 and 51 m high, connected by a low reef. **Spike Rock** is sharp and bare, and is the outermost of a chain of rocks that can be identified by their arch formations. A drying rock lies 0.3 mile WSW and a dangerous wreck lies about 0.3 mile ENE of Spike Rock.

62 **Portage Head** *(48°17'N, 124°41'W)* has bold, irregular cliffs about 125 m high and 1 mile long. A rock with less than 2 m over it usually breaks, and lies 1.3 miles NW from the point. **Strawberry Rock** is 2 m high.

63 **Makah Bay**, between **Anderson Point** and **Waatch Point**, has numerous rocks awash in its south part and affords indifferent shelter in north and east winds with a smooth sea, but is seldom used. Shores are low and sandy. **Waatch River** enters the north part of the bay through a low valley that is one of the features for identifying Cape Flattery.

64 **Cape Flattery** *(48°23'N, 124°44'W)* has bold, rocky cliffs, 37 m high that are reported to give a good radar echo. **Fuca Pillar**, a 48 m high rock column leaning slightly NW, stands about 0.1 mile from the foot of the cliffs. It is more prominent from north than from south. Numerous rocks and reefs border the cliffs east and south of the Cape. The land rises from the Cape to an elevation of 454 m at Bahokus Peak on which there is a radar dome, conspicuous from seaward. Cape Flattery and **Bahokus Peak** usually first appear as an island when viewed from south because of low land along the Waatch River valley.

65 **Tatoosh Island** is 33 m high with almost perpendicular sides and a bare, flat top. Several islets and reefs lie close-off its west side. The passage between Tatoosh Island and Cape Flattery is dangerous and constricted by two rocks awash near its centre. Although sometimes used by local small craft it is not recommended. Currents are strong and treacherous.

66 A **reef**, 1.5 miles SW of Tatoosh Island, has a least depth of 13.7 m over which the sea occasionally breaks in a west swell.

67 **Duncan Rock**, small, low and black and **Duntze Rock** with 5.9 m over it, are the two principal dangers NNW of Tatoosh Island. The passage between Duncan Rock and Tatoosh Island is constricted to less than 0.5 mile by reefs. Strong **tidal streams** and tide-rips make it hazardous.

68 *Cape Flattery* **light** *(181)*, on the west side of Tatoosh Island, is shown from a white conical tower. It is fitted with an emergency light.

69 *Duntze Rock light and bell buoy 2 U.S. (181.4)*, NW of the rock, is a starboard hand buoy. It is fitted with an Automatic Identification System (AIS) transceiver.

Juan de Fuca Strait — South Side

70 The south shore of Juan de Fuca Strait is heavily forested and rises to considerable height. Except in a few places the shore is bold and rugged. Generally water is deep until close to shore and there are few off-lying dangers.

71 Tidal differences for Bay (8512), referenced on Port Renfrew, are listed in *Canadian Tide and Current Tables, Volume 6*.

U.S. Chart 18484 (U.S. Coast Pilot 7)

72 ***Neah Bay**, about 5 miles E of Cape Flattery, is used extensively by small vessels as a harbor of refuge in foul weather. Its proximity to Cape Flattery and ease of access at any time make the anchorage very useful. It is protected from all but E weather.*

73 ***Baada (Baadah) Point**, the E entrance point to Neah Bay, is rocky and grass-covered for some distance back from the shore. **Waadah Island**, 0.3 mile N of Baada Point, is 0.5 mile long, high, and wooded. A light marks the N end of the island and a light and fog signal marks the S end. A stone breakwater extends from the W side of the bay to about the middle of Waadah Island. A reef and foul ground extend 0.2 mile from the SW side of the island. A reef that bares, marked by a lighted bell buoy, extends 500 yards NW from **Dtokoah Point**, SE of the entrance.*

74 *The buildings of **Neah Bay Coast Guard Station**, 0.4 mile SW of Baada Point, are prominent from the entrance.*

75 *The entrance to the bay is between Waadah Island and Baada Point. A depth of 17 feet can be carried into the bay. Anchorage is in 20 to 35 feet, mud bottom.*

76 *The W shore of Neah Bay is high and precipitous, and bordered by craggy rock outcroppings. The shore E of the village of Neah Bay is a low sand beach to Baada Point. Unmarked sunken wrecks are in the W part of the bay in about 48°22'22"N., 124°37'15"W., and in the NE corner of the bay in about 48°22'39"N., 124°36'20"W. Caution is advised when anchoring in the vicinity of the wrecks.*

77 *The Indian village of **Neah Bay**, on the SW shore of the bay, is the site of considerable sport fishing.*

78 *Neah Bay is a **customs port of entry**. The customs officer also performs immigration duties.*

79 *The Makah Indian T-head pier with a 300 foot face, and the ruins of a T-head pier no longer visible, are about 375 and 500 yards SW of Baada Point. Caution is advised in the vicinity of the pier in ruins, as submerged piles may exist. The Coast Guard pier is 0.5 mile SW of Baada Point.*

80 *Two cooperative fish piers, 1 mile and 1.2 miles SW of Baada Point, have facilities for icing and supplying fishing boats. Limited berthage, electricity, gasoline, diesel fuel, water, and ice are available. Both piers have reported depths of 12 feet off the ends. There are many small-craft floats extending along the S shore of the bay. A marina is about 1 mile SW of Baada Point on the S shore and has 200 slips; gasoline, diesel fuel, water, electricity, pump-out, and a launching ramp are available.*

81 *A paved highway extends along the Strait of Juan de Fuca to Port Angeles; telephone service is available.*

Chart 3606

82 **Seal Rock** *(48°22'N, 124°33'W)* is conspicuous, light coloured and has a flat top sloping east. **Sail Rock**, 0.3 mile SE, is lower in elevation and has a pointed summit. The wreck of the *Andalucia* just off these rocks is completely covered. A marina is along the shore near Sail Rock.

83 **Sekiu River**, 7 miles SE of Sail Rock, has some logging operations. A bridge over the river shows prominently through trees.



84 **Clallam Bay** *(48°15'N, 124°16'W)*, a broad open bight east of **Sekiu Point**, affords **anchorage** in 11 to 18 m, sand bottom. It is occasionally used in south winds or thick weather.

85 **Slip Point** is high, wooded, and has a light coloured streak down its face that is visible for a long distance. A reef extending west from Slip Point is marked by a **port hand light buoy**.

86 **Sekiu**, a resort and sport fishing town at the west end of Clallam Bay, has berths, gasoline, limited supplies and a launching ramp. The town of Clallam Bay, on the east side of the bay, has no waterfront facilities.

87 **Pillar Point** *(48°13'N, 124°06'W)* is about 213 m high, bold and wooded to its summit. A dark pillar-shaped rock close under its east face is over 30 m high and prominent from the west.



88 **Anchorage** can be obtained about 0.8 mile SE of Pillar Point, in 16 to 22 m, sticky mud bottom. It offers good shelter from the heavy west swell but gives no protection from the brisk east and NE winds prevalent in winter.



89 A *U.S. Navy* exercise area lies between Pillar and Tongue Points.

90 **Twin Rivers** *(48°10'N, 123°57'W)* are two small streams flowing into the Strait. An earth-filled barge loading facility, 0.3 mile west of **West Twin River** has a reported depth of 4.6 m alongside. It is used for barging clay to Seattle.

91 **Low Point** *(48°09'N, 123°49'W)* has numerous drying boulders west of it and should not be approached closer than 0.8 mile. **Marine farm** facilities, 2.4 miles west of the point, are marked by two private **light buoys**.

Chart 3461





92 **Crescent Bay** *(48°10'N, 123°43'W)* provides limited **anchorage** suitable only for small vessels. It is not a good landing place in north weather. Remains of a wharf on the west shore should be avoided. **Crescent Rock** is marked by a **starboard hand bell buoy** and the channel between it and shore is not recommended. A drying reef extends from **Tongue Point** and a wreck lies north of the point. **Striped Peak** is 1 mile ESE of the point.

93 Tidal differences for Crescent Bay (7050), referenced on Sooke, are in *Canadian Tide and Current Tables, Volume 5*.

94 **Observatory Point** has a 6 m high rock close east; the rock is almost joined to the point at LW. **Freshwater Bay**, a broad open bight with 10 to 40 m depths, is designated as an emergency explosives anchorage. For limits and regulations see *United States Coast Pilot 7*. **Angeles Point** *(48°09'N, 123°33'W)* is low, sandy and covered with alders. A prominent microwave tower, with air obstruction lights, is on the point. *Starboard light buoy 4 (US 16224)* is 3 miles ENE of Angeles Point.

95 The *U.S. Navy* advises that the precautionary area, located within a 1 nautical mile radius about *48°15'36"N, 123°15'48"W*, approximately 9 nautical miles NNE of Ediz Hook, is used by naval vessels to conduct equipment calibration tests. Surface vessels or submerged submarines will occasionally maneuver in circles in this area for several hours or days. When these operations are in progress, the test facility located on the east end of Ediz Hook will be manned and reference lights consisting of a lazy "T" bar, 1 second flashing yellow, 2 seconds flashing red, and a high intensity spot, will be lit. The group of lights is visible from the north side of Ediz Hook with the "T" bar to the west and spot light to the east. The naval vessels will be participating in the Seattle Vessel Traffic System on channel 5A. The *Navy Test Facility Port Angeles* will monitor VHF channels 16 and 69. **Mariners transiting this area are requested to proceed with caution**.

96 *Vessel Traffic Services* are established in U.S. waters east of Port Angeles. This service is mandatory, see *United States Coast Pilot 7*.

97 Tidal differences for Port Angeles (7060), referenced on Sooke, are listed in *Canadian Tide and Current Tables, Volume 5*.

98 Fog is frequently found over the southern shore of Juan de Fuca Strait at many times of the year.

U.S. Chart 18468 (U.S. Coast Pilot 7)

99 ***Port Angeles**, 6.5 miles E of Freshwater Bay and 56 miles from Cape Flattery, is entered between **Ediz Hook**, a low and narrow, sandspit 3 miles long, and the main shore to the S. The harbor, about 2.5 miles long, is easy of access by the largest vessels, which frequently use it when refueling, making topside repairs, waiting for orders or a tug, and when weather-bound.*

100 *The harbor is protected from all except E winds, which occasionally blow during the winter. During SE winter gales, the wind is not usually felt but some swells roll in. The depths are greatest on the N shore and decrease from 30 to 15 fathoms in the middle of the harbor; from the middle, the depths decrease regularly to the S shore, where the 3-fathom curve in some places in the E part is nearly 0.2 mile from the beach. A rock covered 5¼ fathoms is reported in the approach to the harbor in about 48°07'22"N., 123°23'18"W. A shoal with a least depth of 2¾ fathoms is 330 yards NW of the NW corner of the easternmost pier on the waterfront; a buoy is 200 yards E of the shoal.*

101 *Extra caution in navigating the waters inside Ediz Hook should be exercised because of the large number of submerged deadheads or sinkers in the area. Deadheads or sinkers are logs that have become adrift from rafts or booms, have become waterlogged, and float in a vertical position with one end just awash, rising and falling with the tide.*

Anchorage

102 *Vessel Traffic Service Puget Sound requires advance notification of watch supervisor for all vessels using Port Angeles anchorage; telephone 206-217-6050. The best anchorage is off the wharves, in 7 to 12 fathoms, sticky bottom.*

103 *A **nonanchorage area** has been established in the E part of Port Angeles Harbor.*

104 *Extensive log booming grounds in the N part of the harbor extend more than 1 mile from the W shore. Care must be taken when anchoring at night to avoid the rafted logs; the booming grounds are charted.*

105 *Ediz Hook Light (48°08'25"N., 123°24'08"W.), 50 feet above the water, is shown from a skeleton tower, 0.3 mile W of the E extremity of Ediz Hook; a fog signal is at the light. A 170-foot Coast Guard VTS radar tower is about 0.1 mile WSW of the light. Shoals extend to about 75 yards E of the E extremity of Ediz Hook. A lighted buoy is about 150 yards E of the outer limits of the shoals. Coast Guard radio station **NOW** is at the air station. A shoal, with a least depth of 7 fathoms and marked by a lighted buoy, is about 3.4 miles WNW of Ediz Hook Light. An aquaculture site, marked by private lights, is off the S side of Ediz Hook about 800 yards WSW of the light.*

106 ***Port Angeles** is on the S shore of the harbor. Logs, lumber, plywood, newsprint, pulp, shakes and shingles, and petroleum products are the principal commodities handled.*

Pilotage, Port Angeles

107 *Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the W coast of the continental United States (including Alaska) and/or British Columbia. Pilotage for Port Angeles is provided by the Puget Sound Pilots. They monitor VHF-FM channel 13. The pilot station is about 0.7 mile W from Ediz Hook Light. A pier for berthage of the pilot boats is on the S side of Ediz Hook, adjacent to the pilot station.*

Towage

108 *Tugs to 1,200 hp are stationed at Port Angeles, and tugs to 5,000 hp are available from Seattle with advance notice.*

Quarantine, customs, immigration, and agricultural quarantine

109 ***Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service.*

110 *Port Angeles is a **customs port of entry**.*

Coast Guard

111 *Port Angeles Coast Guard Air Station is on Ediz Hook, about 0.3 mile W of the E extremity.*

Harbor regulations

112 *The Port of Port Angeles Terminal Manager's office is in Port Angeles at the foot of Cedar Street.*

Wharves

113 *The major piers described, both private and port operated, extend along the S and W sides of the harbor. For a complete description of the port facilities refer to Port Series No. 37, published and sold by the U.S. Army Corps of Engineers. The alongside depths of the facilities described are reported depths. (For information on the latest depths contact the port authorities or the private operators.)*

Port-operated facilities

114 *Port Terminal No. 1 (48°07'30"N., 123°26'24"W.): 956-foot berthing space on N side with an additional 425 feet to dolphins; 610 foot berthing space on S side, 42 feet at the end; deck height, 17 feet; 17,000 square feet covered storage; 96,000 square feet open storage; shipment of general cargo, lumber, logs, pulp, and other forest products; berthing space for top side repair of large ocean going vessels.*

115 *Port of Port Angeles, Terminal No. 3 (W of Port Terminal 1): 480-foot berthing space; 41 to 45 feet alongside; deck height, 17 feet; receipt and shipment of general cargo, shipment of logs and lumber.*

Privately operated facilities

116 *Black Ball Ferry Transport (48°07'21"N., 123°25'45"W.): Terminus of passenger and automobile ferry connecting Port Angeles and Victoria, B.C.; ferry makes two trips daily from March to May and October to January. From May to October it makes 4 trips daily. Visit "www.northolympic.com/coho" for the current schedule. Operated by Black Ball Transport, Inc.*

117 *Diashowa America, Port Angeles Mill Dock (48°07'57"N., 123°27'33"W.): 640-foot total berthing space with dolphins; 28 feet alongside; deck height, 10 feet; shipment of lumber; owned and operated by Merrill and Ring, Inc. Note: Vessels moor portside-to at this wharf; a tug is recommended for both docking and undocking.*

118 *Diashowa America, Port Angeles Barge Dock (48°08'08"N., 123°27'37"W.): 570-foot berthing space with dolphins; 36 to 40 feet alongside; deck height, 17½ feet; approximately 28,000 square feet covered storage; receipt of fuel oil for plant consumption; shipment of paper products; owned by Diashowa; operated by Diashowa America and BP Marine Americas. A 25-foot shoal is charted about 100 feet E of the face of the Wharf; a tug is recommended when undocking.*

119 *In addition to the facilities mentioned, there are several small piers and wharves at which tugs and other floating equipment moor. Many log dumps are in the harbor.*

Supplies

120 *Water, ice, and marine supplies are available. Groceries are nearby. Diesel oil and gasoline are available at the port boat haven. Bunkering is available by barge.*

Repairs

121 *Port Angeles has several companies and facilities to perform major topside repairs to large oceangoing vessels.*

Communications

122 *Port Angeles is served by U.S. Highway 101. It is connected by ferry to Victoria, B.C. The airport is 2.5 miles W of the city.*

Juan de Fuca Strait — North Approach

Chart 3602

123 **La Pérouse Bank** *(48°45'N, 125°55'W)*, in the NW approach to Juan de Fuca Strait, extends 35 miles west and 30 miles SW of Cape Beale. **Amphitrite Bank**, between Amphitrite Point and La Pérouse Bank, has 37 m over it.

124 *La Pérouse Bank ODAS **light buoy** 46206 (176.5) (48°50'N, 126°00'W)* is a weather buoy.

125 **Soquel Bank** *(48°42'N, 125°10'W)* consists of two shoal areas about 2 miles apart. The west part has a least depth of 23.4 m and the east part has 19.2 m over it.



126 **Swiftsure Bank** *(48°33'N, 125°00'W)* has a least depth of 34 m. The area 4 miles SSW of Swiftsure Bank, known locally as the Chicken Ranch, is frequented by many small sport fishing boats from June to September. These boats may not be well equipped, for example lacking radar, and may have inexperienced crews. They may not be maintaining an adequate lookout or radio watch. Vessel movement in this area may be unpredictable. **Extra caution must**

be exercised in this vicinity to avoid collision and possible loss of life.

126.1 In the vicinity of Swiftsure Bank, there are 2 Seasonal Slowdown Areas that are in effect from June 1 to November 30. Vessel speeds are restricted to 10 knots within these areas. For additional information see *Notices to Mariners Annual Edition 1 to 46 Section A2, Notice 5*.

126.2 As of June 1, 2022, the ECHO Program voluntary slowdown trial in Swiftsure Bank is now in effect for all inbound and outbound commercial and government vessels to reduce the impacts of commercial shipping on at-risk whales in this key foraging area. This initiative will remain in effect 24 hours per day until 2359 PDT on October 31, 2022. If it is safe and operationally feasible to do so, commercial and government vessels are requested to not exceed the following speeds through the water:

- 11 knots – Bulkers, tankers, general cargo vessels, and government vessels; and,
- 14.5 knots – Vehicle carriers, cruise ships, and container vessels.

The voluntary vessel slowdown takes place in the inbound and outbound lanes of the vessel traffic separation scheme between the start or end of the traffic separation scheme on the western or southern side, and the 124° 40' W longitudinal line (traffic calling in point 1) on the eastern side. Speed transition zones are in place about 5 miles prior to entering the slowdown area. For more detailed information related to this and other slowdowns and the ECHO program, refer to the following internet web address: https://www.portvancouver.com/echo/. A submerged acoustic sensor mooring is located 0.25 mile southeast of Traffic Separation buoy "J".

127 **Pachena Bay**, 2.8 miles SE of Cape Beale, is exposed to the heavy swell that is usually present and should not be used as an anchorage. Shelter for small craft can be found inside the **Pachena River** entrance, but local knowledge is advised for entering the river.

128 **Seabird Rocks** off the entrance to Pachena Bay are bare. **Pachena Point**, 3 miles SE of Seabird Rocks, is steep-to.



129 *Seabird Rocks* **light** *(177),* on the largest rock, is shown from a white tower with a red band at the top.



130 *Pachena Point* **light** *(178)* is shown from a white tower. A prominent white house with a red roof is close west of the light.

131 Meteorological information for Pachena Point is in the Appendices.

132 **Tsusiat River**, 7 miles ESE of Pachena Point, has **Tsusiat Falls** at its mouth that can be seen for a considerable distance. As the only feature of its kind on this part of the coast, these falls are useful as an aid in fixing position.

Chart 3647

133 **Nitinat Narrows** *(48°40'N, 124°51'W)* entered between **Tsuquanah Point** and **Whyac Point** leads about 1 mile north into **Nitinat Lake**. **Nitinat Bar**, with depths of 0.9 m to 2 m, extends across the entrance of the Narrows. **Saw Tooth Rocks** (local name) lie south of Tsuquanah Point and are the visible part of the Bar. A large 1 m high rock lies on the NW side of the approach.



134 **Caution. — Exposure to ocean swell, especially with an ebb tidal steam, results in heavy and confused seas on Nitinat Bar. Adverse weather conditions compound the danger. No vessel should attempt to enter under these conditions – vessels have sunk and lives have been lost here.**

135 Secondary current station Nitinat Bar (9102), referenced on Tofino, is in *Canadian Tide and Current Tables, Volume 6*.

136 Entry can be attempted at any time on the flood, but preferably at high water slack with calm seas. Local knowledge is highly recommended. A short distance within the entrance the channel narrows to about 30 m and several rocks, covered less than 2 m, lie in the fairway.

137 Most of the buildings in the First Nations Reserve are in ruins. A pontoon in Cannery Bay is used by a boat ferrying hikers using the West Coast Trail. It is reported that there are numerous deadheads in Nitinat Lake, which is used as a harbour of refuge by fishing vessels and tugs.

Juan de Fuca Strait — North Side

Chart 3606

138 **Carmanah Point** *(48°37'N, 124°45'W)* is the NW entrance point to Juan de Fuca Strait.



139 *Carmanah Point* **light** *(180)* is shown from a white tower.

140 **Bonilla Point**, about 2 miles SE of Carmanah Point, slopes gradually to the sea. Reefs extend about 0.6 mile west and south from it. Inland of the Point, mountains attain elevations in excess of 1 000 m.

140.1 As of June 1, 2022, the ECHO Program voluntary inshore lateral displacement is now in effect for all tug and barge vessels transiting the Canadian inshore area of the Strait of Juan de Fuca to reduce the impacts of commercial shipping on at-risk whales in this key foraging area. When safe and operationally feasible to do so, tugs are requested to move south of the known killer whale feeding area and navigate either through the outbound shipping lane or the inshore lateral displacement zone, maintaining a buffer distance of 1,000 m from the traffic separation scheme (TSS). The inshore

lateral displacement zone is 1,500 m wide and occurs in the area between longitudes *123° 52.3532′ W, 48° 18.6222′ N* and *124° 31.5563′ W, 48° 28.8886′ N*, covering a distance of approximately 28 miles. This initiative will remain in effect 24 hours per day until 2359 PDT on October 31, 2022. For more detailed information related to the lateral displacement and the ECHO program, refer to the following internet web address: https://www.portvancouver.com/echo/.

Chart 3647

141 **Port San Juan**, entered between **Owen Point** *(48°33'N, 124°30'W)* and **San Juan Point** *(48°32'N, 124°27'W)*, is easily identified from seaward, appearing as a gap between two mountain ranges. It provides the first **anchorage** on the north shore westbound from Sooke. The inlet extends about 3.5 miles inland, terminating in a muddy sand beach.

142 Port San Juan is exposed to southwesterly gales and heavy seas, and a swell is often present in the seaward portion of the inlet. Although it is possible for a vessel with good ground tackle to ride out a gale if anchored in the most sheltered part of Port San Juan, it is recommended that as soon as the approach of a SW gale is indicated, shelter should be sought in Neah Bay.

143 *Port San Juan* ***light and whistle buoy*** *YK (183)*, 0.7 mile SE of Owen Point, is a **fairway buoy**.

144 **Kellett Rock**, on the west side of the entrance about 0.5 mile NE of **Owen Island**, dries 0.9 m. **Quartertide Rocks** dry 0.9 m to 2.3 m. The shoreline NE of Owen Point is fringed with islets and rock ledges.

145 **Cerantes Rocks**, on the east side of the entrance, consists of one large rock 15 m high, and several smaller rocks. **Hammond Rocks** are a group of above-water and drying rocks; the highest has an elevation of 9 m. **Woods Nose** is a small point fringed by several low islets. The shoreline NE of San Juan Point is fringed with rocks and shoals.

146 An abandoned **submarine cable** runs from close SE of San Juan Point to close NE of **Adze Head**.

147 **Anchorage** can be obtained anywhere in the Port in 10 m to 16 m, sand. A good small craft anchorage is in **Thrasher Cove** off the mouth of **Hobbs Creek**, or off the east shore about 0.4 mile NE of the community wharf.

148 **Gordon River**, at the north end of Port San Juan, has a bar across its entrance with a drying spit extending from its east entrance point. A gravel launching ramp is on the south shore just before the drying section. Private **buoys** mark the drying section of the channel leading to **Browns Creek**.

149 *Port Renfrew Marina and RV Park* (250-483-1878) occupies the north end of Browns Creek and is used by sport fishing boats. Moorage, fuel, fresh water, camping, and a launching ramp are available. With wharfside depths from 1 to 5 m and a channel nearly impassable at low tide, the marina is not suitable for all boats. A speed limit sign stating 5 MPH is posted onshore near the marina entrance. The marina is open May to mid-October.

150 It has been reported that the bottom in this area is littered with logging debris; the area was used for booming in conjunction with the large logging camp that was located nearby.

151 **San Juan River**, south of Gordon River, is fronted by an extensive drying flat and has a bridge, vertical clearance 4 m, across its entrance. In 1979, the deepest route across the bar was close to the south shore, drying 0.4 m. A **submarine pipeline** on the south shore, 0.2 mile west of the bridge, is marked by an outfall sign. A gravel launching ramp and a pontoon not connected to shore are close west of the bridge.

152 **Overhead cables**, vertical clearance 8 m, cross the river 0.6 mile east of the bridge. Piles line the south shore of the river between the bridge and the cables.

153 **Port Renfrew** in **Snuggery Cove**, on the east side of Port San Juan, is the western terminal of Highway 14 connecting to Victoria. The mostly paved road between Port Renfrew and Cowichan Bay is part of the Pacific Marine Circle Route. Port Renfrew settlement has a post office, general store, restaurants, accommodation, and a public telephone. Shower and laundry facilities are available at the RV campground close by.

154 The **community wharf** has an approach 160 m long leading to a 33 m by 15 m wharfhead with a depth of 4.5 m alongside the north face.

154.1 *Pacific Gateway Marina* (250-412-5509) is located west of the community wharf. Moorage, gas, diesel, a launching ramp and deep water berths for sailboats are available. The marina is open year round and can accommodate vessels up to 24.4 m in length. Fish processing is provided locally and can be provided on the dock.

155 Tidal predictions for Port Renfrew (8525) are in *Canadian Tide and Current Tables, Volumes 5* and *6*.

Chart 3606

156 Canadian Forces firing practice and exercise area WH commences at **Sombrio Point** *(48°29'N, 124°17'W)*, and extends to Sheringham Point. For details see *Notices to Mariners 1 to 46 Annual Edition*.

157 **Jordan River**, 2 miles east of **San Simon Point**, has a prominent bridge across its entrance. **River Jordan**, close east of the river mouth, has a post office.

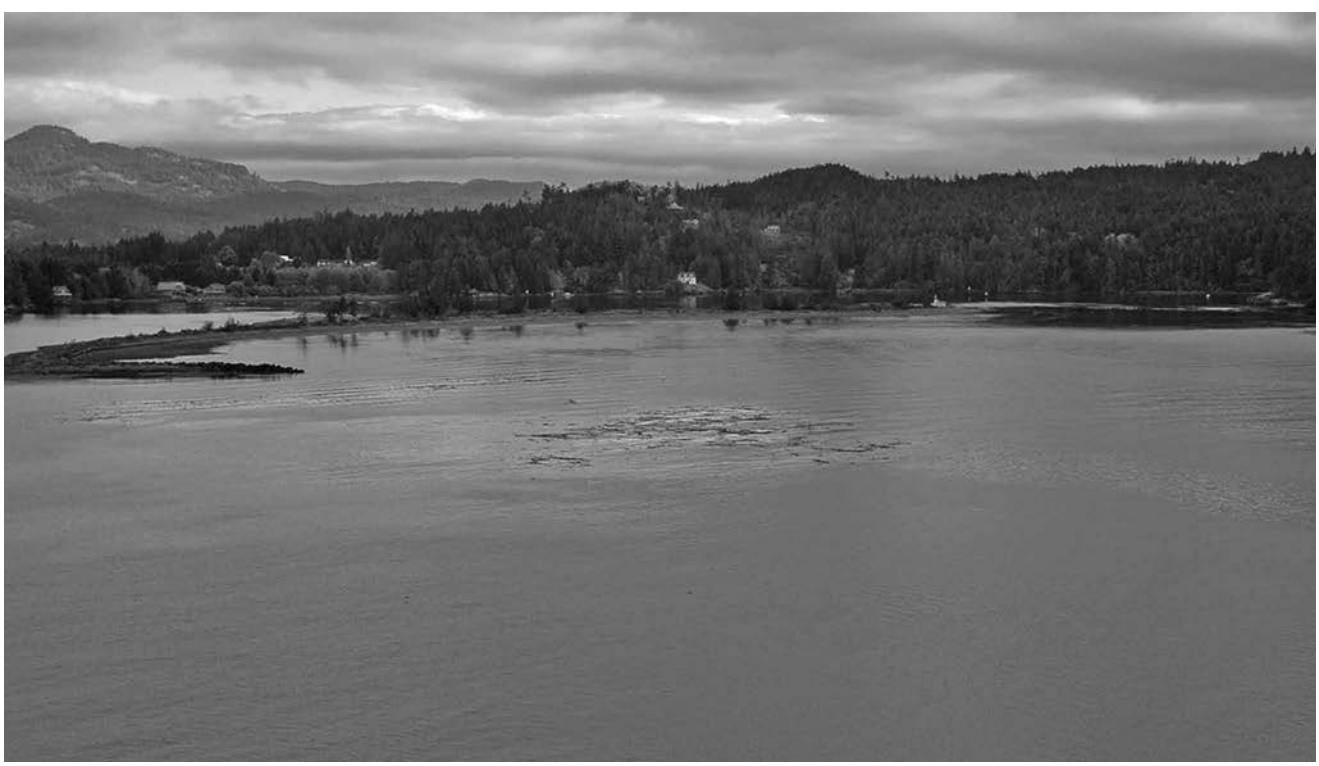
158 A **submarine pipeline** extends 0.6 mile offshore in a SSW direction from River Jordan.

159 Secondary current station River Jordan (1110), referenced on Juan de Fuca Strait (East), is in *Canadian Tide and Current Tables, Volume 5*.

SOOKE HARBOUR AND WHIFFIN SPIT (2005)



ENTRANCE TO SOOKE HARBOUR (2005)



160 Tidal differences, referenced on Sooke, are given for **Point No Point** (7010) *(48°24'N, 123°58'W)*, in *Canadian Tide and Current Tables, Volume 5*.

161 **Orveas Bay** lies between **Sheringham Point** *(48°23'N, 123°55'W)* and **Otter Point**, 4 miles SE. A private ODAS light **buoy** (T'Souke Nation) is approximately 2.2 miles NW of Otter Point.

162 *Sheringham Point* **light** *(186)* is shown from a white tower.

Chart 3410

163 **Sooke Bay** *(48°22'N, 123°46'W)* has a small lagoon at its head, which is a booming ground. The entrance channel to the lagoon is privately maintained. A conspicuous building is on the west side of the lagoon. A boat launching ramp and pontoon lie west of the lagoon entrance, and another launching ramp is 0.2 mile SE of the lagoon entrance. A private ODAS light **buoy** (T'Souke Nation) is approximately 0.6 mile NW of Muir Point.

164 The coast between **Muir Point** on the east side of Sooke Bay and Parsons Point, the west entrance point of Sooke Harbour, is known locally as **Sooke Bluffs**.

166 **Possession Point** *(48°20'N, 123°43'W)* should be given a fair clearance when rounding it to avoid off-lying rocks. **Secretary (Donaldson) Island** is rugged and treed. There is a bold wooded cliff about half way between Secretary (Donaldson) Island and **Beechey Head**, known locally as **Beechey Trap**.

167 **Tidal streams** flowing in and out of Becher Bay, to the NE of Beechey Head, run strongly at 3 kn or more. They cause tide rips and overfalls in the vicinity of Beechey Head.

Sooke Harbour and Approach

Chart 3411

168 **Sooke Inlet** *(48°21'N, 123°43'W)*, the entrance to Sooke Harbour and Sooke Basin, is entered between **Parsons Point** and **Company Point**. **Parsons Spit** extends offshore from Parsons Point and has drying and below-water rocks on it. Numerous small fishing floats attached to fishing gear can be encountered throughout the area. A private ODAS light **buoy** (T'Souke Nation) is approximately 0.2 mile SE of Parsons Spit.

169 **Sooke Harbour** is used mainly by commercial and sports fishing vessels. The entrance to Sooke Harbour is not visible from small craft until near **Simpson Point** because of the reach of Whiffin Spit toward Grant Rocks.

170 **Caution. — Traffic can be heavy and dangerous in Sooke Harbour. Many vessels travel at high speed despite charted dangers; and vessels tend to pass on the incorrect side of lateral and cardinal buoys.**

171 **Use caution when entering Sooke Inlet and Sooke Harbour. Many vessels run into difficulties from not taking adequate precautions against navigational hazards.** Line up Sooke Harbour Outer range before crossing the bar. There is a least depth of 4.2 m over the bar extending across the entrance between Parsons and Simpson Points. In the narrow part of the channel, east of Whiffin Spit, there is a sharp turn in the channel and care has to be taken to avoid being carried onto Grant Rocks by strong tidal streams. When proceeding to the public wharf follow the channel marked by **buoys**. The harbour is shallow in many places with eel grass on many of the shoals.

172 **Whiffin Spit** is low and sandy with trees and bushes on it. **Grant Rocks** SE of Whiffin Spit is an extensive shoal area with several heads. The shoalest dries 1.4 m. Currents in this vicinity can be strong.

173 *Whiffin Spit* **light** *(188)*, on the east end of the spit, is shown from a white tower with a green band at the top. A white building is close by. A fog signal operated by request only to Victoria Coast Guard Radio VAK, consists of one blast on a horn every 30 seconds.

174 *Sooke Harbour Outer range* **lights** *(188.1, 188.12)*, in line bearing 049½°, lead west of Grant Rocks.

175 *Sooke Harbour Inner range* **lights** *(188.2, 188.22)*, in line bearing 007½°, lead clear of the reef east of Whiffin Spit.

176 **South cardinal buoy VA** and **east cardinal buoy VB** mark the SE corner of a drying area in the centre of the harbour. **Port and starboard hand buoys** mark the channel leading to the public wharf, the channel west of **Woodward Point** leading north to Sooke Basin, and the channel west of **Middle Ground**. Private mooring buoys lie along the edges of some drying areas. A private ODAS light **buoy** (T'Souke Nation) is approximately 84 m SE of Woodward Point.

177 **Eliza Point daybeacon** has a **starboard hand daymark**.

178 A telephone cable extends WNW across the harbour commencing from 0.1 mile SW of **Eliza Point**.

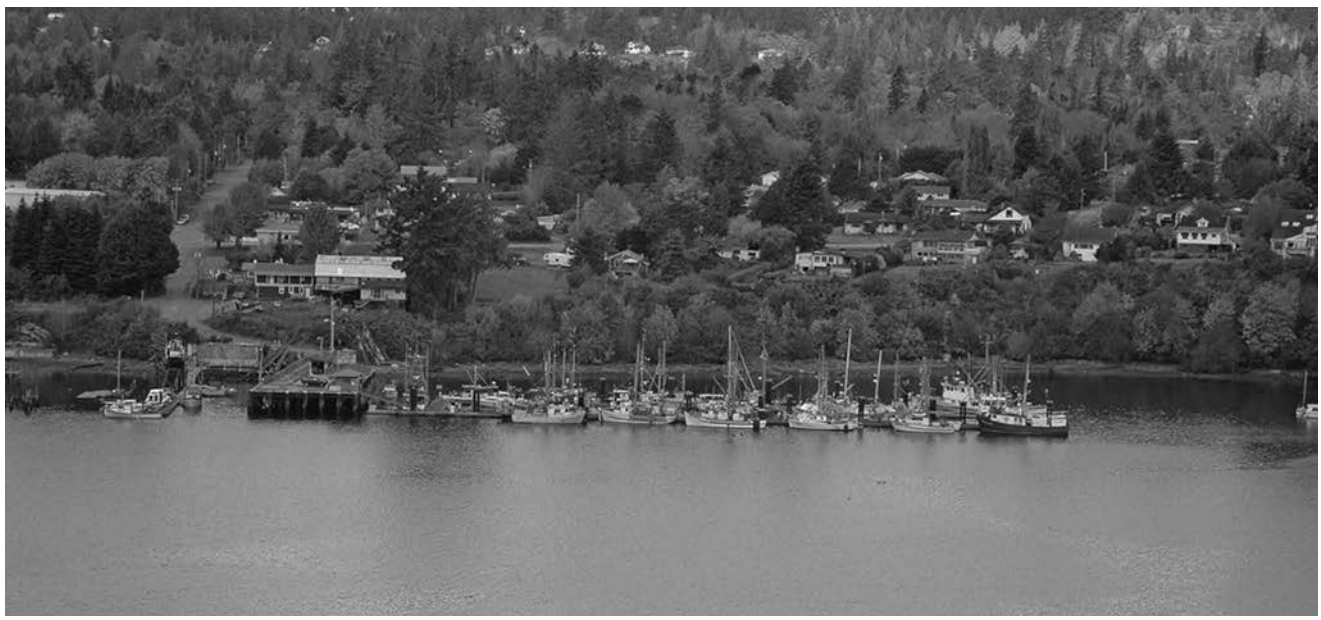
179 Piles lie NE of **Christie Point**. Many of the old pilings between **Harrison Point** and Whiffin Spit have rotted away.

181 Meteorological information for Pachena Point is in the Appendices.

182 Tidal predictions for Sooke (7020) are in *Canadian Tide and Current Tables, Volume 5*.

183 **Tidal streams** run with considerable strength around the extremity of Whiffin Spit, attaining 4 kn

SOOKE SMALL CRAFT HARBOUR AND PUBLIC WHARF (2005)



during large tides. Slack water, about 20 minute's duration, occurs at or near HW at Sooke.

184 No particular area is set aside as an anchorage. Open **anchorage** can be obtained outside the bar about 0.5 mile offshore in depths of about 20 m. During the fishing season, vessels are often anchored in the area just north of Whiffin Spit.

185 The community of **Sooke** is on the west side of the harbour and has a variety of stores and services including a post office, groceries, hardware, laundromat, accommodation, and restaurants. Stores are within walking distance of the public wharf.

186 Sooke is connected by road with Victoria and regular bus service is available.

187 *Sooke Harbour Resort & Marina* (250-642-3236) is 100 m north of Sooke Harbour range lights. Guest moorage, washrooms, showers, power, and laundry are available.

188 A series of old dolphins extend about 200 m SSW from the ruins of a fish packers wharf SW of the public wharf.

189 *Harbour Authority of Sooke* (250-642-4431) **public wharf** has a 74 m approach leading to a 15 by 18 m wharf head. A conspicuous red-roofed building is on the wharf head. Pontoons, each approximately 90 m long, are attached to the NE side of the wharf head and have depths of about 3 m alongside. Power, fresh water, telephone, a 3 000 lb crane, garbage, and used oil disposal facilities are available. Fuel can be delivered by truck. Groceries and hardware are available within walking distance. An ice plant and fish buying operation are alongside. A Canadian Coast Guard Auxiliary rescue vessel (RHIB) is moored here. Some wharves are usually occupied by commercial fishing boats but transient moorage is available.

190 **Sooke Basin** is entered from the NE side of Sooke Harbour, between **Trollope Point** and **Hill Head**. The entrance to Sooke Basin requires careful navigation because of the narrow channel and extensive drying areas created by silting from the **Sooke River**. **Billings Spit** extending south from **Billings Point** is part of these drying areas. Depths in these areas are subject to change and strong currents can be encountered.

191 The preferred route from Sooke Harbour to Sooke Basin is NE of Middle Ground. The NW route is a secondary channel and, due to changes of bathymetry, it requires local knowledge for safe navigation. Enter Sooke Basin after low water and during daylight hours when drying banks are visible.

192 The NE route to Sooke Basin follows the coast between Eliza and Trollope Points at a distance of slightly less than 0.1 mile and just outside the kelp that fronts the shore during summer months. The south shore between Trollope Point and Hill Head should be favoured as Billings Spit extends south to mid-point of the channel. On large tides strong **tidal streams** can be encountered between Trollope Point and Hill Head.

193 The secondary route follows the buoyed channel leading NW of Middle Ground. After passing the last **spar buoy**, continue parallel with shore until two pontoons have

been passed and a double gabled house is abeam, then turn SE and bring the island off Trollope Point ahead.

194 A **cable and a pipeline** cross the entrance channel to Sooke Basin in the vicinity of Billings Point. A water **pipeline** crosses Sooke Basin about 0.3 mile east of Hill Head.

195 Tidal differences for Sooke Basin (7024), referenced on Sooke, are in *Canadian Tide and Current Tables, Volume 5*.

196 *Sooke Marine Industries Ltd.* (250-642-3523) can provide hull and engine repairs. Their marine ways are 0.4 mile NE of Billings Point.

197 *Sunny Shores Resort & Marina* (250-642-5731) is 1.3 miles NE of Billings Point, close west of Goodridge Peninsula. Gasoline and diesel are available at the fuel dock. Guest moorage, power, washrooms, showers, laundry, haulout, repairs, store, launching ramp, and recreational facilities are available.

198 **Goodridge Peninsula**, 1.5 miles NE of Billings Point, is bare. The site of a former lumber mill, only a water tower 37 m high at its west end remains. Numerous piles and dolphins lie in the approach to **Cooper Cove**, which is entered east of the peninsula. An area of foul ground with numerous snags is in the entrance to Cooper Cove, and the wharves in the cove are in disrepair.

199 **Hutchinson Cove**, entered east of **Lorimer Point**, is a good **anchorage** but open to SW winds.

200 **Kellett Point**, 0.7 mile south of Hutchinson Cove, is the north entrance point to **Roche Cove**. A bridge 0.2 mile inside the entrance to Roche Cove has a vertical clearance of 4 m and restricts the channel to a width of 5 m. **Kellett Reef**, 0.2 mile west of Kellett Point, has two drying heads.

201 **Kellett Reef daybeacon**, on the west head of the reef, has a **bifurcation/junction daymark**, preferred channel to the right.

202 **Goodridge Islands** lie about 0.4 mile west of Kellett Point, and south of them is the entrance to **Anderson Cove**. A private ODAS light **buoy** (T'Souke Nation) is approximately 0.2 mile NW of Goodridge Islands.

Becher Bay and Approach

Chart 3410

203 **Becher Bay** *(48°19'N, 123°37'W)*, entered between **Alldridge Point** and **Smyth Head**, is open to Juan de Fuca Strait and has several islands and numerous rocks within 0.1 mile of its shores. Deadheads are likely to be encountered in the bay. First Nations Reserves are on the north and east shores and on several islands within the bay. **Bedford Islands** lie close south of its east entrance point and **Frazer Island** with several smaller islands lie off its east shore.

204 Tidal differences for Becher Bay (7030), referenced on Sooke, are in *Canadian Tide and Current Tables, Volume 5*.

205 **Tidal streams** in Becher Bay are particularly strong and close attention should be paid to charted information. Tidal streams flow in and out of Becher Bay, to the NE of Beechey Head, and run strongly at 3 kn or more. They cause tide-rips and overfalls in the vicinity of Beechey Head. Westerly waves steepen on the ebb currents (exceeding 3 knots), producing a short, choppy sea.

206 A **submarine cable** (power) extends NNE from the unnamed bay on the east side of Wolf Island to the Vancouver Island shore.

207 A **submarine pipeline** (sewer outfall) is laid down the east side of Becher Bay to a discharge point SE of Frazer Island.

208 *Becher Bay Marina* (250-642-3816) is on the west side of Becher Bay, in Campbell Cove. The pontoons are removed during winter months. Limited guest moorage is available; washrooms, showers and a launching ramp are provided.

209 *Cheanuh Marina* (250-478-4880), a full-service **marina** on the north side of Becher Bay NE of **Caffery Point**, is protected by a floating **breakwater**.

210 **Campbell Cove**, on the west side of Becher Bay, is entered between **Creyke Point** and **Wolf Island**. A rock 0.2 mile NNW of Creyke Point dries 1.7 m and is marked by a private daybeacon.

211 **Anchorage** open to weather from the SE can be obtained in **Murder Bay** on the north side of Campbell Cove. Several ruined cribs and a private **mooring buoy** are off the west die of Wolf Island. It has been reported that well protected anchorage can be obtained NE of Wolf Island. Care must be taken to avoid the charted cable close inshore on the west side of this area. By staying east of the large pier in the bay on the NE side of the island this cable can be avoided.

212 A private **mooring buoy** is 0.25 mile SE of **Hoskyn Point**. Private **mooring buoys** are east of Yates Point.

213 The east side of Becher Bay between **Yates Point** and **John Parker Islands** is a booming ground. Numerous piles and dolphins are NE of Yates Point.

214 **Church Hill** *(48°19'N, 123°35'W)*, which rises NE of **Church Point**, has steep cliffs on its SE side. **Church Island**, **Little Church Island** and **Swordfish Island** are bare.

215 **Foul ground** 1.5 miles SW of Church Point contains heavy steel wire mesh.

216 **Christopher Point** is low, steep, and has the remains of a gun emplacement on it. **Whirl Bay** offers temporary **anchorage** during favourable conditions.

Race Rocks

Charts 3410, 3440, 3461, 3606

217 **Race Rocks** *(48°18'N, 123°32'W)* are a group of low, bare rocks. **Great Race Rock**, 9 m high, is the largest of the group, the others being considerably lower. **Rosedale Rock**, 0.4 mile SE of Great Race Rock, has 1.2 m over it and is the outer danger in that direction. **West Race Rocks**, **North Race Rock**, and numerous drying and below-water rocks, on which heavy dangerous overfalls and races occur in bad weather, lie within a 0.4 mile radius of Great Race Rock.

218 A tide generated power **turbine** fixed to the bottom, 0.2 mile NW of Great Race Rock, has a least depth of 5 m. A **submarine cable** (power) extends from the turbine to Great Race Rock.

219 Race Rocks is an Area of Interest under the Marine Protected Areas Strategy. Once designated as a Marine Protected Area, regulations will be added to the *Oceans Act*.

220 **Caution. — Wind conditions and/or wave sequences can cause tide-rips, back eddies or tidal currents to suddenly become very dangerous. Large swells and standing waves can develop with little warning. These can be hazardous particularly to small craft.**

221 *Race Rocks* **light** *(189)*, on Great Race Rock, is shown from a tall tower with black and white bands. White buildings with red roofs are close by. The fog signal consists of three blasts on a horn every minute.

222 **Rosedale Rock light buoy V15** *(189.1)*, close south of the rock, is a **port hand buoy**.

223 Predictions of times and rates of maximum current and times of slack water are tabulated as daily tables for current station Juan de Fuca–East (1100), which is 4 miles south of Race Rocks *(48°14'N, 123°32'W)*. These predictions are in *Canadian Tide and Current Tables, Volume 5*.

224 For free recorded marine weather conditions in Juan de Fuca Strait call *Environment Canada* at 1-604-664-9010.

225 **Race Passage** lies between the dangers surrounding Race Rocks and those fringing Bentinck Island. It can be used by small vessels in good weather provided the vessels have the power to offset the tidal stream that flows through it. When using this passage, favour the Bentinck Island side keeping just outside the line of kelp, as the outermost danger on the south side of the channel is covered at HW and the strongest eddies are found near it. Although the passage is deep it should not be used by ocean-going vessels.

226 **Tidal streams** in Race Passage attain 7 kn on the flood and 7.5 kn on the ebb. Predictions of times and rates of maximum current and time of slack water are tabulated as daily tables for current station Race Passage (1200) in *Canadian Tide and Current Tables, Volume 5*.

227 **Caution. — Dangerous tide-rips are formed. Severe tide-rips are often encountered at Christopher Point and in the vicinity of the islands off Church Point.**

228 The *Canadian Forces* have established a demolition range on **Bentinck Island**. The range is a circle with a 1 mile radius centered on *(48°18'42"N, 123°32'36"W)*. Periodic tests of small explosive charges may result in flying objects falling into the surrounding area. When red flags are flown indicating testing is in progress, keep at least 1 mile clear. Do not land on this island. For details see *Notices to Mariners 1 to 46 Annual Edition*. A private **mooring buoy** on the east side of the Island marks the **wreck** *Bernard Castle*, with a least depth of 5.3 m.

229 **Eemdyk Passage** separates Bentinck Island from Vancouver Island to the NW.

230 **Tidal streams** through Eemdyk Passage are very strong and attain 6 kn.

231 An **overhead cable** (power), vertical clearance 9.8 m, crosses Eemdyk Passage.

Race Rocks to Royal Roads

Charts 3410, 3440

232 Pedder Bay, Parry Bay, and Royal Roads, which are separated by William Head and Albert Head, form the coast between **Edye Point** *(48°19'N, 123°32'W)* and the west entrance point of Esquimalt Harbour. Shores are generally high and wooded, and in Parry Bay and Royal Roads there are sandy beaches, backed by steep cliffs in places.

233 **Caution. — Concentrations of small craft can be encountered in the vicinity of Pedder Bay and Victoria. Vessels may be engaged in sailing races, fishing or cruising.**

234 *Canadian Forces* exercise areas are established in the approach to Esquimalt and Victoria Harbours. For details see *Notices to Mariners 1 to 46 Annual Edition*.

Chart 3410

235 A controlled access zone exists between **Fossil Point** and **Helgesen Point**. For details see *Notices to Mariners 1 to 46 Annual Edition*.

236 **Pedder Bay** *(48°20'N, 123°33'W)* affords **anchorage** in 10 m to 12 m about 0.3 mile ENE of **Manor Point**. Although the holding ground is good, it is exposed to SE winds, and a gale from that direction would make it an unsafe and undesirable anchorage. **Ned Point** is on the north side of the entrance to Pedder Bay. **Anchor Rock**, 2 m high and surrounded by a drying ledge, is 0.2 mile west.

237 **Submarine cables** and **pipelines** restrict anchorage inside Pedder Bay. A cable and pipeline cross Pedder Bay in the vicinity of **Watt Point**. Sewer pipelines run down the centre of Pedder Bay from **Point Ash** to Helgesen Point and a pipeline extends 0.2 mile ESE from Helgesen Point.

238 Tidal differences for Pedder Bay (7080), referenced on Victoria, are in *Canadian Tide and Current Tables, Volume 5*.

239 A *Department of National Defence (DND)* **mooring buoy** marked NAVY about 0.3 mile ENE of **Fossil Point** is in the approach to Pedder Bay.

240 **Port hand buoy** *V11* marks rocks extending east from Watt Point.

241 The *DND* **wharf** is for loading ammunition. Its north face has a berthing length of 80 m with a least depth of 7.6 m alongside. Lights are shown from the outer end.

242 The *Lester B. Pearson College of the Pacific* pontoon is on the north shore of Pedder Bay about 0.5 mile NW of **Weir Point**.

243 *Pedder Bay RV Resort & Marina* (250-478-1771), near the head of the bay, is used by sport fishing boats. Moorage, power, fuel, shower and laundry facilities, tackle and bait shop, boat rentals, and launching ramp are available. Berthing is available for vessels up to 15.2 m.

Charts 3410, 3440

244 **William Head** *(48°20'N, 123°32'W)* is a comparatively low promontory on which red brick buildings of a federal penitentiary are conspicuous.

245 Tidal differences for William Head (7082), referenced on Victoria, are in *Canadian Tide and Current Tables, Volume 5*.

246 **Mary Hill**, 0.8 mile west of William Head, has grassy slopes on its south side. **Quarantine Cove** fronts onto the penitentiary grounds.

247 Anchorage is prohibited in **Parry Bay** except for the area adjacent to Parker Bay. This **anchorage** should be used only in fine weather or when shelter from strong west winds is required.

248 **Haystock Islets** are bare and almost joined to shore at LW by drying mud flats at the mouth of **Witty's Lagoon**, which is a bird sanctuary.

249 A **submarine cable** is laid down the length of Parry Bay.

250 A **measured distance** of 1,852 m in a 027°41′–207°41′ direction is in Parry Bay. Limits are marked by **daybeacons** with fluorescent orange diamond-shaped slat work **daymarks**. The front beacon of the north transit is on the east Haystock Islet.

251 **Foul ground**, considered hazardous to vessels fishing or towing underwater equipment, lies within a 0.5 mile radius of *48°21'44"N, 123°29'20"W*.

Chart 3440

252 **Albert Head** *(48°23'N, 123°29'W)* is a moderately high projection that slopes down to the water's edge. Its extremity is bare, but the remainder is wooded. A *DND* pier with a pontoon attached is in a small bay on the west side. **Coghlan Rock**, 0.4 mile north of Albert Head, has 6.1 m over it.

254 A **wreck** 1.8 miles ESE and another wreck 2.1 miles east of Albert Head *(48°23'N, 123°26'W)*, at depths of about 70 m, are considered a hazard to nets and towed underwater equipment.

256 **Constance Bank**, with depths less than 20 m, is about 2 miles long and about 1 mile wide and lies with its NE extremity about 5.5 miles ESE of Albert Head. Several shoal patches are on the bank and the least depth 15.5 m is near its NW side. Vessels should not anchor on the bank, as its bottom is rocky. Heavy tide-rips sometimes occur over the bank.

257 *Victoria Harbour Cautionary light buoy VH (203), (48°22'31"N, 123°23'34"W)* is in the approach to Esquimalt and Victoria Harbours. It is fitted with a **Racon** (— • —).

258 A pilot boarding station for the *Pacific Pilotage Authority* lies within a 2 mile radius of Victoria Harbour Cautionary light buoy.

260 The white *Dominion Astrophysical Observatory* dome, on **Observatory Hill** *(48°31.2'N, 123°25.1'W)*, is conspicuous from the approach to Victoria and Esquimalt Harbours.

261 A controlled access zone exists in the approach to Esquimalt Harbour. For details see *Notices to Mariners 1 to 46 Annual Edition*.

262 Anchorage in **Royal Roads** *(48°25'N, 123°27'W)* is prohibited. Permission and an anchorage position must be obtained from an Esquimalt Harbour Official, by contacting the Queen's Harbour Master, on VHF Channel 10, or by telephone at 250-363-2160.

263 Fishing is prohibited in the area of Royal Roads, about 1.7 miles NE of Albert Head and in the entrance to Esquimalt Harbour between Fisgard Island and Duntze Head.

264 **Submarine cables**, some with power running through them, are laid in the approach to and in Esquimalt Harbour.

265 An orange and white unlit *DND* mooring **buoy** is moored SSW of Fisgard Island.

Esquimalt Harbour and Victoria Harbour

General

1 This chapter includes Esquimalt Harbour and approaches, Victoria Harbour and approaches, and the coastline between Victoria Harbour and Discovery Island.

Esquimalt Harbour and Approach



Chart 3419

2 **Esquimalt Lagoon**, partially separated from Royal Roads by **Coburg Peninsula**, is entered close south of **Gotha Point** *(48°26'N, 123°27'W)* by a narrow, shallow channel with strong currents that is not recommended for any vessels. Esquimalt Lagoon is a bird sanctuary.

3 Conspicuous tower cranes are visible from the approach to Esquimalt Harbour. They have red air obstruction lights.

4 As depicted on *Canadian Hydrographic Service Chart 3419*, fishing is prohibited in the entrance to Esquimalt Harbour and in an area east of **McCarthy Island**. For further information, please consult the *Fisheries and Oceans Canada* website for the latest fishing prohibitions or consumption advisories for fishing zone 19-2 Esquimalt Harbour.

5 **Esquimalt Harbour** *(48°26'N, 123°26.5'W)* limits are defined as all the navigable waters, including any foreshore, within the Juan de Fuca Strait northwards of a line running east and west (astronomically) through the southernmost tip of the southernmost of the Brothers Islands.

6 Controlled access zones exist in the approach to and inside Esquimalt Harbour; see *Notices to Mariners 1 to 46 Annual Edition*.

7 Esquimalt is a *Canadian Forces Navy Base* and a port for repairing large commercial vessels. Repair and refit facilities are used by bulk carriers, tankers and passenger vessels. The largest vessel to use these facilities in recent years was approximately 295 m long. See www.canada.ca/en/navy/corporate/esquimalt-harbour.html for more information.

8 Esquimalt Harbour is administered by the *Department of National Defence* and is governed by the *Canada Marine Act*, *Transport Canada's Natural and Man Made Harbour Regulations*, and local *Practices and Procedures*.

ESQUIMALT HARBOUR ENTRANCE (2005)



ESQUIMALT HARBOUR (2005)



9 All vessels entering or departing Esquimalt Harbour are requested to contact QHM Operations on marine VHF channel 10 or by telephone at 250-363-2160.

10 Vessels proceeding direct to Esquimalt should report their estimated time of arrival to customs in Victoria by radio. By giving advanced notice officials may board on arrival.

11 Provisions of all kinds are obtainable in quantity from Victoria. Fresh water is available at all wharves and jetties. Fuelling facilities (F Jetty) are for naval vessels only. Commerical vessels at the *Esquimalt Graving Dock* are to make arrangments through *Public Service and Procurement Canada/Esquimalt Graving Dock*.

12 There are two dry docks in Esquimalt Harbour. *Esquimalt Graving Dock* (250-216-2770) is the largest non-military graving dock on the west coast of the Americas. It can handle 90% of all vessels operating on the west coast and most vessels up to 100 000 dwt. It is owned and operated by *Public Services and Procurement Canada* and contracted out to a number of private companies for ship repair and refitting. It has been modified to allow cruise ship stabilizer repair.

Esquimalt Graving Dock
Extreme length: 357.8 m
Breadth at entrance: 41.1 m
Depth over sill at MHWS: 12.2 m
Depth over blocks: 12 m
Equipment: 150 tonne and two 50 tonne traveling cranesl

Canadian Forces Dry Dock
Extreme length: 146.6 m
Breadth of bottom of dock: 19.8 m
Depth over sill at MHWS: 8.8 m
Depth over blocks at entrance: 7.8 m
Depth over blocks at head: 7.5 m
Used by military and auxiliary vessels only

13 Tidal differences for Esquimalt (7110), referenced on Victoria, are in *Canadian Tide and Current Tables, Volume 5*.

14 **Tidal streams** in Esquimalt Harbour and for some distance outside are weak. At the entrance, between Scroggs Rocks and Macaulay Point, the west entrance point of Victoria Harbour, tidal streams run parallel with the shore at ½ to 2 kn. The flood sets SE and the ebb NW.

15 Pleasure craft may only anchor north of a line drawn between the south end of **Richards Island** and the north end of **Smart Island**. All pleasure craft anchored in Esquimalt Harbour shall be moored with two anchors and in the manner directed by a harbour official. Rafting of pleasure craft, at anchor, is not permitted. A harbour official must first ap-

prove anchoring in any other area of the harbour. See www.canada.ca/en/navy/corporate/esquimalt-harbour.html for more information.

15.1 A **breakwater**, marked with four flashing yellow **lights**, is located NE of **Yew Point**.

16 **Brothers Islands**, SE of the entrance to Esquimalt Harbour, consist of two groups of islands and islets. The largest island is 12 m high with some bushes near its north end; the others are bare. The passage between the islands and shore is foul.

17 **Scroggs Rocks**, NW of Brothers Islands, are two drying rocks south of the east entrance to Esquimalt Harbour.

18 *Scroggs Rocks* **light** *(196)*, on the rock, is shown at an elevation of 7.3 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

19 **Fisgard Island**, at the west entrance point of Esquimalt Harbour, is bare and connected to **Rodd Point** by a causeway.

20 *Fisgard Sector* **light** *(197)*, on Fisgard Island, is shown at an elevation of 21.6 m from a white tower and is floodlit at night. A two storey red building is attached to the light tower and is part of the *Fort Rodd Hill* and *Fisgard Lighthouse National Historic Sites of Canada*.

21 *Fisgard Island* ***light buoy*** *V17 (198)*, off the east edge of the shoal area fringing the island, is a **port hand buoy**.

22 **Duntze Head**, at the east entrance point of Esquimalt Harbour, is the extremity of a peninsula on which the *Canadian Forces Base* is located. The point 0.2 mile SE of

Table 2.1 Major Port Facilities — Esquimalt Harbour

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Jetty A – North Face	230	8.3 – 8.9	1.8	Berthing dolphin 30 m off west end. Tower crane, fresh water, power, telephone and shore gangway. Designed to berth "Provider" class vessels at a velocity of 0.19 m/sec.
Jetty A – East Face	60	3.2 – 4.3	1.8	Fresh water, power, telephone and shore gangway.
Jetty B – East Face	Under Construction	Under Construction	Under Construction	Caution - new Jetty B under construction. Construction activity for naval jetties and floats is ongoing. Construction barges will be active throughout the harbour.
Jetty B – West Face	Under Construction	Under Construction	Under Construction	Caution - new Jetty B under construction. Construction activity for naval jetties and floats is ongoing. Construction barges will be active throughout the harbour.
Jetty C (inside piers)	139	8.9	2.3	Mobile crane serves all berths.
Jetty C – West Face West Pier	200	6.6 – 11.3	2.3	
Jetty C – East Face East Pier	200	2.7 – 9.6	2.3	
Y Jetty	57	4 – 6		Maritime Coastal Defence Vessel (MCDV) Jetty. Fresh water, power, telephones, and shore gangway.
Esquimalt Graving Dock South Jetty (Public Services and Procurement Canada)	290	7.4 – 10.2	2.1	Fresh water (non-potable), power, telephones, and shore gangway.
Esquimalt Graving Dock North Landing Wharf (Public Services and Procurement Canada)	244	9.1	1.3	One x 150 tonne crane, fresh water (non-potable), power, telephone, and shore gangway.
Jetty D – North Face	137	7.9	1.4	Used for handling Naval stores and equipment.
Jetty D – East Face	137	4 – 5.7	1.4	8 129 m² open storage.
Jetty F – North Side	230	10 – 10.4	1.7	Bunkering jetty – bunker fuel loaded at 3 000 bbls/hour. Diesel fuel loaded at 91 kl/hour. Fresh water, telephones, and shore gangway. Port hand daybeacon marks drying reef at inner end.
Jetty F – South Side	198	7.4 – 9.3	1.7	Bunkering jetty – bunker fuel loaded at 3 000 bbls/hour. Diesel fuel loaded at 91 kl/hour. Fresh water, telephones, and shore gangway. 30 m float at inner end.
Fuel Jetty				South extension of Jetty F. Used for fuelling smaller vessels.
Jetty G (Colwood Jetty)	60	7.9		

Duntze Head is known locally as **Black Rock**. It has a gun turret on it. A cream-coloured building, 0.2 mile SE of Duntze Head, is conspicuous. An abandoned signal tower on **Grant Knoll** north of Duntze Head is not conspicuous from the outer approach.

23 **Wharves** and jetties in **Constance Cove** and along the SW shore of Esquimalt Harbour are part of *Canadian Forces Base Esquimalt*. They are used for berthing *Canadian Navy*, government and visiting *Navy* vessels. Details are listed in Table 2.1. Construction on Jetties A and B is taking place until further notice. Six pilings showing quick flashing yellow **lights** mark the construction boundary for B Jetty. Mariners are asked to use caution when transiting in the area.

26 **Lang Cove** and **Pilgrim Cove** are at the head of Constance Cove. *Canadian Forces Sailing Assocation* floats are in Lang Cove. **Malacca Patch** lies in the entrance to Pilgrim Cove and is marked by a **starboard hand bifurcation daybeacon**.

27 Fixed red lights are shown at an elevation of 69 m from the top of cranes at the Naval Dockyard. Lights are on the outer ends of most jetties.

28 **Munroe Head** is west of the *Esquimalt Graving Dock*.

29 *Inskip Islands range* **lights** *(199, 200)*, on the largest of the **Inskip Islands**, in line bearing 015°, lead through the entrance of Esquimalt Harbour.

29.1 A drying **rock** lies 60 m SSE of the northern range light on Inskip Islands.

30 **Paddy Passage** leads between the Inskip Islands and **Ashe Head**.

31 **Whale Rock**, with a depth of 2 m, lies 0.2 mile WNW of Inskip Islands.

32 *Whale Rock* ***light buoy*** *VC (202)* is a **starboard bifurcation buoy**.

33 A **daybeacon** with a **port hand daymark** marks a drying ledge on the north side of F Jetty.

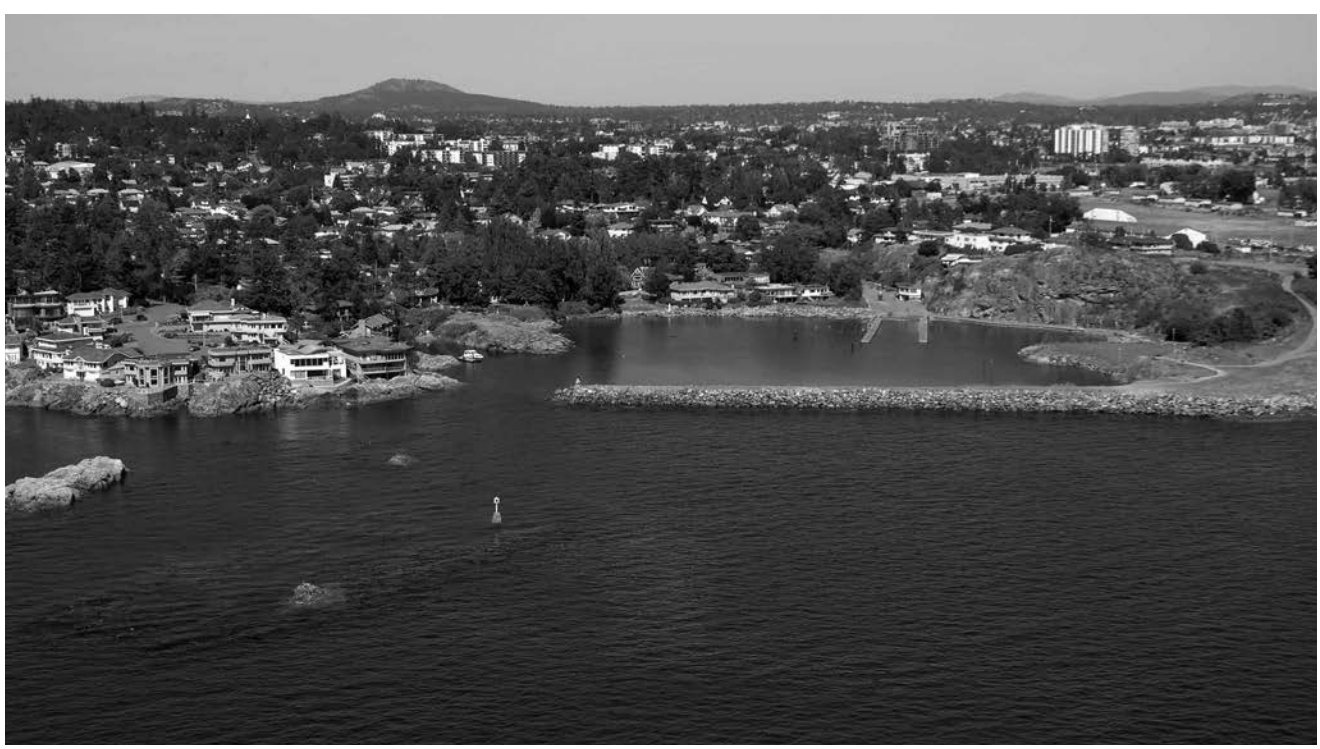
34 Former booming grounds lie north of Inskip Islands in **Plumper Bay**.

35 **Caution. — Log debris and deadheads on the bottom are in the area north of a line joining Ashe Head, Whale Rock and McCarthy Island.**

35.1 Two remediation work areas of sand covering wood debris with a thickness of 0.30 m to 0.60 m are displayed as **obstructions** on charts. One work area (110 m x 190 m) is 0.1 mile NE of Paterson Point. The other area (110 m x 200 m) is 0.1 mile NW of Inskip Islands, and contains a **rock** mound with a height of 1.5 m.

36 **Thetis Cove**, **Limekiln Cove** and **Tovey Bay** indent the NE shore of Esquimalt Harbour. Extensive mud flats are

FLEMING BAY (2005)



at the head of the harbour with **Cole Island** front and centre. This island is part of the *Esquimalt Naval Sites National Historic District*. It was used for storing munitions and has derelict buildings on the east shore.

37 **Paterson Point** and **Smart Island** are on the west side of the harbour SSE of Cole Island. A **rock** that dries 1.7 m , close east of Paterson Point, is marked by a private **buoy**.

38 **Saxe Point** *(48°25'N, 123°25'W)* is fringed with cliffs. A park is on the point. **Gillingham Islands** are bare. The passage between Gillingham Islands and **Royal Point** is not recommended because of underwater rocks.

39 **Gillingham Islands daybeacon**, on the SE drying reef, has two **port hand daymarks**.

40 **Fleming Bay**, protected by a **breakwater**, is used by small craft. It has pontoons and a launching ramp operated by the *Esquimalt Angler's Association*. **Submarine cables** cross the entrance to Fleming Bay and a cable (fibre-optic) is laid south through the bay then east along the north side of Juan de Fuca Strait. **Submarine pipelines** extend from the north shore of the bay.

41 **Fleming Bay daybeacon**, on the end of the breakwater, has two **starboard hand daymarks**.

Victoria Harbour and Approach

Chart 3412

42 **Brotchie Ledge** *(48°24'N, 123°23'W)*, in the SE approach to Victoria Harbour, has a rock bottom and is marked by kelp.

43 *Brotchie Ledge* **light** *(205)* is shown from a white tower with a green band at the top.

44 *Victoria Harbour Entrance* ***light buoy*** *V21 (204.5)*, 0.2 mile south of Harrison Island, is a **port hand buoy**.

45 **Victoria Harbour** is entered between **Macaulay Point** and Ogden Point **breakwater**. The **Inner Harbour** extends from Laurel Point to the Johnson Street Bridge.

46 The harbour entrance is easily recognized by the breakwater and a long, low, gray building close north on the

VICTORIA HARBOUR APPROACH (2005)



Table 2.2 Major Port Facilities — Victoria Harbour

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Ogden Point Docks Pier A – South Side	305	10.7	–	Used by cruise ships May to October. Freshwater at 18 tonnes/hour. Power 120v/100 amps. 11 612 m² covered storage, 6 ha open storage.
Ogden Point Docks Pier A – North Side	244	9.8 – 10.7	–	As above
Ogden Point Docks Pier B – North Side	244	10.7 – 12.5	–	As above
Ogden Point Docks Pier B – South Side	244	9.4 – 11.3	–	As above
Canadian Coast Guard	220	3.1 – 9	–	North of Jetty F. Used for fuelling Naval auxiliary vessels.

MIDDLE HARBOUR (2005)



east side of the entrance. **McLoughlin Point** is on the west side of the entrance. At night, the illuminated skyline of Victoria is conspicuous.

47 Ocean-going vessels are accommodated by terminals on the east side of the harbour between Ogden Point and Shoal Point. Details are in Table 2.2.

48 Victoria Harbour is a designated public port and its limits are defined as all the navigable waters, from the harbour entrance (a straight line joining the tip of the Ogden Point Breakwater and Macaulay Point) to the trestle bridge near Halkett Island in the Upper Harbour.

49 The harbour is owned by *Transport Canada*, and anything related to navigation safety, the water airport, and traffic scheme is overseen by the Harbour Master, who can be reached at 250-363-3578. The marinas within the harbour, as well as the *Ogden Point Cruise Ship Terminal*, are administered by the *Greater Victoria Harbour Authority* 250-383-8300; www.victoriaharbour.org.

50 Harbour regulations are administered by *Transport Canada* and strictly enforced by the Harbour Master. Harbour procedures are detailed in the *Transport Canada* publication *Public Port of Victoria Traffic Scheme*; www.tc.gc.ca/eng/pacific/marine-1521.html.

51 *Canadian Coast Guard Lifeboat Station Victoria* and the *Royal Canadian Marine Search and Rescue (RCM-SAR) Unit 35* are located in Victoria Harbour.

81 Regulations for Victoria Harbour are Practices and *Procedures for Public Ports* with the addition of several special rules that govern fuelling procedures, towing and the length of tow, speed limits in specific areas, prohibited anchorages, prohibited fishing areas, sewage discharge and mooring.

82 Victoria is a port of entry and the **customs office** is located at Raymur Point, between *Fisherman's Wharf* and *Coast Harbourside Hotel and Marina*. A customs wharf is located on the south side of the Middle Harbour and can accommodate vessels up to 49 m (160 ft) in length; telephone 1-888-226-7277.

83 Provisions of all kinds are available in quantity and fresh water is laid on most wharves. Bunker fuel can be delivered by barge, provided sufficient notice is given. Diesel fuel, stove oil, gasoline and a variety of lubricants can also be supplied.

84 Hull and machinery repairs can be undertaken in either Victoria or Esquimalt. Larger vessels have to go to the dry dock in Esquimalt for underwater repairs.

OGDEN POINT (2007)



85 *Seaspan Coastal Intermodal* maintains fully equipped ocean-going tugs for towing and salvage, as well as smaller tugs to assist in docking and undocking.

86 *BC Ferries* operates frequent service to Vancouver and the Gulf Islands through Swartz Bay, 27 km north of Victoria. Black Ball Transport of Seattle maintains regular passenger and car ferry service to Port Angeles throughout the year. *Victoria Clipper* operates a passenger catamaran between Victoria and Seattle. *Victoria Express* operates a passenger service to Port Angeles and Friday Harbour.

87 Frequent bus services are available to Vancouver and points on Vancouver Island.

89 Regular air services to Vancouver, Seattle and other destinations with connections to the North American continent and other parts of the world are available from the *Victoria International Airport*, 24 km north of Victoria. Seaplane flights to Vancouver, Seattle and other destinations are available from the Inner Harbour. Helicopter service to Vancouver is available from the heliport at **Camel Point**.

90 Heliports are at the *Canadian Coast Guard Base* south of Shoal Point, south of **Camel Point**, and at hospitals.

91 **Submarine cables**, some power, cross the harbour in several locations.

92 Tidal predictions for Victoria (7120) are in *Canadian Tide and Current Tables, Volume 5*.

93 **Tidal streams** of 2 kn can be encountered flowing across the entrance to the harbour, between Macaulay Point and Brotchie Ledge. The flood sets SE and the ebb NW. In the Inner Harbour tidal streams do not present any difficulties. Only in Upper Harbour and Gorge Waters will significant velocities be encountered. Secondary current station Gorge-Tillicum Bridge (1305), referenced on Victoria, is given in *Canadian Tide and Current Tables, Volume 5*.

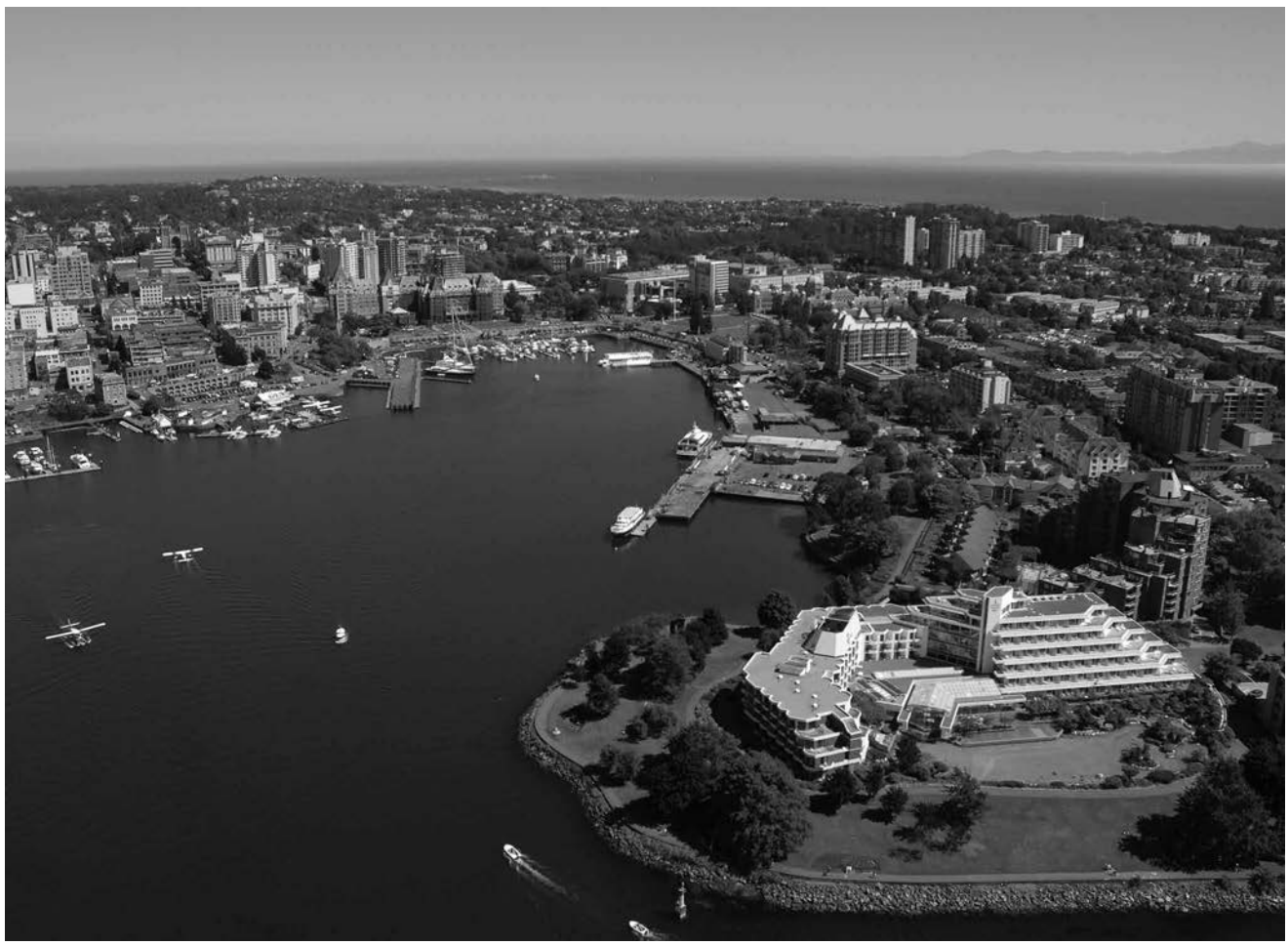
94 Meteorological information for *Victoria International Airport* is in the Appendices.

95 A **submarine pipeline** (sewer outfall) extends 1 mile offshore from east of Macaulay Point.

96 **Ogden Point** *(48°25'N, 123°23.5'W)*, the east entrance point to Victoria Harbour, has the main harbour **breakwater** extending west from it. The waters around Ogden Point breakwater are a Marine Sanctuary and closed to divers for taking or killing many marine species. Because of the large number of persons fishing from the breakwater, the Harbour Master requests all vessels reduce speed and wash, and give extra clearance when passing this area.

97 **Caution. — During strong SE or SW winds very great care is necessary when going along-**

JAMES BAY (2005)



side piers at Ogden Point and it is desirable to have an anchor in readiness. At times with a SW gale the piers are unapproachable. In such cases it is recommended that vessels proceed to an anchorage to await improvement in conditions.

98 *Ogden Point breakwater* **light** *(204)*, on the outer end of the breakwater, is shown from a white tower with a red band at the bottom.

99 Immediately north of Ogden Point breakwater are the *Pacific Pilotage Authority* wharf and pontoon and the Ogden Point Cruise Ship Terminal. Pier A has a prominent, long, low grey building on it. Two air obstruction fixed red lights are located along the footbridge connected to the western side of Ogden Point Terminal Pier B; one in the centre and one at the end. Lights are privately operated.

100 A **wreck** is close offshore from the **Camel Point** heliport.

101 The *Victoria Coast Guard Base* is between Ogden Point and **Shoal Point**. Fixed red lights are shown from the SW corner of the wharf and the heliport. A hovercraft ramp is close SE of the light. **Cautionary buoy** *VQ* is south of Shoal Point.

102 *Shoal Point* **light** *(207)*, west of the point, is shown from a white tower with a red band at the top and is equipped with an aeronautical beacon.

102.1 A line of 6 yellow information **buoys** instructing vessels to keep right extends from Shoal Point to Laurel Point. These buoys have yellow flashing lights in low light conditions.

103 *HMCS Malahat*, a *Canadian Forces Naval Reserve* unit, is close east of Shoal Point.

104 *Victoria Marine Fuels* (250-381-5221), located at Fisherman's Wharf, has gas and diesel.

105 *Fisherman's Wharf* (250-383-8326) provides moorage for visiting recreational vessels, live-aboards,

WHARF STREET MARINA (2005)



fishing vessels and float homes. Power, wireless internet, water, pump-out, showers and washrooms are available. Several floating restaurants are alongside the wharf.

106 *Coast Victoria Harbourside Hotel & Marina* (250-360-1211) is east of **Raymur Point**. A wharfinger is on duty 10 h 30 to 19 h 00 to assist in mooring. Power, internet, water, pump-out and access to hotel facilities are available.

107 *Laurel Point* **light** *(209)* is on the NW extremity of the point. It is shown from a white square tower with a red band at the top and is equipped with an aeronautical beacon.

108 **James Bay**, SE of **Laurel Point**, has the provincial parliament buildings near its south end and the *Empress Hotel* near its east end.

109 The *Clipper Terminal* on the west side of James Bay is 148 m long and provides daily passenger service to Seattle. The extension of this wharf to the SE is 162 m long and is used by Black Ball Transport providing daily service to Port Angeles for vehicles and passengers.

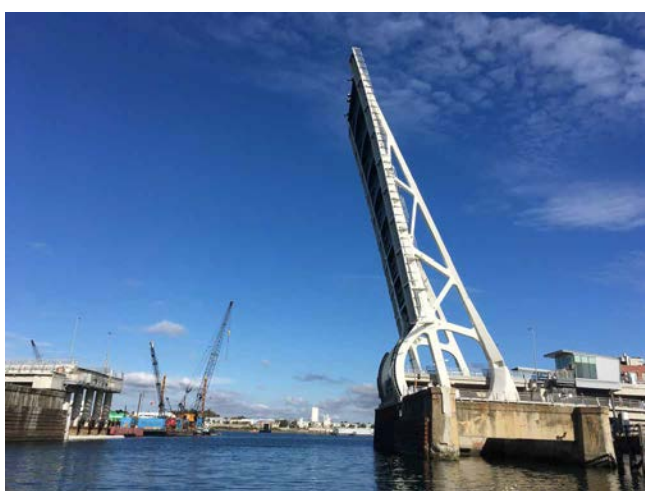
110 *Causeway (Government Street) Floats* (250-383-8326), in front of the *Empress Hotel*, have depths on the outside of 3.2 m and 2 m along the inside of the main pontoon. This facility is used by visiting pleasure craft, and is reserved for special events. Power, internet, water, washrooms, showers and laundry are available.

111 *Ship Point Wharf* (250-383-8326), on the NE side of James Bay, is 155 m long on its south face with a depth of 6.3 m alongside. Depths of 4.1 m lie about 15 m off the wharf face. The north side of the adjoining pier is 64 m long and has a least depth of 5.3 m alongside. *Ship Point Wharf* is used by small passenger vessels, yachts, fishing vessels and transient pleasure vessels. A pontoon is attached to the SE side of the wharf and is used by pleasure and some commercial vessels for pick-up and drop-off. North of *Ship Point Wharf* are seaplane terminals and small craft pontoons.

JOHNSON STREET BRIDGE — SPAN DOWN (2018)



JOHNSON STREET BRIDGE — SPAN UP (2018)



112 *Wharf Street Marina* (250 383-8326), close north of the customs wharf, consist of a large T-shaped pontoon with numerous pontoons extending from it. Visiting vessels have access to moorage, power, internet, water, washrooms, showers and garbage collection. Seaplane facilities are close north.

113 *Johnson Street Marina* (250-383-8326) provides transient and monthly winter moorage but facilities are limited. The dock is south of the Johnson Street Bridge.

114 *Mermaid's Wharf* (250-383-8326) **marina** is located close north of the Johnson Street Bridge. It provides long-term moorage only. No living aboard permitted.

115 The **Johnson Street Bridge** *(City of Victoria)* is a single-leaf bascule bridge located at the NE end of the Inner Harbour. A Bridge Operator is on duty 09h00 to 16h00, seven days a week, except December 25, 26, and January 1. On Saturdays and Sundays, the Bridge Operator may occasionally leave the bridge for short durations to answer City emergency calls. Contact the Bridge Operator on VHF channel 12 (156.6 MHz), call sign VAH20, or telephone 250-385-5717. During off duty hours, a Bridge Operator is available for lifts on a call-out basis by phoning 250-385-5717; advance notice of 90 minutes is recommended.

116 A flashing red **light** at the north and south sides of the east pier is displayed 24 hours. A flashing green **light** at the north and south sides of the west pier is displayed 24 hours.

116.1 A red **light** at the north and south sides of the moveable span placed at centre channel stays on at all times when the bridge is in the down position. When the bridge is being lifted (raised or lowered), the light flashes until the bridge is in the fully open position and then it turns off. A green **light** at the north and south sides starts flashing when the bridge is in the fully open position and stopped. This is the green signal for the vessel to proceed.

116.2 Aerial obstruction **lights** are at the north and south sides of the span. They are placed at the free end of the moveable span (west side of the moveable span). The lights come on when the bridge is in the fully open position.

117 Mariners must maintain watch on channel 12 while transiting the bridge. This is to allow the bridge operator to advise transiting traffic of any change in vessel traffic in vicinity of the bridge.

118 Vertical clearance under the Johnson Street Bridge, when closed, is 5.9 m in the middle of the

WEST BAY (2007)



channel. This clearance increases to the west side, but decreases towards the east side to a value of 4.9 m. The width of the channel between fender pilings is 40 m.

119 **Discovery Rock daybeacon**, about 0.1 mile NE of Tuzo Rock on the SE extremity of a drying spit, has a **port hand daymark** on a steel pile.

120 *Tuzo Rock* **light** *(210)* is shown from a white tower with a green band at the top.

121 Condominiums and a hotel line the north shore between **Lime Bay** and **Songhees Point**. **Tuzo Rock**, close east of Songhees Point, dries.

121.1 The *Victoria International Marina* (778-432-0477) is a luxury, full service marina with 28 berths. Non-power driven vessels may transit under the marina along the Songhees Point shoreline. All vessels entering the marina must contact the Harbour Master's office prior to harbour transit on VHF channel 18A.

121.2 Information **buoys** on the north side of the harbour mark a paddle only area. Non powered vessels must remain north of these buoys. The buoys are white except for one that is yellow and black. It marks the end of the seaplane runway in addition to the paddle only area.

TRIAL ISLANDS (2005)



ENTERPRISE CHANNEL (2005)



DISCOVERY ISLAND LIGHT (2005)



122 **Pelly Island**, on the north side of the Middle Harbour *(unnamed on chart)* about 0.3 mile ENE of Berens Island, is about 1 m high and bare. **Sleeper Rock**, close west of Pelly Island, is a drying rock marked on its south end by a **port hand daybeacon**.

123 *Pelly Island* **light** *(208)* is on the south extremity of the island. It is shown from a white tower with a green band at the top and is equipped with an aeronautical beacon.

124 **West Bay** is entered between Berens Island and **Colvile Island**. A channel dredged to a depth of 1.5 m leads NW past a series of pilings, through West Bay to marinas which do not offer services to visiting vessels. 30 m east of the pilings is a **fish haven** with unknown shoal depths. The outer end of the channel is marked by **port hand buoy** *V23*, and the north side by dolphins.

125 *Berens Island* **light** *(206)*, on the SE extremity of the island, is shown from a white cylindrical tower with a green band at the top and is equipped with an aeronautical beacon.

126 **Work Island** and **Berens Island** lie close south and east of Work Point. Berens Island has a rock ledge extending east from its NE point.

127 **Rose Bay**, between McLoughlin Point and **Work Point**, has a rockfill **breakwater** protecting pontoons extending from its west side. Two rocks lie in the centre of the bay.

128 **Upper Harbour**, between Johnson Street and Point Ellice Bridges, is surrounded by an industrial complex. Residential development is gradually replacing many of the old industries. *Canoe Brewpub, Marina and Restaurant* (250-361-1940) on the east side has power and water available. *Point Hope Maritime* (250-385-3623) on the west side is a full service shipyard offering repair and refit for all types of commercial and private vessels. A 1,200 tonne marine railway will lift vessels with a draft of 3-4 m up to 48 m long and can handle some larger vessels with shallower draughts. A 200 tonne floating dry-dock is 26 m long and 9 m wide.

129 **Point Ellice (Bay Street) Bridge** at the north end of Upper Harbour has a vertical clearance of 8.9 m. Lights under the bridge indicate the navigational channel.

130 **Selkirk Water** extends from the Point Ellice Bridge to Chapman Point.

131 **Sister Rocks daybeacon** with a **port hand daymark** marks the north end of these rocks.

132 **Halkett Island** has shoal water extending SW from it marked at its outer end by **starboard hand buoy** *V24*. The *Fairway Gorge Paddling Club* is east of Halkett Island.

133 **Selkirk Trestle** crosses Selkirk Water. This former railroad bridge is now used by pedestrians and cyclists. The navigation channel under the bridge has a vertical clearance of 1.8 m and a width of 4.9 m. A narrow section of the bridge where timbers have been removed to allow passage of small vessels without raising the bridge has a vertical clearance of 5.5 m. The bridge is usually in a closed position but will be opened upon request by contacting the Johnson Street Bridge operator from 08h00 to 16h00 daily.

134 A **submarine cable** crosses Selkirk Water midway between the Selkirk Trestle and Chapman Point. **Submarine pipelines** cross Selkirk Water at **Chapman Point**. A **pipeline** extends toward Gorge Waters from the south shore SSW of Chapman Point.

135 **Gorge Waters** leads NW from Chapman Point to **Portage Inlet**. Numerous private floats line the shores.

136 **Gorge-Tillicum Bridge**, vertical clearance 7.3 m, crosses Gorge Waters at **The Gorge**. **Craigflower Bridge**, vertical clearance 2.4 m, is at the entrance to Portage Inlet.

137 **Tidal streams** through The Gorge are extremely strong, with maximum rates of 6 kn and overfalls. Secondary current station Gorge-Tillicum Bridge (1305), referenced on Victoria, is in *Canadian Tide and Current Tables, Volume 5*.

138 **Caution. — The Harbour Master reports rescuing a number of overturned vessels from this location every year.**

139 The range of tide in Portage Inlet is about 50% of that at Victoria. There is also a great variation in the time differences with Victoria. A long stand at high water is followed by a small drop to the next low water. This low water occurs at about 1.8 m on the rising tide at Victoria.

Victoria Harbour to Discovery Island

Chart 3440

140 Between Victoria and Cadboro Point *(48°27'N, 123°16'W)*, the coast is fronted by numerous off-lying islands and rocks. Ocean-going vessels destined for Vancouver or New Westminster proceed outside these dangers following the traffic separation scheme, and pass east of Discovery Island. Coastal vessels and others with moderate draught sometimes pass through the islands via Mayor Channel, Baynes Channel or Plumper Passage.

Chart 3424

141 **Clover Point** *(48°24'N, 123°21'W)* is a low point, bare of trees, and can be identified by a large parking area on it. It is lit with streetlights at night.

142 Tidal differences for Clover Point (7115), referenced on Victoria, are in *Canadian Tide and Current Tables, Volume 5*.

143 A **submarine pipeline** (sewer outfall) extends 0.3 mile offshore from the east side of Clover Point. Abandoned **submarine cables** cross the entrances to **Ross Bay** and **Gonzales Bay**. A **submarine cable**, with an anode array at its outer end, extends about 130 m from the NE shore of Ross Bay. **Submarine pipelines** (storm drains) extend south into Ross and Gonzales Bays.

144 A **flagstaff** on **Beacon Hill** is prominent. A grey cylindrical water-tower, 1.3 miles NNE of Clover Point, can be identified by a conspicuous apartment building close north. A white dome and historic monument are on **Gonzales Hill** north of **Harling Point**.

145 **Trial Islands** *(48°24'N, 123°18'W)*, rocky and bare, appear as a single island from most directions. The largest island has **Staines Point** at its south extremity. Trial Islands are an Ecological Reserve.

146 *Trial Islands* **light** *(212)*, close to the extremity of Staines Point, is shown from a white tower. White buildings with red roofs are close by.

146.1 A private, floating ODAS platform, with a yellow light, is approximately 300 m WSW of Staines Point.

147 Radio towers 56 m high are in the centre of the largest Trial Island. Red air obstruction lights disposed vertically are shown from each tower.



148 **Tidal streams** attain 3 to 6 kn, in the vicinity of Trial Islands, and heavy **tide-rips** occur off Staines Point, particularly with the flood stream. **When a strong wind opposes the tidal stream a heavy, steep sea, dangerous to small vessels is raised. Staines Point should be given a wide berth.**


149 **Enterprise Channel**, locally known as **Trial Island Pass**, lies between Trial Islands and the south coast of Vancouver Island. Local knowledge is advised before attempting this channel. The fairway is tortuous and less than 0.1 mile wide in its narrowest part. Tidal streams run at 3 kn and there is a considerable amount of kelp. **Mouat Reef**, which dries 0.9 m, lies on the north side of the east entrance and has a depth of 1.5 m about 0.1 mile SW of it. This reef is marked by **south cardinal buoy** *VE* and by kelp in summer and autumn.


150 A **submarine pipeline** (sewer outfall), west of **McMicking Point**, extends 0.1 mile south into Enterprise Channel. An abandoned **submarine cable** extends across the channel from close east of **Kitty Islet** to the north end of Trial Islands. Other **cables** cross the west entrance between Harling Point and Trial Islands. A **sewage pipeline** extends NE from the west side of the cove and then north to the entrance.

151 **Brodie Rock** *(48°24'N, 123°17'W)* is a pinnacle with 4.7 m over it rising from a ridge in 20 m of water.

152 **Gonzales Point** *(48°25'N, 123°18'W)*, known locally as **Golf Course Point**, is low, rocky, bare of trees and fairly steep-to on its east side. Green fairways of the *Victoria Golf Club* NW of Gonzales Point are conspicuous.

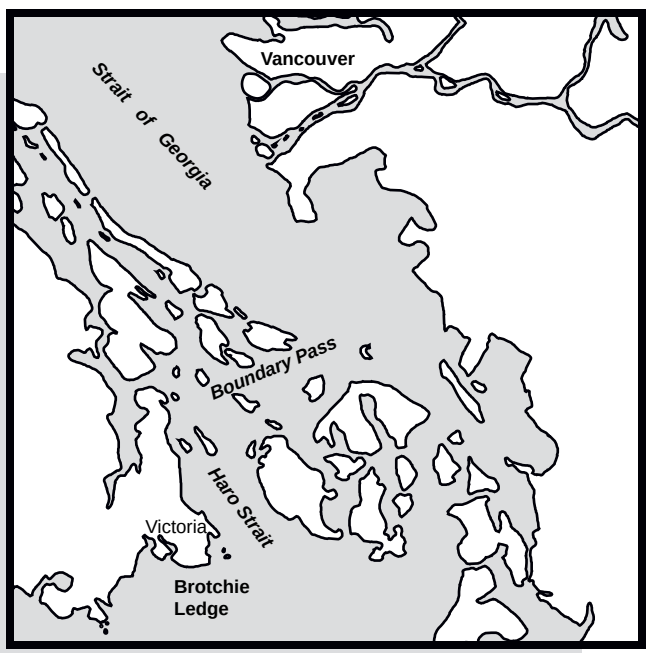
153 **Chain Islets**, a group of scattered rocks and islets on an extensive shoal, lie 1 mile NE of Gonzales Point. **Great Chain Island**, the largest of the group, is bare. Kelp fringes shoal areas in this vicinity. Chain Islets and surrounding area are Ecological Reserves.

154 **Discovery Island** *(48°25'N, 123°14'W)* lies at the junction of Juan de Fuca and Haro Straits. It is wooded and rises to 38 m at **Pandora Hill**. *Discovery Island Marine Provincial Park* consists of the south half of the island.


155 *Discovery Island* **light** *(216)*, on the east extremity of the island, is shown from a white tower. A white building with a grey roof is close by.


156 Heavy **tide-rips**, often dangerous to small craft, are formed in vicinity of Discovery Island particularly near **Sea Bird Point**, and off foul ground fronting **Commodore Point**.

Brotchie Ledge to Vancouver — Haro Strait, Boundary Pass and SE Strait of Georgia



General

1 This chapter includes the main route from the pilot boarding station at Victoria (Brotchie Ledge) via Haro Strait and Boundary Pass to the approaches to the Fraser River, Vancouver and Howe Sound. The SE part of the Strait of Georgia is included.

2 United States coasts of the **San Juan Islands** bordering the east side of Haro Strait and the south side of Boundary Pass are briefly described. For complete information see *United States Coast Pilot 7*.

3 The main shipping route to Vancouver follows the traffic separation scheme south and east of Discovery Island, then through Haro Strait east of Sidney Island, through Boundary Pass, and entering the Strait of Georgia between East Point (Saturna Island) and Alden Point (Patos Island).

3.1 As of June 1, 2022, the ECHO program voluntary slowdown is now in effect for all commercial and government vessels transiting through Haro Strait and Boundary Pass to reduce the impacts of commercial shipping on at-risk whales in these key areas. If it is safe and operationally feasible to do so, commercial and government vessels are requested to not exceed the following speeds through the water:

- 11 knots – Bulkers, tankers, general cargo vessels and government vessels; and,
- 14.5 knots – Vehicle carriers, cruise ships, and container vessels.

The voluntary vessel slowdown takes place between the vessel traffic separation scheme at the south end of Haro Strait, and the vessel traffic separation scheme at the north end of Boundary Pass. For more detailed information related to this slowdown and the ECHO program, refer to the following internet web address: https://www.portvancouver.com/echo/.

4 Several channels leading through the Gulf Islands can be entered from the north end of Haro Strait and the north side of Boundary Pass. Satellite, Swanson, Trincomali and Stuart Channels lead to ports along the Vancouver Island coast. Active Pass and Porlier Pass connect channels within the Gulf Islands to the Strait of Georgia. Active Pass is used by large ferries connecting the mainland to Vancouver Island. Porlier Pass is generally used by freighters bound from the Strait of Georgia to ports along the east coast of Vancouver Island.

5 Pleasure craft are encountered in large numbers throughout the area. Sport and commercial fishing vessels

are also encountered and usually congregate near entrances to narrow passages and off prominent headlands where fishing is good.

6 Numerous marine plants and animals live in British Columbia coastal waters and must be approached with caution. See *PAC 200 — General Information — Pacific Coast* for information on whale watching guidelines, *Marine Protected Areas* and *Ecological Reserves*.

Haro Strait and Boundary Pass

Charts 3440, 3441, 3461, 3462

7 **Haro Strait** *(48°35'N, 123°14'W)* lies between Juan de Fuca Strait and Boundary Pass, encompassing waters between San Juan Island and Vancouver Island. The southern limit is between Sea Bird Point (Discovery Island) and Cattle Point (San Juan Island). On the west, limits are between Cadboro Point (Vancouver Island) and the northern end of the eastern Chatham Island, then to the northern shore of Discovery Island. The north limit is a line from the northernmost extremity of Saanich Peninsula through Harry Point (Piers Island), to Kanaka Bluff (Portland Island), then from the north extremity of Portland Island to Reynard Point (Moresby Island) and from Point Fairfax (Moresby Island) to Turn Point (Stuart Island). The eastern limit is from the south extremity of Stuart Island to McCracken Point (Henry Island), then from the south point of Henry Island to the SW entrance point of Mitchell Bay on San Juan Island.

8 **Boundary Pass**, between Haro Strait and the Strait of Georgia, encompasses the area from Stuart Island to Patos Island. The southern limit is between Turn Point (Stuart Island) and Point Fairfax (Moresby Island). The NW limit is between Pelorus Point (Moresby Island), to Wallace Point (North Pender Island), then to Tilly Point (South Pender Island) and then from Teece Point to Taylor Point (Saturna Island). The north limit is between East Point (Saturna Island) and Alden Point (Patos Island). The SE limit is between Alden Point (Patos Island) and Point Hammond (Waldron Island), then from Sandy Point (Waldron Island) to Charles Point (Stuart Island).

9 Haro Strait and Boundary Pass are deep and for the most part wide. **Great caution and vigilance are necessary because of reefs in some parts and the rate and varying directions of tidal streams.**

10 The **international boundary** between Canada and the United States runs along the centre of Haro Strait and Boundary Pass.

11 *Vessel Traffic Services (VTS)* for Haro Strait and Boundary Pass are in Sector One of the *Vancouver Traffic Zone*, administered by *Victoria Traffic*. Assigned frequency is Channel 11 (156.55 MHz). Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*. See Table 3.1 for a summary of **calling-in points** in this area.

Table 3.1 Calling-in Points — Haro Strait and Boundary Pass

Number	Name	Description
5	Hein Bank	Line running from *48°22'00"N, 123°02'01"W* to *48°27'03"N, 122°57'45"W*
6	Turn Point	Circle centered on *48°41'20"N, 123°14'10"W* radius 3 nautical miles
7	East Point	Line running from *48°47'00"N, 123°02'42"W* to *48°47'24"N, 122°58'13"W*

12 **Calling-in Point 5 Hein Bank** is a line joining *Hein Bank* with *Cattle Point light (221)*, San Juan Island. Administered by *Victoria Traffic* and *Seattle Traffic*.

13 **Calling-in Point 6 Turn Point** is on the approach to Haro Strait and is a circle with a 3-mile radius centered on *Turn Point light (255)*.

14 **Calling-in Point 7 East Point** is a line joining *Saturna Island Sector light (264)* to *Patos Island Sector light (265)*. Mariners are encouraged to call 3 NM from *East Point light* when entering or exiting Boundary Pass.

15 The traffic separation scheme leading SE in United States waters leads into the mandatory *Vessel Traffic Service Puget Sound*. Details and regulations are in *United States Coast Pilot 7*.

16 Turn Point Special Operating Area (SOA) information is available in *Radio Aids to Marine Navigation, Pacific and Western Arctic, Part 3*.

TURN POINT – SPECIAL OPERATING AREA (SOA)

The Turn Point Special Operating Area (SOA) has been established to enhance order and predictability, efficient and safe movement of goods and services, and to further reduce the risk of accidents with respect to vessels transiting the boundary waters of Haro Strait and Boundary Pass in vicinity of Turn Point on Stuart Island, Washington.

Turn Point SOA consists of those Canadian and United States waters contained within a four (4) sided area connected by the following coordinates:

- *48 41.324 N, 123 14.245 W (Turn Point Light, LL255/US 19790);*
- *48 42.400 N, 123 13.967 W;*
- *48 41.087 N, 123 17.631 W (Arachne Reef Light, LL254.3);*
- *48 39.732 N, 123 16.438 W (Tom Point Light, LL225).*

Application

These procedures apply to all Canadian and U.S. VTS participant vessels within or approaching the Turn Point SOA from Boundary Pass, southbound for Haro Strait; and from Haro Strait, northbound for Boundary Pass or Swanson Channel, however, they do not apply to vessels southbound out of Swanson Channel.

Movement Procedures

a) A VTS participant, if towing astern, do so with as short a hawser as safety and good seamanship permits.

b) A VTS participant of 100 m or more in length will make best efforts consistent with safety and industry practices:

i) not to enter the Turn Point SOA when another VTS participant of 100 m or more in length is already located within the SOA, unless:

1) When following astern a minimum 0.5 NM (5 cables) separation is maintained with the vessel ahead;

2) When overtaking in the SOA with the concurrence of MCTS Victoria that there is no opposing traffic and a CPA of at least 0.5 NM (5 cables) is maintained;

3) If outbound from Boundary Pass and meeting an inbound vessel from Haro Strait already in the SOA, enter only after the outbound vessel is past the vector heading of the inbound vessel engaged in the turn and maintain at least a .5 NM (5 cables) CPA;

4) If inbound from Haro Strait and meeting an outbound vessel from Boundary Pass already in the SOA, enter only after the outbound vessel has crossed a bearing line between Turn Point and Arachne Reef and maintain at least a .5 NM (5 cables) CPA.

ii) Maintain a distance off of Turn Point of at least .3 NM (3 cables).

All VTS participants approaching Turn Point SOA are expected to make safe passing arrangements with other VTS participants at either Monarch Head or Blunden Islet southbound; and Lime Kiln Light (LL222/US19695) or Kellett Bluff Light (LL229/US19720) northbound. These arrangements should be made no later than reaching CIP 6 at Gowlland Point (LL253/US19800) southbound and approximately abeam Haro Strait Lighted Junction buoy A (LL255.1/US19775) northbound.

17 A local **magnetic anomaly** as much as 4° from normal variation has been observed on the east side of Haro Strait in the vicinity of **Bellevue Point** *(48°32'N, 123°11'W)*.

18 Tidal differences along Haro Strait and Boundary Pass, all referenced on Fulford Harbour (7330), are given for Finnerty Cove (7140), Saanichton Bay (7255), Sidney (7260), Swartz Bay (7270), Narvaez Bay (7345) and Bedwell Harbour (7350) in *Canadian Tide and Current Tables, Volume 5*.

19 Secondary current stations Haro Strait (1230) *(48°35'N, 123°14'W)*, Boundary Pass (1260) *(48°45'N, 123°05'W)* and Sidney Channel (1232) *(48°37'N, 123°20'W)* referenced on Race Passage (1200), are in *Canadian Tide and Current Tables, Volume 5*.

20 Between the south entrance of Haro Strait and Turn Point, the **tidal stream** sets fairly through the main channel of Haro Strait on the ebb. On the flood stream a huge gyre is present to the east of Discovery Island; see Figure 3.1. The main flood stream that runs along the south shore of Discovery Island sets NE toward San Juan Island resulting in a strong set to the north along San Juan Island and a southerly set in the west portion of Haro Strait off Discovery Island.

21 This tendency of the flood stream to confine itself to a narrow band along the Canadian shore, from Staines Point (Trial Islands) to Sea Bird Point (Discovery Island), results in a gyre at the south end of Haro Strait and delay in the turn of the **tidal stream** to ebb off Sidney Island. This can be anywhere from 1 h 10 min to 2 h 30 min later than the turn predicted at Race Passage.

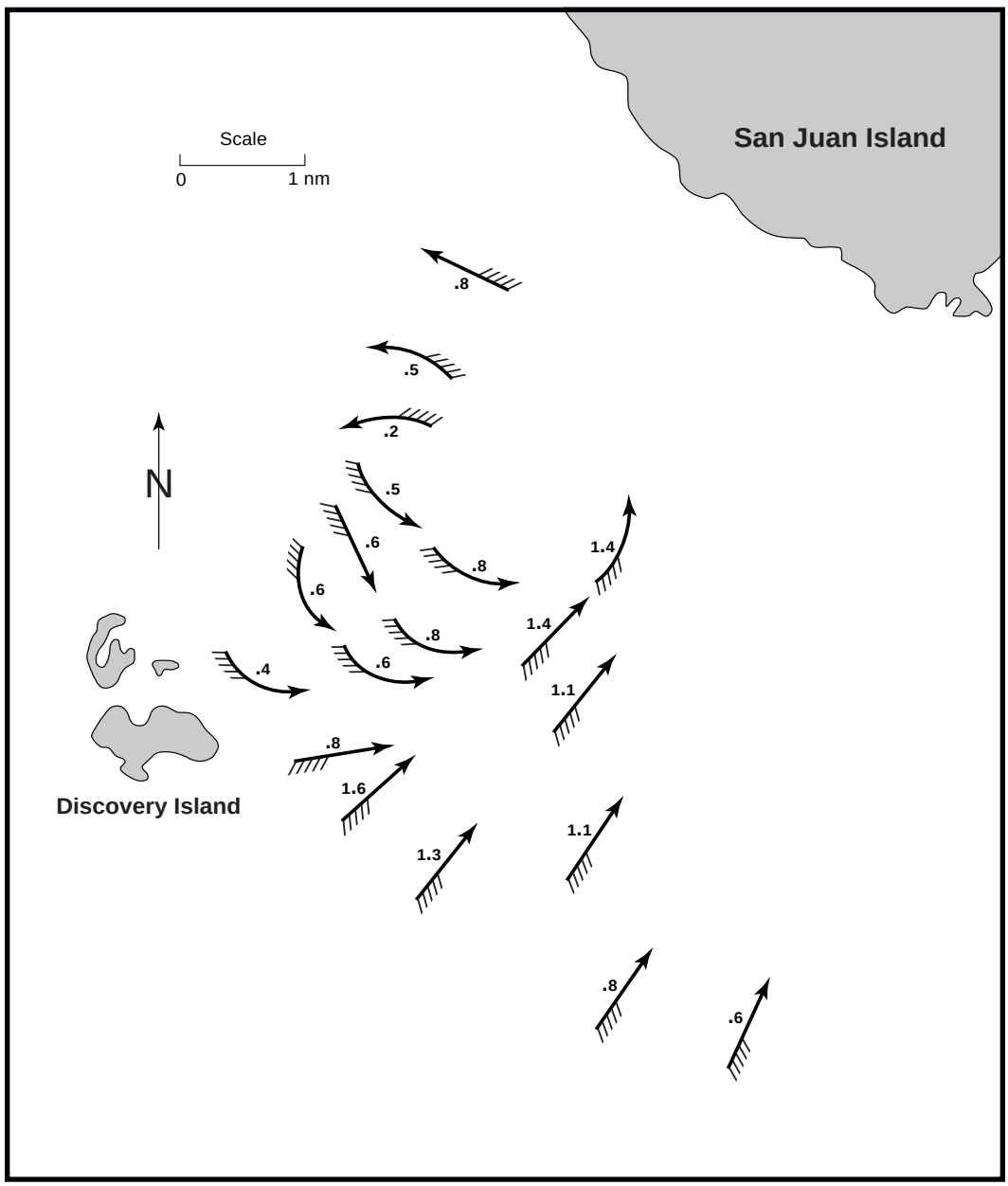
22 On the United States side of Haro Strait, when **tidal streams** off Kellett Bluff reach their maximum velocity, direction on the flood is about north and on the ebb about 170°. Maximum rate, generally greater on the ebb stream, can amount to 4 kn. On reaching Turn Point the flood stream divides. The main current continues toward Active Pass in a direction about 340° while the weaker current branches off into Boundary Pass. Consequently, at Turn Point, the flood is variable in direction, sometimes setting toward the east end of South Pender Island and frequently curving round the north side of Stuart Island. During the strength of the flood the current runs up the centre of Boundary Pass in the direction of Patos Island.

23 At a position with Turn Point bearing 216°, distant 1.3 miles, the ebb begins promptly and for the first hour the direction is about 284°, then becoming 260°. On large tides the maximum velocity on the ebb is 4 kn.

24 Heavy **tide rips** are formed round Discovery Island between Henry Island and Turn Point and on the south-going **tidal stream** round Turn Point. In bad weather there are heavy **tide rips** on the small banks lying in mid-channel east and NE of Fulford Reef *(48°26'N, 123°14'W)*.

25 Near the east end of Boundary Pass, at secondary current station Boundary Pass *(48°45'N, 123°05'W)*, during the

FIGURE 3.1 SOUTH HARO STRAIT FLOOD STREAM GYRE



A gyre is present on the flood stream at the south end of Haro Strait. The velocities (in knots) are shown for those on a 6' rise of tide at Fulford Harbour.

first hour of flood the direction of the current is 014° changing to 070° at about the time of maximum velocity. The ebb begins in a 195° direction, changing to 216° at maximum velocity. Duration of slack at both HW and LW is 10 to 12 minutes. On the ebb the current runs in surges, forming eddies, whereas the flood runs more evenly.

26 Between Saturna and Patos Islands, **tidal streams** are strong and somewhat erratic with tide rips and eddies. Care should be observed when navigating in this area. The passage between Patos Island and Sucia Islands is almost free of tide rips and the tidal currents set more fairly through it. They are less strong and more regular than those between Saturna and Patos Islands.

27 A **submarine cable** (fibre-optic) crosses the south approach to Haro Strait. A **submarine cable** crosses Haro Strait from 1 mile north of Ten Mile Point to San

Juan Island 1.2 miles north of Bellevue Point. A **submarine cable** (fibre optic) is laid from Cordova Bay then north and east through Haro Strait, Boundary Pass and across the Strait of Georgia.

28 *Washington State Ferries* operates a **ferry** that crosses the north end of Haro Strait between Sidney, B.C. and Anacortes, Washington via Friday Harbor. Charted ferry routes are general indications of the route followed.

Haro Strait — South Approach

Charts 3440, 3461, 3462

29 **Hein Bank** *(48°21'N, 123°03'W)* lies in Juan de Fuca Strait and the approach to the south entrance to Haro Strait. It has a least depth of 4.1 m.

31 *Hein Bank light buoy 1 (US 16362)*, 1 mile NNE of the bank, is a **port hand buoy** fitted with a **Racon** (— • —).

32 **Middle Bank** *(48°25'N, 123°06'W)* has a least depth of 19.8 m over it. In heavy weather tide rips occur on and in the vicinity of this bank.

33 **Cattle Point** *(48°27'N, 122°58'W)* is the south extremity of San Juan Island. **Salmon Bank**, a shoal spit, extends 1.5 miles SSW from Cattle Point.

34 *Cattle Point* **light** *(221)* is shown from a tower.

35 *Salmon Bank light and gong buoy 3 (US 16365)*, at the south end of the bank, is a **port hand buoy**.

36 **San Juan Island**, on the east side of Haro Strait, is rugged and partially wooded. **Mount Dallas** *(48°31.3'N, 123°07.9'W)*, the highest of several hills, rises abruptly from the west shore to an elevation of 329 m.

37 **Eagle Point** is 3 miles WNW of Cattle Point. The shore NW of Eagle Point is steep-to and rocky. **Pile Point** is 2.7 miles WNW of Eagle Point. **Kanaka Bay**, close east of Pile Point, is a small cove used by fishing vessels.

38 During the fishing season, June to October, many fishing vessels anchor close inshore at night, generally between Cattle Point and Pile Point.

Haro Strait — South End

Chart 3440

39 *Lime Kiln light (222) (48°31'N, 123°09'W)*, on a headland on the north side of **Deadman Bay**, is shown from an octagonal tower. Two buildings are SE of the light.

40 **Alpha Islet**, the outermost islet of the Chatham Islands group, is 5 m high and bare.

41 **Fulford Reef**, 0.8 mile NW of Alpha Islet, consists of a group of drying reefs. The highest dries 1.5 m.

42 *Fulford Reef* ***light buoy*** *VK (215.5)*, north of the reef, is a **north cardinal buoy**.

43 **Beaumont Shoal** *(48°27'N, 123°11'W)*, in the centre of the traffic separation zone, has 17.1 m over it. Several shoal pinnacles lie in the separation zone to the north and south of Beaumont Shoal. A shoal with a least depth of 13.4 m lies 1.1 miles north of Beaumont Shoal.

44 *Haro Strait* ***light buoy*** *VD (216.4)*, close south of Beaumont Shoal, is a **south cardinal buoy**.

Haro Strait — North End

Chart 3441

45 **Little D'Arcy Island** *(48°34'N, 123°16'W)*, 1.5 miles NW of Kelp Reefs, is wooded.

46 **Unit Rocks**, 0.5 mile SE of Little D'Arcy Island, consist of a group of drying and below-water rocks, the highest rock dries 1.8 m. Unit Rocks is part of *Gulf Islands National Park Reserve*.

47 **Hughes Passage** separates D'Arcy Island from Sidney Island to the north and leads west from the main shipping channel of Haro Strait into Sidney Channel. On its south side it is encumbered with drying and above-water rocks extending 0.3 mile north from D'Arcy and Little D'Arcy Islands. **Sallas Rocks**, extending 0.5 mile south from Sidney Island, encumber the north side of this passage. The highest rock of this group has an elevation of 10 m.

48 **Wymond Point**, 0.9 mile ENE of Sallas Rocks, is the SE extremity of Sidney Island.

49 **Halibut Island**, 1.1 miles NNW of Hamley Point, is wooded and has shoal areas south and SE.

50 *Mandarte Island* ***light buoy*** *UT (225.1)*, 0.4 mile north of Halibut Island, is an **east cardinal buoy** and marks drying rocks extending NW of it.

51 **Gooch Island** *(48°40'N, 123°17'W)* is wooded. A conspicuous red and white watch-tower and a house beside it are on the NW part of the island. **Rum Island** lies close-off the east end of Gooch Island; its east extremity is **Tom Point**. Rum Island, also known as Isle-de-Lis, is part of the *Gulf Islands National Park Reserve*; camping in designated areas only.

52 *Tom Point Sector* **light** *(225)*, on an islet east of the point, is shown from a white tower with a green band at the top.

53 *HMCS Mackenzie* was sunk in 1995 close north of Gooch Island as an **artificial reef** for divers. This vessel was a *Royal Canadian Navy Destroyer Escort*, 111 m long. It is marked by **buoys** that become weighed down

by marine growth and may pose a hazard. **Currents, particularly during large ebbs, can be strong and dangerous to divers and attendant vessels.** For more information see the *Artificial Reef Society of British Columbia.*

54 **Cooper Reef**, 0.5 mile north of Tom Point, dries 2.1 m. **Arachne Reef**, 1 mile NW, has three drying heads and lies in the centre of the east entrance of Prevost Passage.

55 *Arachne Reef* **light** *(254.3)*, on the north side of the reef, is shown from a white tower with a green band at the top.

56 A non-active ocean dump site is centered at *48°41'N, 123°16.6'W*.

57 **Moresby Island** *(48°43'N, 123°19'W)* has a prominent hill near the middle of its south end. **Point Fairfax** is the south extremity of Moresby Island. A bare rock 4 m high and steep-to lies close SE.

58 *Point Fairfax* **light** *(254.5)*, on the bare rock close SE of the point, is shown from a white tower.

59 **Kellett Bluff** *(48°35'N, 123°12'W)*, the SW extremity of Henry Island, is steep, rocky and prominent from north and south. **Henry Island** is separated from San Juan Island by **Mosquito Pass** and **Roche Harbor**.

60 *Kellett Bluff* **light** *(229)* is from a small white building with a black and white **diamond-shaped daymark**.

61 **McCracken Point** is the north extremity of Henry Island. **Battleship Island**, 0.2 mile WNW of McCracken Point, is small and 9 m high. **Danger Shoal**, 0.9 mile north of Battleship Island, has 1.8 m over it and is marked by kelp.

62 *Haro Strait Lighted Junction buoy A (LL255.1/ US19775)* is a **port bifurcation buoy**.

63 **Stuart Island** *(48°40'N, 123°12'W)* is wooded and has two prominent hills in its central part. **Turn Point**, the NW extremity of Stuart Island, is a bold, steep-to bluff.

64 *Turn Point* **light** *(255)*, is shown from a white tower. The light is obscured from 260°30′ to 357°. A white building with a red roof is close SE.

Boundary Pass — North Side

65 **Pelorus Point** *(48°43'N, 123°17'W)* is the east extremity of Moresby Island and the SW entrance point to Swanson Channel. **Tilly Point**, 3.5 miles ENE of Pelorus Point, is the SE entrance point to Bedwell Harbour and Swanson Channel. The shore of South Pender Island, between Tilly Point and **Gowlland Point** (1 mile east), is fringed with rocks and should not be approached within a distance of about 0.2 mile.

66 *Gowlland Point* **light** *(253)* is shown from a white tower with a green band at the top.

67 **Plumper Sound** is entered between **Blunden Islet** and **Taylor Point**, 2 miles NE.

68 Blunden Islet is rocky with a few trees and is part of *Gulf Islands National Park Reserve*, no camping. **Tide rips** are encountered in the vicinity of Blunden Islet.

69 A conspicuous television tower, 1.7 miles WNW of Taylor Point, is near the summit of **Mount Warburton Pike**. The tower has an elevation of 497 m and is marked by red air obstruction lights disposed vertically.

70 **Java Islets**, 0.8 mile east of Taylor Point, are bare and rocky. They are part of the *Gulf Islands National Park Reserve*.

EAST POINT (2007)



71 **Narvaez Bay**, entered NE of **Monarch Head**, is free of dangers. It is recommended as an **anchorage** in fine weather only as it is exposed to the east. With strong winds from that direction a heavy sea rolls in. Uplands on the south side of the bay, and most of the lands at the head of the bay, are part of the *Gulf Islands National Park Reserve*.

72 Tidal differences for Narvaez Bay (7345), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

73 **East Point**, the east extremity of **Saturna Island**, is moderately steep-to but should be given a wide berth because of heavy **tide rips**, overfalls and eddies. Waters surrounding East Point and encompassing Boiling Reef are a protected marine zone managed by *Parks Canada*. A **submarine cable** runs 1.25 miles south between Narvaez Bay and East Point.

73.1 A Killer Whale Restriction Area is in effect from June 1 to November 30. For additional information see *Notices to Mariners Annual Edition 1 to 46 Section A2, Notice 5*.

74 *Saturna Island Sector* **light** *(264)*, on East Point, is shown from a skeleton tower at an elevation of 31.1 m. An additional **light**, shown at an elevation of 36.9 m, is visible all around the horizon.

75 **Boiling Reef** extends 0.4 mile NE from East Point; a rock 2 m high stands in the centre of the reef.

Boundary Pass — South Side

76 **Prevost Harbor** *(48°41'N, 123°12'W)* affords good shelter and **anchorage**. **Satellite Island** lies within Prevost Harbor and the entrance to the harbour is west of the island.

77 **Waldron Island** *(48°42'N, 123°02'W)* is steep and rocky on its east side but flat with sandy beaches on its north and west sides. The highest part of the island is near **Point Disney**, its south extremity.

78 **Cowlitz Bay**, on the SW side of Waldron Island, affords **anchorage** in fair weather. **Mouatt Reef**, in the south part of the bay, lies 0.5 mile north of Point Disney.

79 **Skipjack Island**, north of Waldron Island, is 37 m high and wooded. The passage between Skipjack Island and Point Hammond should be avoided because of strong **tidal streams**.

80 *Skipjack Island* **light** *(US 19805)*, on the NW side of the island, has two black and white **diamond-shaped daymarks**. The light is obscured from 261° to 347°.

Boundary Pass — East End

Chart 3462

81 **Point Hammond** *(48°43'N, 123°01'W)*, the north extremity of Waldron Island, is a high, yellow, sand bluff. **Bare Island**, 0.5 mile NNW of Point Hammond, is grassy and bare of trees.

82 *Boundary Pass Shoal* ***light and bell buoy*** *DB (264.5)*, 2.1 miles NE of Skipjack Island, is an **isolated danger buoy**.

83 **Patos Island** *(48°47'N, 122°57'W)* is wooded except near **Alden Point** at its west extremity. **Active Cove**, at the SW extremity of the island, is reported to be a good **anchorage** for small vessels, local knowledge is advised. There is a tidal race in the approach.

84 *Patos Island Sector* **light** *(265)*, on Alden Point, is shown from a white tower on a building. White buildings with red roofs stand nearby.

85 **Sucia Islands** lie 1.4 miles SE of Patos Island. Most of the area is a Washington State marine park. Ewing Cove and Echo Bay have **mooring buoys** for pleasure craft. Anchorage is available in Echo Bay with an even sand and mud bottom but Ewing Cove offers poor holding for anchors and is not recommended. Reefs extend 1.5 miles west of Sucia Islands to **West Bank**. **Clements Reef**, 0.5 mile north of Sucia Islands, is marked at its NW end by a **starboard hand buoy** and at its SE end by a **danger buoy**.

86 **Tidal streams** between Saturna and Patos Islands are strong and somewhat erratic, and have tide rips and eddies. The passage between Patos Island and Sucia Islands is almost free of tide rips and the tidal streams set more fairly through it.

87 **Savage Point** *(48°48'N, 123°04'W)*, the north extremity of **Tumbo Island**, is in the Strait of Georgia in the approach to Boundary Pass. **Tumbo Reef** extends 0.6 mile ENE from Savage Point and has 0.9 m over it. **Tumbo Point**, the east extremity of Tumbo Island, has foul ground extending 0.5 mile NE.

88 **Rosenfeld Rock**, 0.7 mile NE of Tumbo Point and about 1 mile NNE of East Point, has 2.7 m over it and is usually marked by kelp. It should be given a wide berth because of strong tide rips and eddies.

89 *Rosenfeld Rock* ***light buoy*** *U59 (263)*, east of the rock, is a **port hand buoy** fitted with a **Racon** (— • — •).

Strait of Georgia — SE Part

90 **Strait of Georgia** is entered from the south by way of Boundary Pass or Rosario Strait. The west side of the SE part of the Strait is formed by the east coasts of Saturna, Samuel, Mayne, Galiano, Valdes, Gabriola and Vancouver Islands.

Boat Passage, Georgeson Passage, Active Pass, Porlier Pass and Gabriola Passage lead west through these islands to the channels separating the Gulf Islands. Fairway, Rainbow and Horswell Channels, between Gabriola and Vancouver Islands, are the approach channels to Nanaimo Harbour.

91 **Caution. — The shore between Boundary Pass and Active Pass should be given a berth of at least 2 miles. It is fringed with dangers and lights on Georgina and East Points are obscured over them.**

92 When entering the Strait of Georgia from Boundary Pass or Rosario Strait, the promontory of Point Roberts appears as an island or a flat wooded feature and makes an excellent landmark. High piles of coal, shiploaders and container cranes at Westshore Terminals and Deltaport, 4 miles NW of Point Roberts, also make good landmarks.

93 Between Point Roberts and the entrance to Burrard Inlet, 20 miles NNW, the east shore of the Strait of Georgia is fronted by drying sand and mud flats of the Fraser River delta extending 5 miles offshore. The outer limit of the Port of Vancouver, west of these drying flats, extends from the international boundary to Point Grey, then north across the entrance of Burrard Inlet to Point Atkinson.

94 The **international boundary** between Canada and the United States of America runs from the middle of Boundary Pass, along the SE part of the Strait of Georgia, to a position west of Point Roberts, and then crosses Point Roberts and the entrance of Boundary Bay into Semiahmoo Bay and the mainland.

95 The traffic separation scheme in the Strait of Georgia commences north of Boundary Pass and leads north along the east side of the Strait into Burrard Inlet. This traffic separation scheme is mandatory for use by all ships.

96 In Canadian waters and fishing zones, provided it does not impede the passage of any vessel following a traffic lane, a vessel engaged in fishing may depart from certain provisions of *Rule 10* of the *International Regulations for Preventing Collisions at Sea, 1972*, and fish in any direction in a traffic lane. A vessel engaged in special operations such as buoy tending or hydrographic surveys, provided it does not prevent other vessels using the route from navigating safely, may also depart from certain provisions of *Rule 10*.

97 The traffic separation scheme commencing east of Sucia Islands and leading SE into **Rosario Strait** is part of the mandatory *Vessel Traffic Service Puget Sound*. Details are in *United States Coast Pilot 7*.

98 A *Co-operative Vessel Traffic System (CVTS)* between Canada and the United States has been established in the Strait of Georgia through which the international boundary runs. The SE part of the Strait of Georgia, with the exception of the approaches to Howe Sound, Burrard Inlet, Vancouver Harbour and the Fraser River, is in Sector One of the *Vancouver Traffic Zone*. It is administered by *Victoria Traffic* and the assigned frequency is Channel 11 (156.55 MHz). Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*. See Table 3.2 for a summary of **calling-in points** in this area.

99 **Calling-in Point 8 Patos Island** is a line joining *Patos Island Sector light (265)* with *Alden Bank light and gong buoy A (US 19910)*. Administered by *Victoria Traffic* and *Seattle Traffic*.

100 **Calling-in Point 11 Active Pass**, at the east end of Active Pass, is 3 miles NE of *Active Pass* **light** *(275)*.

Table 3.2 Calling-in Points — Strait of Georgia SE

Number	Name	Description
8	Patos Island	Line running from *48°47'24"N, 122°58'13"W* to *48°50'24"N, 122°52'32"W*
11	Active Pass	An arc centered on *48°52'24.5"N, 123°17'24.5"W*, radius 3 NM
12	Sand Heads	Line running 000°–180° (True) through *49°06'23"N, 123°18'04"W*
14	East Porlier Pass	An arc centered on Virago Rock Sector light LL *(289.3)*, *49°00'46.5"N, 123°35'29.5"W*, radius 3 NM on a line of bearing from seaward 180°–265° (True)
15A	Iona	Line running from *49°12'18"N, 123°15'50"W*, to *49°12'18"N, 123°25'53"W*

101 **Calling-in Point 12 Sand Heads** is a change from Sector One to Sector Two and is a line running 000°–180° through *Sand Heads* **light** *(311)*.

102 **Calling-in Point 14 East Porlier Pass** is centered on *Virago Rock Sector* **light** *(289.3)*. Call in before entry or after exit of Porlier Pass.

103 **Calling-in Point 15A Iona** is a change from Sector One *(Victoria Traffic)* to Sector Three *(Victoria Traffic)* and is a line due west of the *Iona Breakwater light* intersecting with *15B (Cape Roger Curtis)*.

104 **Ferries** on frequent regular schedules cross the traffic separation scheme in the Strait of Georgia between Tsawwassen *(49°00'N, 123°08'W)* and Active Pass *(48°53'N, 123°18'W)*, Tsawwassen and Nanaimo (Duke Point) *(49°10'N, 123°54'W)* and between Fraser River and Active Pass and Nanaimo. Another ferry route across the SE part of the Strait of Georgia is between Horseshoe Bay *(49°23'N, 123°16'W)* and Departure Bay *(49°12'N, 123°58'W)*. Charted ferry routes are general indications of the route followed.

105 Fishing vessels can be encountered in large concentrations anywhere within the Strait of Georgia from approximately July 1 to November 1, and sporadically throughout the year.

106 **Foul** areas (disposal sites), under permit through the *Canadian Environmental Protection Act*, are located in the following positions: *49°17'N, 123°36'W; 49°21'N, 123°29'W; 49°06'N, 123°20'W* and *49°15'N, 123°55'W*. A disused explosive dumping area is in *49°22'N, 123°57'W*.

107 A **submarine cable** (fibre optic) crosses the Strait of Georgia from Point Roberts and passes through Boundary Pass. **Submarine cables** cross the SE part of the Strait of Georgia, from Point Roberts to Mayne Island about 1 mile SE of Active Pass. A **cable area** crosses the Strait of Georgia with its south limit being a line between Salamanca Point, on Galiano Island, and a position 0.7 mile north of *Point Roberts light*, its north limit is a position on Galiano Island 4 miles WNW of Salamanca Point and a position on Roberts Bank 5.9 miles NW of Point Roberts. A **submarine cable** is laid from a position 5 miles SE of Dionisio Point on Galiano Island to the Middle Arm of the Fraser River. A **submarine cable** extends from the entrance of Burrard Inlet, in a WSW direction, to the centre of the Strait of Georgia, then leads WNW through the centre of the Strait. A **submarine cable** extends from close west of Jericho Beach, across Spanish Bank, then leads across the Strait of Georgia to Qualicum Beach. A **submarine cable** crosses the Strait of Georgia from Bowen Island in the vicinity of Cape Roger Curtis *(49°20'36"N, 123°25'43"W)* to French Creek *(49°20'39"N, 124°21'10"W)* on Vancouver Island. Several **abandoned cables** cross the Strait of Georgia from Burrard Inlet to Nanaimo Harbour.

108 Tidal predictions in the SE part of the Strait of Georgia are given for Point Atkinson (7795). Tidal differences, referenced on Point Atkinson, are given for Tumbo Channel (7510), Samuel Island, north shore (7515), Georgina Point (7525), Whaler Bay (7532), Dionisio Point (7535), Valdes Island (7542), Silva Bay (7550), Nanaimo (7917), Nanoose Bay (7930), Winchelsea Islands (7935), Northwest Bay (7938), Blaine (7570), White Rock (7577), Crescent Beach (7579), Tsawwassen (7590), Sand Heads (7594) and Roberts Creek (7824). These tidal predictions and differences are in *Canadian Tide and Current Tables, Volume 5*.

109 *Current Atlas, Juan de Fuca Strait to Strait of Georgia* is available from Canadian Hydrographic Service authorized chart dealers. A list of authorized dealers can be found in the Canadian Hydrographic Service chart catalogue or at www.charts.gc.ca.

110 Surface currents in the Strait of Georgia are produced by the combined effect of tides, winds and runoff from the Fraser River. Within the main portion of the Strait all three are separately capable of generating surface currents of comparable strength. In connecting passes to the Strait however it is the hydraulic head, or difference in tidal height between either end of the pass, which determines speed and direction of currents. Other effects will only become important near slack water. Near shore and in restricted passageways, topography of the bottom and shape of the shoreline will also strongly influence motion of surface waters. Upwellings and back eddies are two of the more common features of topographic influences.

111 Within the main channel of the Strait of Georgia tidal currents set NW on the flood and SE on the ebb. The effect of the earth's rotation (Coriolis effect) is to turn these currents slightly to the right of their direction of motion so the flood is somewhat stronger and of longer duration on the eastern side than on the western side of the Strait. The ebb, on the other hand, is somewhat stronger and of longer duration on the western side for the same reason. Tidal currents in the Strait reach their maximum of over 2 kn in the southern Strait south of a line between Point Roberts and Active Pass.

112 Due to the nature of the tide in the Strait of Georgia, maximum ebbs and floods for a particular tide occur about midway between HW and LW. HW slack and LW slack occur within an hour of the local HW and local LW, respectively. Since times of tide over the whole of the Strait differs by only 18 minutes at most from the times of the tide at Point Atkinson, tidal predictions at that station serve as a reference for determining tides and tidal currents elsewhere in the Strait. This is not true, however, for the major passes such as Porlier Pass, Active Pass, Gabriola Passage and First Narrows, in which tidal currents are not related to those within the Strait itself. Current predictions for these passages are published under separate headings in the *Canadian Tide and Current Tables*. In addition, the jet-like structure of currents flooding through these passages will alter surface motions to about 1 mile or so into the Strait.

113 Fresh water runoff from the Fraser River is a major factor influencing surface currents in the central portion of the Strait of Georgia. This is particularly so from May to September when the volume of river water flowing into the Strait seaward of Sand Heads usually exceeds 2 800 m^3 per second. During the peak runoff period in late June, a large percentage of the area of this region will be covered by a 1–9 m layer of brackish, silty water. Under the influence of wind and the hydraulic head between the river mouth and the Strait, this top layer of relatively light water can move in a manner that differs considerably from tidal currents in the saltier oceanic water beneath.

114 During periods of light winds it has been observed that the surface plume of fresh water flowing from the main arm near Steveston will on the ebb maintain its SW direction toward Active Pass, despite the fact that the tidal currents are to the SE. If the ensuing flood is weak, this portion of the plume may then reach the vicinity of the Gulf Islands within one tidal cycle (12½ hours) having drifted across the Strait at typical speeds of 1 to 2 kn. If the flood is not weak the plume will move northward during light winds. Fraser River runoff entering the Strait on the flood on the other hand

immediately begins to curve to the north. It may then reach Burrard Inlet or continue to drift northward in the direction of Sechelt Peninsula. Typical drift speeds of the surface layer at this time are between 1 to 2 kn, which is comparable to tidal currents in this area.

115 During the summer, the speed of river water flowing into the Strait can reach over 4 kn near the time of LLW but this is reduced to about 1 kn near times of HHW. The former are slowed to speeds of 1 kn or so within a few miles of Sand Heads. In winter when runoff is low, less than 570 m^3 per second, flood tidal currents reverse the river flow such that the resultant currents are upriver as far inland as New Westminster.

116 Off the Fraser River delta, north of the Steveston Jetty, surface currents are often persistently southerly. This near-shore current is usually confined to about 2 to 3 miles west of the shore and attains 1 kn or more. It is most probably a feature of summer and autumn oceanographic conditions, and will be less prevalent in winter and early spring.

117 On the flood tide, and when close to Roberts or Sturgeon Banks, flow of water onto the banks creates a set toward these banks.

118 Provided they exceed 15 kn, winds will also become important in moving the surface layer of light brackish water over the saltier water beneath. Under the influence of such winds the top layer will slide downwind like a lubricated slab of "slippery water". A typical layer 5 m thick for example will drift downwind at about 1 kn under 15 kn winds. When wind speeds exceed 25 kn and there is a fairly widespread surface layer of light water produced by the Fraser River runoff, surface currents will be mainly wind influenced while tides will have only a secondary influence.

119 There are poorly understood drift motions in the Strait of Georgia called residual currents, which can cause the circulation to differ significantly from that expected from the combined action of the wind, tides and Fraser River runoff. Since they are unpredictable, mariners should not expect surface currents to behave in a completely regular manner even when all observable influences have been considered.

120 Meteorological information *Nanaimo Airport* and *Vancouver International Airport* is in the Appendices.

121 **Caution. — Steep, confused seas are formed by winds blowing against the flood tidal stream off the entrances to Boundary Pass, Active Pass and Porlier Pass and by winds blowing against the ebb tidal stream off Fraser River and in the approaches to Vancouver Harbour and Howe Sound.**

122 During the summer months, effects of the freshet from the Fraser River and NW winds that blow strongly nearly every afternoon cause rough conditions for small craft along the west portion of the Strait of Georgia. Crossings to the mainland or travel along the east shores of the Gulf Islands should be carried out early in the morning, but the most preferred time is late afternoon or early evening when winds die away.

123 In winter, Arctic air from the interior surges down Howe Sound creating gale force outflow winds called Squamish Winds. They spread out in a jet over the Strait of Georgia. Due to sheltering, Point Atkinson lighthouse reports are not indicative of Squamish Winds.

Boundary Bay — Semiahmoo Bay

Chart 3463

124 **Boundary Bay** indents the mainland between white cliffs forming the east extremity of Point Roberts *(48°59'N, 123°03'W)* and **Kwomais Point**, 6.5 miles NE. Most of the bay is filled with drying flats.

125 The **international boundary** between Canada and the United States passes through Boundary Bay. It is marked by several lights. Consult *United States Coast Pilot 7* for information about U.S. waters.

126 Extensive night drift fishing in the area from Point Roberts to Blaine makes night navigation difficult.

127 *Point Roberts* ***light and bell buoy*** *4 (300),* at the outer end of a rock ledge extending SE from the SE extremity of Point Roberts, is a **starboard hand buoy**.

128 *International Boundary* **lights** *C, D, E, F, G and H (303, 304, 304.3, 304.5, 305, 305.5)* mark the boundary.

129 **Mud Bay**, in the NE part of Boundary Bay, has narrow, shallow channels leading across its drying flats through which the **Nicomekl River** and **Serpentine River** discharge. These channels converge at **Blackie Spit** *(unnamed on the chart).*

130 *Crescent Beach* **light** *(299.5),* at the entrance to the Nicomekl River, is shown from a dolphin with a **starboard hand daymark**.

131 *Crescent Channel* **light** *(299.6)*, 0.4 mile SW of Blackie Spit, is shown from a dolphin with a **starboard hand daymark**.

132 The channel leading to Crescent Beach and the Nicomekl River is marked by **port** and **starboard hand daymarks** on **dolphins** and the above-mentioned lights.

132.1 Mariners are advised that depths shown in the vicinity of Boundary Bay are subject to change as a result of **silting**.

133 A speed limit of 4 kn is posted in Nicomekl River.

134 **Crescent Beach**, at Blackie Spit, is a year-round residential community and has a variety of restaurants and shops. The

public wharf on Blackie Spit is 58 m long and has a 12 m wharf attached to its NE side. *Crescent Beach Marina* (604-538-9666) is a full-service **marina** offering transient moorage, repairs, fuel dock and a marine store. A **submarine pipeline** is laid across the Nicomekl River close east of the marina.

135 The **Burlington Northern Santa Fe (BNSF) Railway Bridge** (604-538-3233) has a swing span that shows a red light when closed and a green light when open. The swing span has a vertical clearance of 2.7 m when closed and the trestle has a vertical clearance of 3.7 m. A height clearance gauge is on the NW end of the bridge.

136 The bridge operator is available 06h30 to 22h30, seven days a week. The bridge opening signal is three blasts on a horn or telephone the *Crescent Beach Marina* at least one hour before arrival time and before 15h30 at 604-538-9666.

137 Tidal differences for Crescent Beach (7579), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

138 **White Rock** is a seaside resort community along the north side of **Semiahmoo Bay**. It has shops, restaurants, schools and recreation facilities. White Rock is a Canadian Port of Entry for customs clearance used by pleasure craft; telephone; 1-888-226-7277.

139 *White Rock breakwater* **light** *(299.7)*, close west of the **breakwater**, is shown from a **dolphin**.

140 The *City of White Rock* **pier** is at the outer end of a long jetty projecting south across the drying foreshore. The jetty is 470 m long and 5 m wide. Wharves at the outer end of the jetty are protected by a rock **breakwater**.

141 Tidal differences for White Rock (7577), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

Point Roberts to Point Grey

142 The coast north of Point Roberts to **English Bluff**, 3 miles north, consists of bluffs of moderate elevation. North of Tsawwassen, the shore merges into the swampy Fraser River delta and is low, featureless and barely discernible from a vessel in the Strait. Fronting this portion of the coast are Roberts and Sturgeon Banks. These banks dry in patches, are steep-to and extend up to 5 miles offshore.

143 The east side of the Strait of Georgia, between the international boundary and Point Grey, is defined in the *Canada Marine Act* as a part of the Harbour of Vancouver.

Chart 3492

144 **Point Roberts** *(48°59'N, 123°03'W)* is the end of a remarkable promontory extending south from the Fraser River delta. At the SE end of the promontory are white cliffs with trees on their summit, from the trees the land declines gradually to the SW extremity of the promontory terminating in a low shingle point. From a distance, particularly from the south, Point Roberts appears as an island. A rocky ledge that dries in places extends 1 mile SE of the SE end of the promontory *(Chart 3463)*.

145 *Point Roberts light (301)*, on the S extremity of the point, is shown from a skeleton tower with a red and white **diamond-shaped daymark**.

146 *Point Roberts Marina Resort* (360-945-2255), at **South Beach**, 1 mile east of *Point Roberts light*, is entered to the west of and protected by a detached rock **breakwater**. The NW side of the entrance channel is marked by **dolphins**. The outer dolphin and both ends of the breakwater are marked by privately operated lights. This is a full-service **marina** offering transient moorage, repairs, fuel dock and a marine store. A United States customs officer is based at the marina.

TSAWWASSEN TERMINAL (BC FERRIES) (2007)



147 **Boundary Bluff** *(49°00'N, 123°05'W)* is on the Canada/U.S. boundary. A granite monument, 7.6 m high, stands on the summit of the bluff. Several lights also mark the border.

148 **Tsawwassen** *(49°00'N, 123°08'W)*, on the north side of English Bluff, is the site of a large prominent ferry terminal. A causeway extends 1.6 miles in a SW direction from the north side of English Bluff. The **Tsawwassen Terminal**, operated by the *British Columbia Ferry Services Inc.*, is at the outer end of this causeway. Regular and frequent passenger and vehicle service is maintained to and from Swartz Bay and Nanaimo (Duke Point), on Vancouver Island, and ports in the Gulf Islands. Private lights and radar reflectors are shown from the ferry berths. A **breakwater**, about 0.2 mile long, is a short distance south of the Tsawwassen ferry terminal.



149 *Tsawwassen Ferry breakwater* **light** *(307.1)* is on the west end of the south **breakwater** and is shown from a white cylindrical tower with a red band at the top.

150 Tidal differences for Tsawwassen (7590), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.



151 During smaller flood and ebb tides the velocity and direction of **tidal streams** off the approach to *Westshore Terminals* and *Deltaport* may be different from those charted.

152 A restricted area has been established that includes the turning basin adjacent to the container terminal and approaches to the coal berth. Crab floats must remain outside of the restricted area at all times.



153 *Roberts Bank Entrance Range* **lights** *(307.91, 307.92)*, in line bearing 032°, are inshore of *Westshore Terminals* on the SE side of *Deltaport*.

154 *Westshore Terminals (49°01'N, 123°10'W)* and *Deltaport*, NW of the ferry terminal, can be identified by conspicuous high piles of coal, shiploaders and container cranes with air obstruction lights on them. *Westshore Terminals* is used by bulk carriers loading coal for export and has two deep-sea berths. *Deltaport* is a container terminal capable of handling three Post Panamax vessels. The *Mission to Seafarers* can be contacted at 604-940-2740.

155 *Westshore Terminals* and *Deltaport* are within the limits of the Harbour of Vancouver and are under the jurisdiction of the *Vancouver Fraser Port Authority* and Harbour Master (604-665-9086). Tugs are available for berthing. Port regulations for the Harbour of Vancouver apply.

156 Details of **berths** at *Westshore Terminals* and *Deltaport* are given in Table 3.3.

Table 3.3 Major Port Facilities — Roberts Bank

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Westshore Terminals Berth 1	295	23.6	8.0	Handles coal and coke. Mooring buoys at east and west ends. Single, rail-mounted Krupp shiploader capable of 7 000 tonnes per hour (tph). Ships up to 260 000 dwt. With boom horizontal – Minimum shute position: 10.4 m Maximum shute position: 38.5 m. Longitudinal travel along wharf is 244.9 m. Vertical clearance under boom at 15°, above HHWLT, is 19.0 m.
Westshore Terminals Berth 2	184	19.4	6.7	Handles coal and coke. Dolphin-style berth; span between dolphins is 184 m. Mooring buoys at NW and SW ends. Twin quadrant Swan Wooster shiploaders. Combined loading rate of 7 000 tph. Ships up to 150 000 dwt. Vertical clearance under boom at 18°, above HHWLT, is 18.3 m. Vertical distance of bottom of trimmer above HHWLT is 19 m with boom elevated 18°. Maximum boom reach from berth face is 34.9 m with boom elevated 18°.
Deltaport Container Terminal Berth 1	335	15.8	8.9	ZPMC Gantry Cranes 1 to 4 – 50 Long Tonne (LT) spreader and 60 LT hook capacity with outreach of 53.3 m (175 feet), Super Post-Panamax 18 m wide.
Deltaport Container Terminal Berth 2	335	15.8	8.9	ZPMC Gantry Cranes 5 & 6 – 50 LT spreader and 60 LT hook capacity with outreach of 60.5 m (198.5 feet), Super Post-Panamax 20 m wide. ZPMC Gantry Crane 7 – 50 LT spreader and 60 LT hook capacity with outreach of 60.371 m (198 feet), Super Post-Panamax 22 m wide.
Deltaport Container Terminal Berth 3	465	15.8	8.9	Three 80 LT Quad gantry cranes – can hoist two 40-foot containers or four 20-foot containers to a maximum capacity of 80 tonnes.

ROBERTS BANK (DELTPORT, WESTSHORE TERMINALS) (2007)



157 A barge loading ramp and **wharf** are at the NE end of *Deltaport*.

158 Designated Anchorage R *(49°00'46"N, 123°12'14"W)* is in a depth of about 70 m. Due to depth and prevailing weather in this area, the pilot must remain onboard at all times while the vessel is anchored.

159 Shoal areas along *Deltaport* Berth 2 and Berth 3 are 15.8 m (2010), subject to further dredging. The dredged basin at *Westshore Terminals* and *Deltaport* is marked by **starboard hand light buoys** *T2, T4, T6* and *T8 (307.2, 307.3, 307.4* and *307.5), **cautionary light buoy** TB (307.7)* and **port hand light buoy** *T1 (307.9)*.

160 **Roberts Bank** extends north from *Westshore Terminals* to the main channel of the Fraser River.

161 **Caution. — There is an inflow of water onto Roberts and Sturgeon Banks during rising tide. When navigating along or close to the banks on a flood tide, take care not to be set onto them. A NW wind opposing the flood tide, or a SW wind blowing against the freshet, causes short, steep seas. Under these conditions numerous small vessels have been swamped.**

162 *Canoe Pass **light buoy** T14 (308)*, at the entrance to the Pass, is a **starboard hand buoy** fitted with a **Racon** (— • —).

163 A shallow channel marked by private buoys and **dolphins** leads from the above buoy across Roberts Bank to Canoe Passage. **This channel is subject to silting and change; proceed with caution**.

164 Two **dolphins** about 0.6 mile apart, close east of *Canoe Pass light buoy*, mark a cable area and have private lights and radar reflectors.

165 *Roberts Bank **Cautionary light buoy** TA (309.5)*, 3.6 miles WSW of *Sand Heads light*, is fitted with a **Racon** (— — —).

165.1 An *ODAS **light buoy*** is 6.9 miles west of *Roberts Bank Cautionary light buoy TA*. A private *ODAS **light buoy*** is approximately 0.2 mile SE of *starboard hand light buoy T2*.

Chart 3463

166 A **submarine cable** (fibre-optic) extends from Iona Island in a SW direction terminating 2.4 miles west of *buoy T14*. This is the *Victoria Experimental Network Under the Sea (VENUS) Strait of Georgia Installation*. Various oceanographic instruments are deployed from the deep (300 m) node *(49°02'25"N, 123°25'32"W)* and the shallow (170 m) node *(49°02'33"N, 123°19'04"W)*. These should be given a wide clearance from any seabed activity.

167 *Roberts Bank* **light** *(309)*, close east of the entrance to Fraser River main channel, is shown from a white tower with a red band at the top and a concrete building, on **piles**. It is fitted with a **Racon** (— •).

168 **Sand Heads** *(49°06'N, 123°18'W)* forms the main entrance point to the Fraser River. **Sturgeon Bank** fronts the Fraser River commencing from Sand Heads and extends 9 miles north to the NW extremity of North Arm Jetty.

169 *Sand Heads* **light** *(311)*, near the outer end of the Steveston Jetty, is shown from a white tower.

170 *Fraser River **light buoy** S0 (312)*, about 0.7 mile SW of Sand Heads light, is a **starboard hand buoy**.

171 *Sand Heads **light and bell buoy** S1 (310)*, about 0.3 mile WSW of the light, is a **port hand buoy**.

172 *Sturgeon Bank **light buoy** T10 (380.5)*, 4.5 miles north of *Sand Heads light*, is a **starboard hand buoy**.

173 Tidal differences for Sand Heads (7594), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

174 For free recorded marine weather conditions in the Strait of Georgia call *Environment Canada* at 1-604-664-9010.

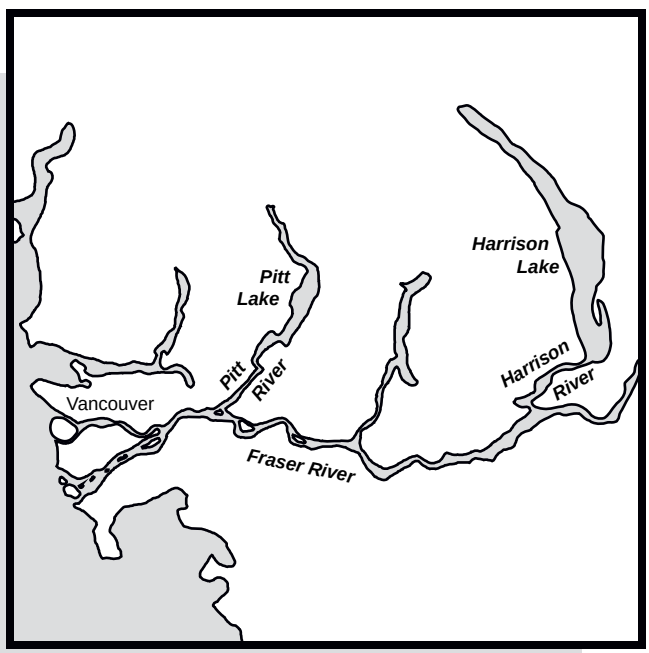
175 **Iona Breakwater** *(49°12'N, 123°16'W)* extends in a WSW direction across Sturgeon Bank from Iona Island.

176 A **submarine pipeline** (sewer outfall) extends 1.6 miles west of the breakwater.

177 A private light with a radar reflector is 0.1 mile west of the breakwater.

178 A conspicuous golf ball-shaped radar dome, with fixed red lights, is at *Vancouver International Airport (49°11'57"N, 123°11'09"W)*. The airport control tower is conspicuous. Air obstruction lights are shown from **dolphins** on the west side of Sea Island and from towers at the airport.

Fraser River, Pitt River and Lake, Harrison River and Lake



General

Charts 3463, 3490, 3491, 3492, 3488, 3489, 3062, 3061

1 **Fraser River** rises near *Jasper National Park*, Alberta, 1 370 km NE in the west slopes of the Rocky Mountains. It empties into the Pacific Ocean at the Strait of Georgia. The large flat delta of the Fraser River is fronted by **Roberts Bank** and **Sturgeon Bank** which extend 5 miles offshore.

2 The river is navigable by deep-sea vessels as far as Douglas Island, 24 miles from the entrance. Upstream from Douglas Island small vessels may navigate as far as Hope, 73 miles from the entrance. The river is not charted beyond the Harrison River entrance.

3 **Pitt River** *(49°15'N, 122°45'W)* is within the *Vancouver Fraser Port Authority* limits and is navigated by high volumes of small craft from its junction with the Fraser River to Pitt Lake (15 miles). It is used for storing and transporting logs. Log booms line the river banks and occupy shoal areas in mid-channel as far as Grant Narrows.

4 **Harrison River** *(49°13'N, 121°57'W)* is also navigated by high volumes of small craft from its junction with Fraser River to Harrison Lake. Harrison River is used for transporting logs and booming grounds for storage line the shores.

5 Depths vary in all three rivers due to silting, scouring, and dredging.

6 The South Arm of the Fraser River on the South Arm, is the main location for deep-sea shipping facilities. It extends along the first 18 miles of the river from seaward. The most common cargoes moving through the port are vehicles, containers, forest products and steel.

7 The **South Arm**, also known as the main channel, entered south of Sand Heads *(49°06'N, 123°18'W)*, is used by pleasure craft, deep-sea ships, fishing vessels, tugs and barges, and for log booms. Cargo ships and pilot vessels maneuver at the pilot boarding station close W off Sand Heads.

8 The **North Arm**, known to coastal shipping as The Ditch, is entered SW of Point Grey *(49°16'N, 123°16'W)* and is used mainly by tugs with log booms or barges.

9 The **Middle Arm**, south of Sea Island, is used mainly by pleasure craft.

FRASER RIVER SOUTH ARM ENTRANCE (2007)



STEVESTON (2007)



10 **Canoe Passage**, which leads across Roberts Bank south of Westham Island, is used by local fishers.

11 The South Arm limits extend from a line drawn south across the river at longitude *123°19'22"W* to a line drawn across the river in a SW direction from the mouth of Kanaka Creek *(49°12'N, 122°35'W) (Chart 3489)*, and to a line drawn in a SSW direction across the Pitt River at Grant Narrows *(Chart 3062)*. Also included is a small portion of North Arm, extending from its confluence with the main river at New Westminster to the west boundary of the city.

12 The navigation jurisdiction of the *Vancouver Fraser Port Authority (VFPA)* includes Burrard Inlet, Port Moody, Indian Arm, English Bay, the Fraser River, the Pitt River, Roberts Bank and Point Roberts.

13 The *Port Information Guide for the Port of Vancouver* was established pursuant to Section 56 of the *Canada Marine Act*. The practices and procedures apply to all users in the port, including commercial vessels, recreational vessels, pleasure craft, and tenants. The guide is available on the P*ort of Vancouver* website at www.portvancouver.com/marine-operations/port-information-guide/.

13.1 The Operations Centre is the primary contact for the port authority and is open 24 hours a day, seven days a week, 365 days per year.

Port of Vancouver
Telephone: +1-604-665-9086
Email: harbour_master@portvancouver.com
Web: www.portvancouver.com

13.1 The *Safe Boating Guide – Fraser River* contains information for small vessel and pleasure craft operators. The *Safe Boating Guide* is available on the *Port of Vancouver* website.

14 **Caution. — On-shore winds meeting an ebb flow current particularly during heavy river outflow can create steep and high seas in the river mouth that are dangerous to small craft.**

15 **Caution. — Large vessels are extremely limited in their ability to maneuver in the narrow deep water channel. Small vessels cannot always be seen. Small craft must keep a sharp look out and stay clear.**

16 **Caution. — Keep a sharp lookout for logs and other debris floating down the river. Deadheads floating at or near the surface can be difficult to see due to the sediment laden, opaque waters.**

17 The *Canadian Coast Guard* maintains a base equipped with specialized Search and Rescue (SAR) craft at Vancouver (False Creek) *(49°16'N, 123°08'W)*.

18 A *Canadian Coast Guard* hovercraft is stationed at *Vancouver International Airport (49°12'N, 123°12'W)*.

Fraser River Main Channel

Chart 3490

19 The South Arm of the Fraser River from east of *Sand Heads light (311)* to *Shoal Point light (367)* is in Sector Two of the *Vancouver Traffic Zone* and is administered by *Victoria Traffic*. Assigned frequency is Channel 74 (156.725 MHz). Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*. **Calling-in points** are listed in Table 4.1.

20 **Calling-in Point 12 Sand Heads** is a line running through *Sand Heads light (311)*.

21 **Calling-in Point 12A Woodward Island** is a line running through *Woodward Island light (345)*.

22 **Calling-in Point 12B Lafarge** is at *Lafarge Cement Plant*.

23 **Calling-in Point 12C Shoal Point Zone Limit** is a line running through *Shoal Point light (367)*. Limit of Sector Two — *Victoria Traffic*.

Table 4.1 Calling-in Points — Fraser River

Number	Name	Description
12	Sand Heads	Line running 000°–180° (True) through *49°06'23"N, 123°18'04"W.*
12A	Woodward Island	Line running 000°–180° (True) through *49°06'23"N, 123°07'29.5"W.*
12B	Lafarge	A line running 157°–337° (True) through *49°09'16.5"N, 123°00'15"W.*
12C	Shoal Point Zone Limit	Line running 90°–270° (True) through *49°11'45"N, 122°54'51"W.*

23.1 Fraser River Traffic Control Zone 4 (TCZ-4) procedures are described in the *Port Information Guide*, available on the *Port of Vancouver* website. The Fraser River TCZ-4 is defined as one nautical mile SW of *Sand Heads light* to the east by a line drawn across the Fraser River at New Westminster Quay.

24 **Pilotage** is compulsory for vessels with a gross registered tonnage greater than 350 tons. Twelve hours notice of requirement for pilotage services is necessary prior to the vessel's arrival at the pilot boarding station at Brotchie Ledge, Victoria. A Fraser River pilot will board at Sand Heads to navigate deep-sea vessels into the Fraser River. The *Pacific Pilotage Authority* office is in Vancouver, telephone 604-666-6776. For details on obtaining a pilot see *PAC 200 — General Information — Pacific Coast*.

25 Most vessels require tug assistance to land and depart berths in the TCZ-4. The river pilot will determine the number of tugs required based on factors affecting each vessel movement.

26 There are no permanent designated **anchorages** in TCZ-4 but Tier 1 vessels under pilotage may anchor to hold position while waiting for a berth, or in case of an emergency. For more information, see the *Port Information Guide*.

27 Tugs and berthing tugs, bunker fuel, medical services, mariners' facilities, fumigation and quarantine services, garbage removal, and government ship and cargo inspections are available. Repair facilities for small craft only. Major hull repairs are available in Vancouver.

28 Due to continual changes in depths as a result of silting, scouring, and/or dredging, charts may not show the latest conditions. Surveys are conducted annually by *Public Services and Procurement Canada* and the *Port of Vancouver* maintains channel parameters by carrying out a continuous maintenance dredging program. The trailing suction hopper dredge *FRPD 309,* stationed at *Vito's Shipyard,* west of the Alex Fraser Bridge, along with the cutter section dredge *Columbia,* carry out dredging. Activities are broadcast via Navigational Warnings.

29 *Avadepth* is a water depth forecasting and reporting system for deep-sea ships navigating the South Arm (main channel) between Sand Heads and Fraser Surrey Docks. See the *Avadepth* website at www2.pac.dfo-mpo.gc.ca for more information.

30 The South Arm as far as Douglas Island is marked by **buoys** and most are lighted. There are numerous fixed light structures, and most reaches of the river are marked by light ranges.

31 **Caution. — Channels of the Fraser River are continually changing, buoys are moved and the alignment of ranges is changed as required. During freshets, buoys and fixed structures can wash away.**

32 The *Fraser River deep-sea shipping channel* is located within the South Arm of the river starting at Sand Heads and continuing upriver to New Westminster. Deep draught vessels will display three all-round red lights in a vertical line at night or a cylinder during the day to indicate their inability to deviate from the dredged channel.

33 The outer shipping channel is designed for two-way traffic for vessels with a maximum draft of 10.7 m. The channel ranges in width from 200 m to 250 m.

34 The inner shipping channel is deeper and can accommodate deep-sea vessels with a maximum draft of 11.5 m. This channel is narrower, with width ranging from 130 m to 170 m. The inner shipping channel is a one-lane channel; however, there are reaches throughout the channel that allow meeting or overtaking of deep-sea vessels at the pilot's discretion. The inner shipping channel can accommodate deep-sea vessels with an underkeel clearance of 1.5 m from Sand Heads to Steveston Bend, and 0.9 m from Steveston Bend to New Westminster.

35 Dredging is also carried out at wharves in Fraser Port. For up-to-date information, particularly when a critical draft is concerned, consult wharf owners.

36 From the middle to end of August, water levels begin to subside. September, October and November are favourable months for river navigation as water is sufficiently high for small vessels to reach Hope, and strength of current is considerably abated. By early December, low levels flow until early spring. Fog over the Fraser River estuary develops in September and persists from October through February. It is usually most dense in early morning just before sunrise.

37 Tidal heights and time differences for Steveston, Deas Island and New Westminster are in *Canadian Tide and Current Tables, Volume 5*.

38 Use of tidal assistance to provide more water for vessel transit is a common practice in the Fraser River. Waiting times are reasonably short due to the semi-diurnal tide cycle. Tidal aid at the mouth of the river represents approximately one-third of the mean water depth in the river, which is significantly greater than upstream at New Westminster where the tidal aid represents only one-fifth of the mean water depth. Information on available drafts, draft restrictions, and arrival and departure windows is available from the Vancouver Pilot Dispatch Office 604-666-6776.

39 **Tidal streams** are affected by weather in the Strait of Georgia, rain, and the amount of water in the river. In the channel above Garry Point flow during freshet season is almost continuously toward the mouth of the river, though it may be checked on rise of the tide. During the low stage of the river, there is a flood and an ebb tidal stream on all large tides, with the flood beginning soon after low water at Sand Heads, and flowing first along the bottom.

40 During freshets the greatest rate of the outgoing stream is approximately 8-10 kn. After the freshet is over it reduces to 5-6 kn.

41 At New Westminster, the incoming **tidal stream** is unable to reverse river current during freshet. At other times the flow will reverse and a flood current can occur as far as Mission.

42 On a rising tide in the Strait of Georgia salt water—which is denser than the fresh water—is forced upstream along the bottom in the form of a wedge. During periods of low flow (February and March) this salt wedge can penetrate the main arm as far as New Westminster.

43 In lower reaches of the main arm the salt wedge has been observed to move upstream at a speed of 1 kn. At a falling tide increasing river slope will halt the wedge's upstream advance and eventually force the salt out of the system. This process can take several hours after the tide in the Strait of Georgia starts to fall. As it recedes toward the mouth the wedge disintegrates rapidly and eventually moves out as a homogeneous plug of brackish water.

44 Limits of penetration depend largely on river discharge. However, two successive high tides of almost equal amplitude separated by a higher low water can force the salt wedge 1 or 2 miles further upstream than normally expected i.e. when salt is not completely flushed out by the river after the first high tide.

45 In a fully developed salt wedge, salinity generally ranges between 25‰ at Sand Heads and 5‰ at the upstream limit.

46 The surface layer of the Fraser River plume is affected by strong winds, resulting in unexpected currents. The plume may also contain logs, trees and other debris that can be hazardous to small craft.

47 The Fraser River is rarely frozen over at New Westminster. Loose pieces of ice sometimes come downriver usually from Mission to Annacis Island. On extremely rare occasions these may be a hazard to navigation.

48 Attention is drawn to cables, bridges, and pipelines in various parts of the river. The **George Massey Tunnel**, located between Woodward Reach and Gravesend Reach on the South Arm, is the only submerged river crossing on the Fraser River. Locations of crossings are marked by signs and mariners are warned to avoid anchoring in their vicinity.

49 Numerous fishing vessels with gillnets in the Fraser River may be encountered between late July and mid-August. During the fishing season many nets may be set across the channel. Fishing vessels may be single crewed and not keeping an adequate lookout. Extra caution is required particularly during the first few hours of an opening and during high water slack when catches are best.

50 Small craft should favour the south side of the channel when heading upriver and the north side of the channel when heading downriver. The best time for small craft to enter or leave the river is at high tide with no wind.

51 The river is at its lowest stage during January, February and March. In April it starts to rise from melting of inland snows and throughout May it rises rapidly. The river is at its highest in June and remains up with small fluctuations until the end of July or middle of August. Records show the year's high water mark is reached anywhere between mid-May and mid-July. During this period the strength of the stream between Mission and Hope is 4 to 7 kn and in narrow parts even more. The usual rise of the river at Fort Langley *(49°10'N, 122°35'W)* due to these floods is about 4.3 m but it has been known to reach 7.6 m.

Sand Heads to Steveston

52 **Caution. — Groundings and other incidents are common in the vicinity of Sand Heads with *Canadian Coast Guard* reporting as many as six incidents per day in the summer season. Small craft operators must pay attention to charts, position, traffic, and natural conditions to avoid trouble.**

53 **Caution. — *Fraser River light buoy S2 (314)* is frequently damaged, particularly by tug and tow operators who should ensure they take measures to avoid contact with this buoy.**

54 Between Sand Heads and **Garry Point** *(49°07'N, 123°12'W)* the north side of the river is bordered by **Steveston Jetty**. It is marked by lights and **daybeacons**. The south side of the channel is marked by **starboard hand light buoys** *(313.5 to 329)*.

55 **Caution. — Steveston Jetty has several gaps through which a cross current flows. On ebb tides extremely turbulent water exists in vicinity of the rock groyne at Steveston Bend.**

56 The channel as far as Steveston is marked by *Wing Dam range lights (323, 324)* and *New Cut range 1 lights (327, 328)*, both located at Steveston Bend.

57 **Scott Pond** (local name) is a private fish boat harbour north of Garry Point. It is well protected.

58 *Garry Point West light (333)*, 0.1 mile west of the point, is shown from a white tower with a green band at the top on a **dolphin**. A conspicuous monument is on the point 0.1 mile east of Garry Point. *Steveston breakwater light (335)* is on the west end of **Steveston Bar**.

59 **Anchorage** is prohibited from mid-May to the end of October in approaches to, and in the west end of Cannery Channel.

60 **Steveston**, on the north side of **Cannery Channel**, known locally as **Cannery Basin**, is the centre of the salmon industry of the Fraser River and is used extensively by commercial fishers. With the decline of the fishery all canneries have closed and tourism is increasingly important. The *Gulf of Georgia Cannery National Historic Site* and *Britannia Heritage Shipyard* are examples of this change. The east end of Cannery Channel is closed by a rock finger. Fuel, fresh water, hull and engine repairs, marine supplies, shopping facilities, restaurants and accommodation are available.

61 *Steveston Harbour Authority* (604-272-5539) **public wharf** is at the west end of Cannery Channel. Power and water are on the floats and used oil disposal facilities are available. Commercial fishing vessels have priority but transient moorage for pleasure craft and a boat ramp are available. For more information visit www.stevestonharbour.com.

62 Tidal heights and time differences for Steveston, referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

Steveston to Tilbury Island

63 Wing dams extend into the river channel from the south side of **Steveston Island**, known locally as **Shady Island**, and from 0.3 mile WNW of **Blair Point**.

64 **Submarine cables and pipelines** as charted.

- A pipeline and abandoned cable are near W of Blair Point.
- A power cable area, abandoned cable, and pipeline are at Woodwards Landing.
- Gas pipelines are in the restricted area at Gravesend Reach.

65 An **overhead cable** crosses the river close W of Purfleet Point (W Annacis Island) with vertical clearances of 25 m and 54 m.

GRAVESEND REACH (2007)



66 Anchorage is prohibited in the vicinity of Cannery Channel and **George Massey Tunnel**.

67 **Reifel Island** *(49°06'N, 123°11'W)*, known locally as **Smokey Tom Island**, is on the south side of the river entrance. The island is a bird sanctuary. **Albion Dyke No. 2**, NW of Reifel Island, extends along the south side of the river channel.

68 Principle lights from Steveston to Tilbury Island are:

- *New Cut range 2 lights (338, 338.5)* are at the west end of Woodward Training Wall.
- *Woodward Island North light (339)* is on Woodward Training Wall, 0.5 mile SW of Blair Point.
- *Woodward Island Downstream range lights (340, 341)* are midway along the north side of Woodward Island, leading from Steveston to north of Woodward Island.
- *Woodward Island Upstream range lights (342, 343)* are close east of the downstream range.
- *Woodward Island light (345)* is at the NE end of Woodward Dam.
- *Kirkland Island West light (346.5)* is on the NW side of Kirkland Island.
- *Kirkland Island range lights (348, 348.1)* are on the east extremity of Kirkland Island.
- *Kirkland Island Breakwater light (348.2)* is on the NE extremity of Kirkland Island; has a **starboard hand daymark**.
- *Deas Island range lights (348.5, 348.6)* are near the west end of **Deas Island** and lead through **Woodward Reach**. Deas Island range lights are visible in line of range only.
- *Tilbury Inbound light (352.9),* near the north bank of the river, is on a 1-pile dolphin; the light is mounted on the structure of the front inbound range.
- *Tilbury range inbound lights (353, 354)*, near the north bank of the river north of **Tilbury Island**, lead through the SW part of Gravesend Reach. *Tilbury range inbound lights* are visible in line of range only.

69 Private lights on the north shore 0.4 mile west of **Gilmour Island** are on east and west extremities of the *Crown Packaging* **wharf**.

70 **Woodward Training Wall** borders the south side of the river from abreast Steveston Island and forms the north sides of **Woodward Island** and **No. 1 Island**. **Woodward Dam**, an extension of the training wall, connects to **Rose Island**, the SW part of **Kirkland Island**.

71 A private **starboard hand buoy**, east of Woodwards Landing, marks the entrance to a dredged basin used by the *British Columbia Ferry Services Inc*.

72 Tidal heights and time differences for Deas Island, referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

73 **Gravesend Reach** extends from Deas Island to the SW end of Annacis Island. The deep channel lies along the NW bank.

74 *Tilbury Terminal* (604-940-7238) has two working berths handling truck and rail traffic and three layover berths, which accommodate *Seaspan Coastal Intermodal Company (SCIC)* vessels and scheduled *SCIC* trailer and railcar ferry service.

74.1 *Fraser River Water Quality ODAS light* ***buoy*** *(354.9)* lies close to the north side across from *Tilbury Terminal*.

75 A large conspicuous white gas tank is on the south side of the river, SW of Lehigh Northwest Cement.

Annacis Island to New Westminster

76 *Tilbury range 1 lights (351, 352)*, 0.5 mile SW of Tilbury range 2, and *Purfleet Point range lights (355.9, 356, 357)* lead through the NE part of Gravesend Reach. Lights of these ranges are visible in line of range only. Private lights are shown from wharves in Gravesend Reach.

77 **City Reach**, known locally as **St. Mungo's Bend** or **Mungo Bend**, extends around the south side of **Annacis Island**, from **Purfleet Point** to the vicinity of Gundersen Slough. The barge tie up area between Purfleet Point and Alex Fraser Bridge on the north side of City Reach is known locally as the Annacis BTU. Tugs turning with barges use the entire channel in this area.

78 **Submarine pipelines** cross City Reach close SW of Alex Fraser Bridge.

79 *City Reach range 2 lights (361, 362),* on the south shore close west of Alex Fraser Bridge, and *City Reach range 1 lights (359, 360)*, on the south shore 0.5 mile west, lead through the west and NE parts, respectively, of City Reach.

80 **Alex Fraser Bridge** *(Ministry of Transportation and Infrastructure)*, a fixed span highway bridge crossing the main shipping channel, has a vertical clearance of 57 m. Flashing red lights are on top of the towers and a fixed white light is on the centre of the span. Another power transmission line, vertical clearance 56 m, crosses the river 0.7 mile upstream from Alex Fraser Bridge.

81 **Gundersen Slough** has a **public wharf**. Moorage is restricted to 8 hours.

ALEX FRASER BRIDGE (2007)



ANNIEVILLE CHANNEL (2007)



NEW WESTMINSTER SWING BRIDGE, PATTULLO BRIDGE, SKY BRIDGE (2007)



82 *Annieville Channel range lights (363, 364),* on the south shore SSW of Gundersen Slough, lead through this channel.

Charts 3490, 3489

83 **Annieville Channel** *(49°11'N, 122°55'W)* extends from Gundersen Slough to Pattullo Bridge at New Westminster. Both sides of the channel have training walls.

84 **Annacis Island Pile Wall** and **Annieville Dyke** form the west side of the channel along the coast of Annacis Island. A break in Annieville Dyke has a **submerged weir** off **Shoal Point** with 3.4 m over it. **Annieville Channel Pile Wall** and **Annieville Rock Wall** form the east side of Annieville Channel. A break at the north end of Annieville Rock Wall has a **submerged weir** with 2.6 m over it.

85 Any vessel navigating the Fraser River between the quick flashing green light located on the downstream end of the Annieville Pile Wall and the quick flashing green light located on the Sapperton Dyke shall keep to the side of the main channel that lies to the port side of the vessel.

87 Two **port hand daybeacons**, marking a **submerged weir**, are on Annieville Dyke.

89 *Annacis Island Pile Wall North light (366.8)* and a **port hand daymark** mark the south end of a **submerged weir** off Shoal Point.

90 *Shoal Point light (367)* marks the east side of the north entrance to Annacis Channel.

91 *Annieville Channel Pile Wall South and North lights (366.1, 366.3)* are at the south and north ends of Annieville Channel Pile Wall.

92 *Annieville Rock Wall 1 light (366.5),* at the south end of Annieville Rock Wall, has a **starboard hand daymark**.

93 *Annieville Rock Wall 3 and 4 lights (366.6, 366.7)* and a starboard hand daybeacon mark the north section of the Annieville Rock Wall. Number 3 light has a **starboard hand daymark**.

94 **Submarine pipelines** cross Annieville Channel in several locations.

95 A **submarine cable area** crosses the main channel in vicinity of SkyBridge.

96 **Submerged weirs**, close NE and 0.1 mile SW of SkyBridge, extend into the fairway from the New Westminster side of the river; they have 11.5 and 11.6 m over them.

97 **SkyBridge** *(Translink),* crossing the Fraser River at New Westminster, is a light rapid transit bridge with a vertical clearance of 44 m. Passage under the span of SkyBridge is marked by a fixed white light on each side and aircraft warning lights are on top of its towers.

98 **Pattullo Bridge** *(Translink),* a high-level highway bridge with a clear span of 137 m across the navigable channel and a vertical clearance of 45 m, is close NE of SkyBridge. Passage under the span of the Pattullo Bridge is marked by a fixed white light on each side visible to vessels approaching from either direction. Pattullo Bridge replacement project is underway. Construction completion date is set for 2024. New Bridge location is approximately 50 meters upstream from New Westminster Railway Bridge. Please check for weekly navigational warning updates at https://www.pattullobridgereplacement.ca/construction/current-works/.

99 **New Westminster Railway Bridge**, close upstream from Pattullo Bridge, has a swing span of 99 m in length and a vertical clearance of 6.7 m when closed. It also has a fixed span known locally as the Log Hole, vertical clearance 6.7 m, and horizontal clearance 113.6 m. The

swing span will open only for vessels that cannot pass under any part of the bridge.

99.1 New Westminster Railway Bridge procedures are described in the *Port Information Guide*, available on the *Port of Vancouver website*.

100 *New Westminster Railway Bridge lights (368)* are shown from centre span, extremities of the pier, and from both upstream and downstream extremities of buttresses. Flood-lights on the swing span and piers, which are automatically activated when the span is open, illuminate both north and south navigation channels. Lights may be deactivated upon request by radio.

New Westminster — Fraser Port

104 The city of **New Westminster** is on the north bank of the Fraser River with its west boundary adjacent to the North Arm, some 18 miles by river from the river entrance. The city has extensive shopping facilities. Its wide range of amenities includes hospitals and a *YMCA*. There are no pleasure craft facilities at New Westminster.

105 **Fraser Surrey Docks**, administered by *Vancouver Fraser Port Authority*, is a year-round multi-purpose marine terminal handling containers and break bulk cargoes. Container traffic has seen dramatic increase in recent years. Commodities include containers, lumber, steel products, woodpulp, project and general cargo. All berths provide fresh water, light, power and telephone services.

106 Tidal heights and time differences for New Westminster, referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

107 Supplies are readily available. Bunker fuel, light and heavy diesel oil, gasoline and lubricants can be obtained from various oil companies who have lightering or pipeline services.

108 Machinery repairs and minor hull repairs can be undertaken. Repair facilities for small craft are available. Major hull repairs can be carried out in Vancouver. Harbour tugs are available.

109 There is a highway and rapid transit to Vancouver, 13 km away, and direct rail connection with major Canadian and U.S. railroads. World-wide air services are available at *Vancouver International Airport* about 10 miles downriver.

110 Numerous wharves, most with warehouses and connection to railways, and sawmills line the waterfront. Details of principal loading and discharging facilities are given in Table 4.2.

Fraser River Secondary Channels

Fraser River — North Arm

Chart 3491

111 The North Arm of the Fraser Riveris used by shallow draught vessels and tugs towing log booms, scows or barges. Marinas for pleasure craft are located in Middle Arm. Numerous industries line the banks of North Arm. Cargoes handled are logs, lumber, wood chips, sawdust, manufactured building materials, steel, iron, sand and gravel.

112 **Sea Island** *(49°12'N, 123°12'W)* separates the west end of the North Arm from the Middle Arm and is the site of *Vancouver International Airport*. The airport control **tower** is conspicuous.

113 **Caution. — Tidal extremes, strong westerly or northwesterly winds, and river outflow at the mouth of the North Arm can cause water conditions dangerous to small craft.**

114 The **North Arm**, locally known as **The Ditch**, is entered from the Strait of Georgia SW of Point Grey *(49°16'N, 123°16'W)*. It leads north of Sea Island and **Lulu Island** and joins the main channel of Fraser River at New Westminster. When entering give the tidal flats off Point Grey a wide berth.

115 Log booms are found moored to the banks almost anywhere on the North Arm. Numbers and sizes are controlled by the Port so they do not obstruct the fairway. Log booms can obstruct the channel especially when their tugs are making their tows just before flood tide.

116 **Caution. — All vessels transiting the area should reduce their wake to ensure the safety of crews working on logs.**

117 A channel width of 90 m is maintained from the entrance, at the Strait of Georgia, to Inner Easterly light, 2.7 miles upstream, and a width of 60 m from there to the main channel at New Westminster.

118 Attempts are made to maintain channel depths at local LW of 5.5 m from the mouth to North Arm Second light, 0.8 mile upstream, and 4.6 m from there to the main channel at New Westminster. North of Mitchell Island and in Middle Arm as far as Dinsmore Bridge 3.6 m is maintained.

119 The range of tide in the North Arm, for mean and large tides, respectively, is 3.3 m and 5.0 m at the mouth, decreasing with the river slope to New Westminster. Tidal heights and time differences for New Westminster are in *Canadian Tide and Current Tables, Volume 5*.

120 Normal river current on the ebb is not severe although during summer freshet periods it is often strong enough to deter towing. There is a distinct flood stream, providing a definite advantage when towing upriver.

Table 4.2 Major Port Facilities — Fraser River

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Crown Packaging	152	6.7	–	Loading ramp used by covered barges for pulp and paper.
Fraser Wharves	154	11.4	4.5	Discharging automobiles from RO/RO carriers. Mooring dolphins 61 m up and downstream from wharf. 25 ha open storage for 18 000 vehicles. Fresh water and telephones.
Lehigh Northwest Cement Ltd Deep-sea Berth	213	9.8	–	Handles limestone, shale, cement, gypsum, mill scale, coal, geyserite and slag. Loading rates: main conveyor 1 200 tonnes/hour, gypsum 350 tonnes/hour, cement 450 tonnes/hour. Telephones and power (100/220/575 volts).
Lehigh Northwest Cement Ltd Coastal Vessel Berth	152	9.1	–	As above.
Seaspan Coastal Intermodal Company Tilbury Terminal	–	–	–	Truck and railcar ferry terminal. Two ferry slips with ramps and three holding berths. 6 ha paved storage.
Rivtow Marine Tilbury Terminal	–	4.6	–	End-on loading ramp.
LaFarge Canada	256	6.6	–	Handles bulk cement and cement clinker via single hatch conveyor. Loading rate 907 tonnes/hour. Unloading rate 543 tonnes/hour. 6.8 tonne Colby elevator. 4 ha open storage. Fresh water, power (110/220/550 volts), telephone and shore gangway.
Chatterton Petrochemical	91	4.6	–	Discharging by pipeline liquids from barges and tankers. Telephone.
Annacis Auto Terminal South Berth 2	214	10.0	3.6	Discharging automobiles from RO/RO carriers. Mooring bollards up and downstream. 53 ha storage for 25 000 vehicles. Rail served. Fresh water and power.
Annacis Auto Terminal North Berth 1	222	10.0	3.6	As above
Fraser Surrey Docks LP Breakbulk Area Berths 2, 3 & 4	2 – 168 3 – 183 4 – 183	12.0	2 – 3.6 3 – 3.1 4 – 3.1	Handles containers, lumber, pulp, paper, steel and general cargo. Two 40 tonne container cranes, one 65 tonne container crane. Large forklifts, yard tractors, trailers and container handlers. 68 ha paved storage, six fully serviced warehouses three have fully enclosed rail tracks. Fresh water, power and telephone.
Fraser Surrey Docks Barge Ramp Berth 6	122	3.0	4.4	Hydraulic barge ramp with 40 tonne weight capacity.
Fraser Surrey Docks Berths 7, 8 & 9	7 – 229 8 – 229 9 – 244	12.5	7 – 3.9 8 – 3.9 9 – 4.1	Handles containers, lumber, pulp, paper, steel and general cargo. Two 40 tonne container cranes, one 65 tonne container crane. Large forklifts, yard tractors, trailers and container handlers. 68 ha paved storage, six fully serviced warehouses, three with fully enclosed rail tracks. Fresh water, power and telephone. Berth 9 has rail line along berth face and a heavy lift pad for up to 100 tonnes.
Fraser Surrey Docks Berth 10	220	11.6	–	Dolphin berth for vessels loading logs or vessels loading to barge. Equipped with 60 m trestle, capacity 20 metric tonnes.
Georgia Pacific	195	11.0	4.1	Unloading bulk gypsum by hopper-feeder conveyor belts with 454 tonnes/hour capacity. Loading plasterboard by forklift at 45 tonnes/hour. Bulk storage 16 326 tonnes gypsum. Covered storage 2 081 m². Fresh water, power (110/550 volts) and shore gangway.
Richmond Properties	–	–	–	Being developed. 54 m barge berth and potential for 4 deep-sea terminals.

121 On a rising tide in the Strait of Georgia salt water—which is denser than the fresh water—is forced upstream along the bottom in the form of a wedge. During periods of low flow (February and March) this salt wedge can penetrate the North Arm to the east tip of Mitchell Island, 10 miles upstream from the entrance at Point Grey. During high river discharge (mid-May to mid-July) this limit would be reduced to 7 miles upstream (Oak Street Bridge).

122 The Strait of Georgia, at the west end of the North Arm, is in Sector Three of the *Vancouver Traffic Zone* and is administered by *Victoria Traffic*. Before entering the Strait of Georgia make a report to *Victoria Traffic* on assigned frequency Channel 12 (156.6 MHz).

123 The Fraser River south of *Shoal Point light (367)*, at the east end of the North Arm, is in Sector Two of the *Vancouver Traffic Zone* and is administered by *Victoria Traffic*. Assigned frequency is Channel 74 (156.725 MHz). Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*.

124 **Submarine cables and pipelines** cross the North Arm in several locations.

125 The **North Arm jetty** borders the SW side of the North Arm from 0.7 mile SW of Point Grey to Iona Island. The **North Arm breakwater**, on the north side of the entrance, extends SW from **Noon Breakfast Point**. **Cowards Cove** is the dredged area close SE of the North Arm breakwater. It is used by local fishing vessels and allows mariners to assess local conditions before venturing out into the Strait of Georgia. An extensive log storage area, with numerous **piles** and **dolphins** for securing log booms, borders the NE side of the channel for 3 miles.

126 *Westerly light (381)* is near the NW extremity of the North Arm jetty. Other lights on the jetty (from NW to SE) are *North Arm Third light (384)* with a **starboard hand daymark** and *Inner (Easterly) light (385)*. A **starboard hand daybeacon** with a radar reflector is 0.6 mile SE of *Westerly light*.

127 *North Arm Breakwater light (382)*, on the south end of the breakwater, has a **port hand daymark**.

128 **McDonald Slough** separates Sea Island from **Iona Island**. **Deering Island**, known locally as **Celtic Island**, lies opposite Iona Island and has a housing development on it. **McDonald Beach Launching Basin**, 0.3 mile SE of Deering Island, has **public docks** and launching ramps. **Richmond Island** is joined to the north shore by a causeway.

129 The area between Arthur Laing Bridge and Marpole Railway Bridge is known locally as **Marpole Basin**. *River Rock Marina* (604-273-8560) is a large full-service **marina** on the south side of the river.

130 **Mitchell Island** comprises three islands, joined by the deposits of dredging overcast, known locally from west to east as **Eburne Island**, **Twigg Island** and Mitchell Island. Some major shipyards and industrial sites are on Mitchell Island. **Poplar Island**, at the east end of the North Arm, lies

FRASER RIVER NORTH ARM ENTRANCE (2007)



between Queensborough Highway and Railway Bridges; the fairway is on its south side.

131 **Power cables** at the west end of Mitchell Island have a vertical clearance of 28 m. In the channel north of Mitchell Island a cable adjacent to two piers has a vertical clearance of 24 m. Between the piers and Knight Street Bridge there are two cables; vertical clearance is 23 m for the first and 29 m for the second. In the channel south of Mitchell Island there is a cable close east of Knight Street Bridge with a vertical clearance of 27 m. A cable with a vertical clearance of 24 m crosses the channel 0.1 mile west of Queensborough Highway Bridge.

132 Fixed span and swing bridges cross the North Arm. When a vessel has given the appropriate signal to have a bridge opened, and for any reason it is decided not to pass through the swing span, the vessel should signal that the span may be closed by sounding two long blasts followed by two short blasts on its whistle or siren. If the swing span cannot be opened, the bridge operator will give a series of short blasts on a horn or whistle and by day raise a red ball and at night swing a red light in circles.

133 **Arthur Laing Bridge** *(Vancouver International Airport)*, at the east extremity of Sea Island, is a fixed span road bridge with a vertical clearance of 19 m and a channel width 97 m. A fuel barge is beneath the bridge.

134 **Marpole Railway Bridge** *(Canadian Pacific Railway)*, 0.4 mile east of the NE extremity of Sea Island, is under construction (2018).

135 **Oak Street Bridge** *(Ministry of Transportation and Infrastructure)*, close east, is a fixed span road bridge with a vertical clearance of 18 m and a channel width of 86 m.

136 **Canada Line North Arm Bridge** *(Translink)*, at the west extremity of Mitchell Island, is a fixed span light rapid transit bridge with a vertical clearance between 16.0 m (over the southern fork of the Fraser River) and 18.0 m.

137 **Knight Street Bridge** *(TransLink)*, at the east end of Mitchell Island, is a fixed span road bridge crossing the north and south channels with a vertical clearance of 12 m under the north branch and 19 m under the south branch. Channel width under the north branch is 71 m and 97 m under the south branch. Clearances are under the centre portion of the main span.

138 **Canadian National Railway Bridge**, 3.5 miles ESE of Mitchell Island, is a swing span with a vertical clearance of 7 m when closed. Channel widths on the north and south sides are 37 m. The bridge operator can be contacted on VHF Channel 74, telephone 604-522-5131. The signal for opening the bridge is three long blasts. An **overhead cable** (power) over the south span draw has a vertical clearance of 21 m.

139 **Queensborough Highway Bridge** *(Ministry of Transportation and Infrastructure)*, 2 miles farther upstream, is a fixed span bridge with a vertical clearance of 23 m and a channel width of 85 m.

140 **Queensborough Railway Bridge** *(Southern Railway of British Columbia)*, east of Poplar Island, is a swing span bridge under jurisdiction of the *Vancouver Fraser Port Authority*. When closed it has a vertical clearance of 1.3 m. Channel width on the north side is 26 m and on the south side 29 m. The swing span will open only for vessels that cannot pass under any part of the bridge.

140.1 Vessels requiring a bridge opening may contact the bridge operator on VHF channel 74 and 06; telephone 604-522-5131. Bridge transit procedures are described

ARTHUR LAING BRIDGE (2007)



in the *Port Information Guide*, available on the *Port of Vancouver website*.

Fraser River — Middle Arm

143 **Middle Arm** *(49°11'N, 123°09'W)*, between Sea and Lulu Islands, is entered from the North Arm. Sturgeon Bank obstructs its west end and has no marked channel across it. Depths in Middle Arm are suitable for small craft.

144 **Submarine pipelines and cables** cross Middle Arm in several locations and are marked by signs.

145 **Canada Line Middle Arm Bridge** *(Translink)* is a fixed span light rapid transit bridge with a vertical clearance of 14.1 m.

146 **Airport (Sea Island) Connector Bridge** *(City of Richmond)* is a fixed span road bridge, vertical clearance 11 m.

147 **Morey Channel Swing Bridge** *(City of Richmond)* has a vertical clearance of 3.6 m when closed. The signal for opening the bridge is three long blasts. Signals prescribed for North Arm swing bridges also apply to this bridge. The bridge will not be opened between 07h00 and 09h00 or 16h00 and 18h00 daily except in an emergency. For bridge openings between 24h00 and 07h00, telephone 604-521-0964. Channel widths on the east and west sides are 18 m.

148 **Marinas** line both shores of Middle Arm and include *Skyline Marina* (604-273-3977) offering moorage for transient vessels and some services. *Vancouver Marina* (604-278-9787) is a full-service marina offering moorage for transient vessels. *Delta Marina* (604-273-4211) offers limited moorage and some services for transient vessels.

149 *Delta Marina* is a *Canada Border Services Agency* clearance location.

150 **Dinsmore Bridge** *(City of Richmond)* is a fixed span road bridge with a vertical clearance of 2 m, channel width 27 m. **Morey Channel** is the portion of Middle Arm in vicinity of Dinsmore Bridge.

151 **No. 2 Road Bridge** *(City of Richmond)*, 0.35 mile west of Dinsmore Bridge, is a fixed span vertical clearance 4.3 m. Middle Arm west of No. 2 Road Bridge is a seaplane landing area.

152 The *Canadian Coast Guard* base is on Sea Island close NE of **Swishwash Island**. It is home to a hovercraft and dive team available 24 hours a day for rescue and other operations.

Canoe Passage

Chart 3492

153 **Canoe Passage** *(49°04'N, 123°09'W)* separates the SE side of **Westham Island** from the mainland. SE of the swing bridge favour the mainland (south) side of the channel and north of the bridge favour the Westham Island (east) side. Local knowledge is advised.

154 A channel marked by private **dolphins** leads across Roberts Bank to Canoe Passage. It is used by local fishers but depths in the channel change and local knowledge is advised.

155 A low white tower, on the south side of Westham Island, is reported to be visible about 4 miles from seaward. Ruins of an old fish cannery, on the opposite side of the channel from the tower, are reported to make a good landmark.

156 **Westham Bridge** *(Translink)* crosses the NE end of Canoe Passage and connects Westham Island to the municipality of **Delta**. The swing span has a vertical

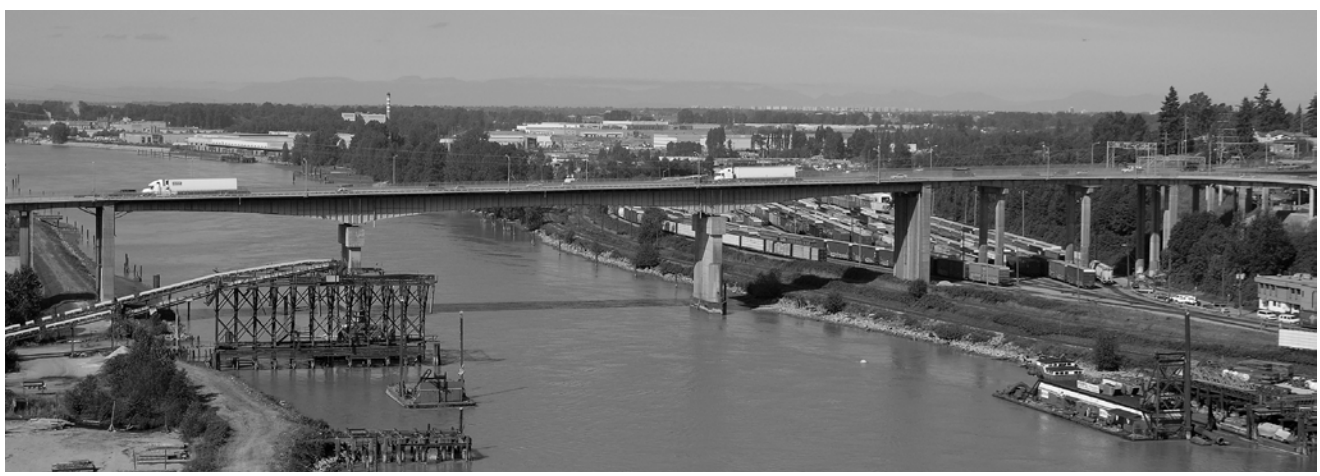
KNIGHT STREET BRIDGE (2007)



CANADIAN NATIONAL RAILWAY BRIDGE (2007)



QUEENSBOROUGH HIGHWAY BRIDGE (2007)



QUEENSBOROUGH RAILWAY BRIDGE (2007)



clearance of 1.6 m when closed. The swing span will open only for vessels that cannot pass under any part of the bridge.

157 From April 1 to November 30 the bridge tender is on duty 24 hours a day. From December 1 to March 31 the bridge tender is on duty 06h00 to 22h00. The bridge is closed to marine traffic between 22h00 and 06h00 but can be opened by contacting the Annacis Swing Bridge operator at 604-521-0964. Emergency response time is about one hour.

158 Vessels requiring a bridge opening must contact the bridge operator by VHF Channel 74, telephone 604-946-0139. Bridge transit procedures are described in the *Port Information Guide*, available on the *Port of Vancouver* website.

159 No vessel shall pass under the bridge or through the swing span unless the vessel and everything that it may have in tow are under complete control. No vessel shall overtake or attempt to overtake, or obstruct or attempt to obstruct any vessel that has signalled for the swing span to be opened. A vessel that has signalled for the swing span to be opened shall remain at a safe distance from the bridge until the bridge has been fully opened.

160 **Overhead cables**, vertical clearance 23 m, cross Canoe Passage close to the bridge.

Sea Reach and Ladner Reach

Chart 3490

161 **Sea Reach** leads SE between Westham and Woodward Islands to the north end of Canoe Passage, it is suitable only for small craft.

162 **Sea Reach range beacons**, close SE of **Ewen Slough**, lead into Sea Reach from the main channel.

163 A **daybeacon** with two **port hand daymarks**, on a **dolphin**, is on the SW extremity of **Barber Island**. Favour the south shore when entering Ladner Harbour.

164 Fish buyer docks and fish processing plants are at several locations on the south shore of Sea Reach and Ladner Reach.

165 **Ladner Reach** leads SSW from Deas Island and east of **Williamson Island** and **Gunn Island** is suitable only for small craft. A **submarine cable** crosses the north end of Ladner Reach.

166 At **Ladner** is the *Ladner Small Craft Harbour* (604-940-6432), numerous float homes with private docks, a large commercial basin and extensive shopping facilities. *Ladner Yacht Club* (604-946-4056) may offer overnight moorage if space is available for reciprocal boats.

167 **Deas Slough** is suitable only for small craft. It has two full-service **marinas**, *Captain's Cove Marina* (604-946-1244) and *River House Marina* (604-940-4496), and a **public dock**. **Submarine cables and pipelines** are laid across the entrance to Deas Slough.

168 *Deas Slough light (348.3)* is on a **dolphin** in the entrance to Deas Slough and is shown from a white cylindrical tower with a red band at the top.

169 **Deas Slough Causeway** *(Ministry of Transportation and Infrastructure)*, a fixed span highway bridge, vertical clearance 2.8 m, crosses Deas Slough. **Overhead cables** (power), vertical clearance 9.9 m, cross the channel on the west side of the bridge.

Annacis Channel

170 **Annacis Channel** *(49°10'N, 122°57'W)*, between Annacis and Lulu Islands, has **Lion Island** and **Don Island** in its SW entrance, preferred channel is south of Don Island. *Shelter Island Marina & Boatyard* (604-270-6272), N of Don Island, is a large full-service **marina**. There is a large complex of businesses catering to all aspects of small craft supply, repair, overhaul, and sales at this location.

170.1 A partially submerged **wreck** lies at the NE tip of Don Island.

171 An **overhead cable** (power) across the south entrance to Annacis Channel has a vertical clearance of 25 m. The overhead cable crossing to **Patrick Island** has a vertical clearance of 28 m. **Submarine pipelines and cables** cross Annacis Channel in several locations.

172 **Annacis Island West Causeway** *(Ministry of Transportation and Infrastructure)*, about 1.5 miles NE of Purfleet Point, is a fixed span highway bridge with a vertical clearance of 9 m. Fixed white lights mark the centre span.

173 **Annacis Island East Causeway** *(Ministry of Transportation and Infrastructure)* is a fixed span highway bridge with a vertical clearance of 9 m. Fixed white lights mark centre span.

Charts 3490, 3489

174 An **overhead cable** (power) with a vertical clearance of 27 m crosses the channel 0.3 mile SW of Annacis Channel Bridge *(49°11'N, 122°56'W)*.

175 A **radio tower**, on the north shore 0.2 mile west of the bridge, has red air obstruction lights.

176 **Annacis Channel Bridge** *(Ministry of Transportation and Infrastructure)*, 2.6 miles NE of Purfleet Point, is a single-opening swing road and rail bridge with a navigable width of 33.7 m. The swing span has a vertical clearance of 2.3 m when closed. The swing span will open only for vessels that cannot pass under any part of the bridge.

MIDDLE ARM SWING BRIDGE (2007)



DINSMORE BRIDGE (2007)



NO. 2 ROAD BRIDGE (2007)



177 No vessel shall pass under the bridge or through the swing span unless the vessel and everything that it has in tow are under complete control. No vessel shall overtake or attempt to overtake, or obstruct or attempt to obstruct any vessel that has signalled for the swing span to be opened. A vessel that has signalled for the swing span to be opened shall remain at a safe distance from the bridge until the signal to proceed. Transiting procedures prescribe that tugs towing barges in excess of certain prescribed measurements or tonnages must have assist tugs. Under certain circumstances they may only transit the swing span when stemming the current.

178 Private fixed white lights are shown from each side of Annacis Channel through the swing bridge, visible to vessels approaching from either direction. A fixed white light is shown from each end of the centre pier projection.

179 Vessels requiring an opening of the bridge can contact the bridge operator on VHF Channel 74, telephone 604-521-0964. Three long blasts on the vessels horn can also be used. Bridge will only open once every half hour.

180 The bridge operator uses the following signals:

1. A fixed red light on each side of the bridge to indicate span is closed;
2. A fixed green light on the side of the bridge facing an oncoming vessel to indicate span is open;
3. A flashing red light visible from each side of the bridge to indicate span is out of order.

181 East of the swing bridge the channel is frequently cluttered with logs. A **submerged weir**, crossing the NE entrance to Annacis Channel, has a depth of 2.9 m over it.

182 *Public Services and Procurement Canada* **Annacis Marine Base wharf** is at Shoal Point.

New Westminster to Douglas Island

183 **Queens Reach** extends from New Westminster to **Port Mann**. The south shore is lined with **piles** and **dolphins**. Georgia Pacific wharf is 0.7 mile east of Pattullo Bridge.

184 **City Bank** *(49°13'N, 122°53'W)* is a log storage ground with numerous **piles** and **dolphins**. Training dykes extend from its south side. **Sapperton Bar** extends east from the bank to **Sapperton Dyke**, a V-shaped structure with its apex upstream. Each wall is 122 m long and has a pile dolphin at its outer end.

185 **Sapperton Channel** lies on the north side of City Bank and Sapperton Dyke. Wharf and docks for a seaplane base are at the west end of the channel. Numerous **piles** and **dolphins** line the north shore.

186 *Port Mann Training Dyke Lower and Upper lights (369, 370)* are at the south ends of the two training dykes on City Bank.

187 *Sapperton Bar Dyke light (371)* is at the west end of the south wing.

188 **Overhead cables** (power), vertical clearance 45 m, cross Queens Reach about 0.5 mile west of Port Mann Bridge. **Submarine pipelines** cross Queens Reach at several locations. They are marked by signs.

189 **Port Mann Bridge** *(Ministry of Transportation and Infrastructure)*, carrying the Trans-Canada Highway, has a vertical clearance of 42 m over the navigable channel. Fixed red lights are shown from the lower part of the span on both sides of the bridge. There is extensive flood lighting. There are four old pilings along the eastern side of the bridge which are considered a hazard to navigation.

WESTHAM BRIDGE (2007)



190 **Douglas Island** *(49°13'N, 122°46'W)* is almost in mid-river at the confluence of the Fraser and Pitt Rivers. **Helmcken Point** forms its west extremity and **Sebastian Point** is its east extremity. The channel on the south side of the island is the wider and deeper. **Tree Island** and **Essondale Islet** together with numerous **dolphins** are NW of Douglas Island.

191 Vessels **anchoring** in the vicinity of the lower end of Douglas Island should anchor as close to the island as possible. Vessels anchored in this area have posed a hazard to barge traffic moving past the island.

Pitt River

Chart 3062

192 **Pitt River** *(49°15'N, 122°45'W)*, within the *Vancouver Fraser Port Authority* limits, is navigable by small craft from its junction with the Fraser River to Pitt Lake (15 miles). It is used for storing and transporting logs. Log booms line the river banks and occupy shoal areas in mid-channel as far as Grant Narrows. Numerous **piles** and **dolphins** line the river banks and lie in mid-channel from the

FRASER RIVER SOUTH ARM WOODWARD REACH (L) SEA REACH (R) (2007)



LADNER REACH AND LADNER HARBOUR (2007)



LADNER HARBOUR (2007)



LADNER SMALL CRAFT HARBOUR (2007)



DEAS SLOUGH ENTRANCE (2007)



DEAS SLOUGH (2007)



river mouth to Addington Point. **Caution. — Keep a sharp lookout for loose logs.**

193 Pitt River water flow is affected by **tidal streams**, and between May and August by the runoff from both the Fraser River and Pitt Lake. Under normal conditions the flow reverses according to tidal conditions in the Fraser River, but in freshet season flow is usually outward.

194 The city of **Port Coquitlam** is on the west bank of Pitt River, near its confluence with the Fraser River.

195 **Pitt River Railway Bridge** and **Pitt River Highway Bridge** cross **Chatham Reach** 2 miles NE of Douglas Island. All three bridges have swing spans.

196 **Pitt River Railway Bridge** *(Canadian Pacific Railway),* vertical clearance 2.0 m, will open only for vessels that cannot pass under any part of the bridge. It is closed to marine traffic from 05h30 to 08h00 and 16h15 to 19h30 Monday to Friday. However, the bridge may open providing the vessel is ready to go, no commuter train is waiting to pass over the bridge, and bridge closure can be done for next commuter train.

196.1 Pitt River Railway Bridge procedures are described in the *Port Information Guide*, available on the *Port of Vancouver* website.

197 Vessels requiring a bridge opening may contact the bridge operator on VHF channel 74, telephone 604-941-0079. The 24-hour emergency line telephone number is 1-800-795-7851.

DEAS SLOUGH (2007)



200 **Pitt River Highway Bridge** *(Ministry of Transportation and Infrastructure)* is a cable-stayed road bridge, vertical clearance 13 m.

201 **Overhead cables** (power), vertical clearance 27 m, cross Chatham Reach between the bridges. A power cable with a vertical clearance of 22 m crosses **Fox Reach** about 1.5 miles NW of **Addington Point**.

202 **Submarine pipelines** and **submarine cables** cross Chatham Reach near the bridges and about 1 mile NE of the bridges. They are marked by signs. A submarine cable crosses Fox Reach 1.5 miles NW of Addington Point.

203 A **launching ramp** and docking facilities are located at the mouth of **Alouette River**.

204 **Goose Bar**, known locally as **Goose Island**, is a drying bank in mid-stream about 2 miles upriver from the bridges.

205 **Conspicuous quarries** are located near the entrance to **Sturgeon Slough** and east of **MacIntyre Creek**.

206 **Siwash Island** is separated from the mainland by **Widgeon Slough**. The SE side of the island is usually lined with log booms.

207 Speed limits of 5 km/h (3 kn) in Widgeon Slough, and 10 km/h (5 kn) in Grant Narrows are in the *Vessel Operation Restriction Regulations*.

208 **Grant Narrows**, connecting Fox Reach and Pitt Lake, is deep and has a dyke along its south side. Its north side is formed by extensive flats of mud and weeds. A **breakwater** and floats are on the north side, and a float and launching ramp are on the south side.

209 **Grant Channel**, leading east and north from Grant Narrows, is a deep channel through flats at the south end of Pitt Lake. The channel sides are steep with very shallow depths along them. It is essential that a good course be made. Grant Channel is marked by **port and starboard hand buoys**.

210 *Grant Narrows West light (372)* is at the west end of Grant Narrows.

211 *Grant Narrows East light (373)*, 1.4 miles east of Grant Narrows, has a **starboard hand daymark**.

Pitt Lake

212 The south end of **Pitt Lake** is filled by an extensive shallow area with drying banks. After the light buoys at the north end of Grant Channel are passed, depths increase sharply and continue deep to the north end of the lake.

213 **Goose Island**, locally known as **Pen Island**, is 1 mile north of the light buoys marking the north entrance to Grant Channel. A rock, with 4.1 m over it, lies 0.25 mile NE of the island.

214 *Goose Island light (373.5)* is on the SW extremity of the island.

215 **Little Goose Island** lies close offshore about 1.5 miles NE of Goose Island. Small craft **anchorage** is possible in the lee of Little Goose Island.

ANNACIS ISLAND E AND W CAUSEWAYS (2007)



PORT MANN BRIDGE (2007)



216 *Cozen Point light (373.7)* is on the point.

217 **Williams Landing**, east of Little Goose Island, has numerous private floats along its shores.

218 **Subiaco Cove**, about 4 miles NW of Williams Landing, lies between **Deer Point** and **Cacus Point**. **Breakwaters** protect private floats.

219 The head of Pitt Lake is about 3 miles north of Cacus Point. Logging camps and booming grounds are at the head of the lake.

220 Due to mountains surrounding the lake, weather conditions can differ from one part of the lake to another. For example, warm sunny weather can be experienced in the north part of the lake while squalls are occurring in the south part.

Douglas Island to Cresent Island

Charts 3489, 3488

221 The Fraser River from Douglas Island *(49°13'N, 122°46'W)* to Kanaka Creek is within *Vancouver Fraser Port Authority (VFPA)* jurisdiction. For navigation guidelines see the *Port Information Guide – Port of Vancouver* at www.portvancouver.com.

222 An unmarked navigation channel is maintained between Douglas Island and **Hope**, a distance of 49 miles. The channel is not charted beyond the Harrison River entrance *(49°13'N, 121°57'W)*.

223 The Fraser River is affected by tides as far upstream as Chilliwack. Mean daily variation in water level when the river flow is low is 1.3 m at Port Hammond, and 1.0 m at Mission. During freshets, variation in water level decreases to about 0.3 m at Port Hammond and 0.1 m at Mission. See charted hydrographs showing seasonal variations in water

levels for Port Hammond, Whonnock, Mission and Harrison Bay.

224 **Caution. — Charted depths are subject to change due to silting, scouring and dredging.**

225 Log booms are moored to banks anywhere along the river. Size and location of these areas change frequently. Lumber mills with barge loading facilities are located along the river.

226 Communities on the Fraser River are connected to New Westminster and Vancouver by rail and highways. Bus and rail services are available.

Chart 3489

227 **Barnston Island** *(49°12'N, 122°42'W)* is 1.3 miles upstream from Douglas Island. **Robert Point** forms its west extremity and **Mann Point** is its east extremity.

228 A **submarine pipeline** (sewer) crosses the river 0.2 mile west of Robert Point.

229 **Bishops Reach** leads north of Barnston Island. *Pitt Meadows Airport* is on the north shore.

230 **Radio towers**, with red air obstruction lights, are 0.5 mile ENE of Robert Point. An aeronautical beacon light is at the airport.

231 Bishops Reach is a seaplane landing area known as Pitt Meadows. An aircraft float protected by a breakwater is east of the radio towers.

232 **Parsons Channel** leads south of Barnston Island. A passenger and vehicle ferry, operated by the *Ministry of Transportation and Infrastructure*, crosses the channel. A launching ramp is alongside the ferry dock.

233 A private light is on Barnston Island, 0.4 mile WSW of Mann Point.

234 **Derby Reach** extends from Barnston Island to the west end of McMillan Island.

235 **Golden Ears Bridge** *(TransLink)* is a fixed span road bridge. Bishops Reach (north side) has a vertical clearance of 34 m. Parsons Channel (south side) has a vertical clearance of 14 m.

236 A **submarine pipeline** (water) crosses the river 0.3 mile east of Mann Point.

237 **Port Hammond** *(49°12'N, 122°39'W)* is engaged in processing forest products. Wharves and floats line the waterfront.

238 **Haney**, 2 miles upriver, is a large community with all amenities including a hospital.

239 The *Vancouver Fraser Port Authority* limit is at **Kanaka Creek** *(49°12'N, 122°35'W)*. A conspicuous bridge crosses the entrance to the creek.

240 **Russel Reach** leads north of **McMillan Island**.

241 A **public pier**, protected by a floating **breakwater**, is at **Kanaka Landing** (local name) 0.7 mile SSE of Kanaka Creek. Docks, with 195 m of berthing space, are attached to the outer end of the pier. Power is available. A launching ramp is adjacent to the wharf.

242 A **submarine pipeline** (gas) crosses Russel Reach 0.6 mile SE of **Tavistock Point**, the NW extremity of McMillan Island.

243 **Albion public wharf** is protected by a floating **breakwater**. A ramp 46 m long and a float with 95 m of berthing space are attached to the west side. Power is laid on the float and a telephone is nearby. A conspicuous tower with red air obstruction lights is near the head of the wharf.

244 **McMillan Island public wharf** is at the outer end of a long trestle approach. Floats with 116 m of berthing space are attached to the wharf. A floating **breakwater** protects the wharf and floats.

245 **Fort Langley** and ***Fort Langley Historic Park*** are in **Bedford Channel**, which leads south of McMillan Island. A speed limit of 10 km/h (5 kn) is prescribed by the *Vessel Operation Restriction Regulations* for Bedford Channel.

246 **Glover Road Bridge**, vertical clearance 2.7 m, crosses Bedford Channel.

247 A **submarine pipeline** (gas) crosses Bedford Channel.

248 The Fraser River east of McMillan Island is a seaplane landing area known as Fort Langley. An aircraft float and launching ramp are 0.25 mile east of **Endsleigh Point**. An aircraft landing strip with turf runway is at the east end of Bedford Channel.

249 A **public wharf** at the end of a long trestle approach, known locally as **McIvor's Landing**, is 1 mile east of Endsleigh Point. Floats, with 134 m of berthing space, are attached to the west side of the wharfhead. A derrick is on the wharfhead and power is laid on the floats. A floating breakwater protects the wharf.

250 **Whonnock** *(49°10'N, 122°28'W)* is on the north bank of the river. **Whonnock public wharf**, protected by a floating **breakwater**, has a float with 56 m of berthing space attached to its east end. Power is laid on the float and a derrick is on the wharfhead.

251 **Plumper Reach** *(49°10'N, 122°26'W)* leads north of **Crescent Island**. **Enterprise Channel**, south of Crescent Island, has a drying bank across it.

252 **Overhead cables** (power) cross Plumper Reach with a vertical clearance 33 m, and at Enterprise Channel with a vertical clearance of 14 m.

Charts 3489, 3488

253 **Stave River** *(49°10'N, 122°25'W)* has two bridges across its entrance. The railway bridge has a vertical clearance of 2.3 m and the highway bridge has vertical clearance of 3.6 m. An **overhead cable** (power), vertical clearance unknown, crosses the river close south of the highway bridge.

254 **Crescent Island buoy S60**, 0.4 mile upstream from the island, is a **starboard hand buoy**.

Cresent Island to Harrison River

Chart 3488

255 **Matsqui Island** *(49°07'N, 122°21'W)* is 2.4 miles upstream from Crescent Island. **Submarine pipelines** (sewer) cross from the south shore the river 0.1 mile and 0.25 mile east of the island.

256 **Mission Highway Bridge** *(Ministry of Transportation and Infrastructure)*, 0.8 mile upstream from Matsqui Island, is a fixed span bridge with a vertical clearance of 19 m.

257 **Mission Railway Bridge** *(Canadian Pacific Railway)*, 0.2 mile upstream, is a swing span bridge with a vertical clearance of 4.9 m when closed. The bridge tender, on duty 24 hours a day, can be contacted on VHF Channel 74 or 69 or telephone 604-826-3117. The opening signal is three long blasts.

258 **Calling-in points** for vessels transiting downstream which require opening are:

- Abeam the mouth of the Nicomen Slough;
- Abeam the mouth of the Lower Hatzic Slough;
- Prior to departure from a berth or vessel tie-up within the above calling-in points.

259 **Calling-in points** for vessels transiting upstream which require opening are:

- Abeam of the downstream end of Matsqui Island;
- Abeam of the upstream end of Matsqui Island;
- Prior to departure from a berth or vessel tie-up within the above calling-in points.

260 Once contact has been established between the vessel and the bridge operator at the first calling-in point, the vessel will provide the bridge tender with an estimated time of arrival (ETA). The bridge tender will check for rail traffic which may coincide with the vessel ETA and advise the vessel of any conflicts.

261 At the second calling-in point the vessel will confirm (or revise) their ETA to the bridge. The bridge tender will in turn confirm the availability of the bridge to open.

262 Once a vessel has made radio telephone contact with the Mission Railway Bridge, a listening watch shall be maintained on VHF Channel 69 until the vessel has cleared the bridge.

263 Should vessels from opposing directions wish to transit the bridge at the same time, the vessel proceeding downriver shall have right of way, in accordance with *Collision Regulations* of the *Canada Shipping Act*.

264 An **overhead cable**, across the swing span of the railway bridge, has a vertical clearance of 21 m. An **overhead cable** (power), with a vertical clearance of 30 m, crosses the river close west of the railway bridge.

265 Fixed white lights are shown from both ends of the swing span and from both ends and centre of the protection pier. Red lights are shown on both sides of the swing span when the bridge is closed.

266 **Mission**, a community on the north side of the river, has a full range of municipal facilities including a hospital with a heliport, and shopping centres. Several wharves and pontoons line the waterfront. Supplies and fuel are available.

267 The Fraser River fronting Mission is a seaplane landing area.

268 The **public boat basin** is protected by an A-frame and floating **breakwaters** on the east, and a floating concrete **breakwater** on its south side. Pontoons provide 630 m of berthing space. Power and water are laid on and garbage disposal facilities are available.

269 A **submarine pipeline** (sewer) crosses the river near Mission.

270 **Hatzic**, about 2 miles upstream from Mission, has no waterfront facilities. **Lower Hatzic Slough** enters the Fraser River east of the community.

271 A **submarine pipeline** (water) crosses the river north of Hatzic.

272 **Nicomen Slough** enters the Fraser River west of **Strawberry Island** *(49°09'N, 122°10'W)*. An **overhead cable** (power) with a vertical clearance of 10 m crosses Nicomen Slough 0.35 mile NW of **Strawberry Slough**. A gravel quarrying operation with loading facilities is across the river from Nicomen Slough.

273 **Nicomen Island**, **Skumalasph Island** and **Queens Island** form the north bank of the river.

274 **Sumas River** *(49°08'N, 122°07'W)* enters the south side of the Fraser River. A railway bridge crosses the Sumas River 1 mile upstream.

275 A log storage basin *(49°08'N, 122°04'W)* has an **overhead cable** (power) across it, vertical clearance 18 m.

276 Unnamed islands, 38, 42 and 33 m high, 1 mile upriver from **Yaalstrick Island**, are an Ecological Reserve.

277 Dredging operations can be encountered in the vicinity of **Minto Landing** *(49°12'N, 121°57'W)* from May to September.

Harrison River

Charts 3488, 3061

278 **Harrison River** *(49°13'N, 121°57'W)* is navigable by small craft from its junction with Fraser River to Harrison Lake. It is used for storing and transporting logs. Booming grounds line the shores.

279 **Harrison Mills Railway Bridge** *(Canadian Pacific Railway)*, 0.8 mile upriver from its junction with Fraser River, is a swing span bridge with a vertical clearance of 3.9 m when closed. The bridge operator is on duty 06h00 to 14h00 daily from April 1 to September 30. The bridge operator monitors VHF Channel 80 or can be reached by telephone 604-796-2839. During the off season, *Canadian Pacific Railway* requires 48 hours notice for bridge openings.

280 **Harrison Mills Highway Bridge** is a swing span bridge with a vertical clearance 7.7 m when closed. This bridge is not occupied by an operator and requires 48 hours notice to be opened; telephone 1-800-667-5122.

281 Fixed red lights are shown from the ends of the swing spans on both bridges.

282 A **radio tower**, with red air obstruction lights, is at the SE end of the railway bridge.

283 A **submarine pipeline** (water intake) is on the north side of the railway bridge.

284 Several **weirs** along the sandbars contain the river channel across **Harrison Bay**.

285 An **overhead cable** (power), vertical clearance 24 m, crosses the river at Harrison Mills. Towers carrying the cable are in the navigable channel.

286 **Harrison Mills** is the site of a large mill. A store, postal service and fuel float are available.

Chart 3061

287 **Wilson Point** *(49°16'N, 121°55'W)* and **Raake Point** are named features about 1.5 miles upstream of Harrison Mills. **Chehalis River** enters the bay opposite Wilson Point.

288 An **overhead cable** (telephone), vertical clearance 8 m, and towers carrying the cable, cross the foreshore west of Chehalis River.

289 **Overhead cables** (power) cross the Harrison River at **Pirates Point**, vertical clearance 125 m, and at **Spooks Point**, vertical clearance 221 m.

Harrison Lake

290 **Harrison Lake**, entered at **Whippoorwill Point**, extends 32 miles NNW to the entrance of the Lillooet River. Several logging camps lie along the shores and tugboats towing log booms can be encountered anywhere on the lake.

291 **Caution. — Strong winds can blow up very quickly causing adverse water conditions to be generated at short notice. Waves up to 1 metre in height can develop quickly and threaten boats in shallow water or at anchor.**

292 *Whippoorwill Point light (378)* has a **starboard hand daymark**.

293 *Harrison Hot Springs light (379)*, about 1 mile east of the above light, is shown from a **dolphin** at the outer end of the **breakwater**.

294 **Speed control buoys**, displaying a 10 km/h (5 kn) speed limit front Harrison Hot Springs.

295 A **submarine pipeline** (water intake) extends about 0.6 mile offshore south of Whippoorwill Point; it is marked by a sign.

296 The south end of Harrison Lake is a seaplane landing area.

297 **Harrison Hot Springs**, on the south shore of the lake, is a resort area that has five hot spring pools, accommodation, campsites, stores and postal services. A public swimming area protected by a **breakwater** is on the waterfront.

298 The **public wharf**, on the east shore, has a float with 37 m of berthing space attached to its outer end. A rock **breakwater** is on the north side of the wharf. Floating **breakwaters** protect docks south of the public wharf.

299 *Harrison Hot Springs Resort & Spa* (604-796-2244), *Killer's Cove Marina* (604-796-3856), *Harrison Yacht Club Clubhouse* (604-796-0049), and a launching ramp are on the east shore south of the **breakwater**.

300 **Echo Island** has **Camile Island** and **Marguerite Island** close-off its SE extremity. **McComb Bay**, on the east shore of Echo Island, is a booming ground.

301 *Echo Island light (377)*, on the west side of the island, has a **starboard hand daymark**.

302 **Echo Bay** is 0.25 mile north of the light.

303 **Celia Cove** and **Camp Cove** are on the west shore of Harrison Lake, opposite Echo Island. **Limbert Rocks**, 1.6 miles north of Camp Cove, dry at 1.8 m.

304 **Cascade Bay** lies east of **Cascade Peninsula**. **Lone Tree Island**, at the entrance to the bay, is connected to shore by a rock **breakwater**. **Blind Bay** and **Lakeberg Bay** are at the head of Cascade Bay. A reef with two islets on it is in Blind Bay and numerous private docks line the shores of the bays.

305 **Rainbow Falls**, on the east shore of Cascade Bay, is marked by a *B.C. Forest Service Recreation Site* sign.

306 **Sturgeon Bay** and **Beach Bay** are at the north end of Cascade Peninsula. Sturgeon Bay is a booming ground. Private **daybeacons** mark drying rocks lying in the entrance to Beach Bay.

307 **Macs Cove** and **Cooks Cove** are 1.2 miles NNE of Beach Bay. A *B.C. Forest Service Recreation Site* sign is at **Bear Creek**.

308 **Sheers Island** *(49°25'N, 121°50'W)* has a booming ground on its NW side.



309 *Sheers Island light (374)*, close north of **Ten Mile Point**, has a **port hand daybeacon**.

310 **Purcell Point** is the south extremity of **Long Island**.



311 *Inkman Island light (375)*, close-off the SE shore of Long Island, has a **port hand daymark**.

312 **Scherrer Bay**, extending NNW from **Inkman Island**, is a booming ground.



313 **Towboat Strait** leads between Long Island and the mainland. **Long Island Bay**, with **Deer Island** in its entrance, is on the west shore of Long Island. Several private floats are in the bay and it is reported to be a good **anchorage** for small craft.

314 **Timberman Cove**, west of **Molly Hogan Point**, is at the north end of Towboat Strait. The bay is a booming ground with a dry land sort area and a barge loading ramp.



315 *Long Island light (376)*, on the north extremity of the island, has a **starboard hand daymark**.

316 **Bear Creek (locality)** *(49°32'N, 121°46'W)* has a log sorting operation and booming ground.

317 **Silver River (locality)** at the mouth of **Big Silver Creek** has a log sorting operation and booming grounds protected by **breakwaters**. **East Bay** is a booming ground.



318 *Vedder Rock light (379.3) (49°36'N, 121°56'W)* has a **port hand daymark**.



318.1 **Submarine cables** cross the lake between Vedder Rock and Westwood Bay.

319 **Westwood Bay**, **Doctors Point**, **Doctors Bay** and **Doctors Island** are named features NW of **Vedder Rock**. Westwood Bay is a booming ground.



320 *Doctors Point light (379.5)*, 0.4 mile NW of the point, has a **port hand daymark**.

321 **Five Mile Bay** *(49°42'N, 122°03'W)* has ruins of a logging operation, broken **piles** and snags foul the bottom. **Todd Bay** is on the opposite shore.

322 **Conspicuous towers** are along the shore 2 miles NE of Five Mile Bay.

323 **Lillooet River** enters the head of Harrison Lake. Numerous islands lie in the river mouth.

324 **Tipella**, on the south side of the river mouth, is a logging operation with booming grounds and a private gravel airstrip.



325 *Port Douglas Channel light (380)*, on the north entrance point to the channel, has a **starboard hand daymark**.



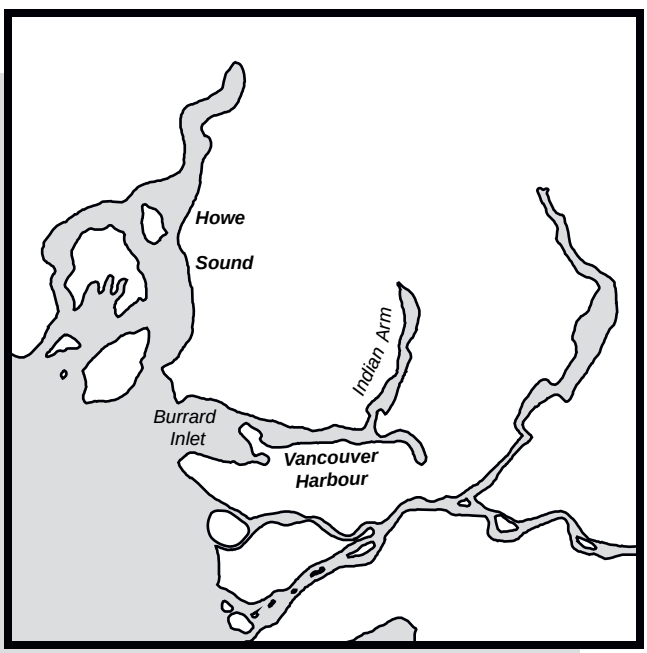
326 **Port Douglas Channel**, depth 1.3 m, leads to **Little Harrison Lake** which has booming grounds along its shores. **Port Douglas**, at the head of the lake, has a loading wharf.

Vancouver Harbour and Howe Sound

General

Charts 3481, 3493, 3497, 3495, 3526, 3534

1 This chapter describes Burrard Inlet including Vancouver Harbour, False Creek and approaches. Howe Sound and approaches, including Squamish, and Port Mellon, are also described.



Approach to Vancouver Harbour

Chart 3496

2 **Burrard Inlet**, close north of the North Arm of the Fraser River, is entered between Point Grey *(49°16'N, 123°16'W)* and Point Atkinson 4 miles north. It penetrates 12.5 miles east where it divides into Indian Arm and Port Moody and is relatively shallow with depths suitable for **anchorage** in all parts except the north end of Indian Arm.

3 English Bay Routing System (EBRS), First Narrows Traffic Control Zone 1 (TCZ-1), Second Narrows Traffic Control Zone 2 (TCZ-2), and Eastern Burrard Inlet Traffic Control Zone 3 (TCZ-3) procedures are described in the *Port Information Guide*, available on the *Port of Vancouver* website.

4 *Vancouver Approach Cautionary light buoy QA (385.5)*, 2.4 miles WNW of Point Grey, is fitted with a **Racon** (— — •).

5 *Burrard Inlet Cautionary light buoy QB (388)*, 2.4 miles west of Prospect Point at the east end of the traffic separation scheme, is fitted with a **Racon** (— • —).

6 **Point Grey** *(49°16'N, 123°16'W)*, the west extremity of a wooded promontory terminating in a rounded bluff, is very conspicuous from south. University of British Columbia buildings on high land above the point are conspicuous.

6.1 An ODAS light **buoy** (Wave Energy Testing) is approximately 0.8 mile NNW of Point Grey.

6.2 An ODAS light **buoy** is 4.2 miles NW of Point Grey.

7 An **ocean dumpsite** *(49°15.4'N, 123°22.1'W)* under permit through the *Ocean Dumping Control Act* is actively used for dumping river dredging spoil.

8 **Spanish Bank** *(49°17'N, 123°14'W)*, composed of hard sand that dries near LW, extends 0.6 mile north from the

west portion of Point Grey. The edge of the bank is steep-to and only visible near LW with strong west winds when there is a line of small breakers.

9 *Point Grey light and bell buoy Q62 (387)*, 1.5 miles north of Point Grey, is a **starboard hand buoy**.

10 *Spanish Bank No. 2 light (386.3)* and *Spanish Bank light (387.01)* are shown from **dolphins** along the outer edge of Spanish Bank.

11 **Submarine cables** cross Spanish Bank and then lead across the Strait of Georgia.

12 *English Bay Anchorage East light (387.2),* on the seaward end of the *Royal Vancouver Yacht Club* **breakwater**, is private and shown from a lantern on a railing.

13 **English Bay** lies between Spanish Bank and *Stanley Park* 3 miles NE. Yacht races, some of them international, take place in the Kitsilano-Jericho Beach area of English Bay between April and October; shipping should keep clear if possible. A public fishing and recreation pier is at **Jericho Beach**. The *Royal Vancouver* and *Kitsilano Yacht Clubs* are 0.4 and 1.5 miles, respectively, east of Jericho Beach. A private **mooring buoy** lies NW of **Kitsilano Beach**. Private **buoys** mark areas reserved for swimming off Kitsilano Beach, Sunset Beach, and Second Beach. English Bay community has all amenities and offers a variety of recreational activities. A launching ramp and the Kitsilano Coast Guard station are located in the entrance to False Creek.

14 **Submarine pipelines** extend from shore close SW and east of **Kitsilano Point**.

14.1 Two **wrecks**, one lying 0.5 mile NW of Kitsilano Point, with 3.9 m of water over it and the other, with 2.7 m of water over it lies 0.4 mile west of the same point.

15 **Elsje Point** close east is the extremity of a rockfill **breakwater**. It protects the Heritage Harbour of the *Vancouver Maritime Museum*. Several historic vessels are moored here.

16 **Siwash Rock**, a prominent pinnacle 16 m high, lies close-off the west side of *Stanley Park*, about 0.5 mile north of **Ferguson Point**. A **submarine cable** lands close north of Ferguson Point.

17 *Ferguson Point light buoy QC (390.5)*, 0.4 mile WNW of the point, is a **west cardinal buoy**.

18 **Point Atkinson** *(49°20'N, 123°16'W)* is moderately steep-to. Strong tide-rips, caused by the meeting of the tidal streams from Burrard Inlet and Howe Sound, frequently occur off the point.

19 *Point Atkinson light (386)* is shown from a white tower with six buttresses. The light has a helicopter landing pad.

20 Tidal predictions for Point Atkinson (7795) are in *Canadian Tide and Current Tables, Volume 5*.

21 Between Point Atkinson and Navvy Jack Point, 2.7 miles east, the coast is indented by several coves. A picnic area, **public wharf** and **mooring buoys** are in **Caulfeild Cove**. A private **mooring buoy** is off *Cypress Park*. A **submarine pipeline** (water intake) extends 110 m offshore on the west side of Sandy Cove. It provides water to the *West Vancouver Laboratory*, which is involved in fisheries research.

22 **Dundarave**, 3 miles east of Point Atkinson, has a microwave tower north of it. **Navvy Jack Point**, 0.6 mile SE, has several drying rocks SW and NW of it. Dundarave has a variety of services, stores, and restaurants.

23 **Hollyburn** has private lights on a **breakwater** protecting small craft facilities of the *Hollyburn Sailing Club*.

Vancouver Harbour — General

Charts 3493, 3497, 3495, 3496

24 **Vancouver Harbour** *(49°18'N, 123°05'W)* is a very busy, year-round, all weather, deep-water port with 276 km of coastline in its navigational jurisdiction. The port of Vancouver is comprised of 17 bulk, 3 breakbulk, and 3 container terminals providing a full range of facilities and services to international shipping. There are marinas and yacht clubs serving a high volume of pleasure craft, and seaplane traffic is considerable in Coal Harbour.

25 The **Harbour of Vancouver** is defined in the *Canada Marine Act*. It includes Burrard Inlet, Indian Arm, Port Moody, English Bay and all other tidal waters lying east of a line drawn from Point Atkinson light south to the west point of Point Grey *(Chart 3496)*. It also includes a narrow coastal strip in the Strait of Georgia in the approach to Fraser River, Sturgeon Bank and Roberts Bank *(Chart 3463)*.

26 The *Vancouver Fraser Port Authority (VFPA)* operates the *Port of Vancouver*, which includes Burrard Inlet, Indian Arm, English Bay, the Fraser River, the Pitt River and Roberts Bank.

26.1 The Operations Centre is the primary contact for the port authority and is open 24 hours a day, seven days a week, 365 days per year.

Operations Centre
Port of Vancouver
Telephone: +1-604-665-9086
Email: harbour_master@portvancouver.com
Web: www.portvancouver.com

27 The *Port Information Guide* for the *Port of Vancouver* was established pursuant to Section 56 of the *Canada Marine Act*. The practices and procedures apply to all users in the port, including pleasure craft, recreational vessels, and tenants. The guide is available on the *Port of Vancouver* website.

30 **Vancouver** is a large city well provided with hospitals and complete municipal facilities, amenities include a *YMCA, YWCA* and consulates for about forty countries. The *Mission to Seafarers* (604-253-4421) is located at 401 East Waterfront Road. The *Mariners Clinic* (604-683-0206) provides comprehensive medical care for sailors and other affiliated industries. The Clinic is located at 1160 Burrard Street.



31 **Pilotage** is compulsory. Vancouver is in Area 2 of the Pacific Pilotage Region and the pilot boards in vicinity of the **cautionary buoy** off Brotchie Ledge, near Victoria. The Pacific Pilotage Authority office is in Vancouver. For details regarding obtaining a pilot see *PAC 200 — General Information — Pacific Coast* or contact:

Pacific Pilotage Authority Canada
1000-1130 West Pender Street
Vancouver, B.C. Canada V6E 4A4
Administration: 604-666-6771
Vancouver Dispatch: 604-666-6776
Victoria Dispatch: 250-363-3878
www.ppa.gc.ca



32 Vancouver Harbour and its approach, in Sector Three of the *Vancouver Traffic Zone*, are administered by *Victoria Traffic*. Assigned frequency is channel 12 (156.6 MHz). A brief description of this VTS is in *PAC 200*. Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*. **Calling-in points** are listed in Table 5.1.

Table 5.1 Calling-in Points — Vancouver Harbour

Number	Name	Description
15A	Iona	Line running from *49°12'18"N, 123°15'50"W* to *49°12'18"N, 123°25'53"W*
15B	Cape Roger Curtis	Line running from *49°12'18"N, 123°25'53"W* to *49°20'24"N, 123°25'53"W*
19	Dundarave	Line running 000°–180° (True) through buoy "QB" *49°19'02.5"N, 123°12'00"W*
20	Vanterm	Line running 358°–178° (True) from *49°17'23"N, 123° 04'33"W* to *49°18'21"N, 123° 04'37"W*
21	Berry Point	Line running from 000°–180° (True) from *49°17'43"N, 122°59'09"W*
22	Roche Point	Line running from 000°–180° (True) from *49°18'02.5"N, 122°57'17"W*

33 **Calling-in Point 15A Iona** is a change from Sector One *(Victoria Traffic)* to Sector Three *(Victoria Traffic)* and is a line due west of the *Iona Breakwater light* intersecting with *15B (Chart 3463)*.



34 **Calling-in Point 15B Cape Roger Curtis** is a change from Sector One *(Victoria Traffic)* to Sector Three *(Victoria Traffic)* and is a line due south of *Cape Roger Curtis light (417)* intersecting with *15A (Chart 3463)*.

35 **Calling-in Point 19 Dundarave** is a line running through *Burrard Inlet light buoy QB (388)*.

36 **Calling-in Point 20** *Vanterm* is a line running through the west end of *Vanterm* to *49°18'21"N, 123°04'37"W*.



37 **Calling-in Point 21 Berry Point** is a line running through *Berry Point light (411)*.



38 **Calling-in Point 22 Roche Point** is a line running through *Roche Point light (412)*.

39 **Anchorages** are available in English Bay (North and South), the Inner Harbour and Indian Arm. Anchorages are listed in Table 5.2. For additional details, see the *Port Information Guide*, available on the *Port of Vancouver* website.

4.5 Anchorages

Anchorage Requests

Every effort will be made to assign Anchorages 24 hours prior to the arrival of a vessel, subject to availability, providing at least 24 hours notice is given. However, it is understood that some requests due to emergencies, berth delays etc. may require immediate assistance. Victoria Marine Communications and Traffic Services Centre (MCTS) may be contacted at any time after office hours at 250-666-6333. When necessary MCTS will contact the Harbour Patrol Vessel or the Duty Harbour Master.

In addition, an English Bay anchorage, Inner Harbour anchorage & Indian Arm anchorage are reserved daily for emergency use.

Ships at Anchor

A continuous navigation watch must be maintained at anchor. In all circumstances, while at anchor the officer of the watch must:

1) *determine and plot the ship's position on the appropriate chart as soon as possible, when circumstances permit, check at sufficiently frequent internals whether the ship is remaining securely at anchor by taking bearings of fixed navigational marks or readily identifiable shore objects;*
2) *ensure that an efficient look-out is maintained;*
3) *ensure that inspection rounds of the ship are made periodically;*
4) *observe meteorological and tidal conditions and the state of the sea;*
5) *notify the master and undertake all necessary measures if the ship drags anchor;*

6) *ensure that the state of readiness of the main engines and other machinery including 2nd anchor is in accordance with the master's instructions;*
7) *if visibility deteriorates, notify the master and comply with the applicable regulations for preventing collisions at sea;*
8) *ensure that the ship exhibits the appropriate lights and shapes and that appropriate sound signals are made at all times, as required;*
9) *take measures to protect the environment from pollution by the ship and comply with applicable pollution regulations;*
10) *Continuously monitory channel 12.*

Furthermore, to ensure a safe and seaworthy condition at anchorage, vessels are advised that they should not completely deballast until cargo-loading operations have begun.

Anchorage Information

When making an anchorage request the following information should be entered in PGP:

- *name of agency handling ship*
- *name of agency representative requesting the anchorage*
- *ships name*
- *ships length overall*
- *ships draught upon arrival at the anchorage*
- *ships estimated time of arrival at the Port*
- *ships estimated length of stay at anchor*
- *type of cargo to be loaded/discharged*
- *any other pertinent information:*
  - *part-loaded*
  - *taking bunkers*
  - *machinery defects*
  - *2nd Narrows transit, etc.*

Other Anchorages

In times of congestion within the Port, vessels may be directed to anchor off Vancouver Island. These anchorages are assigned by the Pacific Pilotage Authority or by local port authorities.

Anchorage Priorities

Anchorages other than for the Inner Harbour are assigned on a first come first serve basis subject to availability. However, this does not apply to vessels waiting for other ports, or not utilizing the Port. These vessels will be assigned anchorages subject to availability.

Seasonal Anchorages

Vessels in anchorages 13, 14 & 15 are susceptible to dragging in strong southerly winds. The use of these anchorages is restricted from 1st November to 1st April when strong southerly winds are predominant.

Anchorage Warnings

Victoria Traffic will broadcast on CH12 a wind warning advisory for all vessels at anchor in the Port of Vancouver, under the following circumstances:

1) *When winds reach or exceed 30 knots from any direction at First Narrows;*
2) *When winds are West to North West 20 knots or greater at First Narrows and a gale warning for North Westerly winds has been issued for Georgia Straight;*
3) *At the discretion of the Harbour Master or Victoria Marine Communications and Traffic Services Centre (MCTS).*

Cancellations

The anchorage warning will be cancelled when:

1) *Winds have abated below 30 knots for over one hour (below 20 knots for over one hour if from the West or North West);*
2) *At the discretion of the Victoria Marine Communications and Traffic Services Centre (MCTS).*

Improperly Anchored Vessels

If a vessel fails to anchor in its assigned anchorage or if a vessel drags out of position in the anchorage, and:

1) *The vessel is endangering other vessels at anchor, or*
2) *The vessel is obstructing the use of other anchorages*

The vessel will be required to be repositioned by a BC Coast Pilot, and to absorb all costs associated with the repositioning.

41 Vancouver is a port of entry for customs and immigration, and officials board on arrival. *Vancouver Commercial Operations West* is at 333 Dunsmuir Street (1-800-461-9999). Vancouver is also the quarantine station for British Columbia. Tugs are available for berthing and running lines. Linesmen are available through local shipping agents.

42 Fresh water is available at most berths. All types of provisions, as well as deck and engine stores are available. Bunker fuel oil and diesel oil are available in any quantity at oil company wharves or are delivered by tank barge alongside.

43 Labour is available through local stevedoring firms. Tugs are available for berthing, shifting and running lines. Ships gangways can be easily utilized at most berths. The port is well provided with companies equipped to undertake repairs to all types of marine instruments and for compass adjusting.

44 The Port is ISPS compliant with a fully staffed security department and 24-hour marine surveillance. Card-only

Table 5.2 Vancouver Harbour Anchorages

Anchorage	Latitude ° ′ ″	Longitude ° ′ ″	Max LOA (m)	Depth at centre of anchorage (m)	Minimum depth within anchorage area (m)	Notes
South English Bay						
1	49 17 57 N	123 14 19 W	400	60	48	Cape size capable
2	49 17 33 N	123 13 53 W	260	37	14	
3	49 18 04 N	123 13 33 W	400	45	37	
4	49 17 39 N	123 13 11 W	260	37	28	
5	49 17 15 N	123 12 42 W	230	21	12	
6	49 18 12 N	123 12 48 W	400	40	30	Cape size capable
7	49 17 47 N	123 12 25 W	260	27	23	
8	49 17 22 N	123 11 59 W	230	19	16	
9	49 16 56 N	123 11 33 W	190	12.3	10	
10	49 18 19 N	123 12 03 W	400	30	24	Cape size capable
11	49 17 54 N	123 11 38 W	260	25	19	
12	49 17 29 N	123 11 14 W	230	18	14	
13	49 17 05 N	123 10 49 W	190	11.8	10	
14	49 18 25 N	123 11 19 W	400	24	21	Cape size capable
15	49 18 01 N	123 10 53 W	260	19	17	
U	49 17 45 N	123 15 13 W	400	47	28	Short term only
Z	49 17 09 N	123 10 00 W	100	10.3	9	
North English Bay						
16	49 19 57 N	123 13 08 W	260	40	20	
17	49 19 56 N	123 13 54 W	260	52	32	
18	49 19 55 N	123 14 39 W	260	55	32	
Inner Harbour						
A	49 18 11 N	123 05 26 W	300	35	24	
B	49 18 06 N	123 04 46 W	260	23	19.4	
C	49 18 01 N	123 04 11 W	260	21	16.2	
D	49 17 39 N	123 05 03 W	300	35	29.8	
E	49 17 44 N	123 03 55 W	230	16	15.7	
X	49 18 17 N	123 06 05 W	185	20	17	
Y	49 18 01 N	123 03 35 W	260	16	14.8	Short term only; pilot to remain on board
W	49 17 43 N	123 05 54 W	300	55	30	Short term only; pilot to remain on board
Indian Arm						
K	49 17 51 N	122 56 52 W	260	30	23.5	
L	49 17 55 N	122 56 07 W	260	18	15.7	
M	49 18 23 N	122 56 17 W	260	26	19.9	Use only if no other suitable anchorages are available
N	49 17 39 N	122 58 04 W	260	15.6	15.3	Use only if no other suitable anchorages are available

Source: www. portmetrovancouver.com
Accessed: October 2, 2013

gate access is in place at all terminals. The Port provides 24-hour closed circuit television monitoring of roadways and cruise terminals.

45 *Vancouver Police Department Marine Unit* has two patrol vessels based in the harbour. They can be reached on Channel 12, or in an emergency on Channel 16, or call 911.



46 Small craft berthing facilities are available in False Creek and Coal Harbour. In North Vancouver there are small craft facilities in **marinas** at Mosquito Creek and at *Lynnwood Marina & Light Industrial Park* (604-985-1533), located between Second Narrows and Lynnterm. **Marinas** for small craft are also at Reed Point in Port Moody and Deep Cove in Indian Arm.

47 Railroads serve the port and provide continent-wide transportation for freight and passengers. The *Greater Vancouver Transportation Authority, (Translink)* maintains local transit facilities. Bus services are available to all points in Canada and the United States. World-wide air services are available for passengers and freight at the *Vancouver International Airport*. Local airlines provide services to places within the province. Seaplane services to many of the more remote places on the coast and helicopter service primarily to Victoria are available.

48 *BC Ferries* (www.bcferries.com) maintains regular passenger and vehicle **ferry** services between the mainland and the Sunshine Coast, southern Gulf Islands, and Vancouver Island.

49 Heliports are at Children's Hospital, Vancouver Hospital, Health Science Centre, and on the south shore of the harbour between *Canada Place* and *Centerm*. Several private heliports are around the harbour.



50 Tidal predictions in the approach to Vancouver Harbour are given for Point Atkinson (7795) and tidal differences, referenced on Point Atkinson, are given for False Creek (7710). In the west portion of Vancouver Harbour, between First and Second Narrows, tidal predictions are given for Vancouver (7735). East of Second Narrows tidal differences referenced on Vancouver are given for Port Moody (7755), Deep Cove (7765) and Buntzen Lake (7771). Tidal predictions and differences are in *Canadian Tide and Current Tables, Volume 5*.

51 Predictions of times and rates of maximum current and times of slack water are given for First Narrows (4000) and Second Narrows (4100) in *Canadian Tide and Current Tables, Volume 5*.



52 West of First Narrows, between it and **buoy** *QB* 2.5 miles west of Lions Gate Bridge, the ebb current is preceded by a well-defined tide line. Surface currents west of the tide line are slack but at a depth of 10 m a strong west current in excess of 2 kn is usually present.

53 In First Narrows duration of slack water varies and is sometimes considerable. In the narrowest part of the channel rate of tidal stream varies greatly and can be as strong as 6 kn. The flood going east through First Narrows is straight and without turbulence as far as Brockton Point, where extensive rips develop on large tides.

54 The ebb follows the fairway from Brockton Point but on passing Lions Gate Bridge it sets in a narrow band along the north shore. The ebb can attain 4 kn 0.2 mile off Navvy Jack Point. However 0.6 mile off this point in the fairway it seldom exceeds 1 kn. On strong ebbs a distinct front exists along the junction of the main stream, with the relatively weak currents to the south. It is often marked by a line of rips, dangerous to small craft, especially in the area near the mouth of Capilano River.

55 In the west portion of Vancouver Harbour between First and Second Narrows, surface current is not always indicative of current throughout the water column during late spring and summer. On a rising tide strong easterly bottom currents may be present, especially off Neptune Bulk Terminals, even though there is slack water at the surface.

56 Between Brockton Point and Neptune Bank, 2.5 miles east, tidal streams tend to circulate anti-clockwise both on flood and ebb. On the ebb, the main stream sets west in central and north parts of the harbour and a weak eddy sets east along the south shore. On the flood, the main stream sets strongly from Brockton Point toward *Centerm* 1 mile ESE. Currents along the north shore, after a period of weak velocity and variable direction following slack water, form an eddy that continues west and re-enters the main stream opposite Brockton Point.

57 Between First and Second Narrows strongest currents occur 3 hours before turn to ebb when velocities can attain 2 kn setting ESE off *Centerm* on the south shore, then again 2 hours before the turn to flood when velocities can attain 2 kn setting west along the north shore.

58 Inshore eddies within Vancouver Harbour are unpredictable. No reliance should be placed on anticipated direction of tidal stream alongside any wharf. Vessels berthing should have anchors in readiness.

59 Meteorological information for *Vancouver International Airport* and a frequency of fog table for Vancouver Harbour are in the Appendices.

First Narrows

Chart 3493

60 **First Narrows** forms the entrance to the west part of Vancouver Harbour. The entrance channel lies between Lions Gate Bridge and Brockton Point. It is marked by Lions Gate Bridge (Inbound and Outbound) Sector lights, and is maintained to a least depth of 15 m.

61 **Caution. — Navigating First Narrows is challenging, particularly for small craft. High traffic volumes and adverse sea conditions caused by wind, tide, and river outflow may be encountered. Mariners must exercise caution and keep a sharp look out at all times.**

61.1 The *Safe Boating Guide — Burrard Inlet* contains information for small vessel and pleasure craft operators. The *Safe Boating Guide — Burrard Inlet* is available on the *Port of Vancouver* website.

62 First Narrows Traffic Control Zone (TCZ-1) procedures are described in the *Port Information Guide*, available on the *Port of Vancouver* website.

3.1 First Narrows

3.1.1 Definition

First Narrows is defined as those waters in Vancouver Harbour bounded to the east by a line drawn from Brockton Point to Burnaby Shoal, then 000° True north; bounded to the west by a line drawn from Navy Jack Point to Ferguson Point.

3.1.2 Passing and Overtaking

Deep sea and large coastal vessels are not permitted to meet or overtake each other between Calamity Shoal Buoy and Capilano Light Beacon (First Narrows Light).

Deep sea and large coastal vessels are not permitted to overtake other vessels transporting dangerous goods between Brockton Point and Capilano Light Beacon.

3.1.3 Towing, Tugs and Tows

1) *The maximum allowable dimensions of log rafts are as follows:*
   - *forty sections total content*
   - *twenty sections overall length*
   - *two sections overall width.*
2) *Log rafts over 10 sections in length require an assist tug. Unless cleared by the MCTS Centre, eastbound tugs with tows bound for Seaspan and the Navy Buoy area shall cross the channel east of Burnaby Shoal.*
3) *The maximum length of tow line to be used between Capilano light and the Second Narrows MRA is 55M (180 ft).*

3.1.4 Maneuvering within First Narrows

The following applies to vessels maneuvering in First Narrows:

1) *All vessels are to keep to starboard of mid channel unless otherwise authorized by the MCTS Centre.*
2) *Vessels entering First Narrows are to be in receipt of a Traffic Advisory issued by the MCTS Centre not later than Burnaby shoal westbound or Dundarave eastbound.*

3.1.6 Clearing Narrows

The term "Clear Narrows" is defined as the transit of a vessel through either First or Second Narrows, unimpeded and not met, overtaken or crossed ahead of by any other vessel.

The MCTS Centre will issue a "Clear Narrows" clearance upon request by the master of a vessel that requires a clear passage through either First or Second Narrows, provided that traffic conditions allow.

The MCTS Centre will issue a "Clear Narrows" clearance on VHF Channel 16 followed by a broadcast on VHF Channel 12.

Light tugs and other highly maneuverable small vessels may be granted a compliance exemption from the MCTS Centre.

63 Current tables giving daily predictions for First Narrows (4000) are published in *Canadian Tide and Current Tables, Volume 5*.

64 *First Narrows light (394)*, 0.35 mile NNW of Prospect Point, at the outer end of the mud flats off Capilano River, is shown from a white tower with a green band at the top on a **dolphin**.

65 **Capilano River** is a mountain stream having its source in mountains east of Howe Sound, it then flows in a south direction and enters Vancouver Harbour north of Prospect Point. Owing to the high elevation of its source, and the precipitous nature of its descent down the mountains, freshets are sudden and destructive.

66 **Caution. — Vessels entering or leaving First Narrows in the vicinity of Prospect Point should exercise great caution passing the mouth of Capilano River. If the river is in flood a considerable set toward Prospect Point can be experienced at certain stages of tide.**

67 **Prospect Point** *(49°19'N, 123°08'W)* is a high bluff on the south side of First Narrows. *Prospect Point light (392)*, at the foot of the bluff, is shown from a white tower with a red band at the top.

68 **First Narrows Bridge** *(British Columbia Ministry of Transportation and Infrastructure)*, known locally as **Lions Gate Bridge**, is a fixed span road suspension bridge that crosses First Narrows close east of Prospect Point. Vertical clearance under the centre of the span is 61 m. Under the remainder of the navigable channel it is 58.5 m.

69 Fixed red **lights** are shown from the tops of the main towers. Two fixed white **lights** are shown on the underside of the bridge to indicate channel limits. Fixed yellow **lights** are shown from the centres of the bases of the two main towers. Four isophased yellow **lights** *(392.7, 392.8, 393.6, 393.7)* are shown to mark the bridge camber so pilots can ensure adequate air draft clearance. They are synchronized to flash together.

FIRST NARROWS BRIDGE (LIONS GATE) (2005)



70 *Lions Gate Bridge Inbound Sector* **light** *(392.6), and Lions Gate Bridge Outbound Sector* **light** *(393.5),* on the bridge mark the channel east of the bridge to Brockton Point. White sectors indicate preferred channel and are not to be used east of Brockton Point.

71 **Calamity Point**, on the north side of First Narrows about 0.4 mile east of Lions Gate Bridge, has a ridge of drying boulders extending from it. A **submarine pipeline** (water intake) extends 100 m offshore. *Calamity Point light (395)* is shown from a white tower with a green band at the top on a **dolphin**.

71.1 A CHS current metre is located 25m SW from Calamity Point Light in Vancouver Harbour approximately 2 m off the bottom.

72 A **conspicuous tower** with a copper roof, 8.5 m high, built over the north shaft of the First Narrows pressure tunnel is on the north side of the narrows, about 0.15 mile SE of Calamity Point.

73 *Calamity Shoal light buoy Q65 (395.3),* close south of the shoal spit extending south from Calamity Point, is a **port hand buoy**.

74 **Parthia Shoal** is on the south side of First Narrows, the bottom is covered in boulders. **Submarine pipelines** extend 0.15 mile offshore near Parthia Shoal.

75 **Brockton Point** is at the SE end of First Narrows. A white tower with a red band that formerly supported a navigation light is conspicuous.

Vancouver Harbour — Western Portion

76 **Vancouver Harbour** — **Western Portion** is the area between First and Second Narrows.

77 Vancouver Harbour between Burnaby Shoal and Second Narrows is a very busy seaplane landing area. A good lookout should be kept for floatplanes, particularly in the vicinity of Coal Harbour, where the majority are based.

77.1 A **submarine cable** (fibre optic) extends from the seaplane base around Brockton Point west to Descanso Bay on Gabriola Island. For detailed information see https://connectedcoast.ca/.

78 **Anchorages** between First and Second Narrows and regulations governing them are described at the beginning of this chapter.

79 **Anchorage is prohibited** south of a line drawn from the south end of Deadman Island to *Centerm* and in Coal Harbour.

80 **Sailing is prohibited** in the portion of the harbour west of a line drawn from the west end of *Centerm*, across the harbour, to the SW end of Lonsdale Avenue.

81 The *Vancouver Sea Bus (Trans Link),* two passenger **ferries** on a regular schedule, cross Vancouver Harbour from east of Canada Place on the south side to the north side.

81.1 A **wreck** with 18.2 m over it lies 0.6 mile west of the north shore *Trans Link* station.

82 **Burnaby Shoal**, extending 0.3 mile SE of Brockton Point, is usually marked by kelp.

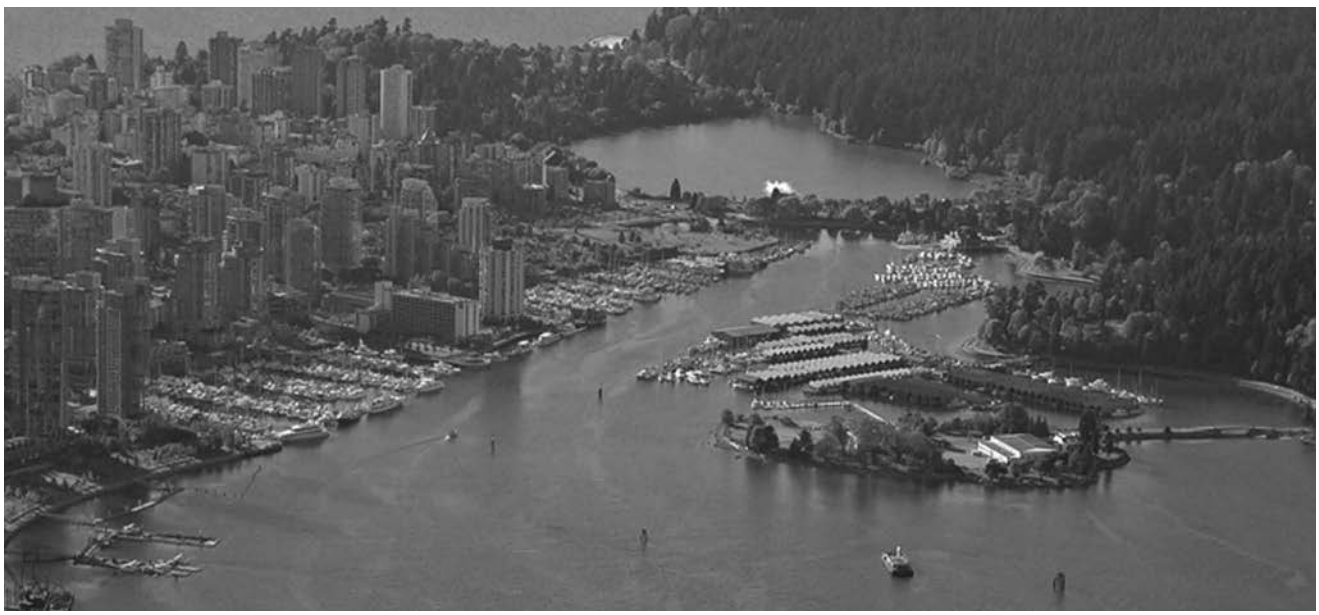
83 *Burnaby Shoal light (403)* is shown from a white tower with a red band at the top.

84 **Submarine cables** extend south from 0.2 mile south of Brockton Point to the fuel barge moored east of Deadman Island. At night lighted signs are conspicuous. A **submarine cable** extends from Brockton Point to Burnaby Shoal.

84.1 A submerged *ODAS* ***platform***, at a depth of 25.5 m, is located 0.2 mile east of Brockton Point. A **submarine cable** extends west from the platform to the Brockton Point shore station.

85 A **buoy** in the centre of the entrance to Coal Harbour marks the SW corner of the seaplane landing area.

COAL HARBOUR AND LOST LAGOON (2005)



86 *Deadman Island light (403.5)* is shown from a white tower with a red band at top on a **dolphin** at the edge of a drying flat 0.1 mile south of the island.

87 **Deadman Island**, 0.5 mile SW of Brockton Point, is connected to the mainland close north by a narrow causeway and surrounded by a drying flat with scattered boulders on it. *HMCS Discovery* is a Canadian Forces Naval Reserve training base.

88 *Coal Harbour light (404)* is on a **dolphin** at the west edge of a drying bank SW of Deadman Island.

89 **Coal Harbour**, which leads NW from the south end of Deadman Island, has a channel about 120 m wide with a depth of 3 m. It affords excellent shelter for small craft alongside any of the numerous docks. Several marinas and berths for aircraft are on the south side of the harbour. The *Vancouver Rowing Club* headquarters and docks are at the head of the harbour. Rowing shells can be encountered between the headquarters and *Centerm*. *Royal Vancouver Yacht Club* docks are on the north side of the harbour. Traffic is extremely heavy in Coal Harbour.

90 A **speed limit** of 5 kn in Coal Harbour, south of Burnaby Shoal, is strictly enforced.

91 **Loch Katrine Bank**, least depth 15.7 m, lies in the centre of Vancouver Harbour north of *Vanterm*. **Neptune Bank**, least depth 14.6 m, lies east of Loch Katrine Bank and south of *Neptune Terminals* and *Lynnterm West Gate*.

92 *Terminal Dock East light (408.5)* is on pilings 0.8 mile ENE of *Vanterm*.

93 Major port facilities west of Second Narrows are presented in a west to east sequence on the south shore (Table 5.3), and on the north shore (Table 5.4). Depths alongside are subject to shoaling. For latest depths and port information contact the *Port of Vancouver*.

94 Numerous **marinas** are located in the western portion of Vancouver Harbour. On the north shore *Mosquito Creek Marina* (604-987-4113) has limited guest moorage. *Lynnwood Marina* (604-985-1533), on the north shore in Second Narrows, offers moorage for repair customers only.

Second Narrows

Chart 3497

95 **Second Narrows** *(49°18'N, 123°02'W)*, 4.5 miles east of First Narrows, is similar in character. The bank along the north shore is caused by deposit brought down by the **Seymour River**, which flows into Burrard Inlet at this point. The fairway at its narrowest part is a little more than 90 m wide.

96 **Caution. — Navigating Second Narrows is challenging, particularly for small craft. High traffic volumes and adverse sea conditions caused by wind, tide and river outflow may be encountered. Mariners must exercise caution and keep a sharp look out at all times.**

97 Second Narrows Traffic Control Zone (TCZ-2) procedures are described in the *Port Information Guide*, available on the *Port of Vancouver* website.

Table 5.3 Major Port Facilities — Vancouver Harbour Western Portion (South Shore)

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Canada Place East	506	8.5	2.8	Cruise ship terminal. Four automatic tide-sensored gangways. Conveyors and mobile cranes for handling baggage and stores. Baggage area 6 000 m². Dock apron 9,500 m². Fresh water, telephones, garbage disposal and 24-hr tug service. Operator: Cerescorp Company.
Canada Place North	274	8.5	2.8	As above
Canada Place West	329	8.5	2.8	As above
Centerm Berths 5 & 6	644	15.0	2.1	Containers, forest products, breakbulk and general cargo. 1 45 tonne container crane 50 m outreach, 1 40 tonne cranes 37-43 m outreach, forklifts, top and side lifters, yard tractors and trailers. On-dock intermodal rail yard. 30,000 m² covered storage, 204,380 m² open storage and 1,200 TEU's. 294 reefer outlets. Fresh water at 227 tonnes/hr and telephones. Operator: DP World Canada
Burlington Northern – Santa Fe Deep-sea Berth	200	10.0	3.4	Steel, breakbulk, pulp, newsprint and lumber. Dolphins. 2,800 m² covered storage, 4,046 m² open storage. On-dock railway. Barge berth. Fresh water at 54 tonnes/hr and telephones.
Burlington Northern – Santa Fe Barge Berth	120	6.5	—	As above
Lantic Inc. (Rogers Sugar)	130	9.1	1.6	Bulk raw sugar imports. Storage 31,745 tonnes raw sugar. Maximum discharge rate approx 363 tonnes/day. Fresh water at 27 tonnes/hr and telephones. Operator: Lantic Inc.
Alliance Grain Terminal (formerly Agricore United) East Berth	213	13.4	—	Bulk grain and grain products. Seven loading spouts, two belts with loading rate 600 tons/hr per belt. 102,070 tons storage. Fresh water at 91 tonnes/hr and telephone.
Alliance Grain Terminal (formerly Agricore United) West Berth	213	11.7	—	As above
Vanterm Berth 1 & 2	340	10 – 9.5	2.5	Containers, forest products, project cargo, bulk liquid and general cargo. Five 40-tonne container cranes, side picks, yard tractors, chassis, lift trucks. On dock intermodal rail yard. 288 reefer outlets. Underground pipeline for loading bulk liquid. Storage 11,613 m² covered storage, 22,296 m² open storage, 9,200 full TEUs, 3,000 empty TEUs. Operator: TSI Terminal Systems Inc.
Vanterm Berth 3	91	9.2	2.5	As above
Vanterm Berth 4	183	11.0 – 9.8	2.5	As above; oil vessel berth.
Vanterm Berths 5 & 6	619	15.6 – 15.0	2.5	As above; container vessel berths.
Vanterm Berth 7	228	14.6	2.5	As above; utility berth.
Pacific Elevators Berth 1	185	9.6	1.9	Lay berth. Operator: Viterra.
Pacific Elevators Berth 2	215	13.7	1.9	Canola, barley, rye, peas, flax and pellets Seven loading spouts at each berth. Loading rates 2,000 tonnes/hour. Fresh water at 91 tonnes/hr, telephones and shore gangway 9 m long.
Pacific Elevators Berth 3	305	10.2	—	Travelling shiploader – 1x purse conveyor rated 1,500 tonnes/hr feeds ship loader crane.

Cascadia Grain Terminal Berth 1	274	15.0	—	Wheat, barley, flax, canola and durum wheat. Two belts, 7 spouts, loading rates 3,200 tonnes/hr. Storage 280,000 tonnes. Fresh water at 23 tonnes/hr, power (550 v, 3 phase and 100 amps for lighting), telephones and shore gangways 9 and 18 m long. Operator: Viterra Inc.

CANADA PLACE (2005)



CENTERM (2005)



PACIFIC ELEVATORS AND VANTERM (2005)



CASCADIA GRAIN TERMINAL (2005)

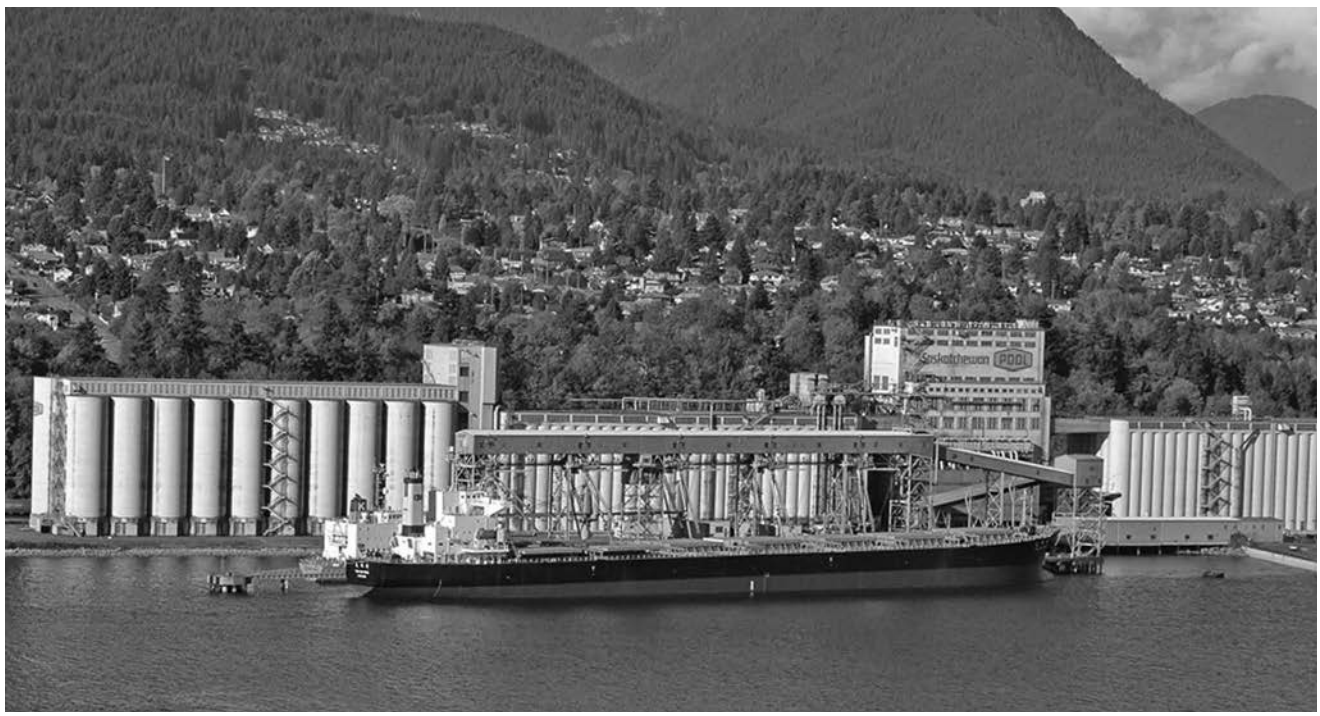


Table 5.4 Major Port Facilities — Vancouver Harbour Western Portion (North Shore)

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Kinder Morgan Vancouver Wharves Berths 1 – 5	—	—	—	Mineral concentrates, canola oil, pulp, sulphur, potash, fertilizer, agri-products and dry bulk commodities. Five deep-sea berths, 45 hectares of land, tracks for up to 400 railcars. Barge slip. Operator: Kinder Morgan Canada Terminals Ltd Partnership.
Berth 1	520 (combined with 2 & 3)	13.7	—	Concentrate rail car unloader and grab bucket ship unloader.
Berths 2 & 3	—	11.2	—	Breakbulk handling pulp and paper, and canola oil. Tractors, flat deck trailers and lift trucks. 2,790 m² covered storage.

Berths 4 & 5	410	11.6	—	Sulphur and agri-products etc. Two separate dry-bulk systems. Dual purpose rail car dumper. Two quadrant loaders at berth 4 (sulphur, fertilizer and potash). Separate dumper, conveying system and shiploader at berth 5 (agri-products).
Fibreco	137	11.5	1.7	Bulk wood chips. Berthing dolphins 73 m WSW and 55 m ENE off wharf. Designed for vessels up to 265 m long with 11.5 m draught, 42,000 dwt. Berthing velocity at 10° approach not to exceed 0.1m/sec. Loading by conveyor belt and pneumatic blower at maximum rate of 1,200 tonnes/hr. Bulk storage 100,000 bone dry units. Fresh water via 2" pipeline, power (120 v) and telephones. Operator: Fibreco Export Inc.
Vancouver Shipyards	220	—	—	Syncrolift (270 ft x 70 ft) – 1,150 ton capacity. Marine rail system (8 berths). 850 ft of water berth. Two 25 ton cranes and 3 10 ton cranes. Steel forming shop. Pain facilities. Machine and rigging shops.
James Richardson International	180	14.4	2	Canola and cereal grains. Two Peco loaders at 2,000 tonnes/hr each. Storage 108,000 tonnes.
Cargill Vancouver Terminall Berth 1	230	15.5	2	Wheat, durum wheat, canola, barley and grain by-products. Loading via two belts at 1,200 tonnes/hr each, five spouts at each berth. Storage 240,000 tonnes. Operator: Cargill Ltd.
Cargill Vancouver Terminal Berth 2	230	12.5	2	As above
Neptune Bulk Terminals Berths 1 – 3	—	—	—	Coal, potash, agri-products, chemical fertilizers, canola oil and phosphate rock. Open storage 600,000 tonnes coal, covered storage 210,000 tonnes dry bulk, 19,000 tonnes tank storage for oil. Eight tank car unloading stations for oil at Berths 1 and 2, 400 tonnes/hr. Shore gangways at all berths. Fresh water, power (440 v 3 phase 30 amps, 110/220 v single phase), and telephones. Operator: Neptune Bulk Terminals (Canada) Ltd.
Berth 1	230	15.2	1.6	Coal and canola oil. Handles ships to 180,000 dwt. Two quadrant ship loaders at 2,700 tonnes/hr. Stacker/reclaimer rated at 3,600 tonnes/hr. Secondary reclaimer 1,000 tonnes/hr. Railcar rotary dumper 3,600 tonnes/hr.
Berth 2	229	13.7	1.6	Potash, fertilizer, dry bulk and canola oil. Handles ships to 80,000 dwt. Two quadrant ship loaders at 2,000 tonnes/hr each.
Berth 3	155	13.1	1.6	Agri-products and phosphate rock. Handles ships to 65,000 dwt. Outbound – linear travelling ship loader 1,200 tonnes/hr agribulk, 2,500 tonnes/hr potash. Inbound – 2 travelling bridges with 50 tonne receiving hoppers. Storage 250,000 tonnes
G3 Terminal Vancouver	283	12.0	1.5	Grain products. Equipment to handle cargo up to 42 tonnes. 13,935 m² covered storage, 183,087 m² open storage. Lift trucks and tractor trailers. Railway services warehouses. Power (110 v/15 amps), fresh water and telephones. Operator: Western Stevedoring Company Ltd.
Lynnterm Berths 1, 2 & 3	715	15.0	1.9	Forest products, steel products, general cargo and containers. Equipment to handle cargo up to 42 tonnes. 56,000 m² covered storage, 27,113 m² open storage. Railway services warehouses. Reefer outlets. Operator: Western Stevedoring Company Ltd.
Lynnterm (Formerly Univar Canada Terminal) Berth 4	200	11.6	—	Caustic soda solution (40,000 tonnes storage, loading 1,200 tonnes/hr), ethylene dichloride (30,000 tonnes storage, loading 1,000 tonnes/hr) and ethylene glycol (17,000 tonnes storage, loading 800 tonnes/hr). Three dolphins extend from east end. North face of dolphins is for barges. South face of dolphins designed for vessels berthing port side to dock at a velocity not exceeding 0.1 m/sec. Berthing at slack water only with wind velocity less than 15 m/sec. Line pull on bollards not to exceed 75 tonnes. Allowable hull pressure: 20 t/m², maximum berthing force: 72.5 tonnes. Operator: Univar Canada.

JAMES RICHARDSON INTERNATIONAL (2005)



3.2 Second Narrows Movement Restriction Area Procedures

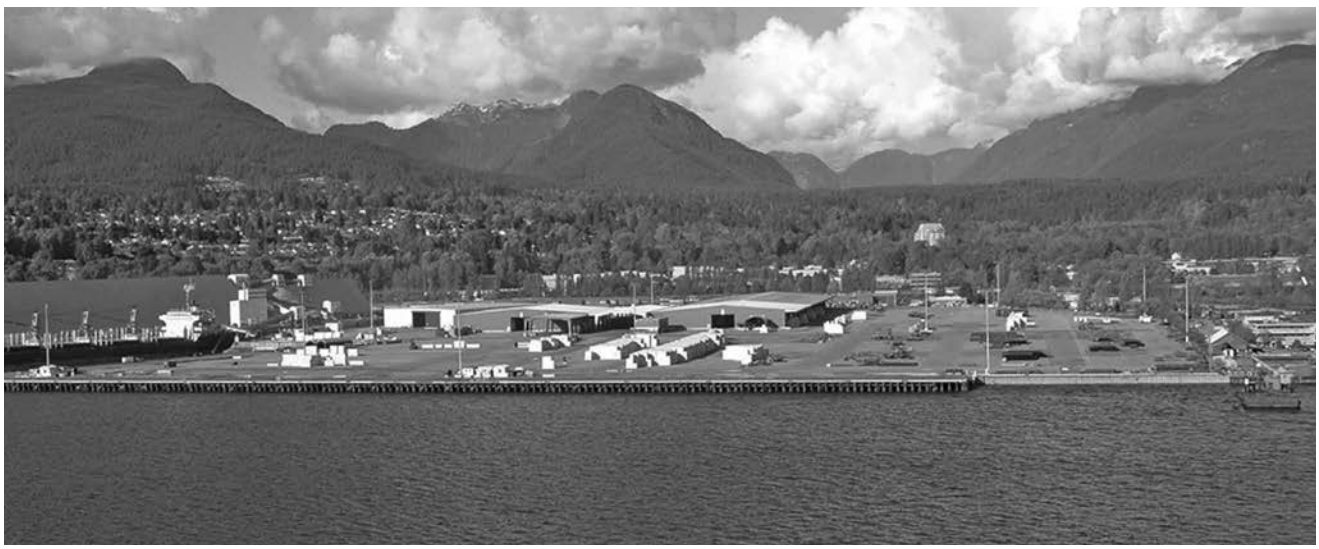
3.2.1 Introduction

The Second Narrows forms a natural bottleneck of water in Burrard Inlet, between the main port area of Vancouver harbour to the west and the Central Portion of Vancouver harbour to the east. The Vancouver Fraser Port Authority (VFPA) has established the Second Narrows Movement Restriction Area (MRA) and has developed the Second Narrows MRA Procedures, hereinafter the "MRA Procedures", in consultation with pilots and marine industry. The purpose of the MRA Procedures is to facilitate the safe navigation and efficient operation of vessels in this area of Vancouver Harbour and they are part of the VFPA's Harbour Practices and Procedures.

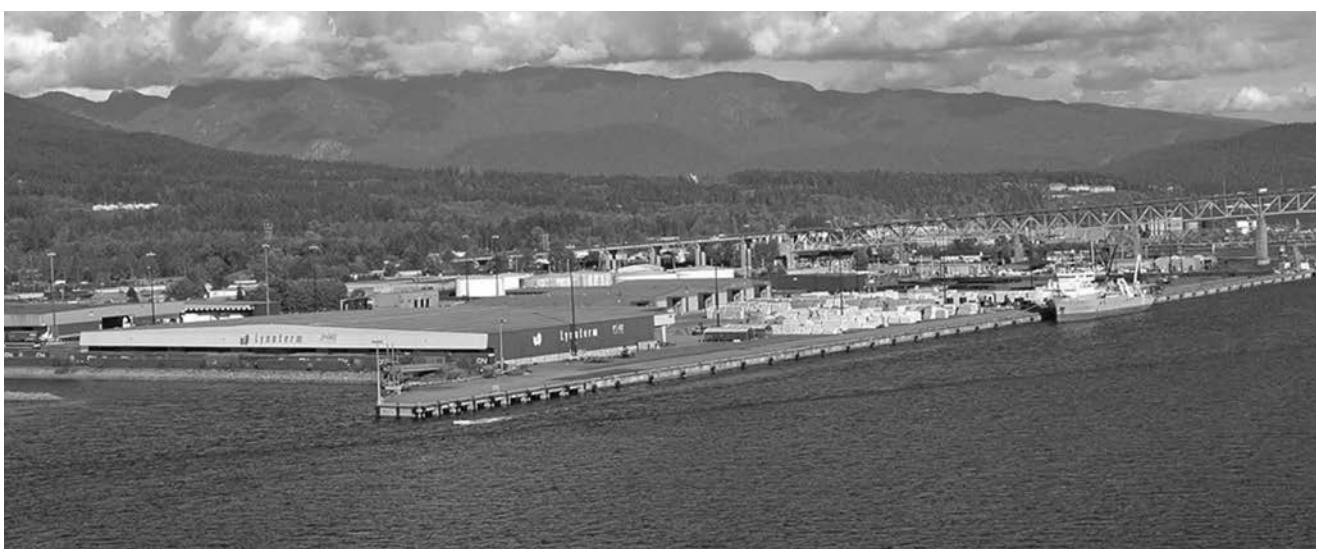
3.2.2 Definitions

Barge	*A vessel designed with no means of self-propulsion.*
Bollard Pull	*The sustained useful pulling capability of the towing vessel.*
Clear Narrows	*The unimpeded transit of a vessel through the MRA, including not met, overtaken, or crossed ahead by any other vessel.*
Clearance	*Authorization form MCTS for a vessel to enter, move within or depart from the MRA subject to any conditions specified in the MRA procedures.*
Dangerous Goods	*Polluting and dangerous cargoes in liquid bulk, explosives and highly toxic cargoes, as identified by applicable Canadian and International standards.*
Daytime	*The hours between dawn and dusk as defined by the morning and evening civil twilight, respectively.*
Harbour Master's Office	*The VFPA department that governs port practices and procedures and has responsibilities related to the safety of navigation and marine operations in the port jurisdiction.*
Holding Area	*A designated area in which vessels can hold themselves in readiness until conditions are such that a transit of the Second Narrows Bridges can be made.*
Master	*'Master' means person in charge of a ship.*
MRA	*The Second Narrows Movement Restriction Area and comprises the area enclosed within lines drawn 000° from the fixed light on the north-eastern end of Terminal Dock to the North Vancouver Shoreline at Neptune Terminals and a line drawn 000° from Berry Point Light (approximately 1.5 miles east of the CN Bridge on the South Shore of Vancouver Harbour) to the North Shore on the opposite side of the Channel.*
MRA Vessel	*A vessel restricted by these regulations during its transit of the Second Narrows Bridges.*
Non MRA Vessel	*A vessel that at the time of its transit through the Second Narrows Bridges is not restricted by these regulations.*
Piloted Vessel	*A vessel that is under the conduct of a pilot in accordance with the Pacific Pilotage Regulations.*
Recreational Vessel	*A non-MRA vessel that has the primary role of recreation (i.e. not intended for commercial use or hire).*

LYNNTERM — WEST GATE (2005)



LYNNTERM — EAST GATE (2005)



Second Narrows Bridges	*The Canadian National Railway Bridge (CN Bridge) and the Ironworkers Memorial Second Narrows Bridge (Ironworkers Bridge).*
Slack Water	*Tidal currents generally not greater than ½ knot.*
Tractor Tug	*A tug capable of creating forces in multiple directions (generally equipped with cycloid or 360° azimuth drive propulsion).*
Under Keel Clearance (UKC)	*The depth of water between a keel's clearance and the waterway bottom.*
Victoria MCTS	*The Canadian Coast Guard's Marine Communications and Traffic Services Centre in Victoria.*

3.2.3 Application

1) The MRA Procedures apply to all marine traffic in the MRA, except vessels that are engaged in law enforcement, security, or search and rescue.

2) Non-MRA vessels shall transit or move within the MRA only when safe to do so and must take into account all factors influencing safe of navigation including tidal current, weather conditions and their knowledge of the MRA.

3) The MRA Procedures do not relieve the Master from compliance with the Canada Shipping Act Collision

Regulations or other regulations, requirements or standards in respect of vessels operating in Canadian ports.

4) *Further, these Procedures do not lessen in any way, the responsibility of the Master for the safe navigation, prudent maneuvering of the vessel and preparation for unforeseen circumstances affecting the normal operation of the CN Bridge.*
5) *These MRA procedures may be further operationalised with Standard Operating Procedures developed by the pilotage company in conjunction with the Pacific Pilotage Authority.*
6) *These procedures may be varied by the Harbour Master in the event of an emergency, which causes (or is likely to cause) loss of life,* personal injury, serious environmental pollution or contributes to unsafe navigation in the harbour.

3.2.4 Second Narrows Bridges Vertical and Navigation

Vertical clearances are given as distances measured from the Higher High Water, Large Tide datum to the lowest member of the bridge structure, in way of navigation channel.

1) *The limiting height factor for a complete transit of the Second Narrows Bridges is 44 metres which is the vertical clearance at the central fixed span of the Ironworkers Bridge.*
2) *The vertical span clearances of the CN Bridge are:*
   a) *Main lift span fully raised (open position) 46 metres*
   b) *Main lift span at lowest level (closed position) 10.8 metres, and*
   c) *First fixed span immediately south of the south tower, 10.8 metres.*
3) *The central portion of the Ironworkers Bridge shipping channel where the maximum vertical clearance is available is 110 metres wide.*
4) *The vertical lift section of the Second Narrows Railway Bridge provides 137 meters clear navigation width between rubbing fenders.*

3.3 Transit Restrictions

3.3.1 Operational Periods

1) *Operational Periods are established on either side of high and low water slack tides and are based on slack water or stemming 1 and 2 knot limiting current.*
2) *When available, real time tide and current information should be used in conjunction with predicted Operational Periods to improve* the safety and efficiency of operations in the MRA.

3.3.2 Vessel Restrictions

1) *The following vessels are subject to observing the Operational Periods during their transit of the Second Narrows Bridges:*
   a) *Vessels carrying over 6,000 tonnes of cargo and,*
   b) *All piloted vessels, regardless of tonnage*
2) *Tug and barge combinations specifically designed for pushing and tractor tugs towing alongside, may transit with a barge carrying 6,000 to 10,000 tonnes of cargo, regardless of current direction, when not employing a pilot.*
3) *Vessels with Length Overall plus Breadth (LOA + B) greater than 265 meters require two pilots and are subject to daylight passage of the MRA.*
4) *Tanker vessels greater than 185 meters are restricted to daylight transit through the MRA when in product.*
5) *Vessels with LOA+B greater than 295 meters are restricted from transiting 2nd Narrows without prior approval of the Harbour Master.*
6) *Tankers loaded to 12.5 m or greater shall be trimmed 15 cm by the stern.*
7) *Vessels found by the pilots to have unacceptable maneuvering characteristics may be refused permission to transit or subjected to* special restrictions.

3.3.3 Navigation Channel Clearances

1) *The following guidelines apply to the transit of vessels through the Second Narrows:*
   a) *The minimum channel width required for transiting the MRA is 2.85 times the vessel beam.*
   b) *A minimum 10% UKC clearance calculated using the static draught, i.e. the draught of the vessel when it is not moving through the water, is required.*
   c) *The pilot in conjunction with the master should evaluate these conditions prior to the transit.*
2) *Vessels with an air draught in excess of 42 metres must report the maximum air draught of the ship or floating equipment at least 24 hours in advance to the Harbour Masters Office. The Harbour Master may approve the transit based on calculation of the air draught* clearance or require verification of the air draught by a competent surveyor prior to transit.

3.3.4 Transit Speed

1) *MRA vessels shall transit within the MRA at a speed through water no greater than 6 knots, except when safety of navigation requires otherwise.*
2) *All other vessels within the MRA shall proceed at a safe speed that will allow them to properly react according to the prevailing circumstances and condition.*

3.3.5 Clear Narrows

1) *A Clear Narrows order is required for:*
   a) *MRA tanker vessels carrying dangerous goods or pollutant cargoes in bulk.*
   b) *Other vessels with special transit requirements that require the approval of the Harbour Master.*
2) *Light tugs are permitted to transit through the Second Narrows bridges during a Clear Narrows condition providing a ship to ship agreement has been reached with the vessel(s) for which a clear Narrows has been announced.*
3) *All other vessels shall observe the Clear Narrows order and not interfere in any way with the passage of a vessel for which a Clear Narrows has been issued. MCTS may direct such vessels to a suitable Holding Area until conditions are such that a transit of the Second Narrows Bridges can be made.*

3.3.6 Order of Transit

The following order of priority applies to vessels transiting the MRA:

1) *MRA vessels have priority over Non-MRA vessels when transiting the MRA*
2) *Vessels carrying dangerous goods have priority over other vessels within their respective group when transiting the MRA*

3.3.7 Wind Restrictions

There are no standing wind restrictions for the MRA. However, when wind warnings are in effect, the Master and/or Pilot shall take into consideration such factors as light vessel draught and/or high freeboard, when planning to transit the MRA.

3.3.8 Visibility

Reduced visibility limits the ability to see aids to navigation and other vessels or landmarks. These procedures outline safety requirements to be followed when transiting under the Second Narrows Bridges during periods of reduced visibility.

1) *Piloted vessels or vessels carrying over 6,000 tonnes of cargo, intending to transit under the Second Narrows Bridges are restricted to a clear range of visibility, through the entire portion of the passage that falls within the MRA, as observed from the CN Bridge.*
2) *Pusher tug-barge combinations or tractor tugs towing alongside carrying between 6,000 tonnes and 10,000 and vessels carrying up to 6,000 tonnes of dangerous goods, may transit during conditions of restricted visibility subject to the following conditions:*
   a) *An additional tug to assist with the transit is employed*
      i) *Each tug's shipboard navigation equipment include*
      ii) *An operational Electronic Chart Display and Information System (ECDIS), as approved by IMO or meeting local industry guidelines,*
   b) *One operational radar*
   c) *The transit is restricted to a reduced MRA Operational Period limited to 1 knot current.*
   d) *The vessel operator has provided the Harbour Master's Office in advance with documentation which demonstrates to satisfaction of the Harbour Master adequate internal safety systems that have been put in place for a safe transit of the MRA and the degree of local knowledge of the MRA.*
3) *Nothing in this section shall be construed to require the Master of a vessel to commence a transit in reduced visibility.*

3.4 Communications

3.4.1 Harbour Master

The Harbour Master has overall authority in interpreting and overseeing the implementation of these procedures. In doing so, the Harbour Master consults with other partners in safety including pilots, other statutory agencies and industry experts, as required.

3.4.2 MCTS

1) *Communication with vessels transiting or intending to transit the Second Narrow MRA is provided, on behalf of the Harbour Master's Office, by the Victoria MCTS.*
2) *MCTS provides clearance to enter, move within or depart from the MRA subject to conditions specified in these MRA Procedures. When a "clearance" is given to a vessel to transit the Second Narrows MRA, MCTS shall provide information of any other known traffic intending to transit within 20 minutes of the transit time for which the clearance is given.*
3) *MCTS shall also, at this time, advise of any specific orders regarding the transit which may be issued by the Harbour Master's Office.*
4) *Where certain vessels are required to wait pending the transit of another vessel, they shall be so advised prior to leaving berth, weighing anchor, or entering the MRA.*
5) *Vessels requiring tugs shall indicate to MCTS that such tugs will be in place prior to proceeding into or moving within the MRA.*

3.4.3 CN Bridge

The CN Bridge operations, on receipt of an MRA vessel's ETA, shall endeavour to make the CN Bridge available with the lift span elevated 30 minutes prior to the ETA.

1) *All vessels requiring the CN Bridge lift span be raised shall establish communication on VHF Channel 12 with the CN Bridge Operator, immediately prior to approaching the Second Narrows Bridges, indicating their intention to request for the lift span to be raised.*
2) *The communication of the MRA Vessels shall include:*
   a) *A statement of intentions, prior to departing from a Vancouver Harbour location or upon entering English Bay, when underway*
   b) *ETA at the CN Bridge; and*
   c) *Confirmation of such ETA on reaching the MRA.*
3) *In the absence of clear verbal communication between vessel and bridge operator, the vessel shall sound three (3) prolonged blasts, repeating this signal until acknowledgement has been received from the bridge operator.*
4) *All vessels shall remain at a safe distance from the CN Bridge until the lift span is in a fully raised position.*
5) *The CN Bridge operations, when the vessel's request has been received, shall:*
   a) *Verbally confirm their understanding on VHF Channel 12;*
   b) *Display one (1) flashing red light on that side of the lift span facing the approaching vessel which indicates that the lift span is in the process of being raised to the fully raised position, or to the requested height; and*
   c) *Display one (1) flashing green light on that side of the lift span facing the approaching vessel which indicates that the lift span has been raised to the fully raised position, or to the requested height.*
   d) *Display a sector light for westbound MRA vessels that require the lift span in the fully raised position.*
6) *No vessel shall approach the CN Bridge when the following signals are displayed:*
   a) *Two (2) flashing red lights on that side of the lift span facing the approaching vessel which indicates that the vessel is to stop at once or, if necessary, go astern; or*
   b) *A vertical row of four (4) fixed white lights on the centre of the main lift span which indicates that another vessel is approaching from the opposite direction.*

3.5 Vessel Traffic within the MRA

1) *A non-MRA vessel may overtake another non-MRA vessel that is proceeding at a speed of less than 6 knots in the MRA, provided the vessels concerned:*
   a) *The passage does not occur within two cables of either side of the Second Narrows Bridges*
   b) *Have satisfactorily exchanged communication and signals between them*
2) *Under no circumstances shall a vessel attempt to overtake, or otherwise obstruct a vessel that has approached the CN Bridge and has signalled or requested for the lift span to be raised.*
3) *An MRA vessel shall not commence its transit until an MRA vessel transiting in the opposite direction has completed its transit.*
4) *MRA vessels transiting in the same direction shall maintain a safe separation distance between them.*
5) *MRA vessels proceeding to or departing from berths within the MRA shall give way to and not interfere with the movement of MRA vessels transiting the MRA.*
6) *Non-MRA vessels shall plan their movements to give MRA vessels transiting or moving within the MRA as unobstructed a passage as is practicable and consistent with good seamanship.*
7) *All vessels, including sailing vessel, transiting the MRA shall be under adequate mechanical power.*
8) *A vessel having a defect in the hull, main propulsion machinery, steering system, or other communication or navigation system, that is detrimental to safe navigation, require prior approval of the Harbour Master's Office to transit the MRA.*
9) *Personal watercraft or jet skis are not permitted to move within or travel through the MRA due to risks associated with commercial marine traffic and the narrow channels.*

3.6 MRA Vessel Tug Regulations

3.6.1 General Requirements

1) *All tugs employed at the stern of a vessel transiting the Second Narrows MRA must be tethered tractor tugs.*
2) *Escort tugs shall be in attendance prior to entering the MRA until clear of the Second Narrows Bridges by 3 cables unless otherwise specified in these rules.*
3) *Tugs capable of generating more than 40 tonnes of bollard pull force shall have an operational tension meter that the tug operator can easily read from the conning position.*

4) Loaded (in product) tankers vessels greater than 40,000 DWT intending to transit the Second Narrows MRA require a minimum of two tugs through the First Narrows when inward or outward bound.

3.6.2 Vessel–Tug Matrix

1) MRA vessels transiting through the Second Narrows MRA, must comply with the standards for tug requirements outlined in Table 1: MRA Vessels Tug Matching Matrix, which summarizes the bollard pull requirements and the configuration of the tug package for such vessels.

Vessel Dimensions (m)		Number of Tugs		Bollard Pull (tonnes)		
Draught	LOA/LOA+B	Bow	Stern	Bow	Stern	Total
>12	LOA>200m	1	2	30	110	140
>10<12	LOA>200m	1	1 or 2	30	80	110
<10	(LOA+B)> 265m	1	1 or 2	30	65	95
>8<10	LOA>200m; (LOA+B)<265m	1	1 or 2	30	65	95
<8	LOA>200m; (LOA+B)<265m	1	1 or 2	30	50	80
>10	LOA<200m	1	1 or 2	30	50	80
>8<10	LOA<200m	1	1 or 2	30	40	70
<8	LOA<200m	1	1	20	30	50

Table 1: MRA Vessels Tug Matching Matrix

2) Transit of vessel with a LOA + B > 265 and draught greater than 13.5 meters, is subject to tug requirements and other aids to navigation system enhancement presently not in place at the MRA.

3) Vessels with additional levels of redundancy in their propulsion and control systems, which provide such vessel with extra maneuverability and safety features, may be allowed to reduce the number of tugs required in accordance with Table 1: MRA Vessels Tug Matching Matrix or Barges– Tug Requirements as applicable.

3.7 Towing and Barge Traffic

3.7.1 General

1) A vessel towing another vessel through the MRA, shall limit the length of her towline, measured from the stern of the towing vessel to the nearest portion of the vessel being towed, to not more than 60 meters. Such towline may not be lengthened until both vessels are completely clear of the bridge piers.

3.7.2 Tug Requirements for Barges

1) Barges moving within the Second Narrows MRA, must comply with the standards for tug requirements outlined in Table 2: Barges–Tug Requirements, which summarises the bollard pull requirements and the number of required tugs to transit through the MRA.

2) A towed vessel carrying dangerous goods requires an assist tug of adequate power in addition to the tug requirements set in Table 2: Barges–Tug Requirements.

Capacity (Metric Tonnes)	Number of Assist Tugs	Total BP (Tonnes)
< 6,000	—	—
> 6,000 – <10,000	1	20
10,000 or greater	2	40

Table 2: Barges–Tug Requirements

3.7.3 Log Towing

1) The overall width of log booms within the MRA shall not exceed two sections wide.

2) When transiting the MRA with more than 10 sections overall length, the Master or Person-in-Charge of a log boom shall engage, in addition to tugs required in the towing operation, one or more tugs of adequate power, to:

a) Remain close inshore off the main channel, and

b) Be able to maintain such boom in the designated holding areas located on both sides of the Second Narrows Bridges as shown on chart # 3497.

98 Current tables for Second Narrows (4100) are in *Canadian Tide and Current Tables, Volume 5*.

99 The best time for large vessels to transit Second Narrows is at or near HW slack with the first ebb being best for inbound (east-going) vessels, and the last of the flood being best for outbound (west-going) vessels. At LW slack, when tidal stream conditions permit, the last of the ebb for inbound (east-going) vessels, and the first of the flood for outbound (west-going) vessels, are considered reasonably good times to transit the narrows.

100 The current is straighter with a more uniform run during the first of the ebb than at any other stage. There are no tide-rips or eddies of noticeable size. As far as current conditions are concerned, the first of the ebb is considered the best time for safe passage inbound (east-going).

101 Current conditions on the last of the flood are reasonably good and the best time for a safe passage outbound (west-going). The current sweeps uniformly into the narrows without turbulence. It is deflected little when opposite Seymour River

except on very weak tides. Rips and eddies that appear east of the bridge are less turbulent than at the first of the flood.

102 During the first of the flood and last of the ebb, stronger rips and eddies will be encountered than at other times. When tides are large, LW slack is of short duration and velocity increases rapidly. On the first of the flood offset to the south abreast Seymour River is quite noticeable on weak tides, and rips and eddies farther east are very turbulent.

103 On the last of the ebb velocity at the bridge is about 1 kn more than it would be at other stages. Rips and eddies west of the bridge can be quite strong. A west-going vessel with a tow may find itself set north here by the main current while the object being towed can be carried south into the weak variable currents off Cascadia Grain Terminal. Towing lines should therefore be as short as possible.

104 Navigators should avoid making passage through the narrows on the first of the flood or the last of the ebb when LW at Vancouver falls below 2 m. If necessary to do so, every effort should be made to arrive at the bridge as near as possible to slack water.

105 **Caution. — Due to disturbances or other causes, predicted slack and times of maximum current can vary from the actual conditions by as much as 30 minutes. A definite set to the NW of the narrows, during the first half of the flood, should be expected. Freshets from the Seymour River cause a cross current toward the south shore that is most pronounced on the ebb tide.**

106 During the flood maximum velocity occurs about 0.2 mile east of the bridge and during the ebb at or near the bridge. Flood currents attain 6½ kn but the ebb, due to turbulence west of the bridge, seldom exceeds 5½ kn.

107 *Second Narrows West light (408.51)*, on the south shore 0.8 mile west of the highway bridge, is shown from a skeleton tower. It is a direction light bearing 266° and is intended to be used by vessels transiting the bridges from east to west.

108 **Iron Workers Memorial Second Narrows Bridge** *(B.C. Ministry of Transportation and Infrastructure)* is a fixed span road bridge with a width of 315 m between supports over the channel. It has a minimum vertical clearance of 44 m over the 110 m wide shipping channel.

109 The road bridge has six white lights marking the main shipping channel. Two face east *(408.53, 408.7)*, two face west *(408.54, 408.8)*, and centre floodlights pointing downward *(408.55, 408.6)*. Bridge piers on both sides of the shipping channel are floodlit.

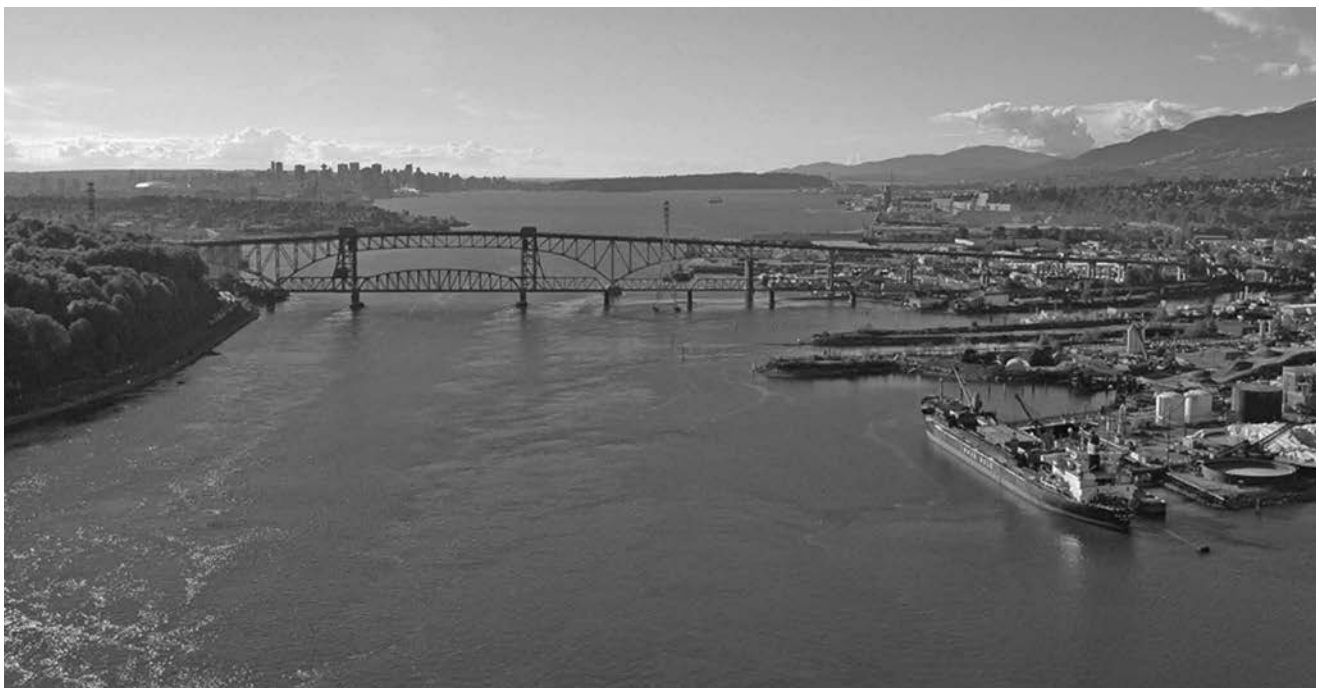
110 *CN Rail Bridge Sector light (409.35)*, on the centre of the east side of the railway bridge, is intended to be used by vessels transiting the bridges from east to west.

111 **Second Narrows Railway Bridge** *(Canadian National Railways)*, close east of the highway bridge, has a vertical lift span over the navigable channel. Limits of this channel, 137.1 m wide, are indicated by fixed red and green lights at the base of the piers supporting the lift span.

SECOND NARROWS BRIDGE LOOKING UPSTREAM (2005)



SECOND NARROWS BRIDGE LOOKING DOWNSTREAM (2005)



Minimum clearance under the raised span is 46 m and 10.8 m when the span is lowered. The first fixed span immediately south of the south tower has a vertical clearance of 10.8 m.

112 Bridge abutments on the north side of the channel are marked by green lights *(409, 409.3)*. Bridge abutments on the south side of the channel are marked by red pole lights *(409.1, 409.2)*. Green lights on the centre of the lift span indicate the span is raised *(409.6, 409.7)*. Red lights both sides of the green lights on the centre of the lift span indicate the span is lowered *(409.4, 409.5, 409.8, 409.9)*.

113 An **overhead cable** (power), vertical clearance 65 m, crosses Second Narrows close east of the railway bridge. **Submarine pipelines** cross Second Narrows about 0.2 mile east of the railway bridge.

114 *Riverside East light (409.95)*, on the north side of the channel 0.3 mile east of the railway bridge, is shown from a white square tower with a green band at top.

115 *Second Narrows light (410)*, on the north side of the channel 0.6 mile east of the railway bridge, is shown from a white square tower with a green band at top.

116 *Second Narrows East light (410.5)*, 1.1 miles east of the railway bridge, is on a **dolphin** on the north side of the channel.

117 *Berry Point light (411)*, on the N extremity of the point, is shown from a skeleton tower on a **dolphin**.

Vancouver Harbour — Central and Eastern Portions

Chart 3495

118 Major port facilities east of Second Narrows are presented in a west to east sequence on the south shore (Table 5.5), and on the north shore (Table 5.6). Depths alongside are subject to shoaling. For latest depths and port information contact the P*ort of Vancouver*.

118.1 Eastern Burrard Inlet Traffic Control Zone (TCZ-3) procedures are described in the *Port Information Guide*, available on the *Port of Vancouver* website.

119 Berths at oil refineries and at *Pacific Coast Terminals* have pollution prevention booms that are deployed only when a ship or barge is alongside. When the ship or barge departs booms are usually moored to a **buoy**.

120 **Roche Point** *(49°18'N, 122°57'W)*, 2.5 miles east of Second Narrows, is the west entrance point of Indian Arm. A launching ramp is on the west side of *Cates Park*.

121 *Roche Point light (412)* on the S extremity of the point is shown from a white cylindrical tower on a **dolphin**.

121.1 **Caution. — Westridge Marine Terminal is under construction. A barrier has been constructed around the area that extends approximately 500 m from the shore (2021).**

Table 5.5 Major Port Facilities — Vancouver Harbour Eastern Portion (South Shore)

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Chevron Canada Stanovan	62	11.7	—	Petroleum products. Berth length 110 m between mooring dolphins. Condition for approaching wharf best on first or last of ebb. Velocity during these periods seldom reaches 1 kn and the set is uniformly from east, either at an angle or parallel with wharf. On flood tides the current direction is more uncertain and can reach 2½ kn. Light range at berth.
Berry Point Terminal	122	12	—	Variety of forest products. 48,560 m² open storage. Booming grounds and mooring buoys lie off wharf.
Shell Canada Products Shellburn Outer Berth (north face)	122	12.1	—	Petroleum products. Mooring dolphins 154 m apart. Designed to accommodate 40,000 dwt tanker vessels. Partially laden vessels to a maximum displacement 52,000 dwt can be accommodated. Dolphins designed for tanker berthing with a velocity of 0.11 m/sec perpendicular to berth face and a maximum berthing angle of 5°.
Terasen Pipelines Westridge Marine Terminal	92	11.4	2.8	Crude petroleum, petroleum products and jet fuel. Six mooring dolphins 275 m apart, can accommodate vessels up to 100,000 dwt. Gravity feed crude loading from Burnaby Terminal 3,400 m³/hr, 24" crude oil loading line c/w 2x12" chiksans 10" flexible hose for vapour recovery, 2x8" hoses for jet fuel unloading maximum 1,375 m³/hr. Some crude barges require distance flanges. Fresh water, power (220-440v/100 amps), telephone and shore gangway.
PetroCanada West Jetty	43	12	1.5	Berth 90 m between mooring dolphins designed for vessels 50,000 dwt. Petroleum products handled via pipelines at 3,637 to 4,546 lmp. Fresh water at 54 tonnes/hr.
PetroCanada East Jetty	40	6	2.9	Petroleum products via pipeline at 3,637 to 4,546 lpm. Fresh water at 91 tonnes/hr and telephone. Fireboat and spill response sea truck moored at float close east.
Pacific Coast Terminals Berth 1	237	12	2.4	Bulk liquids (ethylene glycol). Handles ships up to 70,000 dwt. Loading 800 tonnes/hr. Storage 55,000 tonnes ethylene glycol and 11,200 tonnes unused tanks. Fresh water at 27 tonnes/hr and telephones.
Pacific Coast Terminals Berth 2	165	12.5	2.4	Sulphur. Single quadrant shiploader at 5,000 tonnes/hr. Bulk storage 220,000 tonnes sulphur. Fresh water at 27 tonnes/hr and telephones.

STANOVAN (2005)



BERRY POINT TERMINAL (2005)



SHELLBURN (2005)



TERASEN PIPELINES WESTRIDGE MARINE TERMINAL (2005)



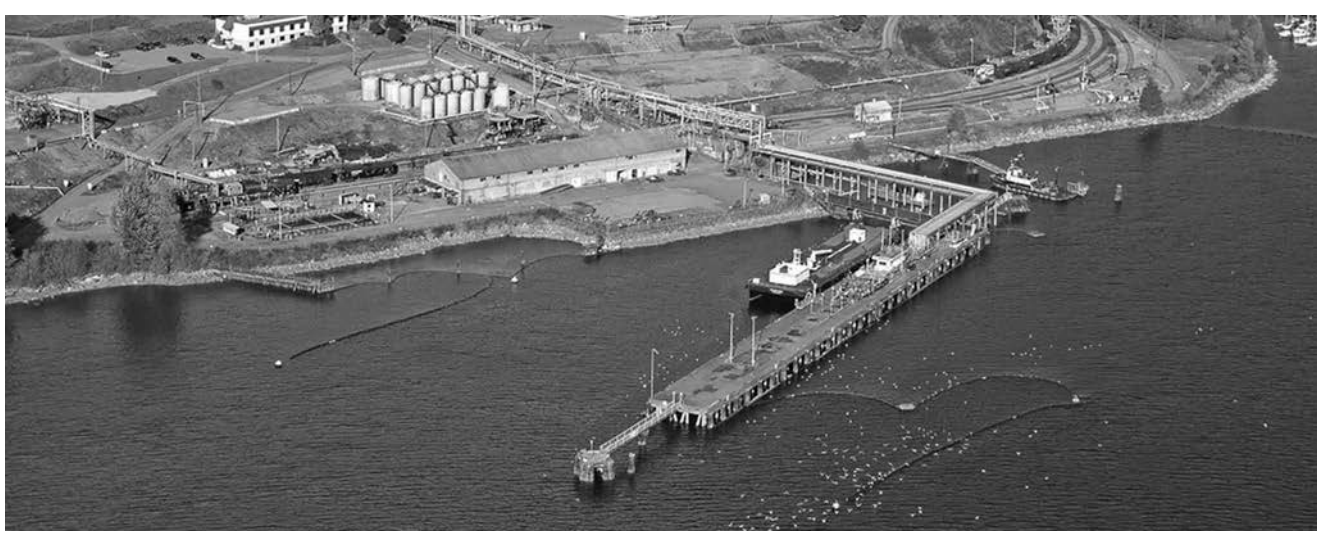
Table 5.6 Major Port Facilities — Vancouver Harbour Eastern Portion (North Shore)

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Canexus Chemicals South Berth	152	9.9 – 10.1	1.8	Imports bulk sea salt, exports chlor-alkali and hydrochloric acid. Bulk storage 27,000 tonnes salt, two tanks 11,000 tonnes each. Fresh water at 13.6 tonnes/hr and 5 m shore gangway. Two sets range lights mark limit of deep water close to shore.
Canexus Chemicals South Berth	76	6.6 – 8.5	1.8	As above
Imperial Oil Ioco Terminal (Port Moody)	165	9.2	2.1	Petrochemicals and petroleum products. Mooring dolphins off each end for vessels to 35,000 dwt. Products conveyed by pipeline and hose at 4,000 bbls/hr. Fresh water at 23 tonnes/hr and telephone. Berths for barges and coastal tankers east of main wharf.

CANEXUS CHEMICALS (2005)



IMPERIAL OIL IOCO TERMINAL (2005)



122 **Port Moody**, the east branch at the head of Burrard Inlet, is entered between **Admiralty Point** *(49°18'N, 122°56'W)* and **Gosse Point** 0.3 mile south. Near **Burns Point**, 0.45 mile SE of Admiralty Point, the inlet is about 0.2 mile wide and free of dangers. **Carraholly Point**, 0.35 mile east of Burns Point, has a drying rock ledge extending SE from it. At **Dockrill Point** a mud flat extends 0.2 mile offshore. Numerous private docks line the shore SE of the point. Mud flats at the head of the inlet are used for log storage.

123 *Gosse Point light (413), Burns Point light (414)* and *Carraholly Point light (415)* mark the entrance to Port Moody.

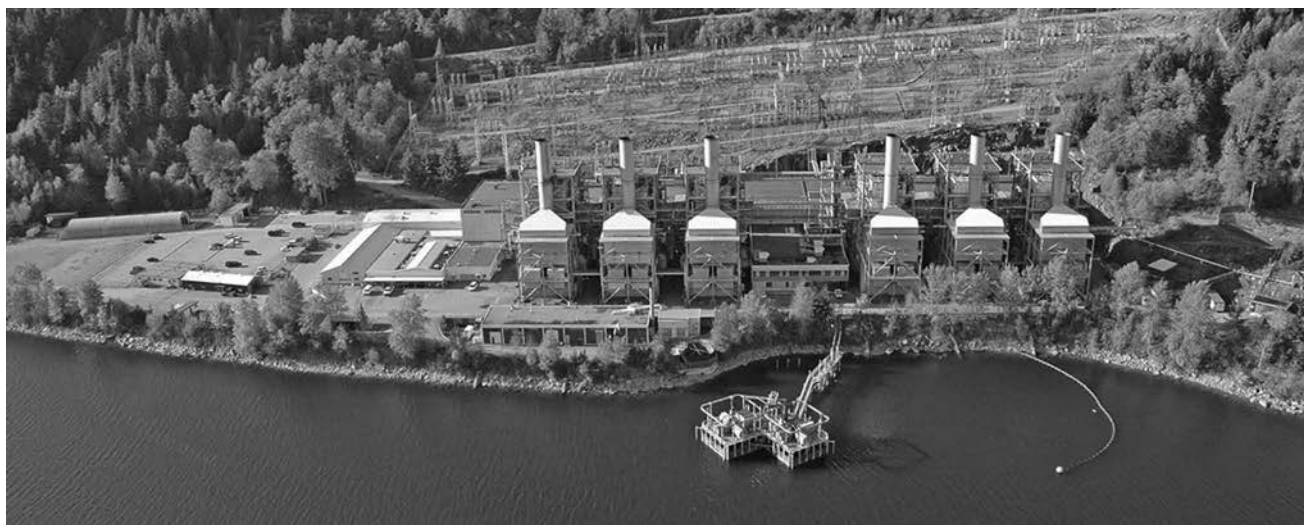
124 *Carraholly range lights (415.1, 415.2)*, in line bearing 277°, are on the north shore about 0.35 mile NE of Carraholly Point.

125 **Overhead cables** (power), vertical clearance 44 m, cross the entrance to Port Moody at Burns Point and the channel leading to Port Moody about 0.7 mile east of Burns Point.

126 **Submarine pipelines** (oil) and a **submarine cable** cross the inlet between **Ioco** and **Reed Point**. A submarine pipeline, 0.7 mile SE of Reed Point, extends 0.1 mile across the drying flat.

127 *Reed Point Marina* (604-937-1600), a large full service facility protected by **breakwaters**, is on

BURRARD GENERATING STATION (2005)



REED POINT MARINA (2005)



the south shore close west of **Reed Point**. Entrances to the marina are marked by private lights located on the floating breakwaters.

128 *Reed Point light (416),* on the south shore of Port Moody, is shown from a skeleton tower with **daymarks** and is on a **dolphin**.

129 A private light exists on a dolphin, 0.25 mile ENE of Reed Point marking the turning basin, and has a sign reading "Underwater Obstruction Keep Clear 15m (50ft)"

130 *Port Moody light (416.5)*, 1 mile SE of Reed Point, is on a **dolphin** with a **starboard hand daymark**.

131 **Caution. — Beacons, one with a port hand daymark and one with a starboard hand daymark, mark a channel that leads SSE from Port Moody light to docks and a boat launching ramp at *Rocky Point Park*. This channel is subject to silting and change; proceed with caution.**

132 **Port Moody (city)** is at the head of Burrard Inlet. Materials handled are sulphur and ethylene glycol. The port has the usual facilities of a medium sized community. A museum, launching ramp, swimming pool and picnic area located at *Rocky Point Park.*

133 Port Moody lies within Vancouver Harbour and is administered by the Vancouver Fraser Port Authority.

134 **Anchorage** is by arrangement with the Vancouver Harbour Master. Nearest official anchorage berths are in the entrance to Indian Arm. **Mooring buoys** are SE of *Pacific Coast Terminals*. A designated anchorage area for recreational vessels exists east of the *Pacific Coast Terminals*. A permit is required for overnight stays and can be obtained by phoning the *City of Port Moody* at 604-469-4552.

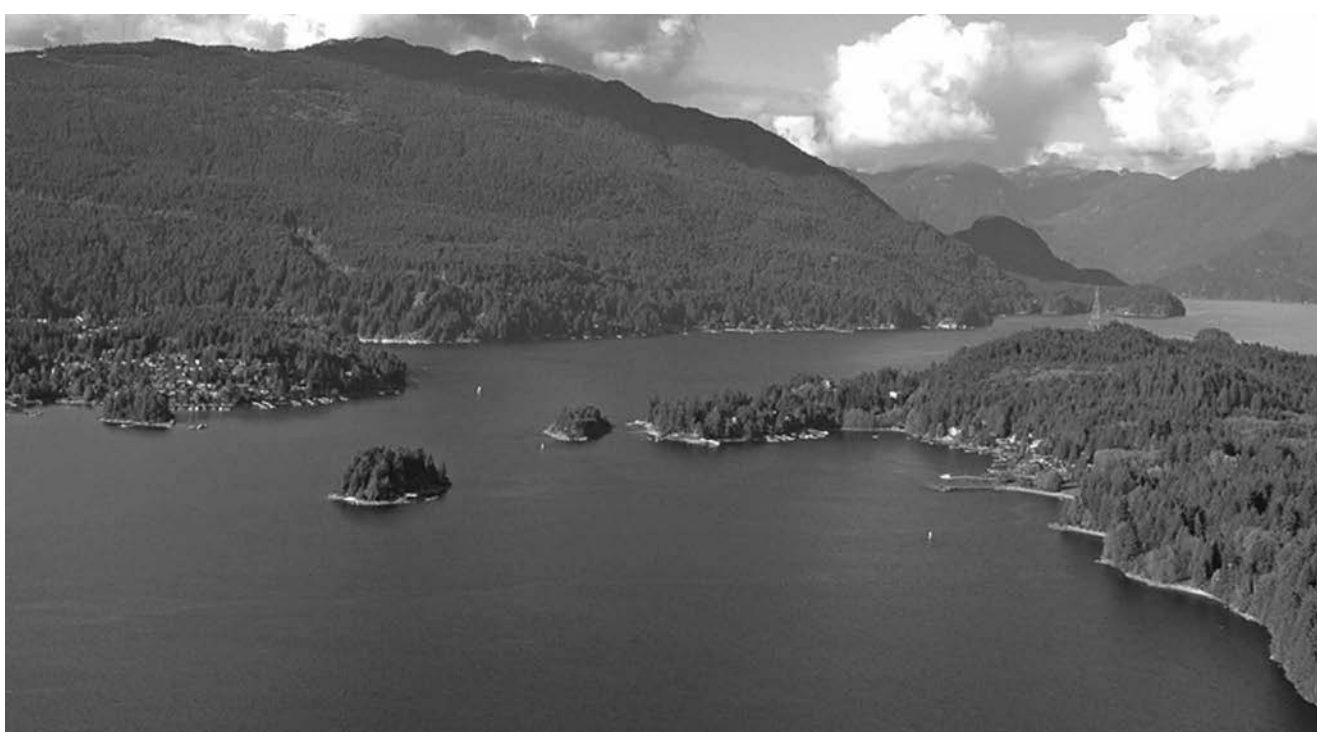
135 Tidal differences for Port Moody (7755), referenced on Vancouver, are in *Canadian Tide and Current Tables, Volume 5*.

Indian Arm

136 **Indian Arm**, entered between Roche Point and Admiralty Point *(49°18'N, 122°56'W)*, is entirely different in character from other portions of Burrard Inlet. It is enclosed on both sides by rugged mountains rising to elevations of 600 to 1 500 m. During spring and summer months melting snow falls in foaming cascades down the mountain sides and renders surface water nearly fresh. Several resorts are located in the inlet and numerous private docks line the shores. Yacht club outstations and **anchorage** are at the head of Indian Arm.

137 **Non-active ocean dump sites** are in *49°18'50"N, 122°56'17"W* and *49°20'45"N, 122°54'37"W*.

INDIAN ARM ENTRANCE (2005)



138 A **speed limit** of 5 kn is prescribed by the Vancouver Fraser Port Authority in Bedwell Bay, as well as in the area from the south side of Boulder Island to the north side of Cosy Cove. These areas are marked by lighted speed limit buoys.

139 **Dollarton** is a small community on the west shore, about 0.5 mile NE of Roche Point. Many private ramps, docks and boat-houses line the shore.

140 **Boulder Island**, about 0.5 mile NE of Dollarton, has a prominent house on its south end.

141 **Belcarra daybeacon**, on a drying rock 0.25 mile ESE of the south extremity of Boulder Island, is a white tower.




142 **Belcarra** is on the east side of Indian Arm at the south end of **Belcarra Bay**. The public wharf, with an L-shaped float, has a depth of 2.4 m alongside and is for unloading and loading only, overnight mooring is not permitted. A **submarine pipeline** runs from the **Belcarra** public wharf to **Cove Cliff**. **Belcarra Regional Park** is near the entrance of Indian Arm on the east shore.

143 **Turtle Head** *(49°19'N, 122°56'W)* and **Hamber Island**, close west, have cliffs on their south sides.

144 **Turtle Head daybeacon**, off the south end of Hamber Island, is a white tower with a red band around the top.



145 **White Rock**, west of Hamber Island, lies at the extremity of a drying rock ledge extending SE from **Grey Rocks Island**. A **submarine cable and pipeline** are laid from Grey Rocks Island to the mainland.

146 **Cove Cliff**, a community in the bay NW of Grey Rocks Island, has a public dock that dries at LW.



147 **Deep Cove**, a settlement at the head of the cove with the same name, is a residential area. It has several stores, restaurants and direct highway connection with Vancouver. A **submarine pipeline** (sewer) is laid on the south shore of Deep Cove.

148 Lighted **speed control buoys** (5 knots) are in the entrance to Deep Cove, about 125 m from south and north Shores.




149 The **public wharf** at the end of a long approach structure is 22 m long. The wharf is only for loading and unloading, and overnight mooring is not permitted. Yacht club docks with private lights are close north of the public dock. *Seycove Marina* (604-929-1251) is on the north side of the cove and has fuel facilities and limited guest moorage.

150 Tidal differences for Deep Cove (7765), referenced on Vancouver, are in *Canadian Tide and Current Tables, Volume 5*.

151 **Whiskey Cove**, **Coombe** and **Cosy Cove** are on the east shore NE of Turtle Head. Rocks, with 3 and 4 m over them, are in the north approach to Whiskey Cove.



152 An **overhead cable**, vertical clearance 49 m, crosses Indian Arm about 0.6 mile NE of Turtle Head.

153 **Black Shoal**, **Tupper Rock** and **Charles Reef** lie between **Jug Island** and **Racoon Island** in the approach to Bedwell Bay.

154 *Indian Arm Provincial Park* comprises Racoon Island, Twin Islands, Croker Island and Granite Falls.



155 **Bedwell Bay** *(49°19'N, 122°54'W)* provides one of the few **anchorages** in Indian Arm. It is exposed to occasional strong NE winds that occur in winter. A drying reef extends from the west entrance point, and 0.2 mile south of this point there is a shoal with 10.4 m over it. Speed limit signs are posted around the shores. Numerous private **mooring buoys** and **buoys** marking a water-ski slalom course are in the bay.

156 **Bedwell Bay daybeacon**, on the NE extremity of the reef extending from the west entrance point to the bay, is a white tower with a red band around the top.

157 A **speed control light buoy** is 0.6 mile SSW of Bedwell Bay daybeacon.



158 An **overhead cable**, vertical clearance 99 m, crosses Bedwell Bay.

159 **Farrer Cove**, NE of Bedwell Bay, is the site of a *YMCA* summer camp. **Belvedere Rock**, in the entrance to the cove, has 0.6 m over it.

160 **Lone Rock Point**, on the west shore abreast Racoon Island, has a private wharf on its SW side.



161 *Woodlands light (412.3)*, close south of Lone Rock Point, is on a white cylindrical tower with a green band at the top.



162 **Woodlands**, close west of Lone Rock Point, has a public dock with a 24 hour limit. A rock with 1.5 m over it lies close south of the dock. **Sunshine**, 0.3 mile NE, has a small public dock. A **submarine pipeline** (water) is laid close offshore from Woodlands to Sunshine.



163 **Twin Islands**, close-off the east shore, are joined by a drying isthmus. The channel east of the islands can be used by small craft. A rock which dries 1.5 m lies close inshore at the north end of the channel. Twin Islands offers temporary **anchorage** and the larger of the two islands has picnic and sanitary facilities. The largest Twin Island (northern) has a dinghy dock on its east side.



164 *Twin Islands light (412.4)* is shown from a white tower with a red band at the top on the north extremity of the north island.

165 **Brighton Beach** and **Orlomah Beach** are on the west shore. **Best Point** has a conspicuous three-storey house on its north side.



166 *Best Point light (412.5)* is shown from a white tower on the point.



167 **Buntzen Bay** *(49°23'N, 122°52'W)* is on the east side of the arm. BC Hydro power generating stations are at **Buntzen Lake**. **Caution should be exercised when approaching the power houses as the gates may be**

opened without warning to discharge huge volumes of water.

168 Tidal differences for Buntzen Lake (7771), referenced on Vancouver, are in *Canadian Tide and Current Tables, Volume 5*.

169 *Indian Arm Provincial Park* encompasses the waters and shorelines from Buntzen Bay north to the head of the arm.

170 **Coldwell Beach** is north of Best Point. **Silver Falls**, north of Coldwell Beach, is conspicuous from northward. **Johnson** is on the east shore opposite Silver Falls and 0.9 mile north is the site of an old sawmill. **Croker Island** is part of *Indian Arm Provincial Park*.

171 *Croker Island South light (412.6)*, on the SE extremity of the island, is shown from a white tower.

172 **Bergs**, on the west side of the arm, is the site of an abandoned sand and gravel operation.

173 A private **buoy**, at the NW end of Croker Island, has a sign that reads "SLOW NO WAKE".

174 *Burrard Yacht Club* docks are at the mouth of **Clementine Creek**.

175 **Granite Falls** *(49°27'N, 122°52'W)*, on the east side of the arm, is the site of **Fairy Falls** a conspicuous waterfall. Granite Falls offers fair **anchorage**, overnight anchoring is not recommended. A small dock allows access to campsites on shore.

176 **Granite Falls daybeacon**, close south of the falls, is a white tower with a red band at the top.

177 **Iron Bay**, north of Granite Falls, has *Deep Cove Yacht Club* docks. The coast from Iron Bay north to the mouth of **Indian River** may be used as booming grounds.

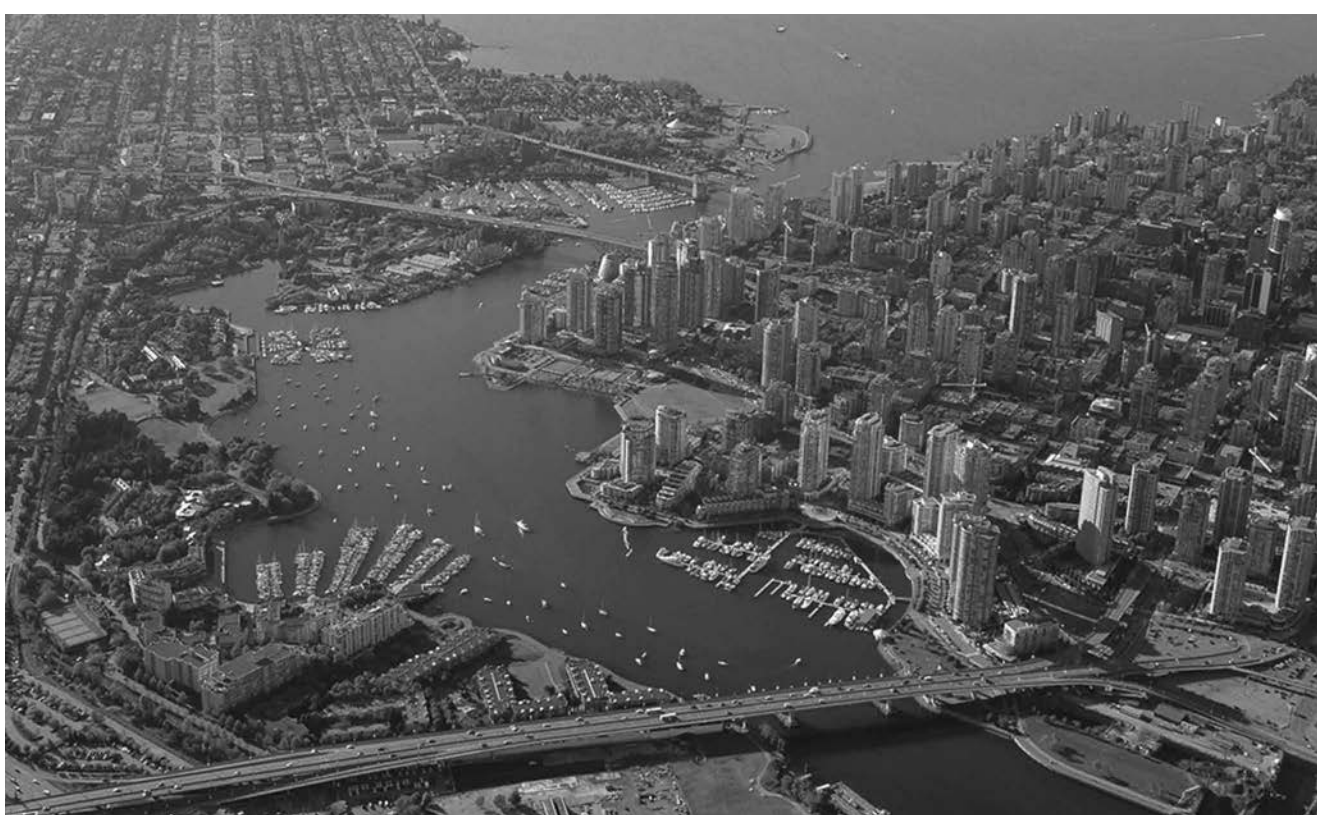
178 *Wigwam Inn* at the head of Indian Arm on its west side is an outstation for the *Royal Vancouver Yacht Club*.

False Creek

Chart 3493

179 **False Creek** *(49°16'N, 123°08'W)*, in the SE part of English Bay, is shallow and used by pleasure craft, tugs, barges and fish boats. Traffic can be considerable at times with as many as 1 200 vessels entering or leaving on busy summer Sundays. It can be identified by Burrard Bridge, the *Vancouver Maritime Museum* and the *H.R. MacMillan Space Centre*. The approach to False Creek is relatively shallow and

FALSE CREEK (2005)



no attempt to enter should be made except in the white sector of the light, on the north pier of the Burrard Bridge.

180 Full-service **marinas** in False Creek include *Pelican Bay Marina* (604-729-1442) and *Quayside Marina* (604-681-9115). Diesel, gasoline, snacks and other provisions are available at *False Creek Fuels* (604-638-0209). Mooring in unoccupied slips is available at *Blue Pacific Yacht Charters* (604-682-2161), *Cooper Boating* (604-687-4110) and *False Creek Yacht Club* (604-648-2628). False Creek **anchorage** permits are issued at the *Vancouver Welcome Centre* (604-868-4275). Marine supply stores, shops, restaurants, accommodation and recreation facilities, and attractions on Granville Island and at the public market.

181 The *False Creek Harbour Authority* (604-733-3625) provides long-term, affordable, safe and secure moorage and services for commercial fish boats and transient vessels. Contact the wharf office for tie-up instructions before landing. There is a Customs dock here.

182 *Vessel Operation Restriction Regulations* prohibits proceeding under sail and prescribes a speed limit of 5 kn in False Creek. **Speed restriction light buoys** are at the entrance to False Creek.

183 **Submarine pipelines and cables** cross False Creek in several places. Locations are marked by signs.

184 Tidal differences for False Creek (7710), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

185 *Kitsilano and English Bay Beach light buoys Q52* and *Q41 (388.1, 388.6)*, marking the approach to False Creek, are **port and starboard hand buoys**. A **daybeacon** with a **starboard hand daymark** is on the outer end of a rock groyne on the west side of the entrance to False Creek.

186 *Kitsilano Coast Guard Base* and a **wharf** are on the SW shore just before the Burrard Bridge. A floating **breakwater** protects the docks on the south side of the wharf.

187 *Kitsilano Base* **light** *(389)* is on a **dolphin** at the SE end of the breakwater.

188 *False Creek Sector* **light** *(390)* is on the north pier of Burrard Bridge. The white sector indicates the preferred channel.

189 False Creek is crossed by three fixed span road bridges. **Burrard Street Bridge** has a mid-channel vertical clearance of 28 m. Vertical clearance under the south span

BURRARD AND GRANVILLE BRIDGES (ENTRANCE TO FALSE CREEK) (2005)



is 17 m. **Granville Street Bridge** has a vertical clearance of 27 m. **Cambie Bridge**, near the head of the creek, has a vertical clearance of 13 m.

189.1 Numerous private **lights** are shown from wharves and docks in False Creek. Lighted lateral **buoys** mark the navigation channel between Granville Street Bridge to east of the Cambie Bridge.

190 Fishermen's Terminal in **Brokers Bay** is operated by the *False Creek Harbour Authority*. Docks for fishing vessels and other small craft are close south of Burrard Bridge, on the west shore of False Creek in Brokers Bay. They vary in length from 67 to 127 m and depths alongside are between 2.6 and 3.2 m.

Howe Sound — General

Charts 3526, 3534, 3496

191 **Howe Sound** is entered between Point Atkinson *(49°20'N, 123°16'W)* and Gower Point, 11 miles WNW. Several large islands divide the entrance into four main channels. From east to west these are Queen Charlotte Channel, Collingwood Channel, Barfleur Passage and Shoal Channel. Howe Sound offers few small craft anchorages due to great depths and lack of protected bays. The sound is almost entirely hemmed in by rugged, precipitous mountains rising abruptly from the water's edge.

191.1 Glass Sponge Reef Marine Refuges have been established in Howe Sound to protect and conserve the glass sponge reefs. No commercial, recreational or First Nations bottom-contact fishing or recreational salmon trolling using down riggers is allowed in these areas. For further information on the Strait of Georgia and Howe Sound Glass Sponge Reef Conservation please visit https://www.dfo-mpo.gc.ca/oceans/ceccsr-cerceef/closures-fermetures-eng.html

192 **Caution. — In the south entrances to Shoal Channel, Barfleur Passage, Collingwood Channel and Queen Charlotte Channel, there can be large quantities of logs and beach refuse that are difficult to see in choppy water.**

192.1 **Caution. — In winter, Howe Sound is subject to strong outflow winds from Squamish as the artic air from the interior funnels and accelerates down the sound creating gale force outflow winds called Squamish Winds. It is reported that these winds can reach Hurricane force near Pam Rocks.**

193 A railway line runs from North Vancouver along the east shore of Howe Sound to Squamish and northern B.C. A main highway runs close to the railway.

194 Regular **ferry** services crosses the entrance to Howe Sound from Horseshoe Bay to Langdale, and Queen Charlotte Channel from Horseshoe Bay to Snug Cove. Large **ferries** connecting Horseshoe Bay in Queen Charlotte Channel to Departure Bay on Vancouver Island will be encountered in Queen Charlotte Channel, Collingwood Channel, Barfleur Passage or in the approach to Howe Sound. Charted **ferry** routes are general indications of the route followed.

195 Howe Sound in Sector Three of the *Vancouver Traffic Zone* is administered by *Victoria Traffic*, assigned frequency is Channel 12 (156.6 MHz). The Master of a vessel must request clearance from *Victoria Traffic* before proceeding to or leaving any berth within Sector Three.

195.1 The **Calling-in Points**, coordinates listed in Table 5.7, are

196 *Calling-in Point No. 15C* called *Gower Point* is a change from Sector Three *(Victoria Traffic)* to Sector One *(Victoria Traffic)* and is a line joining *Cape Roger Curtis* light *(417)* and Gower Point.

197 *Calling-in Point No. 16* called *Halkett Point* is a line joining Halkett Point and a point south of Lions Bay on the east shore.

198 *Calling-in Point No. 17* called *Grace Island* is a line joining *Grace Islands* light *(429)* and a point south of Langdale on the west shore.

199 *Calling-in Point No. 18* called *Cowan Point/Point Atkinson* is a line joining *Point Cowan* light *(418)* and *Point Atkinson* light *(386)*.

200 Tidal predictions at the entrance to Howe Sound are given for Point Atkinson (7795). Tidal differences in Howe Sound, referenced on Point Atkinson, are given for Gibsons (7820) and Squamish (7811) in *Canadian Tide and Current Tables, Volume 5*.

Table 5.7 Calling-in Points — Howe Sound

Number	Name	Description
15C	Gower Point	Line running from *49°20'24"N, 123°25'53"W* to *49°23'01"N, 123°32'06"W*
16	Halkett Point	Line running 090° – 270° (True) from *49°26'43"N, 123°19'12"W* to the mainland shoreline
17	Grace Island	Line running 090° – 270° (True) from *49°25'50"N, 123°26'48"W* to the mainland shoreline
18	Cowan Point / Point Atkinson	Line running from *49°20'08.5"N, 123°21'34.5"W* to *49°19'50"N, 123°15'48"W*

201 Meteorological information in Howe Sound for Port Mellon is in the Appendices.

Queen Charlotte Channel

Chart 3496

202 **Queen Charlotte Channel** separates Bowen Island from the mainland to the east. Entered between Point Cowan and Point Atkinson the channel extends NNE to Bowyer Island.

203 From Point Atkinson *(49°20'N, 123°16'W)*, off which there are often tide-rips, the east shore of the channel is indented and a number of islets and rocks lie off it. The west shore is moderately steep-to for the most part and free of off-lying dangers.

204 **Submarine cables** cross Queen Charlotte Channel commencing on the east shore from **Larsen Bay**, **Batchelor Cove**, **Cliff Cove** and **Copper Cove**.

205 **Passage Island** *(49°21'N, 123°18'W)* lies in the middle of the entrance to Queen Charlotte Channel. A bare patch on the SE part of the island is visible for a good distance from south. A prominent circular house is on the NE corner. Foul ground extends a short distance from the SE part of the island. A private **mooring buoy** is 0.3 mile west of Passage Island.

Queen Charlotte Channel — East Side

206 **Grebe Islets**, 0.8 mile NNW of Point Atkinson, have several shoals and drying rocks to the north of them. **Bird Islet**, 1.4 miles NNW of Grebe Islets, has a drying rock close SW and a rock with 0.7 m over it 0.1 mile NE. The channel between Bird Islet and **Kettle Point** is not recommended.

207 *Grebe Islets* **light** *(421.2),* on the west islet, is shown at an elevation of 7.2 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

208 *Bird Islet* **light** *(421.4),* on the drying **rock** close SW of the islet, is shown at an elevation of 4.5 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

209 **Whyte Cove**, between **Whyte Islet** and **White Cliff Point**, has numerous private **mooring buoys** in it. **Lookout Point** is 0.3 mile NE of White Cliff Point.

210 *Lookout Point* **light** *(422),* on the west side of the point, is shown at an elevation of 7 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

212 *Whytecliff Park* ***Marine Protected Area*** *(District of West Vancouver)* extends from Whyte Islet to Cliff Cove. Fishing and removal of marine specimens is prohibited.

Chart 3534

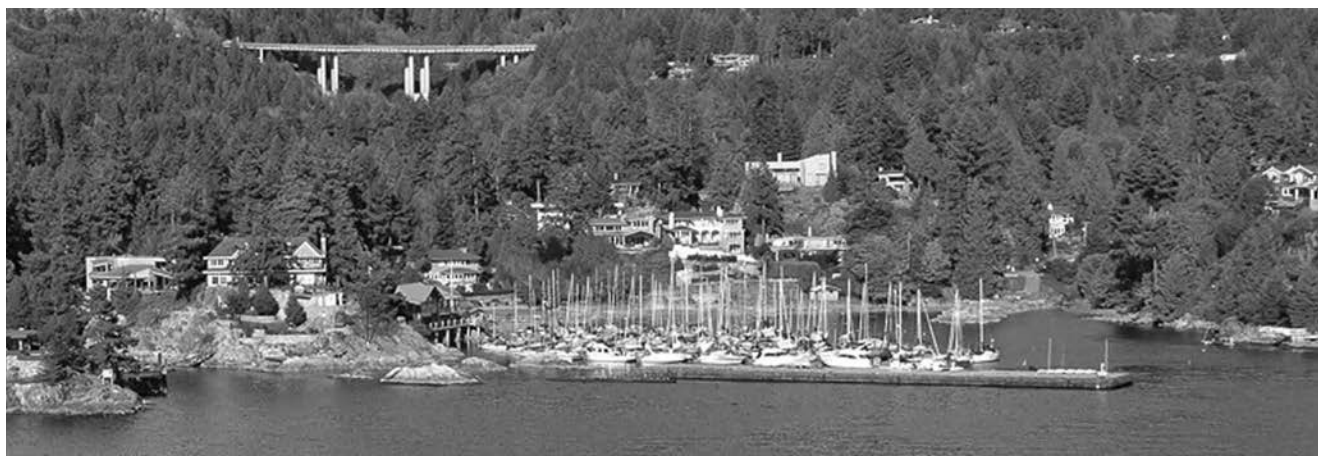
213 **Eagle Harbour** *(49°21'N, 123°16'W)* has a floating **breakwater** with a private light on its SE extremity. The breakwater extends from the NW entrance point and is anchored to the eastern shore. The *Eagle Harbour Yacht Club* is on the north side of the harbour, no guest moorage is available. Private **buoys** are on the east side of the harbour.

214 A road cut and bridge on the Upper Levels Highway behind Fishermans Cove are conspicuous from SW.

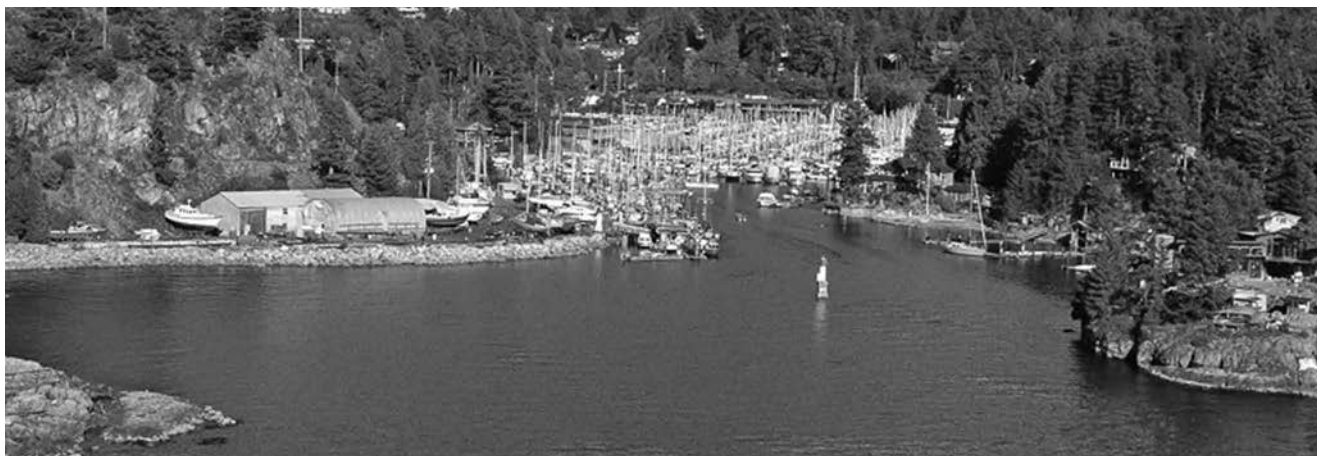
215 **Fishermans Cove**, north of Eagle Harbour, can be entered NW or east of **Eagle Island**. The NW channel is 20 m wide and has a least depth of 1.2 m. A **starboard hand daymark** marks the south side of this channel (vessels northbound from Eagle Harbour must leave this daymark to port). The entrance east of Eagle Island has a least depth of 0.6 m.

216 *Fishermans Cove* **light** *(421),* on the north side of a drying reef in the entrance NW of Eagle Island, is

EAGLE HARBOUR (2005)



FISHERMANS COVE (2005)



shown at an elevation of 5.8 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

217 *West Vancouver Yacht Club* has some guest moorage for members of reciprocal clubs. *Thunderbird Marina* (604-921-7434) is a large full-service marina with limited guest moorage.

218 **Submarine pipelines** (gas) cross the channel east of Eagle Island and connect the island to the small island west of it. A submarine pipeline (sewer) crosses from the small island west of Eagle Island, around the north side of Eagle Island and then crosses the channel east of Eagle Island. Another submarine pipeline (outfall) extends north 27 m from the small island west of Eagle Island into the NW entrance channel.

219 An **overhead cable**, vertical clearance 24 m, crosses the NW entrance channel to Fishermans Cove.

HORSESHOE BAY (2005)



Another cable (telephone), vertical clearance 3.7 m, connects Eagle Island to the two small islands close west.

220 **Horseshoe Bay** *(49°23'N, 123°16'W),* entered east of **Tyee Point**, has a residential area of the same name at the head of the bay with stores, restaurants and repair facilities.

221 *Tyee Point* **light** *(423),* on a drying reef east of the point, is shown at an elevation of 5.2 m from a white cylindrical tower and is fitted with a **radar reflector**.

222 *BC Ferries* has a large terminal in Horseshoe Bay and maintains regular service to Nanaimo, Snug Cove and Langdale. The latter providing a through route by road and **ferry** to Powell River. Frequent bus service is available to Vancouver. **Small craft must keep clear of ferries which are limited in their ability to maneuver when docking.** Private lights with radar reflectors are at the ferry terminal on the outer ends of the berths.

223 The **public wharf**, with docks attached to its outer end and both sides, is at the head of the bay. There is a depth of 6 m alongside the wharfhead, and a 3-tonne crane. Commercial vessels have priority. A water taxi operates between Horseshoe Bay and Bowen, Gambier, Keats and Boyer Islands.

223.1 *Royal Canadian Marine Search and Rescue (RMC-SAR) Unit 1* is located in Horseshoe Bay.

224 *Sewell's Marina* (604-921-3474) close NW of the public wharf is protected by **breakwaters**. It is a large full-service **marina** with fuel and guest moorage. Docks belonging to the marina also lie SE of the public wharf. A public launching **ramp** is close to the marina south dock complex. A private **buoy** is moored close NW of the breakwater at the marina.

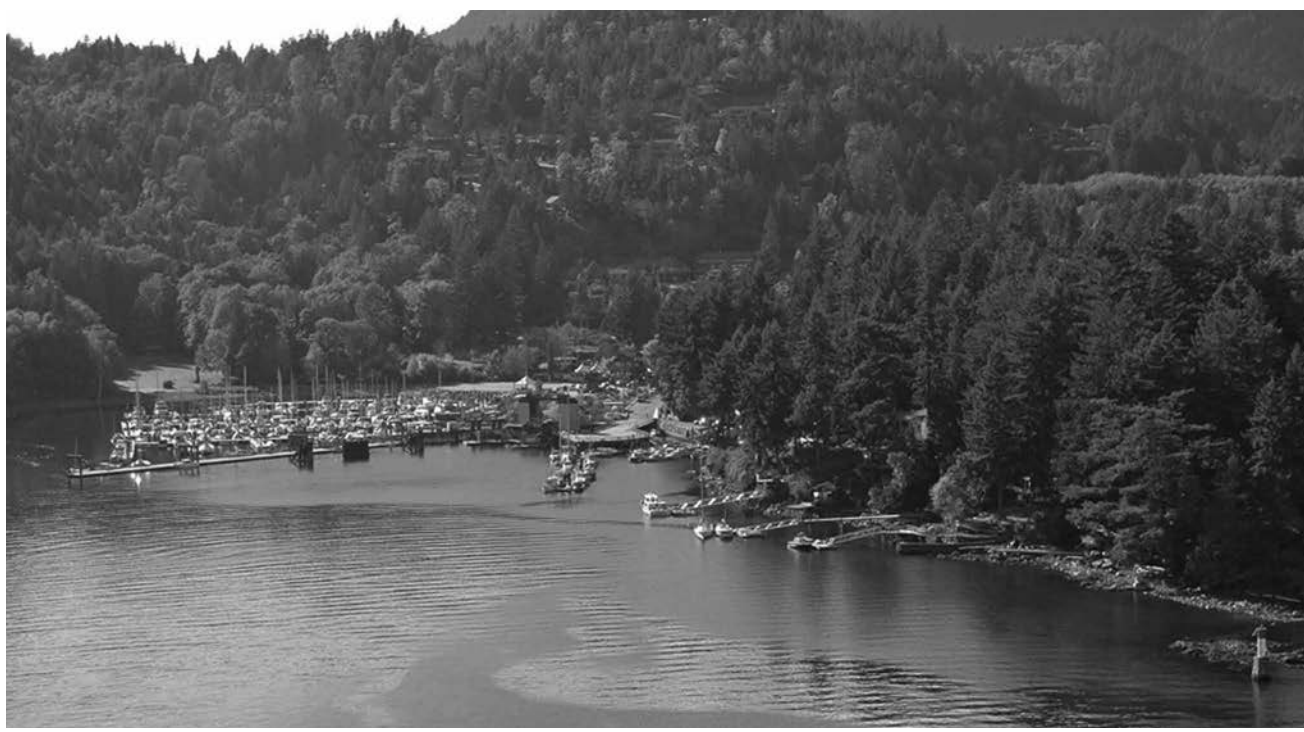
Chart 3526

225 Between Horseshoe Bay and **Alberta Bay** *(49°28'N, 123°15'W)* **marinas** provide facilities for small craft. Sunset Marina (604-921-7476), at **Sunset Beach** 1.9 miles NE of Horseshoe Bay, provides permanent moorage only. No transient moorage is available. Gasoline, repairs and a launching ramp are available. Lions Bay Marina (604-921-7510), at **Lions Bay** 4.8 miles NNE of Horseshoe Bay, offers permanent vessel storage and transient moorage. Diesel fuel, gasoline, marine supplies, washrooms and a launching ramp are available. A water taxi operates between Lions Bay and Bowen Island.

225.1 *Kelvin Grove Beach Park (Village of Lions Bay),* close north of Lions Bay Marina, has swimming area boundary markers and a float.

226 A **submarine pipeline** (sewer outfall) is 0.3 mile south of Lions Bay. Another submarine pipeline is 0.5 mile SW of Sunset Beach.

SNUG COVE (2005)



Queen Charlotte Channel — West Side

Chart 3496

227 The west side of Queen Charlotte Channel is formed by the east side of **Bowen Island**. **Point Cowan** *(49°20'N, 123°22'W)* is the SW entrance point of Queen Charlotte Channel.

228 *Point Cowan* **light** *(418)*, on the point, is shown at an elevation of 20.4 m from a white cylindrical tower and is fitted with a **radar reflector**.

229 **Seymour Landing**, 0.5 mile NE of Point Cowan, is connected by road to Mannion Bay and Snug Cove. The bay is exposed to **ferry** wash. *Apodaca Provincial Park* is a nature reserve.

Chart 3534

230 **Snug Cove** *(49°23'N, 123°20'W)* is the south and smaller part of a double headed bay. The settlement has restaurants, groceries, stores, gas station, library, and the Bowen Island post office. Anchorage is not recommended in Snug Cove because of **ferries** and **submarine cables and pipelines**. Water taxis operate between Snug Cove and Horseshoe Bay, Lions Bay, and Gibsons. *BC Ferries* provides regular **ferry** service to and from Horseshoe Bay. Private lights are at the ferry terminal on the outer ends of the berth. A public launching **ramp** is available.

231 *Snug Cove* **light** *(419)*, on the point at the entrance to the cove, is shown at an elevation of 6.1 m from a white cylindrical tower with a green band on top and is fitted with a **radar reflector**.

232 *Snug Cove North* **light** *(419.5)*, on a drying ledge at the entrance to the cove, is shown at an elevation of 6.1 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

233 A **submarine pipeline** (sewer) is laid along the south shore of Snug Cove and extends about 100 m seaward from the south entrance point. An abandoned **submarine cable** lies along the north shore and extends seaward.

234 Snug Cove **wharf** and dock, operated by the *Bowen Island Municipality*, near the head of the bay with a ferry landing attached to its inner end, has 100 m of berthing with a depth of 3 m alongside. It is exposed to **ferry** wash.

235 Nearby **marinas** include *Bowen Island Marina and the Pier* (604-947-9710), NE of the Snug Cove wharf, which provides permanent moorage only. No transient moorage is available. *Union Steamship Company Marina* (604-947-0707), west of the Snug Cove wharf, provides permanent and transient moorage for up to 150 vessels to a maximum length of 60 m. Power, washrooms, showers, laundry, marine store, restaurant, accommodations and sewage pumpout facilities are available.

236 **Mannion Bay** is exposed and during SE weather a heavy swell rolls in. Drying and below-water rocks and a boomed off area are on the south side of the bay. Private docks and **mooring buoys** are in the north part. Temporary fair weather **anchorage** for small craft with good holding is reported to be available in the NW part of the bay.

Chart 3526

237 **Millers Landing** *(49°23'N, 123°19'W)*, a short distance north of Mannion Bay, has private docks.

238 **Finisterre Island** *(49°25'N, 123°18'W)* is connected to the NE end of Bowen Island by a drying ledge.

239 *Finisterre Island* **light** *(420)*, on the north extremity of the island, is shown at an elevation of 10.1 m from a white cylindrical tower and is fitted with a **radar reflector**.

240 The coast on either side of **Hood Point** *(49°25'N, 123°19'W)* is indented and the shore is lined with houses. **Cates Bay**, **Enchanta Bay**, **Columbine Bay** and **Smugglers Cove**, east and west of Hood Point, provide shelter and **anchorage** for small craft. A rock that dries 3.7 m lies in the middle of Enchanta Bay.

241 **Bowyer Island**, 1.5 miles ENE of Finisterre Island, has a 5.5 m shoal off its south end and a 2.4 m shoal 0.1 mile off its NW part. Private **mooring buoys** are on these shoals.

Ramillies and Montague Channels

242 **Ramillies Channel**, separating **Anvil Island** from the NE side of Gambier Island, is entered west of Pam Rock *(49°29'N, 123°18'W)*.

243 **Pam Rock** is conspicuous and has numerous drying and below-water rocks extending north and south from it. **Christie Islet** is bare and conspicuous, the rock and islet are a bird sanctuary.

244 *Pam Rock* **light** *(424)*, on the **rock**, is shown at an elevation of 12.7 m from a white cylindrical tower and is fitted with a **radar reflector**.

245 **Irby Point**, 1.4 miles north of Pam Rock, is the south extremity of Anvil Island.

246 Two bays separated by **Daybreak Point** lie NW of Irby Point. *Daybreak Point Bible Camp* pier and float are on the north side of these bays. **Anvil Island** settlement, on the south side of these bays, has a dock. **Leading Peak**, the summit of Anvil Island, is very conspicuous from most parts of Howe Sound. It resembles the horn of an anvil pointed upwards.

DARRELL BAY (2005)



247 **Brigade Bay**, on the west side of Ramillies Channel, 1.3 miles west of Pam Rock, has a private dock protected by a rock breakwater. A private light is on the north end of the breakwater. **Douglas Bay**, 2 miles NW of Brigade Bay, has private docks. Temporary **anchorage** is possible in the south part of Brigade Bay and in Douglas Bay. Care should be taken in Douglas Bay to avoid the drying rock and shallows extending from the mouth of **Gambier Creek**.

247.1 *Ramillies Channel Marine Recreation Site (Recreations Sites and Trails BC, Sea Kayak Association of BC),* on the west side of Ramillies Channel, 1 mile NW of Brigade Bay, is suitable for use by kayaks and small vessels. No facilities are available.

248 **Domett Point**, the north extremity of Anvil Island, is the NE entrance point to Ramillies Channel.

249 The **wharf** on the mainland shore 1.4 miles north of Domett Point and close west of **Potlatch Creek** belongs to *Camp Potlatch*. **Defence Islands**, 1.5 miles east, are First Nations reserves.

250 **Montagu Channel** separates Anvil Island from the mainland to the east and is the main entrance channel to the head of Howe Sound and Squamish Harbour. **Brunswick Point** is on the east side of the channel.

251 *Brunswick Point* **light** *(425),* on the point on the east side of Montague Channel, is shown at an elevation of 10.1 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

252 **Submarine cables** lead from Copper Cove up the centre of Montague Channel, landing at Minaty and Darrell Bays.

253 A *BC Ferries* **wharf** for emergency use only is at **Porteau Cove**, 2 miles NNE of Brunswick Point. A private light with a radar reflector is shown from the wharf.

254 *Porteau Cove Provincial Park* has sunken wrecks and an artificial reef for divers. The area is marked by **buoys**. Camping facilities, toilets, picnic area and a launching ramp are available.

Squamish Harbour

255 **Squamish Harbour**, at the head of Howe Sound, includes facilities at Woodfibre and Squamish.

256 **Caution. — Numerous wind and kite surfers can be expected in the approaches to Squamish, particularly during summer afternoons.**

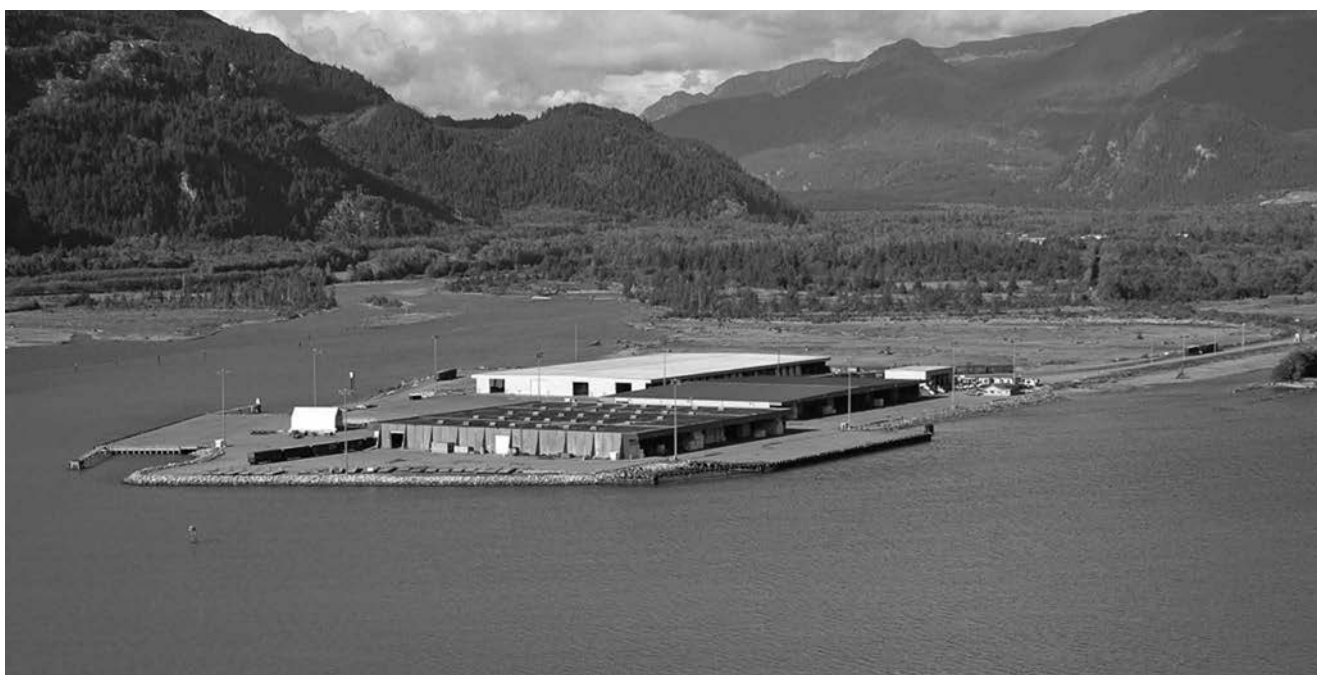
257 **Caution. — Recent repeated hydrographic surveys have revealed that depths at the head of Squamish Harbour are subject to large and rapid changes. The area 0.3 mile SW of Squamish Terminals is particularly affected. Material deposited by the Squamish River can reduce depths by as much as 1 m per week. This build up can continue for several months, and may be followed by an underwater landslide that results in depths suddenly 20 – 30 m deeper. These changes occur too rapidly to be effectively charted.**

258 **Use extreme caution in these areas particularly when approaching Squamish Terminals Berth 2.**

Table 5.8 Major Port Facilities — Squamish

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Squamish Terminals Berth 1 (East)	137	10.6	—	Forest products, steel products and special project cargo. Stevedoring services available by arrangement. Dolphins off both ends of berth to accommodate vessels 195 m long. Barge ramp north of berth. 47,410 m² covered storage. Operator: Western Stevedoring.
Squamish Terminals Berth 2 (West)	153	9.4	—	Forest products, steel products and special project cargo. Stevedoring services available by arrangement. Dolphins off both ends of berth to accommodate vessels 212 m long. 47,410 m² covered storage. Operator: Western Stevedoring.

SQUAMISH TERMINALS (2005)



259 **Darrell Bay** on the east shore of Howe Sound, south of Squamish, is the site of a *BC Ferries* terminal. It is for emergency use only; there is no regularly scheduled service.

260 **Pilotage** is compulsory. Squamish Harbour is in Area 2 of the Pacific Pilotage Region and the pilot boards in the vicinity of the **cautionary buoy** off Brotchie Ledge, near Victoria. For details regarding obtaining a pilot when arriving or departing see *PAC 200 — General Information — Pacific Coast*.

261 Squamish Harbour is not a port of entry and customs officials from Vancouver deal with customs formalities. Marinas, tugs, and small craft repairs are available. There are extensive booming grounds within Squamish Harbour.

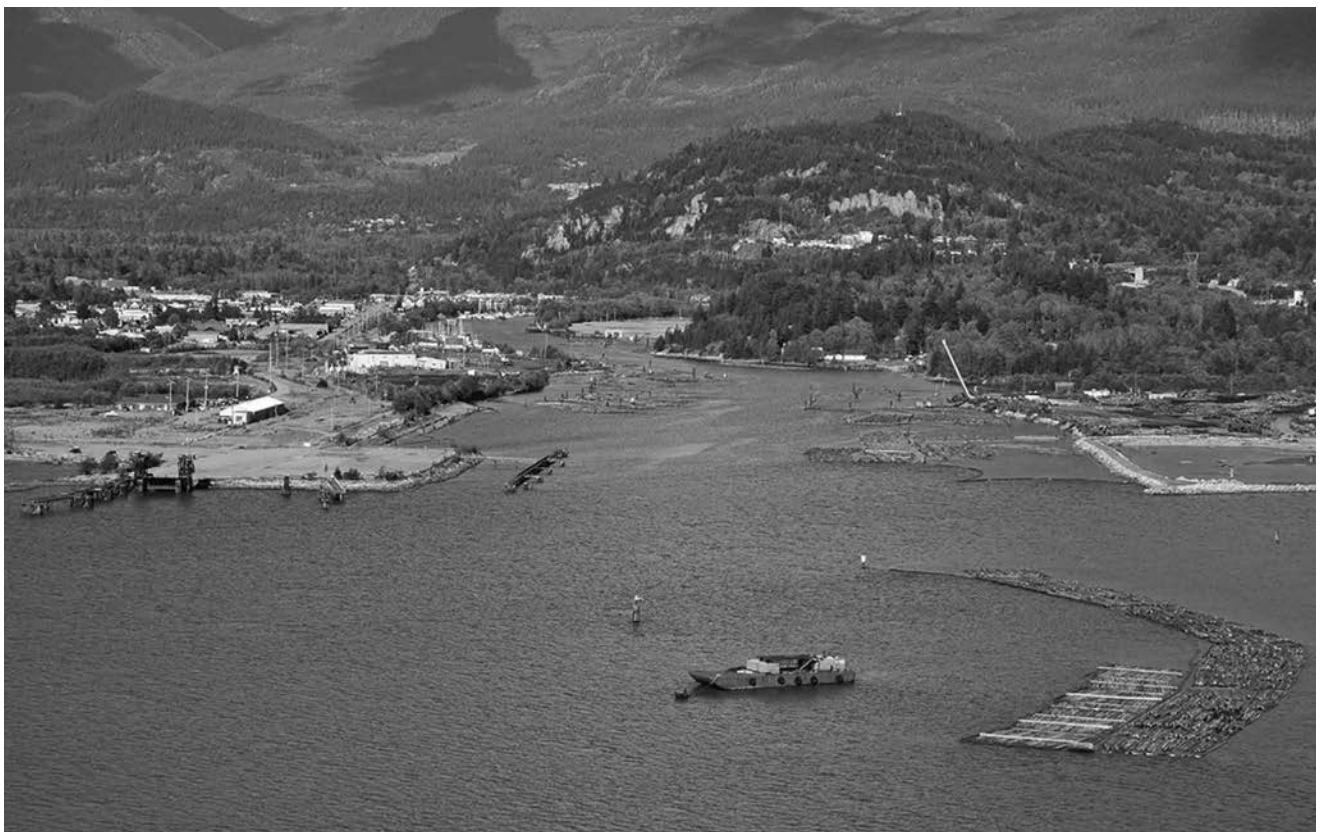
262 Tidal differences for Squamish (7811), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

263 **Short term anchorage** can be obtained in about 50 m, 0.3 mile SW of Squamish Approach light. Due to the strength and suddenness of local winds and poor holding ground long term anchorage is not recommended.

264 **Minaty Bay** *(49°37'N, 123°13'W)* is the site of a former gravel pit and barge loading facility, in ruins. A **submarine cable** lands at Minaty Bay.

265 **Britannia Beach** was formerly a mining town with facilities for shipping copper ore. The mine is closed and its loading wharf in a state of disrepair. The old mine building on the hillside overlooking the town site is a

ENTRANCE TO MAMQUAM BLIND CHANNEL (2005)



conspicuous landmark and has a large sign "Mining Museum" facing seaward. The community has a post office and store. Two ruined wharves are SW of the Mining Museum. The southern most wharf has the **wreck** of the *Gulf Bird*, a tug approximately 14 m long, close off its SE end. The top of the mast is just visible. The submerged wrecks of the *Cape Swain*, a fishing vessel 17.4 m long, and the former *Canadian Coast Guard Ship Ready*, a search and rescue cutter 29 m long, are close off the NE end of the same ruined wharf. The wreck of the tug *La Lumiere*, with a least depth of 66 m, lies 0.1 mile west of the northern most ruined wharf.

266 A **submarine cable** (power) is on the south side of the causeway and is marked by a sign. A **submarine pipeline** (outfall), south of the wharf, extends 200 m off shore. Another **submarine cable** (power) that extends from Woodfibre crosses Howe Sound and lands 0.15 mile north of Britannia Beach.

267 **Watts Point**, 1.5 miles NW of Britannia Beach, has booming grounds to the north and south. A quarry operation 0.8 mile NE of Watts Point has a barge ramp and loading conveyors. A **Foul area** (disposal site), under permit through the *Canadian Environmental Protection Act*, is located at *49°38.5'N, 123°14.1'W*.

268 **Microwave towers** are 0.6 mile ENE and 0.7 mile east of Watts Point. The east tower has red air obstruction lights.

269 **Woodfibre** *(49°40'N, 123°15'W)* is the site of a former pulp mill. There are no facilities.

269.1 A private ODAS light buoy is approximately 1 mile south of Woodfibre.

270 **Submarine cables** land at Darrell Bay. A second submarine cable extends from Woodfibre to the north of Britannia Beach.

Chart 3534

271 **Squamish** *(49°41'N, 123°10'W)* is in the entrance to the east arm of the **Squamish River**. The port handles forest products. Squamish has a variety of retail stores, restaurants, a post office and a hospital. Details of the major port facilities in Squamish are in Table 5.8.

272 Fuel is available by prior arrangement for tank truck delivery. Fresh water can be obtained at the public wharf and provisions are obtainable in moderate quantities at stores in Squamish.

273 Squamish is connected with Vancouver and the interior by road and rail; regular bus service is available. The airport, north of the town, has an asphalt runway 730 m long.


274 *Squamish Approach* **light** *(425.5)*, on the east side of the entrance to Mamquam Blind Channel, is shown at an elevation of 6 m on a **dolphin** with **starboard hand daymarks**.


275 *Squamish range* **lights** *(426, 427)*, on the east bank of Mamquam Blind Channel about 0.8 mile NE of Squamish Approach light, in a line bearing 034½° lead through Mamquam Blind Channel to the inner part of the Squamish River. The front light is shown at an elevation of 8.8 m and the rear light at an elevation of 11.7 m; both lights are shown from a mast fitted with a **red daymark with a white vertical stripe**.


276 *Squamish Terminal range* **lights** *(427.1, 427.2)*, west of the terminal, in a line bearing 019½° lead to the west berths of the terminal. The front light is shown at an elevation of 4.9 m from a skeleton tower and the rear light at an elevation of 9.8 m from a dolphin; both lights are fitted with a **red daymark with a white vertical stripe**.


277 *Squamish Terminal No. 1* **light** *(427.4)* is shown at an elevation of 4.2 m on a **dolphin** 0.5 mile WNW of Squamish Approach light.


278 *Squamish Terminal No. 2* **light** *(427.5)* is shown at an elevation of 4.3 m on a **dolphin** 0.3 mile WNW of Squamish Approach light.

279 A private light is on the end of the Squamish River training wall, west of the terminal.

279.1 Private lights are on the wharves on the east entrance point of the west arm to Squamish River. Private range lights, east of Squamish Terminals, in line bearing 025°, lead to the east berth of Squamish Terminals. Private **mooring buoys** lie south of Squamish Approach light.

280 **Mamquam Blind Channel** is the east entrance channel of Squamish River. Shoaling has developed across the full channel width near the mouth of the Stawamus River. The portion of the range north of the river should not be used; the preferred channel is reported to be to the west of the range.


281 The *Squamish Harbour Authority* (604-892-3725) **public wharf** is on the west bank of the east arm to Squamish River and about 1 mile NNE of Squamish Approach light. It has a depth of 2.3 m alongside its outer end. Docks attached to the wharf have a combined berthing length of 330 m and depths of 0.7 to 1.1 m alongside. A 3 tonne crane is on the wharfhead. Pump-out, washrooms and showers are available. Power and water are available at the docks.

282 *Squamish Yacht Club* docks are on the north side of the public wharf.

Collingwood Channel

Chart 3526

283 **Collingwood Channel**, along **Bowen Island** (west side), is entered from the south between **Cape Roger Curtis** *(49°20'N, 123°26'W)* and Worlcombe Island 1 mile WNW. **Mount Gardner** is easily distinguished by its round, partially bare summit.

284 **Conspicuous microwave towers** are on the south side of Bowen Island. Microwave towers with red air obstruction lights are on the summit of Mount Gardner, and a TV tower with red air obstruction lights is 0.9 mile NNE of the mount.


285 *Cape Roger Curtis* **light** *(417)*, on the point, is shown at an elevation of 9.6 m from a white square tower.


286 A **submarine cable** crosses Collingwood Channel between **Bowen Bay** and **Ragged Island**. Another **submarine cable** (fibre optic) crosses the channel between Bowen Bay and Eastbourne on Keats Island.

287 **Tunstall Bay**, on the east side of the channel about 1 mile within the entrance, has drying rocks and an islet in its north part. The bay is too deep for anchorage.

288 **Collingwood Channel daybeacon**, 1.4 miles SW of Hutt Island, has a **bifurcation/junction daymark**, preferred channel to the left. It marks a 3.4 m drying **rock**.

289 **Hutt Island**, on the east side of the north entrance to Collingwood Channel, has several piles offshore at its NE point. **Hutt Rock**, 0.2 mile SW of Hutt Island, has a rock that dries 0.6 m close north of it. **Marine farm** facilities marked by a **cautionary buoy** are close-off Bowen Island SE of Hutt Rock.

290 **Hutt Rock daybeacon** has a **bifurcation/junction daymark**, preferred channel to the left. It marks a 2.7 m drying **rock**.

291 **Galbraith Bay**, east of Hutt Rock, has a public dock, operated by the *Bowen Island Municipality*, that is 18 m long with a depth of 4.6 m alongside, and is for active loading and unloading only. No overnight moorage. **Mount Gardner locality**, in the south part of the bay, is connected by road to Snug Cove.

GIBSONS (2005)



292 **Grafton Bay**, east of the north end of Hutt Island, is too deep for satisfactory anchorage. Floats and **mooring buoys** are private.

293 **Grafton Bay daybeacon**, on a rock in the channel between Hutt Island and Grafton Bay, has a **starboard hand daymark**. A rock that dries 0.6 m lies close east of the beacon. **Mariners should not pass between the beacon and Bowen Island to avoid this rock. Many groundings have occurred here.**

294 **Worlcombe Island** *(49°21'N, 123°28'W)* is on the east side of the south entrance to Collingwood Channel and has a few houses on it. The passage between Worlcombe Island and **Pasley Island** is encumbered with reefs, local knowledge is advised.

295 **Worlcombe Island daybeacon**, on a rock in the passage between Worlcombe and Pasley Islands, has a **starboard hand daymark**.

296 **Mickey Island**, **New Islet** and **Ragged Island** lie north of Pasley Island.

297 **Keats Island** forms the NW side of Collingwood Channel. **Cotton Point** is its NE extremity. **Eastbourne**, 0.5 mile south of Cotton Point, has a public dock 15 m long at the end of a long pier and private **mooring buoys** are in the vicinity. For information on moorage and docking times, contact the *Sunshine Coast Regional District* (604-885-6800). A water taxi operates between Eastbourne and Langdale.

Barfleur Passage

298 **Barfleur Passage** leads between Keats Island and the group of islands to the south. It is entered from the west between **Popham Island** *(49°22'N, 123°29'W)* and **Home Island** 1.3 miles NNW. Home Island is small, sparsely wooded and joined to Keats Island by a drying ledge. **Little Popham Island** and **Hermit Island** are NE of Popham Island.

299 *Popham Island* **light** *(432)*, on the NW extremity of the island, is shown at an elevation of 11.2 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

300 A **submarine cable** crosses Barfleur Passage between Keats and Ragged Islands.

301 **Preston Island**, 1.5 miles NNE of Popham Island, is wooded and conspicuous. Small vessels using the channel to the north of Preston Island should favour the Preston Island

shore to avoid islets fringed with rocks extending from Keats Island.

Gibsons and Approaches — Shoal Channel

Chart 3534

302 **Shoal Channel** *(49°24'N, 123°30'W)* separates Keats Island from the mainland. Its south entrance is obstructed by a bar of sand and rock with 2.1 m over it. The bar has depths of 1.5 m over a rock bottom near mid-channel with drying and sunken rocks closer inshore. The sea breaks over the bar when wind opposes tide. This entrance to Shoal Channel should only be used by those familiar with local conditions.

303 **Submarine cables** (power and telephone) cross Shoal Channel in the vicinity of Steep Bluff and Gibsons. A **submarine pipeline**, 0.6 mile SW of Steep Bluff, extends about 91 m offshore.

304 **Steep Bluff**, just within the bar, is fringed with a drying rock ledge. A rocky spit, with drying rocks on it, extends 0.2 mile NNE of Steep Bluff and lies in the south approach to Gibsons. A scow mooring is on the west side of the spit.

305 *Gibsons Landing Rock* **light** *(430)*, on a **rock** at the north end of the spit, is shown at an elevation of 7 m from a white cylindrical tower with a green band on top and is fitted with a **radar reflector**.

306 *Gibsons Landing* **light** *(431)*, atop the gazebo on the outer end of the north rock **breakwater**, is shown at an elevation of 4.9 m.

307 *Gibsons Landing Breakwater South* **light** *(431.5)*, on the outer end of the south **breakwater**, is shown at an elevation of 6 m from a mast and has a **port hand daymark**.

308 Tidal differences for Gibsons (7820), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

309 **Gibsons** is on the west side of a bight on the north side of Steep Bluff. It is a tourist resort and distributing centre for towns on the north side of the Strait of Georgia. A variety of stores, restaurants, lodging, businesses, services and postal office are available. The *Sunshine Coast Museum and Archives* is located in Gibsons. Diesel fuel, gasoline, lubricants and fresh water are available.

311 **Anchorage**, with good holding, can be obtained off the wharf, but care should be taken to keep clear of the **submarine cable** that lands close north of the wharf.

312 A road connects Gibsons with Langdale, Sechelt, Pender Harbour and Earls Cove (Agamemnon Channel), the latter providing **ferry** connection with the road leading to Westview, Powell River and north to Malaspina Inlet via Lund.

313 The public **wharf**, operated by the *Gibsons Landing Harbour Authority* (604-886-8017), has docks from 40 m to 90 m long attached to it. The float on the east side of the rock breakwater is reserved for aircraft. Depths alongside the wharfhead are 2.4 to 6 m at the NE face, and 4.2 to 4.8 m at the SE face. Power, limited guest moorage, washrooms, showers, laundry, pumpout, garbage and internet are available.

314 *Gibsons Marina* (604-886-8686), behind the south breakwater, offers permanent and transient moorage for vessels up to 26 m. Power, water, washrooms, showers, laundry, garbage disposal and sewage pumpout facilities are available. The fuel dock, close north of the floats, has diesel fuel, gasoline, lubricants, snacks and tackle. A public launching **ramp**, inshore of the marina, is available.

315 **Keats Island settlement**, known locally as Keats Landing, on the west side of Keats Island abreast Steep Bluff, consists mainly of summer homes. The **public wharf** and dock have a depth of 4 m alongside. A 3 tonne crane is on the wharf. For information on moorage and docking times at the wharf, contact the *Sunshine Coast Regional District* (604-885-6800). A water taxi operates between Keats Island and Langdale.

316 **Shelter Islets**, off the NW shore of Keats Island, consist of two islets joined by a drying bank, they shelter Plumper Cove.

317 **Plumper Cove**, entered north of Shelter Islets, provides a snug **anchorage**. However hard it may be blowing in the Strait of Georgia it is usually calm in the cove. Anchorage can be obtained in the middle of Plumper Cove, in depths of 13 to 15 m, and though small vessels could lie at single anchor it is recommended to moor with two anchors.

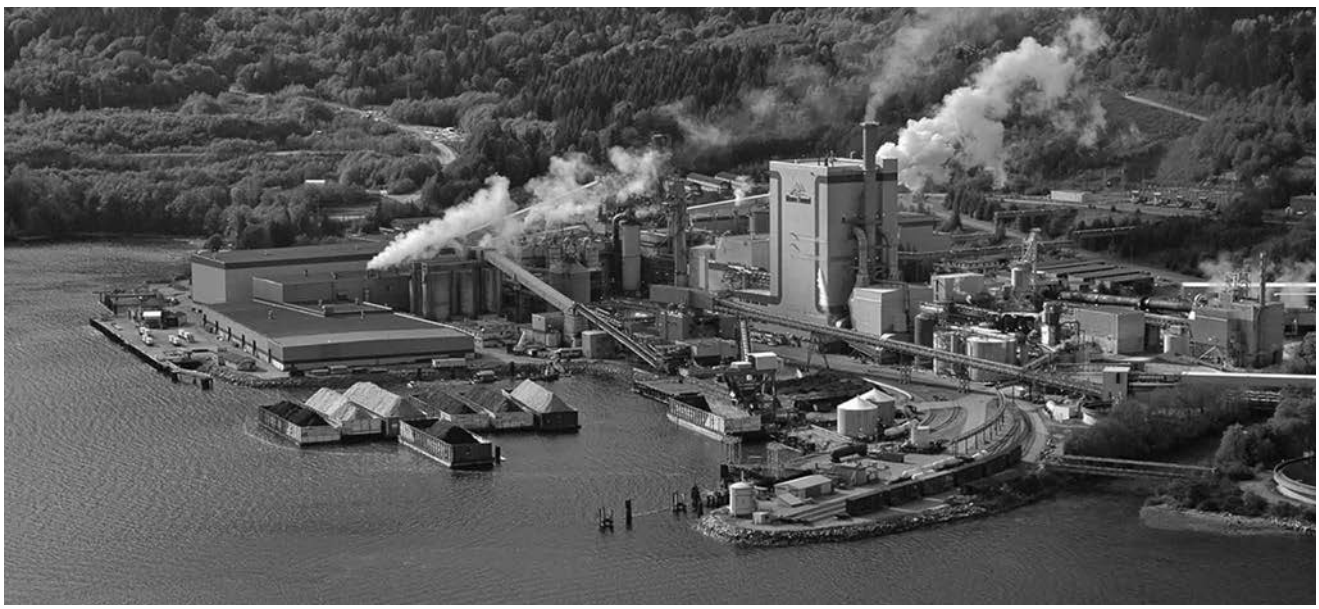
318 *Plumper Cove Marine Provincial Park* has public docks and **mooring buoys**. Drinking water, camping, picnic, pit toilets and garbage disposal facilities are available. **Cautionary buoy** *QP* marks a shoal area off the docks.

Chart 3526

319 **Granthams Landing** *(49°25'N, 123°30'W)* is on the west side of Shoal Channel NE of Gibsons. The wharf, float and mooring buoys are private and are operated by the *Grantham's Landing Wharf Association*. First Nations reserves are SW and NE of the wharf.

320 **Soames Point**, 0.5 mile NE of Granthams Landing, is the NW entrance point of Shoal Channel. A shoal spit extends south from Soames Point; its outer end is marked by **port hand buoy** *Q57*.

PORT MELLON (2005)



Gambier Island — South Side

321 **Gambier Island**, in the centre of Howe Sound, has four bays indenting its south side.

322 **Halkett Bay**, entered west of **Halkett Point** *(49°27'N, 123°19'W)*, is the east and smallest of the four indentations on the south side of Gambier Island. A cluster of above-water and drying rocks lies in the NW part of the bay, and a detached rock, with less than 2 m over it, lies in the middle of the fairway near the head of the bay.

322.1 *HMCS Annapolis* has been sunk on the west side of the entrance to Halkett Bay as an **artificial reef** for divers. It is marked by **buoys** and has a least depth of 9.9 m. This former *Royal Canadian Navy* Destroyer Escort is 113 m long and was sunk in 2015. For more information see the *Artificial Reef Society of British Columbia*

323 *Halkett Bay Marine Provincial Park* has a dinghy dock, pit toilets and camping facilities.

324 The **public wharf** and dock are in the small cove west of the west entrance point to Halkett Bay. The wharf has a shed and derrick on it and the dock is 17 m long. For information on moorage and docking times, contact the S*unshine Coast Regional District* (604-885-6800).

325 A **submarine pipeline** (sewer outfall), at the west entrance point to Halkett Bay, extends 93 m offshore.

326 **Mount Artaban**, east of Port Graves, rises to 614 m. **East Bay**, known locally as **Daisy Bay**, lies close north of **Gambier Point** and has a **breakwater** protecting a private wharf. **Potts Point** is fronted by a shingle spit with shallow water for about 90 m beyond its extremity, the point should be given a wide berth. Both sides of Port Graves, north of Potts Point, are booming grounds and private **mooring buoys** line the shore between East Bay and Potts Point.

327 **Port Graves**, the principal **anchorage** in Howe Sound, can be approached from any of the channels at the entrance of Howe Sound. The most direct route is through Collingwood Channel but the entrance is not easily identified until a short distance off **Hope Point** *(49°26'N, 123°22'W)*.

328 *Hope Point* **light** *(420.4)*, on a drying ledge 0.1 mile SE of the point, is shown at an elevation of 7 m from a white cylindrical tower.

329 **Anchorage** can be obtained north of Potts Point in a depth of 15 m or less. A good position is between 0.5 and 0.7 mile north of Potts Point in a depth of 13 m. It has been reported that the bottom is littered with sunken logs, cables and chains.

330 *Camp Artaban*, at the head of Port Graves, is an Anglican Church camp. Camp docks are on the east side of the public wharf.

331 The **public wharf** at the head of Port Graves has a dock on its west side with a depth of 2 m alongside. It is equipped with a 5 tonne crane. For information on moorage and docking times, contact the *Sunshine Coast Regional District* (604-885-6800). Submerged logging cable is reported to be at the head of Port Graves.

332 **Centre Bay** is the next indentation west of Port Graves. **Alexandra Island** has an above-water

rock and a 2.1 m drying rock close-off its east shore. Yacht clubs have docks on the west side of Alexandra Island, in **Elliot Bay** (local name) and at the head of Centre Bay. Booming grounds occupy both sides of the bay. **McKenzie Cove** is on the east side of Centre Bay. Drying and below-water rocks lie at the head of the bay. The wreck of the tug *Lorne*, with a least depth of 43 m, lies in MacKenize Cove.

333 **West Bay** is entered west of **Carmelo Point** *(49°27'N, 123°24'W)*. It is partially obstructed by above-water and drying rocks a short distance within the entrance, but a clear channel about 0.1 mile wide lies along the west shore. Two **wrecks**, with 2.5 m and 19.9 m over them, are located in the NE corner of the bay. Another **wreck** lies near shore, visible at LW, close to McDonald Creek. A **public wharf** 185 m long is on the west side of the entrance to the bay. For information on moorage and docking times at the wharf, contact the *Sunshine Coast Regional District* (604-885-6800).

334 **Gambier Harbour** *(49°26'N, 123°26'W)*, near the SW point of Gambier Island, has a **public wharf** with depths of 3 to 4.6 m alongside. A dock 30 m long is attached to its west side. A 2 tonne crane and a shed are on the wharfhead. For information on moorage and docking times, contact the *Sunshine Coast Regional District* (604-885-6800). This public wharf and the entire harbour are exposed to the weather.

Thornbrough Channel

335 **Thornbrough Channel**, on the west side of Howe Sound, leads west and north of Gambier Island.

335.1 Mooring **buoys** are close to shore between Soames Point and Hopkins Landing.

336 **Hopkins Landing** *(49°26'N, 123°29'W)* has a **public wharf** 18 m long at the end of an approach pier. A dock, 17 m long with a least depth of 4.6 m alongside, is attached to the north side of the wharf. For information on moorage and docking times, contact the *Sunshine Coast Regional District* (604-885-6800).

338 **Langdale**, 0.3 mile NE, is the site of the *BC Ferries* landing for the **ferry** to Horseshoe Bay. A large *Salvation Army* summer camp is in the vicinity. A conspicuous orange coloured cliff is 0.5 mile north of the ferry landing.

339 **Submarine cables** cross Thornbrough Channel from close north of Langdale to **Avalon Bay** and **Burgess Cove**.

340 **Grace Islands** *(49°26'N, 123°27'W)*, the SE entrance point of Thornbrough Channel, are connected to one another by a drying ledge and fringed with drying and below-water rocks.

341 *Grace Islands* **light** *(429)*, on the SW extremity of the islands, is shown at an elevation of 6.1 m from a white cylindrical tower.

342 **Thornbrough Bay**, 1 mile north of Grace Islands, has several private docks and **mooring buoys**. **New Brighton**, at the head of the bay, has a **public wharf** with a depth of 8.2 m alongside. Attached to it are docks with 120 m of berthing space. A 3 tonne crane is on the wharf. A water taxi operates between Thornbrough Bay, Keats Island and Langdale.

343 **Williamsons Landing**, 1.3 miles north of Langdale, is fronted by pilings and private docks. A short distance SSE is a *YMCA* camp with a dock.

344 Booming grounds are south of the *YMCA* camp and along the west side of Gambier Island between Thornbrough Bay and Mariners Rest. A **wreck** lies near the shore, visible at LW, close to Marion Creek. An extensive log sorting area is 0.5 mile NNW of Williamsons Landing. A large mill has a wharf with covered conveyor for loading barges.

345 **Twin Creeks** is about 1.5 miles north of Williamsons Landing. Extensive booming grounds are in the vicinity. Numerous **buoys** and **boomsticks** between Williamsons Landing and Twin Creeks provide moorings for log booms and rafts. A **wreck** close to the booming grounds *(49°28'01"N, 123°28'21"W)* is at a depth of 145 m and is considered a hazard to nets and towed underwater equipment.

346 **Witherby Point**, about 1.8 miles north of Williamsons Landing, is steep-to and very prominent. **Mariners Rest**, 0.9 mile SE of Witherby Point, is a rock off the west extremity of Gambier Island. **Andys Bay**, NE of Mariners Rest, has a dock in ruins. Booming grounds and **mooring buoys** are in Andys Bay.

347 Between Witherby Point and **Hillside**, 1.5 miles NW, there is a conspicuous row of lights on top of poles, booming grounds, several **mooring buoys** and a barge loading ramp. A gravel quarry, booming ground, and marine farm are about 0.5 mile north of Hillside. A First Nations reserve is 0.6 mile north of Hillside.

348 A **Foul area** (disposal site), under permit through the *Canadian Environmental Protection Act*, is located at *49°31'N, 123°28.3'W*.

349 **Port Mellon** *(49°31'N, 123°29'W)* is the site of a large pulp mill run by *Howe Sound Pulp and Paper* (604-884-5223). Its principal exports are wood pulp. The port is used mainly by cargo vessels. The inner approach to the port is deep and free of dangers.

350 *Howe Sound Pulp and Paper Deep Sea* **wharf** is 189 m long with a least depth of 10.6 m alongside and a height of 1.1 m. It is used mainly for loading pulp, which is brought alongside by 9 tonne lift trucks. Loading is done by ships gear. Fresh water and telephone are available. There is

no shore gangway. The wharf has 5 200 m^2 of covered storage and 2 045 m^2 of open storage. It is recommended that vessels berth starboard side to. A barge loading facility is close west of the wharf. A dock for seaplanes is close west of the barge loading facility. Rail-car barge ramp and chip handling facilities for barges are east of the wharf.



351 A **submarine pipeline** extends about 0.2 mile south from the south entrance point of **Rainy River**.

352 **Seaside Park**, a short distance NE, has barge unloading facilities protected by a **breakwater** marked with a private light.

353 **Latona Passage**, between **Woolridge Island** *(49°31'N, 123°28'W)* and Gambier Island, is deep and free of dangers in the fairway. Booming grounds are along the east shore of Latona Passage and off the south and north ends of Woolridge Island.

353.1 *Bain Creek Smenmántm K'I kp'ikw and Thornbrough Point txwnaḿ Chá7elkwnech Recreation Sites (Recreations Sites and Trails BC, Sea Kayak Association of BC)* are on the north side of Thornbrough Channel and are suitable for use by kayaks and small vessels. Bain Creek, 1.7 miles ENE of Port Mellon, has eight campsites and Thornbrough Point, 0.8 mile SE of McNab Creek, has 10 campsites. No other facilities are available.

354 **McNab Creek** is in a bight on the north shore of Thornbrough Channel, about 4 miles ENE of Port Mellon. A repair building, A-frame, four storage tanks and a log dump and booming ground are located on the west side of the bight, where dredging has been done to facilitate landing for logging equipment and supplies. Houses are on the east side of the bight close to the mouth of the creek. A dock is behind the spit east of the creek.



355 **Ekins Point** is on the north side of Gambier Island. Close SW of the point are private docks and a floating **breakwater** owned by the *Burrard Yacht Club*. Ekins Point (locality), 0.3 mile SW of the point, has private wharves and docks owned by the *Thunderbird Yacht Club*. *Camp Latona*, 0.3 mile SW of the locality, has a private wharf and dock. A **submarine pipeline** (sewer outfall) is close north of the camp. **Booming grounds** are along the north shore of Gambier Island.



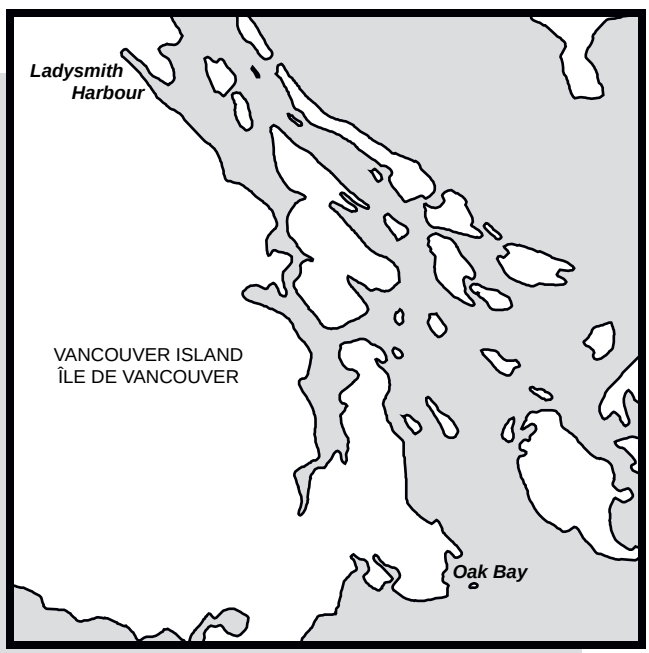
356 *Ekins Point* **light** *(428)*, on the point, is shown at an elevation of 6.4 m from a white cylindrical tower and is fitted with a **radar reflector**.

Gulf Islands South — Oak Bay to Ladysmith Harbour

General

Charts 3440, 3441, 3442, 3443

1 The areas covered in this chapter comprise passages, channels and inlets lying along the SE coast of Vancouver Island from Oak Bay *(48°26'N, 123°18'W)* to Ladysmith Harbour *(49°00'N, 123°49'W)* including adjacent **Gulf Islands** bordering the Strait of Georgia; and all the passages and waters leading NW from Haro Strait and Boundary Pass bounded to the N by Stuart Channel.



2 Several channels leading through the Gulf Islands can be entered from the S end of Haro Strait and the S side of Boundary Pass. Satellite, Swanson, Trincomali and Stuart Channels lead to ports along the Vancouver Island coast. Active Pass and Porlier Pass connect channels within the Gulf Islands to the Strait of Georgia. Active Pass is used by large fast ferries that connect the mainland to Vancouver Island. Porlier Pass is used by large freighters bound from the Strait of Georgia to ports along Vancouver Island.

3 The routes used by tugs and barges and pleasure craft, when proceeding between Juan de Fuca Strait and the Strait of Georgia, are through Sidney Channel and its continuation Moresby Passage on the west side of Haro Strait. From the north end of Moresby Passage the route leads through Swanson and Trincomali Channels and enters the Strait of Georgia through Active Pass. To avoid busy ferry traffic through Active Pass, the route through Captain Passage, Trincomali Channel and Porlier Pass is frequently used. This route is more sheltered than the Haro Strait/Boundary Pass route and there are several good anchorages along it.

4 Pleasure craft are encountered in large numbers throughout the area. Sport and commercial fishing craft usually congregate near the entrances to narrow passages and off prominent headlands where fishing is good.

5 The *Gulf Islands National Park Reserve* (www.pc.gc.ca) comprises sites throughout the southern Gulf Islands. It includes D'Arcy Island north to Prevost Island and Portland Island east to Tumbo Island. The park office 250 654-4000 is in Sidney. Waters surrounding or adjacent to park lands, generally 200 m perpendicularly distant from the natural boundary of the land, are protected marine zones managed by *Parks Canada*. Camping is permitted in designated areas

only; no camping on islets. Dogs must be leashed on park lands.

6 Meteorological information for *Victoria International Airport* and Cowichan Bay, and a wind frequency table for *Saturna Point Light (East Point)* are in the Appendices.

Oak Bay and Approaches

Chart 3424

7 **Mayor Channel** west of **Great Chain Island** is the passage generally used by coastal vessels. It is entered from the south between **Thames Shoal** *(48°25'N, 123°17'W)* and the reefs extending south from Great Chain Island. The north entrance is between **Lewis Reef** and **Fiddle Reef**; this passage is known locally as the **Goal Posts**.

8 **Tidal streams** follow the fairway of Mayor Channel at 2 to 3 kn. The flood sets north and the ebb south.

9 **Mouat Channel**, on the west side of Mayor Channel, separates Thames Shoal from **Lee Rock**. **Harris Island**, **Robson Reef**, **Emily Islet** and **Tod Rock** lie on the west side of Mayor Channel in the approach to Oak Bay.

10 **Port hand buoy** *V25* lies close south of Lee Rock.

11 *Lewis Reef light (213)*, shown from a white cylindrical tower with a red band at top and *Fiddle Reef Sector light (215)*, shown from a white cylindrical tower, are on the reefs.

12 Tod Rock **daybeacon** has a **starboard hand daymark**.

13 ***Harris Island buoy*** VJ, close north of the island, is a **north cardinal buoy**.

14 Robson Reef **daybeacon** has a **port hand daymark**.

15 **Oak Bay** to the west of Mayor Channel has *Oak Bay Marina* (250-598-3369), a full-service **marina**, on its south side. Transient moorage is limited and reservations are strongly advised. It is entered between the **breakwater** at **Turkey Head** and the **breakwater** projecting south from **Mary Tod Island**.

16 A **speed limit** of 8 km/h (4 kn) is prescribed in the *Vessel Operation Restriction Regulations* for that part of Oak Bay west of Mary Tod Island.

17 *Mary Tod Island light (214)*, shown from a mast, is on the south extremity of Mary Tod Island **breakwater**.

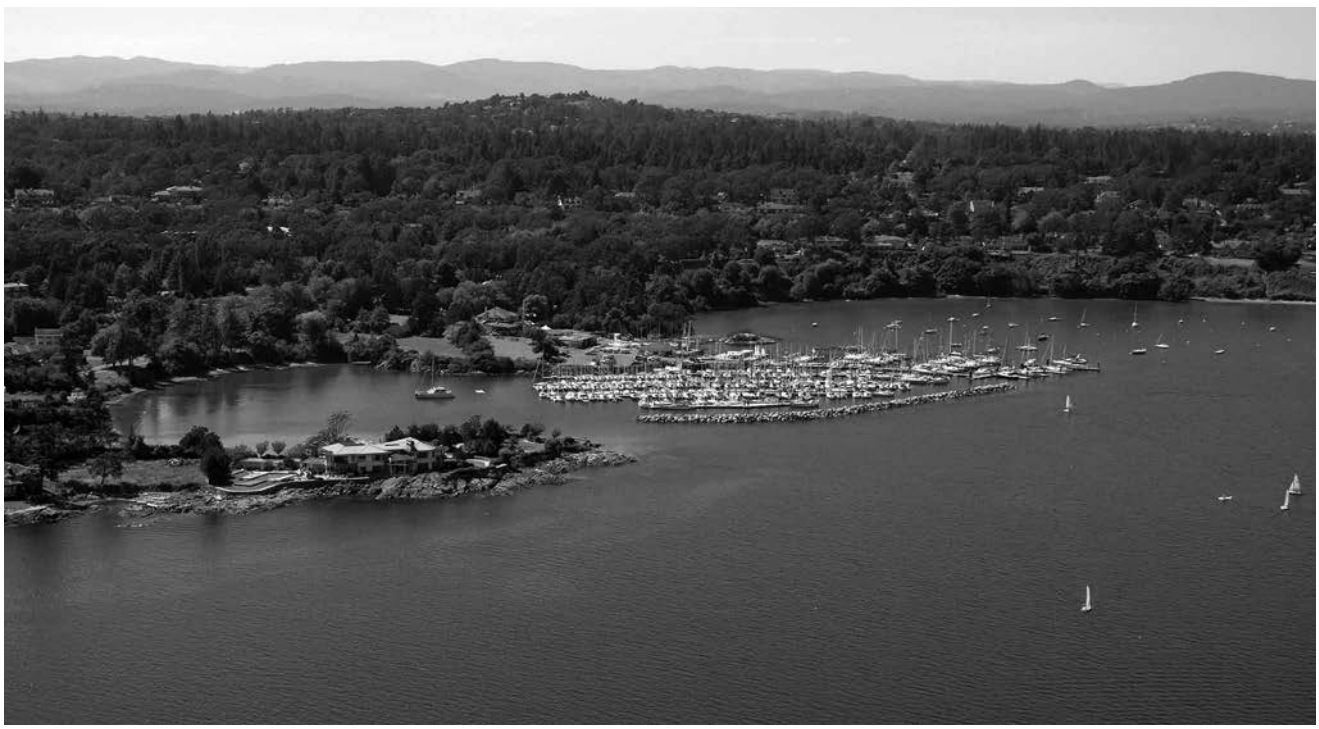
18 **Starboard hand buoy** *V26* marks the outer end of a reef extending west from Mary Tod Island. Numerous private **mooring** and **cautionary buoys** lie to the west.

19 Tidal differences for Oak Bay (7130), referenced on Victoria, are in *Canadian Tide and Current Tables, Volume 5*.

OAK BAY (2005)



CADBORO BAY (2007)



20 A **restricted boating area** at the north end of Oak Bay fronting **Willows Beach** is reserved for swimmers.

21 **Cattle Point** *(48°26'N, 123°17'W)* is the site of a park with boat launching ramps. A **speed limit** of 5 kn applies in this area.

22 Cattle Point **daybeacon** on a drying rock close north of the point has a **bifurcation**/**junction daymark**, preferred channel to the left.

23 **Cadboro Bay**, though open to the SE, is not subject to heavy seas. Tugs and rafts shelter here. A rock **breakwater** on the west side of the bay shelters the *Royal Victoria Yacht Club*. **Anchorage** in mud and sand can be found beyond the yacht club moorage. Cadboro Bay and its approach are often used for yacht races; various **buoys** and markers are likely to be encountered. Several private **mooring buoys** are in the bay.

24 **Hecate Passage** *(48°25'N, 123°15'W)*, at the SE end of Chain Islets, separates **Spencer Ledge** from **Virtue Rock**, about 0.2 mile east.

25 **Plumper Passage**, which separates Discovery and Chatham Islands from the Chain Islets, is entered from the south between Virtue Rock, with 0.6 m over it, and Commodore Point 0.6 mile ENE. The north entrance is between **Carolina Reef** *(48°26'N, 123°16'W)*, which dries 1.2 m, and **Heritage Point** 0.6 mile NE.

26 **Tidal streams** of 3 to 5 kn can be expected within Hecate and Plumper Passages. The flood stream begins almost immediately after low water; it runs for about 3 hr 45 min after which there is a period of slack water. The ebb stream then runs until low water, or for about 7 hours.

27 **Baynes Channel** *(48°27'N, 123°16'W)* leads to Haro Strait between the NW part of the Chatham Islands group and the islands and shoals extending from **Cadboro Point**. The area surrounding Cadboro Point is an Ecological Reserve. The channel has no dangers in the fairway with the exception of the 4.6 m shoal lying 0.5 mile south of Cadboro Point.

28 *Baynes Channel North light (216.3)*, on an islet 0.1 mile ESE of Cadboro Point, is shown from a white cylindrical tower with a green band at top.

29 **Tidal streams** set along the axis of Baynes Channel, at 4 to 6 kn in the north entrance, between Strongtide Islet and Cadboro Point, and at 2 to 3 kn in its south entrance. Secondary current station Baynes Channel (1225), referenced on Race Passage, is given in *Canadian Tide and Current Tables, Volume 5*. The flood sets NE and the ebb SW. Winds can be very changeable in Baynes Channel. **A strong wind opposing the tide will cause heavy tide rips with short, steep seas.**

30 **Submarine cables** cross Baynes Channel from **Maynard Cove** to Chatham Islands.

31 **Chatham Islands** *(48°26'N, 123°15'W)*, on the east side of Baynes Channel, are a compact group of islands and rocks. The islands are low, wooded and almost connected at low water. **Alpha Islet**, **Griffin Island** and the surrounding area are *Ecological Reserves*.

32 **Strongtide Islet**, about 15 m high, is the NW island of the Chatham Islands. It is rocky, wooded and moderately steep-to on its NW side.

33 **Radio towers** 91 m high with red air obstruction lights are on Strongtide Islet. A radio tower 47 m high is on **Vantreight Island**. The largest of the Chatham Islands has **radio towers** 62 m high with red air obstruction lights.

34 **Jemmy Jones Island**, 0.5 mile SW of Cadboro Point on the west side of Baynes Channel, is bare and is an *Ecological Reserve*.

35 **Ten Mile Point** is 1.2 miles WNW of Fulford Reef.

Chart 3440

36 **Telegraph Cove**, **Finnerty Cove** and **Arbutus Cove** lie between Ten Mile Point and **Gordon Head**, 3 miles NNW. **Cormorant Point** is 0.3 mile WNW of Gordon Head. **Gordon Rock**, 0.15 mile north of Gordon Head, dries 1.5 m.

37 A **submarine pipeline** (sewer outfall), close south of Finnerty Cove, extends 0.2 mile offshore. Another pipeline is in the south part of Finnerty Cove.

38 Tidal differences for Finnerty Cove (7140), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

39 **Johnstone Reef**, 1 mile east of Finnerty Cove, dries 0.6 m. **Port hand buoy** *V29* lies close north of the reef.

40 The **wreck** of a former refugee carrying vessel *Black Dragon* sank 0.9 mile NE of Johnstone Reef in December 2003. This steel hulled vessel is 42 m long, 7 m wide and has a draft of 5 m.

41 **Caution. — Many boats have grounded in the vicinity of Little Zero and Zero Rocks. Mariners must reference charts and closely monitor their position.**

42 **Zero Rock**, 1.8 miles NNE of Gordon Head, dries 3 m. It lies in the south approach to Cordova and Sidney Channels. Shoal pinnacles and a rock with less than 2 m over it lie within 0.5 mile north of Zero Rock.

43 *Zero Rock light (223)* is shown from a white tower with a green band at the top.

44 **Little Zero Rock**, 1 mile WNW of Zero Rock, dries 2.4 m and is steep-to on its east side. Shoal pinnacles and a rock with less than 2 m over it extend 0.6 mile WNW from Little Zero Rock.

45 *Little Zero Rock light buoy V30 (222.8)*, 0.6 mile WNW of Little Zero Rock, is a **starboard hand buoy**.

46 **Anchorage** can be obtained in the south part of **Cordova Bay**, about 1 mile NNW of Gordon Head. The holding ground is good and depths are 15 to 16 m.

47 **Military exercise area WC** is located in the north end of Cordova Bay and extends north to Cordova Spit. For details see *Notices to Mariners 1 to 46 Annual Edition*.

Chart 3441

48 **Cowichan Head** *(48°33'N, 123°22'W)* has conspicuous white cliffs that gradually decline in elevation on either side.

49 Shoals extend up to 0.5 mile offshore south of Cowichan Head and north to Island View Beach. The launching ramp at Island View Beach is only suitable for very small craft and becomes difficult to use at low tide.

50 **Kelp Reefs** *(48°33'N, 123°15'W)*, in the centre of Haro Strait, consist of a group of below-water and drying rocks. The main shipping channel through Haro Strait lies between Kelp Reefs and San Juan Island.

51 *Kelp Reefs light (224)*, shown from a white tower, is on a drying reef at the east side of the reefs.

52 **Fairway Patch**, 0.7 mile SW of D'Arcy Island, has a least depth of 9.1 m over it. **D'Arcy Shoals**, 0.7 mile west of D'Arcy Island, consist of two rocky heads.

53 *D'Arcy Shoals light buoy U1 (226.3)*, east of the shoals, is a **port hand buoy**.

54 Cadboro Point in line with Zero Rock light structure *(Chart 3440)*, bearing 165°, leads west of Fairway Patch and D'Arcy Shoals.

55 **D'Arcy Island** *(48°34'N, 123°17'W)* is wooded. Part of *Gulf Islands National Park Reserve*, camping is permitted in designated areas only. The **mooring buoy** on the east side is for park staff only.

56 *D'Arcy Island light (226)*, on the SW side of the island, is shown from a white tower with a red band at the top.

57 **James Spit**, with less than 2 m over it, is a sandy spit extending 1.8 miles SSE from the south coast of James Island.

Cordova Channel

58 **Cordova Channel** *(48°36'N, 123°22'W)* separates James Island from **Saanich Peninsula**.

59 **Tidal streams** in Cordova Channel attain 2-3 kn on the flood, and 1-2 kn on the ebb. The flood sets north and the ebb south.

60 **Submarine cables** cross Cordova Channel between Cordova Spit and James Island. A **submarine cable area** (power) crosses the channel between **Ferguson Cove** and James Island.

SAANICHTON BAY PUBLIC WHARF (2007)



60.1 A **marine farm** lies south of the submarine cable area on the James Island side of Cordova Channel. It is marked by yellow **buoys** with yellow flashing lights.

61 A **submarine pipeline** is laid at the south end of Cordova Spit and two submarine pipelines extend 0.9 mile offshore at **Bazan Bay**.

62 **James Island** has a conspicuous white sand cliff extending across the width of its south coast, its east side is low and sandy. It is privately owned.

63 **Cordova Spit**, on the west side of the channel, is low with clumps of stunted bushes and a row of utility poles.

Chart 3479

64 **Saanichton Bay**, entered between Cordova Spit and **Turgoose Point**, affords **anchorage** open to SE winds. Tidal streams are not significant. The south side of the bay and the south end of Cordova Spit is a First Nations Reserve.

65 Tidal differences for Saanichton Bay (7255), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

66 The **public wharf** close south of Turgoose Point has an approach 35 m long leading to an 18 by 9 m wharfhead with a depth of 4.6 m at its outer end. A dock 10 m long and **mooring dolphins** are on the south side of the wharf approach. Garbage disposal is available at the head of the wharf.

67 Private **mooring buoys** are in Saanichton Bay. **Charted buoys** are for securing log booms and barges.

68 A private light is at the north end of the spit close-off the SW side of James Island.

69 *James Island light (227)*, shown from a **dolphin**, is off the NW extremity of the island.

70 **Radio towers** on **Mount Newton** *(48°37'N, 123°27'W)* have flashing red air obstruction lights.

Sidney Channel

71 **Sidney Channel** is entered from the south between James Spit and D'Arcy Island; its north entrance is between the north extremities of James and Sidney Islands.

72 Secondary current station Sidney Channel (1232), referenced on Race Passage, is in *Canadian Tide and Current Tables, Volume 5*.

73 A **submarine cable** crosses the north entrance of Sidney Channel from the north end of Sidney Island to the Vancouver Island shore close south of Sidney.

74 **Sidney Island** has earth cliffs and banks on the SW side which become white and conspicuous toward their south end. This side of the island is fringed with a drying mud flat extending up to 0.2 mile offshore.

75 **Munroe Rock**, 0.4 mile west of the SW end of Sidney Island, is 1 m high.

SIDNEY SPIT (2007)



76 Two detached **shoals**, 0.3 mile west of the NW part of Sidney Island, have 1.7 and 2.4 m over them.

77 *Sidney Channel light buoy U2 (228)*, SW of the shoals, is a **starboard hand buoy**.

78 **Port hand buoy** *U3* is on the SE side of the shoals.

79 **Sidney Spit** *(48°39'N, 123°20'W)*, a low sandy spit, extends about 1 mile north from Sidney Island. The northern third of Sidney Island is part of *Gulf Islands National Park Reserve* and has picnic and camping facilities. **Mooring buoys** and a landing dock for small craft are on the west side of the spit.

80 Sidney Lagoon, the area south of the public dock on the west side of the spit, is closed to marine traffic. This area is marked by keep out buoys and a beacon. Restricting boat access will limit disturbance to birds and protect ecologically important eelgrass beds. Authorized access will be given to approved research projects and for traditional purposes practiced by *Coast Salish First Nations*.

81 *Sidney Spit light (230.3)*, shown from a white cylindrical tower with a red band at the top, is at the north end of the spit.

Sidney and Tsehum Harbour

82 **Little Group** *(48°40'N, 123°22'W)* is a group of islands and rocks surrounded by drying ledges and shoals lying in the approach to Sidney and Tsehum Harbour. **Little Shell Island** is separated from **Ker Island** by **Byers Passage**. Some piles lie close north of Little Shell Island.

83 *Little Group Rock light (230.5)*, in the centre of the passage between Coal and Ker Islands, is shown from a white cylindrical tower.

84 **Sidney** *(48°39'N, 123°24'W) www.sidneybc.com* is a town with a wide variety of stores, a post office (V8L 3S2), marine hardware stores as well as dental and medical offices, restaurants, and a laundromat. It is the terminal of the *Washington State Ferry* that runs to Anacortes. *Victoria International Airport* is close west.

85 **Caution. — Two shoals, with less than 2 m over them, lie in the approach to the public wharf. One, 0.2 mile SE of the public wharf, is marked by port hand buoy *U5*, the other, 0.2 mile NE of the same wharf, is marked by starboard hand buoy *U6*.**

86 *Sidney Breakwater light (230.7)*, on the south extremity of the north **breakwater**, is shown from a white tower with a red band at the top.

87 Two private lights are shown from the seaward end of the public fishing and recreation pier.

88 *Victoria Aero Beacon light (235)*, west of Sidney, is shown from *Victoria International Airport* control tower.

89 *Sidney Ferry Terminal* has two private flashing lights on the outermost **dolphins**.

90 **Radio towers**, close west of the ferry wharf, display red air obstruction lights.

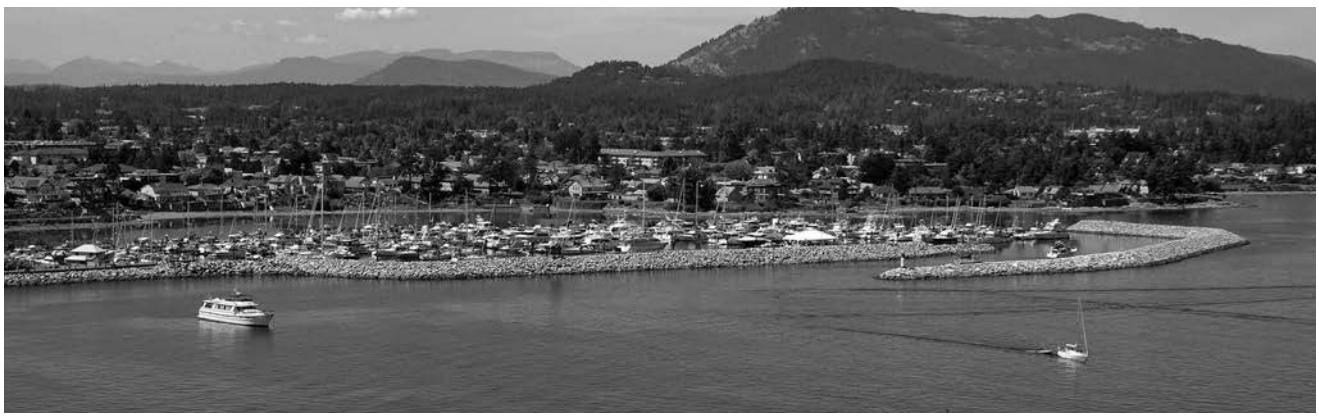
91 A **submarine pipeline**, commencing close north of the ferry wharf, extends 0.4 mile seaward. Another pipeline south of the ferry wharf extends 91 m offshore.

92 A **submarine cable**, about 0.1 mile south of the ferry wharf, is laid across the north entrance of Cordova and Sidney Channels to Sidney Island. A power cable crosses from Roberts Point to Forrest Island.

93 Tidal differences for Sidney (7260), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

94 **Tidal streams** off Sidney are strong, the flood setting north and the ebb south. Currents alongside the

PORT SIDNEY MARINA (2007)



PORT SIDNEY MARINA (2007)



public wharf are variable and during SE weather berthing is difficult; it is advisable to berth at or near slack water.

95 A rock breakwater extending 250 m north from close north of the wharf and a second rock breakwater extending south from drying ledges 0.3 mile north of the wharf protect the marina. The entrance between the breakwaters is about 30 m wide and there are depths of about 2 m alongside the docks.

96 *Port Sidney Marina* (250-655-3711) is a large, full-service **marina** with a customs office for pleasure craft.

97 **Caution. — Port Sidney Marina cannot be entered from the north; many vessels have grounded while trying. Use the entrance between the rock breakwaters immediately south of Sidney Breakwater light.**

98 Beacon Avenue **public wharf** extends about 122 m off shore; its seaward face is 46 m long with a least depth of 4 m alongside, and is equipped with a 3-tonne crane. Garbage disposal facilities are available on the wharfhead. A dock extending south from the wharf is used by a passenger ferry that operates to Tsehum Harbour and Sidney Island.

99 A public fishing and recreation pier extends 140 m offshore close south of the public wharf. The pier is not designed for berthing. Artificial reefs lie on the north and south side of the pier.

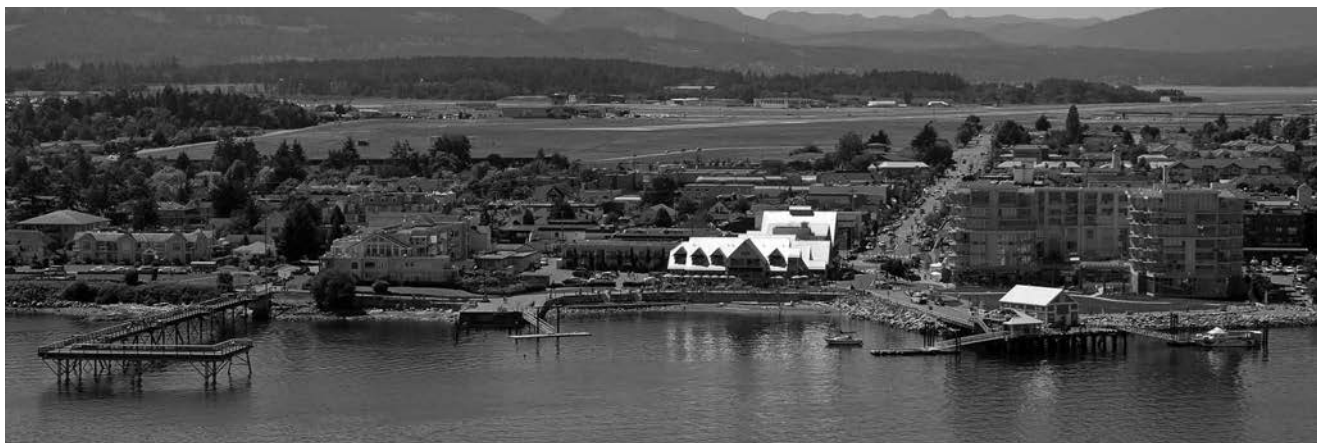
100 The *Sidney Ferry Terminal* is 0.4 mile south of the public wharf.

101 A float and launching ramp, protected by a rock **breakwater**, are at *Tulista Park*, 0.5 mile SW of the public wharf.

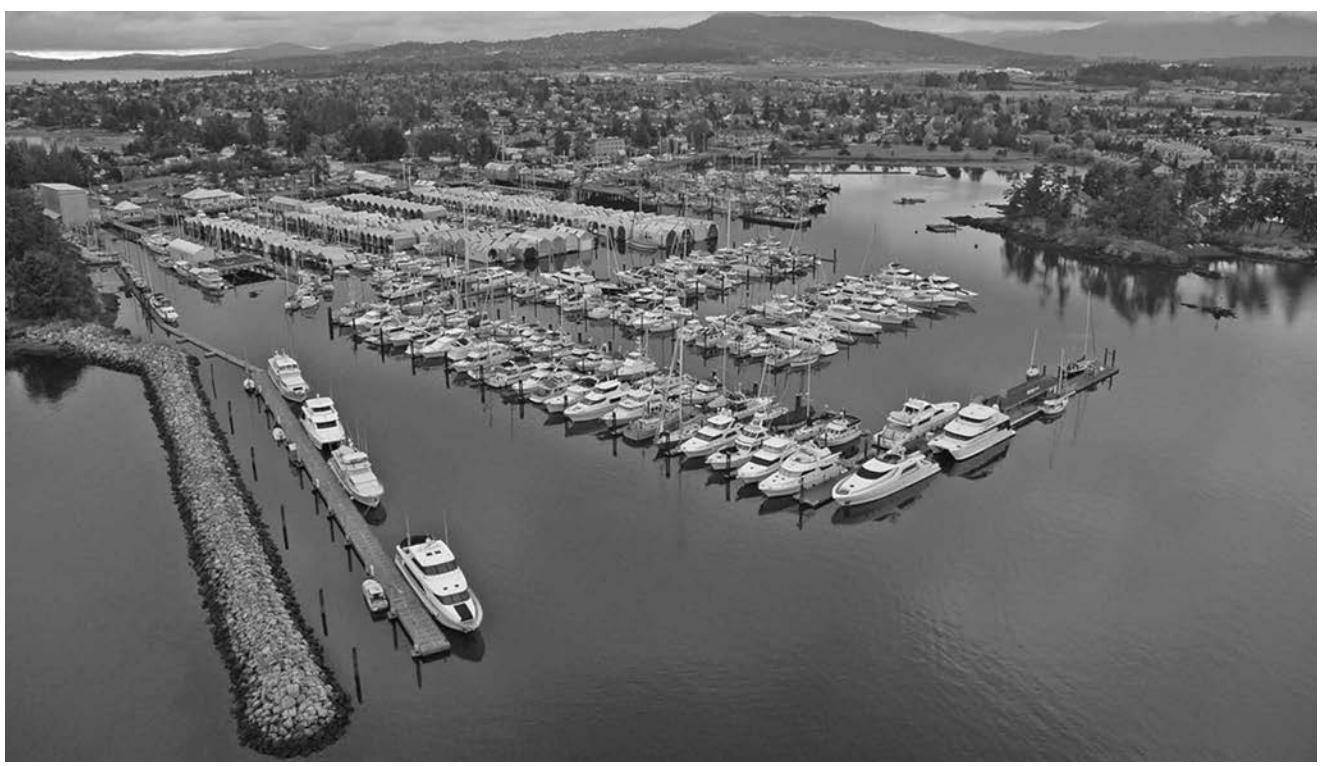
102 **Graham Rock** lies off the entrance to **Roberts Bay** and on the south side of the approach to Tsehum Harbour.

103 *Roberts Bay light (230.6)*, on the NW end of Graham Rock, is shown from a grey skeleton tower with a **port hand daymark**.

SIDNEY FISHING PIER AND PUBLIC DOCK (2007)



TSEHUM HARBOUR (2005)



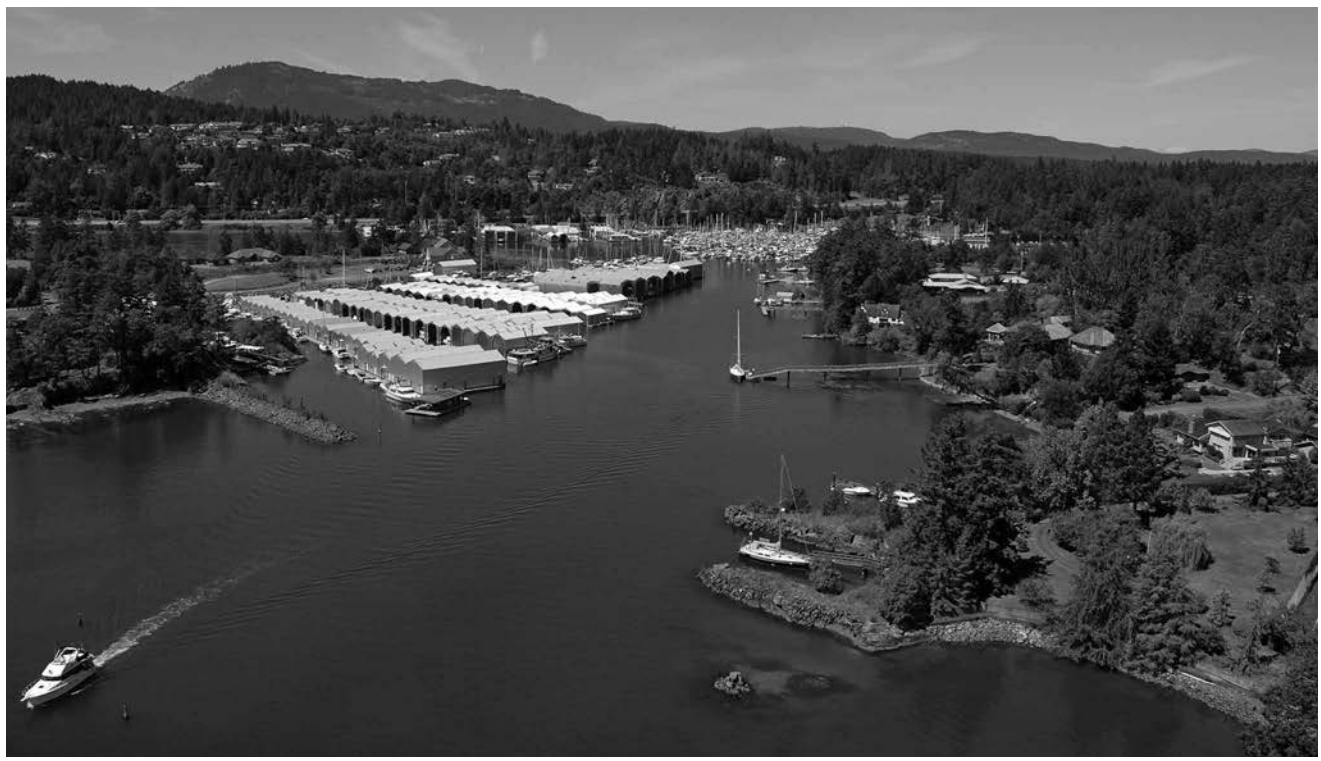
104 **Tsehum Harbour**, operated by the *Tsehum Harbour Authority* 250 655-4496, is known locally as **Shoal Harbour**. It is entered between **Armstrong Point** and **Curteis Point**. Several marinas are in the harbour and it is used extensively by pleasure craft. The channel into the harbour and to the marinas is well marked by **lights**, **daybeacons** and **buoys**.

104.1 A **wreck** of a sailboat, with a least depth unknown, lies about 300 m east of **Mill Point**, with masts visible at high water. Several charted wrecks are in the harbour. Mariners are advised to exercise **caution**.

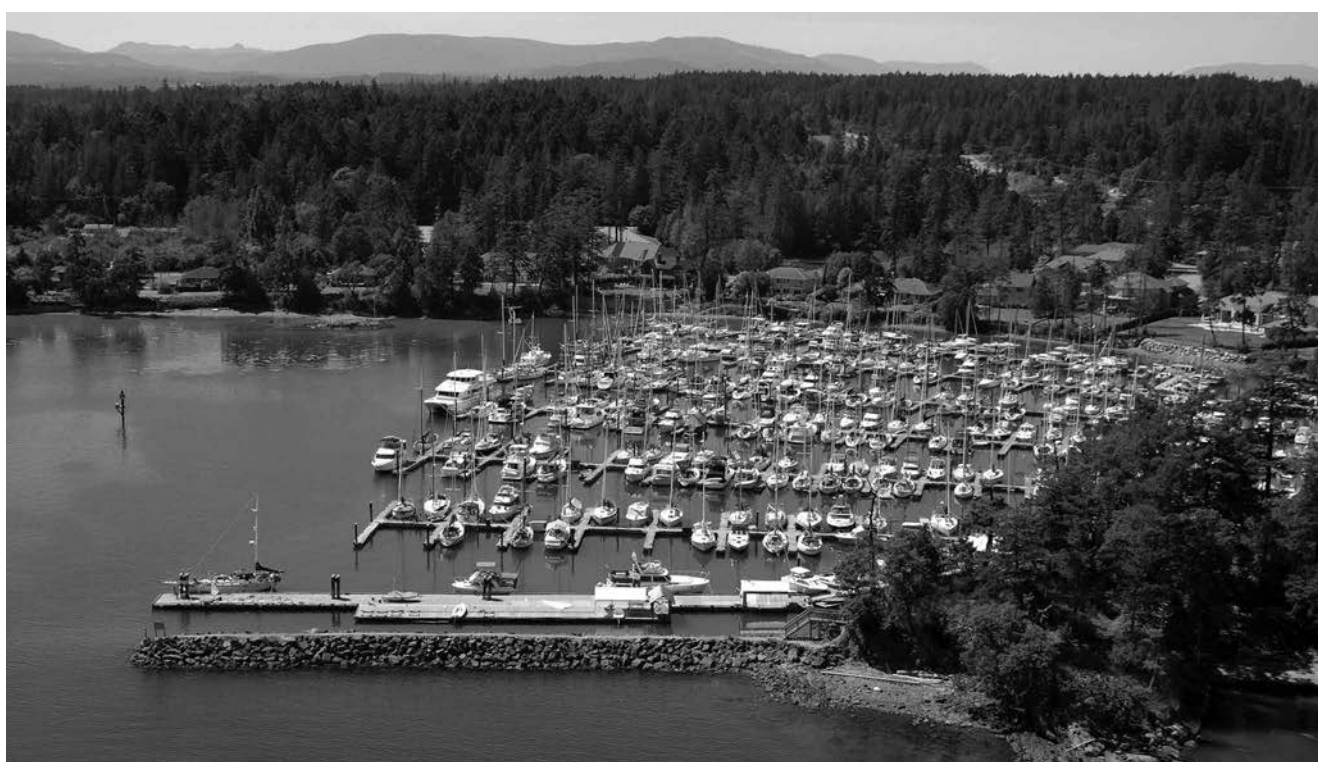
105 **Customs** clearance for pleasure craft can be obtained at the customs dock in All Bay.

106 A **speed limit** of 8 km/h (4 kn) is prescribed by the *Vessel Operation Restriction Regulations* for Tsehum Harbour west of a line drawn between Armstrong and Curteis Points. Also an **anchoring prohibited** area lies between *Tsehum*

TSEHUM HARBOUR NORTH (2007)



BLUE HERON BASIN (2007)



Harbour light (233) and a *private light* off Nymph Point. This area is to remain clear of vessels and moorings to permit safe navigation.

107 Shoals extend 0.25 mile ESE from Curteis Point. The north shore of Tsehum Harbour, between Curteis Point and **Kingfisher Point**, is fringed by drying and below-water rocks.

108 **All Bay** is on the south side of Tsehum Harbour, west of **Thumb Point**. **Blue Heron Basin** is at the west end of Tsehum Harbour. The full-service **marina** here is *Van Isle Marina* (250-656-1138).

109 A **submarine pipeline** runs from the shore north of Nymph Point seaward through central Tsehum Harbour to a point 0.3 mile west of Little Shell Island. There have been frequent problems with this pipeline breaking away from the seafloor and rising to the surface.

110 *Tsehum Harbour light (233)*, 0.3 mile SW of Curteis Point, is shown from a **dolphin** with a **starboard hand daymark**.

111 *Tsehum Harbour Entrance light (234.1)*, about 0.1 mile WNW of the above light, is shown from a mast with two **starboard hand daymarks**.

112 *Blue Heron Basin Entrance light (234.3)*, 0.1 mile SW of Kingfisher Point, is shown from a **dolphin** with a **port hand daymark**.

113 *Blue Heron Basin light (234.5)*, at the entrance to the south boat basin, is shown from a **dolphin** with a **port hand daymark**.

114 A private light is shown from the outer end of the **breakwater** extending north from Thumb Point. Two private lights are on the outer end of the wharves at the marina west of All Bay. Private lights are on the outer ends of the **breakwaters** extending south from the north entrance point of Blue Heron Basin.

115 **Daybeacons** mark the entrance to All Bay, the channel leading to the marina west of All Bay, the channel leading into Blue Heron Basin, and the channel leading north from *Blue Heron Basin Entrance light* into the north arm of Tsehum Harbour.

116 **Caution. — The channel leading into the north arm of Tsehum Harbour is very narrow and shallow. A number of vessels have grounded here. This channel should be considered marginal at best for keel vessels at or near low water. Mariners must ensure that they are aware of the position of their vessel in relation to the bottom at all times.**

117 The **public wharf** in All Bay has two wharfheads and docks with depths of 2.4 m alongside. Power is laid on the docks and fresh water and garbage and used oil disposal facilities are at the wharfhead.

118 Full-service **marinas** include *Westport Marina* 250 656-2832 and *North Saanich Marina* 250 656-5558.

119 **Repairs** to hull and engine can be carried out by several boatyards. Marine ways capable of hauling out craft up to 24.3 m long, 5.2 m beam and 2.4 m draught are available.

Miners Channel and Prevost Passage

120 **Miners Channel**, entered between **Hamley Point** *(48°36'N, 123°16'W)* and Halibut Island, 1 mile north, leads NW along the NE coast of Sidney Island and is sometimes used by small commercial vessels. The Sidney-Anacortes ferry passes through the north end of Miners Channel.

120.1 An unnamed cove is on the east side of Sidney Island, west of Halibut Island. A private dock, protected by a rock **breakwater** with a private light, are on the east side of the cove. Two drying **rocks**, one with a 2.8 m over it, lie in the approach to the dock and are marked by a private **port hand buoy**.

121 **Mandarte Island**, 0.7 mile NW of Halibut Island, is bare with the exception of a few stunted trees at the NW end. It is a First Nations Reserve and a nesting area for seabirds. Shoals extend SE and NW of the island.

122 *Mandarte Island North light (225.2)* shown from a white cylindrical tower with a green band at the top is on the bare rock 0.3 mile NW of the island.

123 **South Cod Reef** *(48°39'N, 123°18'W)* dries 0.3 m and **North Cod Reef** dries 1.8 m, they lie south of the west end of Gooch Island.

124 *South Cod Reef light buoy US (225.3)* is a **south cardinal buoy**.

125 *Forrest Island light (225.4)* shown from a white cylindrical tower with a red band at the top is on an islet 0.2 mile SE of the island.

126 **Forrest Island** *(48°40'N, 123°20'W)*, about 1 mile west of North and South Cod Reefs, is wooded and surrounded by drying reefs. A **breakwater** is on the NE side of the island. **Sunk Rock** lies 0.3 mile NW of Forrest Island.

127 **Dock Island** *(48°40'N, 123°21'W)*, the east island of Little Group, lies on the west side of the passage leading north from Sidney and Miners Channels to Moresby and Shute Passages. Dock Island and unnamed islets west and south of it are part of *Gulf Islands National Park Reserve*; no camping.

128 *Dock Island light (230)* shown from a white cylindrical tower with a green band at the top is on the east side of the island.

129 Beaver Point *(48°46'N, 123°22'W)* seen midway between the east extremity of Portland Island and the west Pellow Islet, bearing 355°, leads about 0.1 mile west of Sunk Rock *(Chart 3441)*.

130 **Greig Island**, 0.7 mile north of Forrest Island, is bare. Part of *Gulf Islands National Park Reserve*; no camping.

131 Greig Island **daybeacon**, on a drying rock close north of the island, has a **starboard hand daymark**.

132 **Domville Island** *(48°40'N, 123°19'W)* and **Brethour Island**, NE of Forrest Island, are separated by a narrow channel. **Rubly Island** lies close SE of Domville Island and **Sheep Island** lies off the NW extremity of Domville Island. A chain of above-water and drying rocks extends NW of Brethour Island with **Reay Island** at the extremity. Reay Island is part of *Gulf Islands National Park Reserve*; no camping.

133 A **breakwater** and private dock are on the NW side of Brethour Island. Another **breakwater** is on the SE side of Sheep Island.

134 **Joan Rock**, 1 mile west of Arachne Reef and 0.4 mile north of Brethour Island, has 0.6 m over it. **Starboard bifurcation buoy** *UH* is on the NW side of Joan Rock. **Imrie Island**, 0.7 mile NW of Joan Rock, is grassy and part of *Gulf Islands National Park Reserve*; no access permitted.

135 **Prevost Passage** connects the main shipping channel of Haro Strait to Moresby Passage.

Moresby and Shute Passages

136 **Moresby Passage** *(48°43'N, 123°21'W)*, between Moresby and Portland Islands, is a continuation of the route north from Sidney Channel. Ferries leaving Swartz Bay use this passage.



137 **Tidal streams** run fair through the constricted north entrance of Moresby Passage at 2 to 3 kn. The flood sets north and the ebb south.

138 **Seymour Point** *(48°43'N, 123°20'W)* is the west extremity of Moresby Island. **Reynard Point**, 0.7 mile NNE of Seymour Point, has a drying rock ledge extending 0.2 mile WNW from it.

139 **Canoe Rock** *(48°44'N, 123°20'W)* is a drying rock lying in the north entrance of Moresby Passage.



140 *Canoe Rock light (256)* is shown from a white tower with a red band at the top.

141 **Portland Island**, on the west side of Moresby Passage, is surrounded by drying and below-water rocks extending up to 0.5 mile offshore. Also known as Princess Margaret, the island is part of *Gulf Islands National Park Reserve* which encompasses the whole of Portland Island as well as Pellow Islets and Tortoise Islets. A 400 m zone surrounding the island is a protected marine zone managed by *Parks Canada*. A dinghy dock is in Royal Cove.

142 **Pellow Islets** are on a drying reef extending from the east extremity of Portland Island. They have a few stunted trees on them and are conspicuous from north and south. Part of *Gulf Islands National Park Reserve*.

143 *Pellow Islets light buoy U15 (256.5)*, about 0.25 mile SE of the islets, is a **port hand buoy**.

144 The *G.B. Church*, a steel hulled coastal freighter 53 m long, was sunk close south of Pellow Islets as an artificial reef for divers. It is marked by **mooring buoys**.

145 **Turnbull Reef**, north of Pellow Islets, consists of several drying heads surrounded by shallow water extending 0.4 mile NE from Portland Island. Kelp is present on the reef during summer but is often drawn underwater by the strength of tidal streams.

146 The west side of Imrie Island in line with the west side of Reay Island, bearing 165°, leads through the deepest part of Moresby Passage. It has been reported that in certain light conditions, Reay Island cannot be observed on the above bearing because of an unfavourable background.

147 **Shute Passage**, south of Portland Island and north of Coal, Pym, Knapp and Piers Islands, leads NW into Satellite Channel. **Celia Reefs** and some drying reefs close-off the islands on the south side are the only dangers.

148 *Celia Reefs light buoy U14 (240.5)*, south of the reefs, is a **starboard hand buoy**.

149 **Ferries** from Swartz Bay frequently cross Shute Passage coming from Gosse Passage to the south and bound for Active Pass.



150 A **submarine cable** is laid across the NW end of Shute Passage.



151 **Hood Island** *(48°43'N, 123°22'W)* is joined to the south end of Portland Island by a drying ledge. **Princess Bay**, entered north of **Tortoise Islets**, provides **anchorage** for small craft.

152 **Brackman Island**, off the SW side of Portland Island, is wooded and cliffy on its east side. Part of *Gulf Islands National Park Reserve*; no access permitted.

Tsehum Harbour to Colburne Passage

153 A **speed limit** of 8 km/h (4 kn) is prescribed by the *Vessel Operation Restriction Regulations* for Page Passage, Canoe Bay and Iroquois Passage.

154 **Page Passage** is entered from the south between Curteis Point and **Kamaree Point**. **Fernie Island** and **Johnson Islet** are on the east side of the passage and **Kolb Island**, with **Harlock Islet** close SE, form its west side. **Rose Rock** lies in mid-channel, at the north end of Page Passage. Three rocks, two with less than 2 m over them and one that dries 0.2 m, lie in or near mid-channel. The north rock is marked by a **daybeacon** with **two port hand daymarks**.

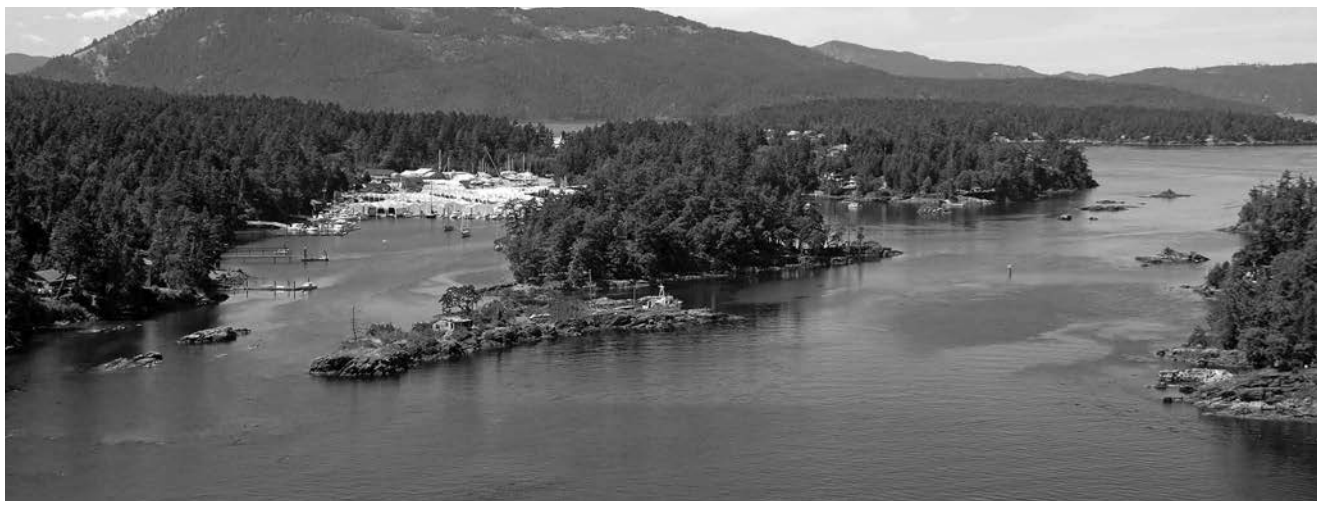


155 An **overhead cable**, vertical clearance 8.8 m, crosses between Kolb Island and Harlock Islet.



156 **Submarine cables** cross Page Passage in several locations.

PAGE PASSAGE (2007)



CANOE BAY (2005)



157 **Canoe Bay**, locally known as **Canoe Cove**, is approached between Kolb Island and **Musclow Islet**. Numerous drying reefs and below-water rocks lie to the north and west of Musclow Islet.

158 A private **daybeacon** is in the north part of Canoe Bay.

159 *Canoe Cove Marina* (250-656-5566) in Canoe Bay is a full-service **marina** with extensive berthing for small craft. Repairs and supplies are available.

160 **Customs** clearance for pleasure craft can be obtained at the dock at the east end of the marina.

161 **Anchorage** for small craft can be obtained between the marina and Kolb Island. A **submarine cable** and a **submarine pipeline** cross the south part of the bay to Kolb Island and several private **mooring buoys** are in the bay.

162 **Iroquois Passage**, entered from the south between **Goudge Island** and Fernie Island, leads NW passing east of Musclow Islet; it enters Colburne Passage between **Swartz Head** and *Goudge Island light*. A reef of above-water and drying rocks extends NNW from Musclow Islet to Swartz Head. The wharves and **breakwater** on the west side of Goudge Island are private.

163 **Submarine cables** and a **submarine pipeline** cross the north end of Iroquois Passage.

164 *Goudge Island light (237)* shown from a white cylindrical tower is on a reef close NW of the island.

165 **John Passage** separates **Coal Island** from Goudge Island and is entered from the south between **Killer Whale Point** and Fernie Island. **Cap Rocks** lie close-off Killer Whale Point and several drying reefs lie in the fairway. **John Rock**, off the SE end of Goudge Island, dries 2.2 m and is the south rock of the drying reefs.

166 **Submarine cables** cross John Passage close south of Carney Point and across the north entrance from Lewis Bay.

167 *Fernie Island light (236),* on a drying ledge extending SE from the island, is shown from a white tower with a green band at the top.

168 John Passage **daybeacon**, on a drying reef close north of John Rock, has a **port hand daymark**.

169 Coal Island **daybeacon**, on a drying reef 0.1 mile north of John Passage daybeacon, has a **starboard hand daymark**.

170 **Lewis Bay**, in the north part of Coal Island, is entered between Carney Point and Fir Cone Point. A reef of drying rocks extends 0.1 mile NW from **Carney Point**. A rock with 1.3 m over it lies in the centre of the bay. A breakwater and privately owned docks close east of it are at the head of the bay.

171 An **overhead cable**, clearance unknown, crosses the foreshore at the north end of Goudge Island.

172 Coal Island forms the south side of the east entrance to Colburne Passage. Its north side is cliffy and moderately steep-to.

Colburne Passage

173 **Colburne Passage** is entered from the east between **Fir Cone Point**, the NW extremity of Coal Island, and **Pym Island** *(48°42'N, 123°23'W)*. It leads west to Satellite Channel between Coal Island, Goudge Island and Saanich Peninsula on the south and Pym, Knapp and Piers Islands on the north. Stranger and Gosse Passages lead from its north side into Shute Passage; John and Iroquois Passages lead south from its south side.

174 Large fast ferries, continually arriving and departing from the terminal at Swartz Bay, use the east or west entrances to Colburne Passage. Charted ferry routes are general indications of the route followed. Ferries can be encountered anywhere within vicinity of the route shown.

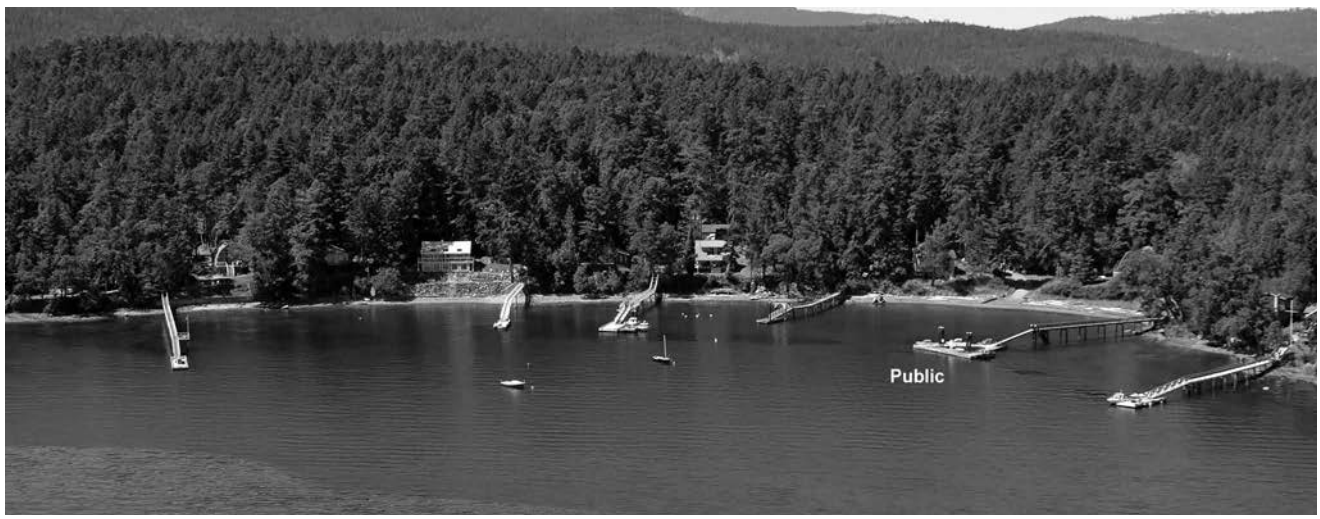
175 **Caution. — Ferries are limited in their ability to maneuver, especially during docking. Vessels should give ferries a wide berth and maintain a vigilant look-out especially near ferry routes and terminals.**

176 **Tidal streams** of 1 to 2 kn can occur in Colburne Passage; the flood sets west and the ebb east.

SWARTZ BAY (2005)



PIERS ISLAND PUBLIC WHARF (2007)



177 **Submarine cables** and a **submarine pipeline** cross Colburne Passage.

178 *Coal Island light (238)*, on Fir Cone Point, is shown from a white cylindrical tower with a green band at the top.

179 *Coal Island light buoy U8 (240)*, 0.2 mile N of Coal Island light, is a **starboard hand buoy**.

180 **Swartz Bay** *(48°41'N, 123°24'W)* is on the south side of Colburne Passage, about 1 mile west of Fir Cone Point. It is the site of *Swartz Bay Terminal*, operated by *BC Ferries*. Regular and frequent passenger and vehicle services are maintained to and from Tsawwassen, on the mainland, and to places in the Gulf Islands. Swartz Bay lights at the terminal are private and fitted with radar reflectors. The fog signal is operated by ferry personnel when required for ferry movements. The ferry berth close east of the *BC Ferries* terminal is for freight ferries operating from the Fraser River.

181 Tidal differences for Swartz Bay (7270), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

182 Swartz Bay **public wharf**, operated by the *Southern Gulf Islands Harbour Commission* (250-655-3256), is east of the ferry landings. It is 26 m long at the end of a trestle approach ramp. The outer end of the wharf has a depth of 0.6 m. The bottom surrounding the wharf is mainly rock ledges with sand and gravel patches between; a depth of 0.6 m lies 10 m NE of the wharf. The dock is used by daily commuters; long-term moorage is limited to three days. The yellow reserved area is only for emergency use and private and commercial loading and unloading.

183 **Wilhelm Point**, 0.7 mile north of Swartz Bay, is the SE extremity of Piers Island. Numerous private piers and docks line the shores of Piers Island.

184 The Piers Island **public wharf**, operated by the *Southern Gulf Islands Harbour Commission* (250-655-3256), is close NW of Wilhelm Point. The docks, each 21 m long, form a triangle and have depths of 1.2 to 2.1 m alongside.

185 **Indian Point**, the SW extremity of Piers Island, has a drying ledge extending 0.1 mile SW from it. **Patrol Island** on the drying ledge is 5 m high.

186 **Shoals** lie in the west entrance of Colburne Passage, south and SE of Indian Point; the fairway through these shoals is marked by the following light buoys and light.

187 *Colburne Passage light buoy U18 (248)*, 0.3 mile S of Piers Island, is a **starboard hand buoy**.

188 *Patrol Islet light buoy U16 (248.2)*, 0.2 mile south of Patrol Island, is a **starboard hand buoy**.

189 *Colburne Passage South light (248.1)*, on a shoal about 0.3 mile south of Patrol Island, is shown from a white cylindrical tower with a green band at the top.

Stranger and Gosse Passages

190 **Stranger Passage**, between Pym and Knapp Islands, connects Colburne Passage to Shute Passage. Its south end is obstructed by a drying ledge extending east from Knapp Island, and by a rock with 2.0 m over it in the centre of the fairway. A private **daybeacon** is on the drying ledge.

191 **Submarine cables** cross the south end of Stranger Passage.

192 **Gosse Passage**, between **Knapp Island** *(48°42'N, 123°24'W)* and **Piers Island**, connects Colburne Passage to Shute Passage. It is encumbered with **Clive Island**, the rocks and shoals extending 0.1 mile south from it and by a shallow ridge extending west from Knapp Island. The NE coast of

Piers Island, between **Schmidt Point** and **Harvey Point**, is encumbered with several off-lying drying reefs. **Peck Reef** is the only named reef of this group.

193 **Ferries** continually arriving and departing from Swartz Bay use Gosse Passage.

194 A **submarine cable** is laid down the centre of Gosse Passage.

195 *Clive Island light (246),* on a drying ledge extending SE from the island, is shown from a white cylindrical tower with a green band at the top.

196 *Knapp Island light buoy U10 (247)* is a **starboard hand buoy**.

197 *Gosse Passage light buoy U9 (247.3)* is a **port hand buoy**. These buoys mark the fairway on the SE side of Clive Island.

198 *Piers Island light buoy U12 (245),* about 0.3 mile NE of Clive Island, is a **starboard hand buoy**.

199 Peck Reef **daybeacon** has a **port hand daymark**.

Satellite Channel

Chart 3441

200 **Satellite Channel** *(48°43'N, 123°28'W),* entered from Swanson Channel at its east end, leads around the south end of **Saltspring Island** to Fulford Harbour, Saanich Inlet, Cowichan Bay and the south end of Sansum Narrows. Shute and Colburne Passages enter the south side of Satellite Channel.

201 The east end of Satellite Channel is frequently used by large ferries going between Swartz Bay, at the north end of Saanich Peninsula, and Tsawwassen on the mainland. Smaller ferries cross Satellite Channel between Swartz Bay and Fulford Harbour. Charted ferry routes are general indications of the route followed.

202 Tidal predictions in Satellite Channel are given for Fulford Harbour (7330). Tidal differences, referenced on Fulford Harbour, are given for Cowichan Bay (7310); predictions and tidal differences are in *Canadian Tide and Current Tables, Volume 5*.

203 **Tidal streams** attain 1 to 2 kn in Satellite Channel. In the vicinity of Cape Keppel the flood sets NW and the ebb SE.

204 **Submarine cables** cross the east end of Satellite Channel from close SW of Beaver Point to Shute Passage. The shore end of the cables, SW of Beaver Point, is marked by an **orange square daymark** and cable sign. Another cable crosses Satellite Channel from about 1 mile west of Isabella Island to the north end of Saanich Peninsula, both ends are marked by cable signs.

205 **Beaver Point** *(48°46'N, 123°22'W)*, the NE entrance point to Satellite Channel, is the site of a park and campsite. **Eleanor Point**, 1.3 miles SW of Beaver Point, has a rock 0.3 m high close SE of it.

206 *Beaver Point light (257)* is on the point and is shown from a white cylindrical tower with a green band at the top.

207 **Chesil Bank** *(48°45'N, 123°22'W),* in the east entrance of Satellite Channel, has a least depth of 8.3 m.

208 **Chads Island**, 0.4 mile SW of Chesil Bank, is separated from the north side of Portland Island by a narrow channel, almost entirely blocked by above-water and drying rocks. **Royal Cove** is reported to afford **anchorage** for small craft; a dinghy dock is at the head of the cove. **Kanaka**

FULFORD HARBOUR (2005)



Bluff, the west extremity of Portland Island, is moderately steep-to.

209 *Kanaka Bluff light (241)* is shown from a white tower with a red band at the top.

Fulford Harbour and Approaches

Charts 3478, 3441

210 **Fulford Harbour** *(48°46'N, 123°27'W)* indents the S coast of Saltspring Island. It is used by mainly pleasure craft and ferries. The settlement of Fulford Harbour is at the head of the inlet 2 miles from the entrance.

211 Reginald Hill, 248 m high, bare and rocky, stands 2 km SE of the harbour.

212 Tidal predictions for Fulford Harbour (7330) are in *Canadian Tide and Current Tables, Volume 5*.

213 The main approach to Fulford Harbour is from Satellite Channel between **Russell Island** *(48°45'N, 123°24'W)* and **Isabella Point**, 1 mile SW. Russell Island is part of *Gulf Islands National Park Reserve*; no camping. An alternate approach is through the channel N of Russell Island but take care to avoid **Louisa Rock** *(48°45'N, 123°25'W)* and other detached shoals off the Saltspring Island shore. A detached shoal with 4.3 m over it is 0.2 mile S of the east extremity of Russell Island. **Cecil Rock**, 0.2 mile south of Russell Island, has less than 2 m over it.

214 **Kingfisher Cove**, NE of Louisa Rock, has a **breakwater**, with a private **daybeacon**, extending from its west entrance point.

215 **Fulford Harbour**, entered west of **Jackson Rock**, penetrates the south shore of Saltspring Island for 1.5 miles. It is used mainly by pleasure craft and *BC Ferries* that run between Fulford Harbour and Swartz Bay on Vancouver Island. **Fulford Harbour village**, at the head of the inlet, has a gas station, post office (V0S 1C0), store and restaurant. It is connected to Ganges by road. Numerous private docks and **moorings** are in Fulford Harbour.

216 *Jackson Rock light (243)*, on a drying rock about 0.2 mile W of Jackson Rock, is shown from a white cylindrical tower with a red band at the top.

217 *Fulford Harbour light (244)*, and *Fulford Harbour Dolphin light (244.1)*, at the ferry landing, are private.

218 **Anchorage** for small craft is available clear of the ferry route in 18 to 26 m.

219 *Fulford Outer Harbour* **public wharf** has a length of 16 m; *Fulford Inner Harbour* **public wharf** has a berthing length of 36 m with a depth alongside of 3 m. Both wharves are operated and maintained by the *Harbour Authority of Saltspring Island* (250-537-5711). The *BC Ferries* facility is close north to the inner wharf.

220 *Fulford Harbour Marina* (250-653-4467) offers seasonal transient and permanent moorage. Power, showers and washrooms are available.

221 **Isabella Island** *(48°44'N, 123°26'W)* and a small islet close west of it are connected to the Saltspring Island shore by a drying ridge. Isabella Island is part of *Gulf Islands National Park Reserve*.

222 *Isabella Island light (242)*, on the SE extremity of the island, is shown from a white cylindrical tower with a green band at the top.

223 **Cape Keppel** is the south extremity of Saltspring Island. The land rises steeply from Cape Keppel to the summit of **Mount Tuam**, 0.9 mile NE.

224 **Shute Reef** *(48°43'N, 123°26'W)* dries 1.2 m. **Arbutus Island** is grassy with a few arbutus trees.

225 *Shute Reef light (248.3)*, on the reef, is shown from a white cylindrical tower.

226 **Radio towers** with red air obstruction lights are on the summit of **Cloake Hill** on the south side of Satellite Channel. On the north side of the channel **radio towers**, with red air obstruction lights, are on the summit of Mount Tuam.

227 The Saltspring Island shore west of Isabella Island and an area covering approximately 1 square mile at the junction of Satellite Channel and Saanich Inlet are *Ecological Reserves*.

228 **Patey Rock** *(48°42'N, 123°31'W)* dries 2 m.

229 *Patey Rock light (249)* is shown from a white tower with a green band at the top.

230 **Hatch Point**, the west entrance point to Saanich Inlet, has a ruined conveyor and overturned barge on it.

231 A **wharf**, 0.4 mile NW of Hatch Point, has a pipeline system and is used by coastal oil tankers. Private lights are shown from the dock.

232 A floating **breakwater**, protecting a private pier with a dock, is close south of the wharf.

Cowichan Bay

Charts 3478, 3441

233 The west end of Satellite Channel *(48°43'N, 123°32'W)* forms the south approach to Cowichan Bay and Sansum Narrows.

234 Eight designated **anchorages** are in Cowichan Bay and its south approach. Anchorages 1, 3 and A lie within Cowichan Bay. Anchorages B to F lie in the west part of Satellite Channel. The bottom is mud.

COWICHAN BAY (2007)



Table 6.1 Major Port Facilities — Cowichan Bay

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Cowichan Bay Dock Berth 1 (Southern)	155	9.3 (9.9 3 m off dock face)	0.5	Handles lumber and forest products. Forklifts. Power and telephone. Operator: Western Stevedoring Company Ltd.
Cowichan Bay Dock Berth 2 (Northern)	198	8.3 (9.7 3 m off dock face)	0.5	Handles lumber and forest products. Mooring dolphin 15 m north connected by walkway. 8 ha paved storage. Forklifts, lumber carriers. Power and telephone.

235 **Cherry Point** is 1.5 miles NW of Hatch Point. **Boatswain Bank** extends east from the drying flats between Cherry and Hatch Points; it has a sand bottom.

235.1 A steel post extending at an angle out of the water is located close to the shore in Boatswain Bank.

236 **Musgrave Rock**, 1.5 miles north of Cherry Point, has 2.1 m over it and is marked by **starboard hand buoy** *U26*.

236.1 A private ODAS **buoy** is approximately 0.5 mile NW of Cherry Point.

Chart 3478

237 **Separation Point** *(48°45'N, 123°34'W)* is the north entrance point to Cowichan Bay and the SW entrance point of Sansum Narrows.

238 *Separation Point light (250)* is shown from a white cylindrical tower.

239 **Mount Tzouhalem** *(48°46'N, 123°37'W)*, with **Skinner Bluff** forming its SE side, is conspicuous from all directions.

240 **Cowichan Bay**, entered south of Separation Point, has a large drying mud flat, about 0.8 mile wide, at its west end. **Cowichan River** and **Koksilah River** discharge into the bay across these flats.

241 **Cowichan Bay settlement**, on the south shore, is a resort for tourists who take part in the fishing for which the bay has achieved a wide reputation. The port exports significant quantities of lumber and forest products. The largest vessel to use the port was 196 m long with a draught of 10.4 m.

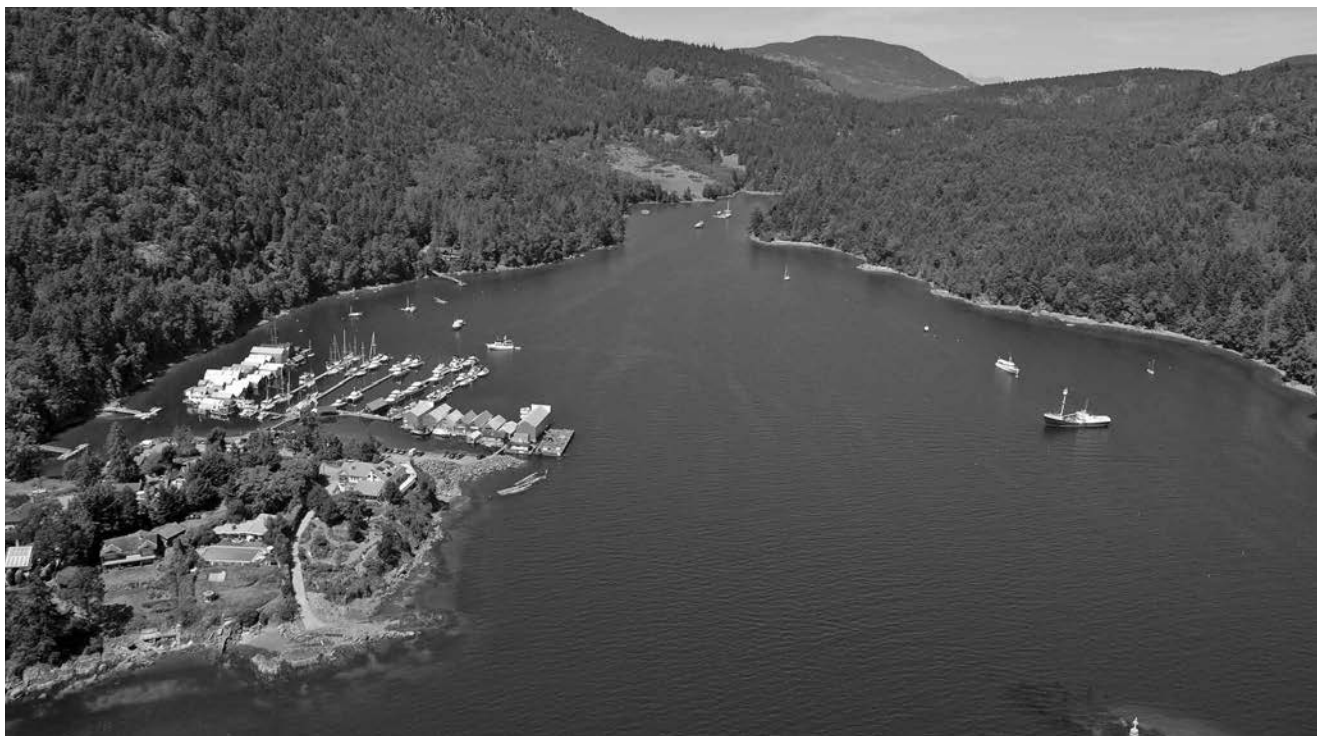
242 A licensed inn, restaurants, shops, post office and garbage disposal facilities are available. An RCMP detachment is at Duncan, about 6 km NW of the community. Medical, dental, hospital and pharmacy facilities are also available at Duncan.

243 **Pilotage** is compulsory. For information on obtaining a pilot when arriving or departing see *PAC 200 — General Information — Pacific Coast*.

244 Tidal differences for Cowichan Bay (7310), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

245 Private lights are shown from the north and south extremities of the lumber **wharf** and from a **dolphin** 70 m south of the barge slip.

GENOA BAY (2007)



246 The *Port of Cowichan* 250 746-2500, assigned frequency 156.55 MHz, Channel 11, is administered by the *Cowichan Valley Regional District*. Major port facilities are listed in Table 6.1. *Cowichan Bay Dock*, operated by *Western Stevedoring Co. Ltd* (250-748-5206), has 8 ha of paved area for assembly and storage of lumber. The **barge slip**, at the south end of the wharf, has berthing **dolphins** on its east and west sides. A **dolphin** is 70 m south of the barge slip. *Cowichan Bay Fishermens Wharf* (250-746-5911) is a full-service small craft harbour and **public wharf** on the south shore. The wharf is protected from east weather by a floating **breakwater**. The wharf is now approached from the NW side. Several docks are attached to its east and west sides. The area inside the **breakwater** and east of the wharf was dredged to 3 m (1966).

247 *Cowichan Bay East Breakwater light (249.7)* is shown from a mast on the NE end of the floating **breakwater** protecting the public wharf. *Cowichan Bay West Breakwater light (249.8)* is shown from a mast on the west end of the **breakwater**.

248 Private wharves and **marinas** are adjacent to the public wharf. The *Oceanfront Grand Resort & Marina* 250 715-1000 has a small dock for hotel guests only. *Pier 66 Marina* 250 748-8444 is a full-service marina with overnight moorage. *Dungeness Marina* 250 748-6789 is a full-service marina including pumpout. *Bluenose Marina* 250 748-2222 has 30 and 50 amp power, showers and laundry facilities.

249 A **submarine pipeline**, 0.3 mile west of the public wharf, extends about 0.2 mile offshore.

250 **Genoa Bay**, on the north side of Cowichan Bay, has a drying reef in the centre of its entrance. The bay has good **anchorage**, mud bottom, for small craft. The east side of the bay is a booming ground with private **mooring buoys**. *Genoa Bay Marina* (250-746-7621) is on the west side of the bay. It has power and water (please conserve), and permanent and transient moorage. A **wharf** with sheds is on the west side of Genoa Bay a short distance inside the entrance.

251 A **daybeacon** on the drying reef in the entrance to Genoa Bay has a **starboard hand daymark**.

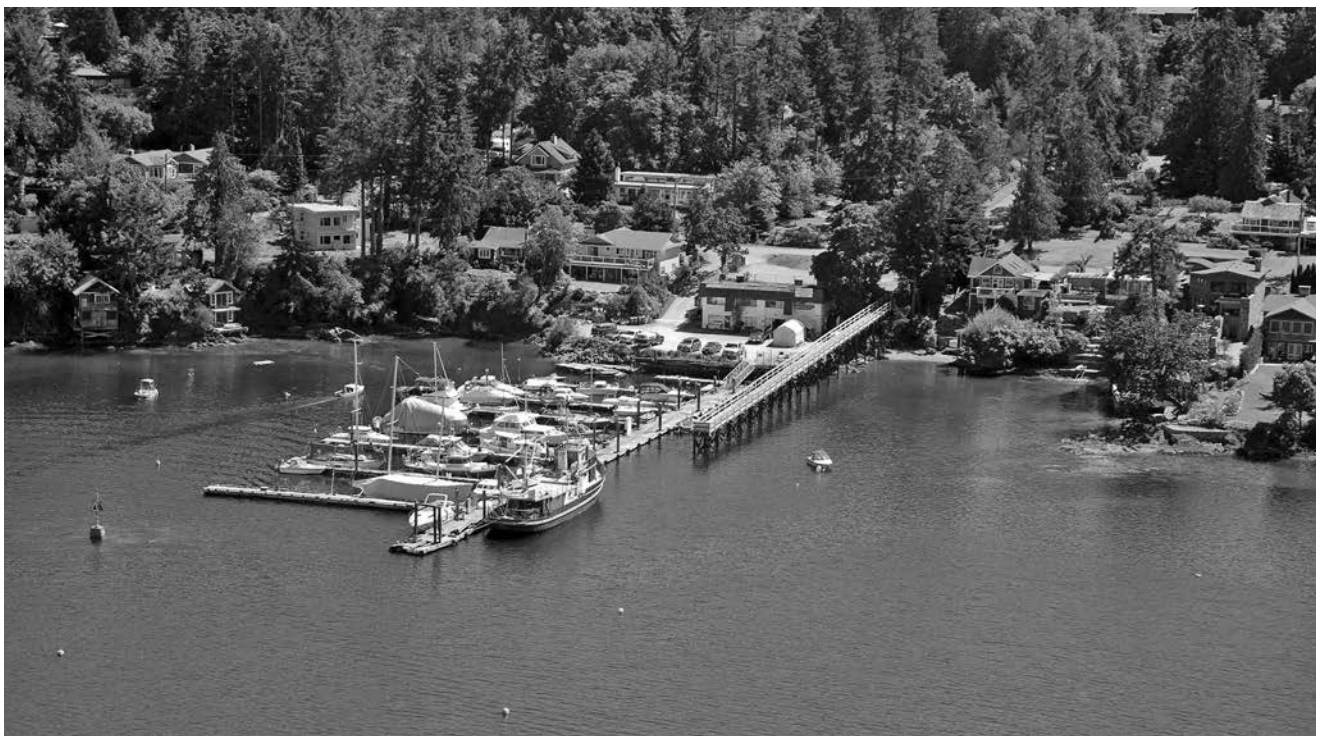
252 **Port hand buoy** *U27* marks the drying rock on the west side of the entrance.

Saanich Inlet

Chart 3441

253 **Saanich Inlet** *(48°38'N, 123°30'W)*, entered between Hatch Point and **Moses Point**, extends 13 miles south from Satellite Channel. **Malahat Ridge**, along the west side of

DEEP COVE (2007)



Saanich Inlet, is steep and heavily wooded on its lower slopes. The east shore, as far south as Tod Inlet, is low and wooded. South of Tod Inlet it is steep and heavily wooded. The head of Saanich Inlet is known as Finlayson Arm.

254 A deep trough runs down the centre of the inlet, but close offshore there are several isolated rocks and reefs. Private docks, boathouses, rubble **breakwaters** and **mooring buoys** line the shores.

255 Military exercise area WD, about 1 square mile in extent, is in the middle of Saanich Inlet NW of Yarrow Point. For details see *Notices to Mariners 1 to 46 Annual Edition*.

255.1 **Caution.** — *Ocean Networks Canada* operates a 7.5 m floating science platform at approximately *48°37'20"N, 123°29'56"W* in Saanich Inlet. The platform is anchored by three mooring lines that extend 300 m from the platform and has a private light. In addition, a fibre optic cable extends from the platform to a seafloor anchor 30 m from the platform. Mariners should remain clear of the platform to avoid interactions with the mooring lines.

256 A regular passenger and vehicle ferry service crosses Saanich Inlet from McPhail Point on the west side to Brentwood Bay on the east side. Charted ferry routes are general indications of the route followed.

257 **Submarine cables** cross Saanich Inlet from Coal Point to south of Hatch Point. Near Brentwood Bay two submarine cables cross Saanich Inlet.

258 Tidal differences in Saanich Inlet, referenced on Fulford Harbour, are given for Patricia Bay (7277), Brentwood Bay (7280) and Finlayson Arm (7284) in *Canadian Tide and Current Tables, Volume 5*.

259 **Wain Rock**, 0.2 mile WSW of Moses Point, dries 2 m.

260 *Wain Rock light (248.6)* is on the rock and is shown from a white cylindrical tower with a green band at the top.

261 **Deep Cove**, entered between Moses Point and **Coal Point**, has the remains of a public wharf in its south part; it cannot be used for berthing. Several pilings and a rubble **breakwater** are at the head of the cove. Numerous private **mooring buoys** are in Deep Cove.

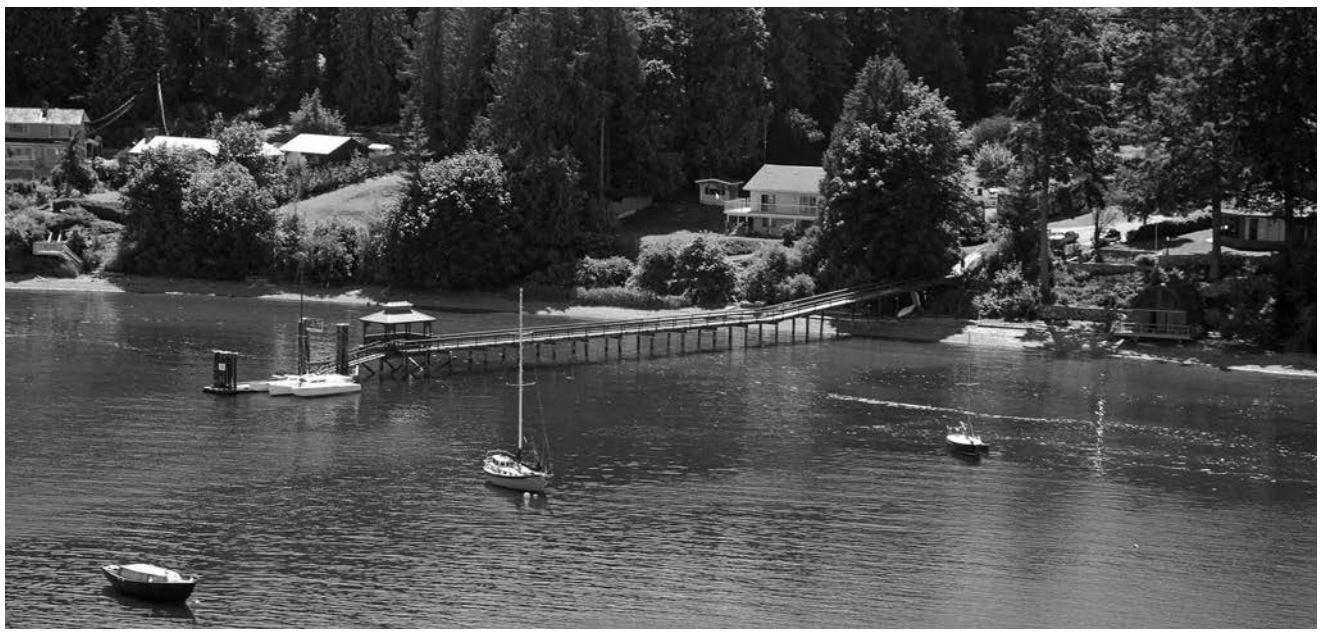
262 A **daybeacon** on a drying rock, in the south part of Deep Cove, has a **starboard hand daymark**.

263 **Patricia Bay**, known locally as **Pat Bay**, about 1.5 miles south of Deep Cove, is fringed by drying flats. *Victoria International Airport* is east of the bay.

264 A **submarine cable area** (power) is laid in the vicinity of the **mooring buoys** in Patricia Bay. Navy vessels use this area to conduct acoustic testing.

265 A **submarine cable** (fibre optic) extends from the end of the Institute of Ocean Sciences wharf in a WSW direction for approximately 1.4 miles and ends in water 100 m deep. This is part of the *Victoria Experimental Network*

MILL BAY PUBLIC WHARF (2007)



Under the Sea (VENUS). Various oceanographic instruments are deployed from a node at the end of the cable which should be given a wide clearance from any type of seabed activity.

266 Patricia Bay is a seaplane landing area. The *Victoria International Airport* seaplane base is on the north side of the *Institute of Ocean Sciences* wharf and is protected by a floating breakwater.

267 Orange and white **mooring buoys** marked *NAVY* are in Patricia Bay SW of **Warrior Point**.

269 **Anchorage** in 20 to 50 m depths can be obtained in Patricia Bay.

270 **Wharves** of the *Institute of Ocean Sciences* are in the SE corner of Patricia Bay. These facilities are for government vessel or vessels visiting the *Institute of Ocean Sciences*. Water, power, garbage disposal and telephone are available. The main pier consists of an approach causeway extending 170 m NW from shore; a concrete pier extends 244 m WNW from the outer end of the causeway. A dock for small vessels fronts the north side of the main pier extending from the causeway to the L-shaped pier. All berths are equipped with large rubber fenders and the elevation of the wharves is 1.8 m.

271 On the north side of the main pier, and 120 m from its outer end, an L-shaped concrete pier forms a dock 39 m wide. The berth on its north side is 92 m long with a least depth of 6.1 m alongside; depths inside the dock are generally in excess of 7 m. The berth on its south side is 120 m long with a least depth of 5.4 m alongside.

272 The berth on the north side of the L-shaped pier is 103 m long and has a depth of 5.2 m at its east end and 6.2 m at mid-length.

273 The south side of the main pier has a berthing length of 226 m with depths ranging from 4.1 m at its inner end to 6.5 m at its outer end.

274 Red and green lights are shown from the outer ends of the above-mentioned piers.

275 A rock **breakwater** extends 100 m south from the inner end of the main pier and another rock **breakwater**, close west, extends 107 m north from the south shore protecting a small boat harbour with docks. This is used by government vessels only.

276 *Patricia Bay breakwater light (251.5)*, on the north end of the south **breakwater**, is shown from a mast and has a **starboard hand daymark**.

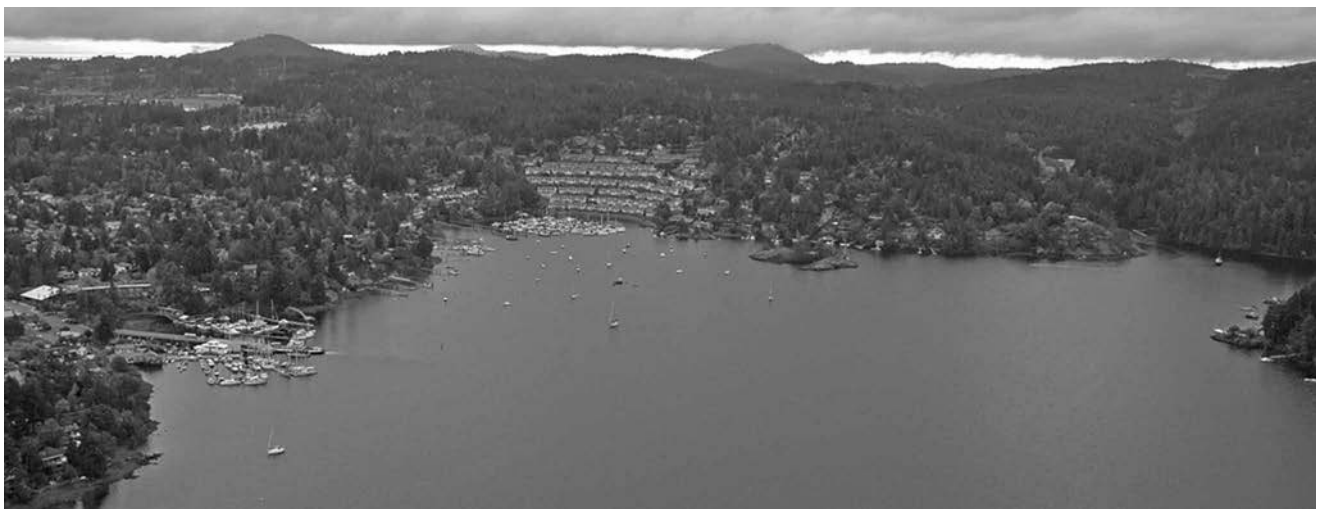
277 **Mill Bay** on the west side of Saanich Inlet, opposite Patricia Bay, is entered south of **Whisky Point**. A shoal pinnacle, with 4.4 m over it, lies in the centre of the bay. *Mill Bay Marina* 250 743-4303 is a full-service marina. A launching ramp is close north of the public wharf.

278 A **submarine pipeline**, at the NW end of Mill Bay, extends about 0.25 mile offshore.

279 The **public wharf** in Mill Bay has a dock with 30 m of berthing and depths of 1.2 to 3 m alongside.

280 **Anchorage** for small vessels can be obtained in Mill Bay, but it is open to the SE. Numerous private **mooring buoys** lie between the marina and public wharf.

BRENTWOOD BAY (2007)



BRENTWOOD BAY FERRY TERMINAL (2007)



281 **Verdier Point**, south of Mill Bay, has a row of **dolphins** close south of it. A conspicuous gravel pit is close north.

282 **Tanner Rock**, 0.3 mile SSE of Verdier Point, dries 1.8 m. **Tozier Rock** lies 0.8 mile SSE of Tanner Rock and about 0.3 mile offshore.

283 Tanner and Tozier Rocks are marked by **daybeacons** with **starboard hand daymarks**.

284 **McPhail Point** is situated 0.5 mile SSW of Tozier Rock.

285 The **ferry wharf**, 0.3 mile north of McPhail Point, is used by the ferry that plies to and from Brentwood Bay. Private lights are shown from the ferry wharf.

286 **Bamberton**, 1.3 miles south of McPhail Point, is the site of a former cement works with berthing facilities for freighters and barges. The works were closed in 1980 and plans for residential redevelopment have yet to produce results. A cluster of silos and other buildings remain and are conspicuous.

287 The north **wharf** is 76 m long with depths of 9 m alongside; it can berth vessels up to 160 m long. The south wharf is 122 m long with depths of 4.6 m alongside.

288 **Coles Bay** *(48°38'N, 123°28'W)* has **anchorage** in 20 to 30 m. **Dyer Rocks**, 1 m high, lie close SW of Yarrow Point on the west side of Coles Bay. A rock, with 1.8 m over it, lies 0.3 mile WSW of **Yarrow Point**; it is marked by **port hand buoy** *U23*. Approaching Coles Bay

from the north give Dyer Rocks a berth of at least 0.5 mile to avoid shoals extending south from them.

289 **Thomson Cove** has a private **warning buoy** marked *Electric cables — No anchoring within 50 feet* near its head. A flagpole is on **Henderson Point**.

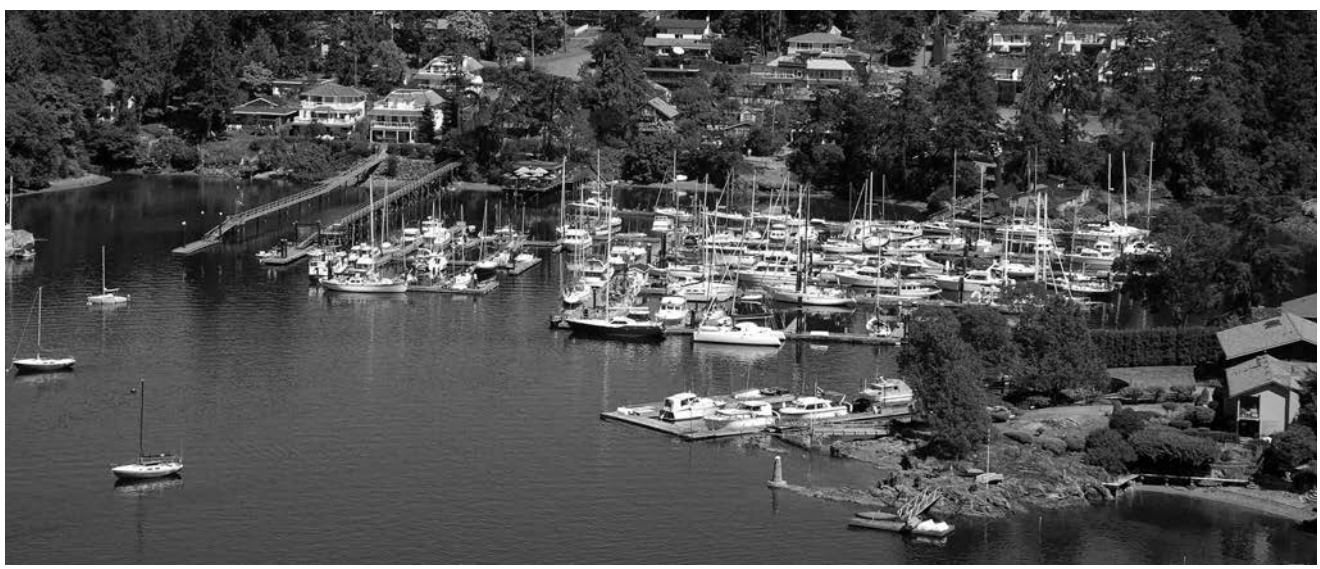
290 **KENNES**, formerly known as **Hagan Bight**, is in the NE corner of **Brentwood Bay**, which is entered between Henderson Point and **Willis Point**. **Senanus Island** lies in its entrance. Through the center of the Brentwood Bay, 8 lateral **buoys** (4 port, 4 starboard) mark the navigation channel. Brentwood Bay village, numerous private docks and **mooring buoys** are in the SE corner of the bay. *Angler's Anchorage Marina* 250 652-3531 and *Brentwood Bay Lodge & Spa* 250 652-3151 are full-service **marinas**; reservations are recommended.

291 A **speed limit** of 8 km/h (4 kn) is prescribed by the *Vessel Operation Restriction Regulations* for Brentwood Bay.

292 *Senanus Island light (252)*, on the NW extremity of the island, is shown from a white tower.

293 **Anchorage** in 60 to 80 m can be obtained east of Senanus Island.

BRENTWOOD BAY PUBLIC WHARF (2007)



BUTCHART COVE (2007)



FINLAYSON ARM HEAD (2007)



294 A **submarine cable** crosses the south end of Brentwood Bay and another submarine cable is laid from the south shore to **Daphne Islet**.

295 Tidal differences for Brentwood Bay (7280), referenced on Fulford Harbour, are listed in *Canadian Tide and Current Tables, Volume 5*.

296 The **ferry wharf** from which the ferry to McPhail Point operates is close south of **Sluggett Point**; this is known as the **Mill Bay Ferry**.

297 **Starboard hand buoy** *U22* marks a drying rock close SW of the ferry landing.

298 A **daybeacon**, on a drying rock 0.1 mile north of Daphne Islet, has a **bifurcation**/**junction daymark**, preferred channel to the right.

299 **Caution. — Do not approach the marina close south of the ferry wharf between the aforementioned buoy and daybeacon; drying rocks lie between the buoy and shore.**

300 The **public wharf**, 0.3 mile SE of the ferry landing, is 22 m long with a depth of 4.2 m alongside.

301 Diesel fuel, gasoline, lubricants, provisions, ice and fresh water are available.

302 **Butchart Cove**, near the entrance to Tod Inlet, has a dinghy dock and limited **anchorage**.

303 **Tod Inlet**, at the south end of Brentwood Bay, has a narrow entrance, less than 0.1 mile wide. **Port hand buoy** *U21*, on the east side just inside the entrance, marks a rock on the outer edge of a small gravel spit. This is the site of a former cement works though little remains except one chimney and piles from a ruined wharf. The inlet is surrounded by *Gowlland Tod Provincial Park*. Facilities are limited, but this is a very popular destination for small craft, especially in summer when the anchorage becomes crowded.

304 **Anchorage** and shelter for small craft can be obtained inside Tod Inlet in about 5 m, mud bottom.

305 **Squally Reach** is the portion of Saanich Inlet from Willis Point to **Elbow Point**, 2.7 miles SW.

306 **Repulse Rock**, 0.1 mile SW of Elbow Point, is a drying rock marked by a **daybeacon** with a **bifurcation**/**junction daymark**, preferred channel to the right.

307 **Finlayson Arm** extends 3.5 miles south from Repulse Rock and forms the south end of Saanich Inlet.

308 Tidal differences at the south end of Finlayson Arm (7284), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

309 An **overhead cable** (power), vertical clearance 55 m, crosses Finlayson Arm at **Christmas Point**. Power lines on pylons, vertical clearance 113 m, cross Finlayson Arm at the south end of **Sawluctus Island**. A power line, vertical clearance 21 m, crosses the mud flats at the head of the inlet.

310 Conspicuous greenhouses and pipelines of an abalone farm are on the hillside about 0.5 mile north of Christmas Point.

311 A **submarine cable** crosses the drying flat in the entrance to Goldstream River close south of the overhead cable.

312 **Goldstream River** flows into the head of Finlayson Arm and across an extensive drying mud flat. *Goldstream Boathouse* 250 478-4407 is a full-service **marina** on the west side of Finlayson Arm close north of the mud flats.

HYASHI COVE (2007)



Swanson Channel

Charts 3441, 3442

313 **Swanson Channel** *(48°45'N, 123°18'W)* leads north from Boundary Pass and Satellite Channel to Trincomali Channel, Active Pass and Navy Channel. North Pender Island forms the east side of Swanson Channel. Moresby, Saltspring and Prevost Islands form its west side. Satellite Channel leads west between Moresby and Saltspring Islands. Captain Passage, between Saltspring and Prevost Islands, leads to Ganges Harbour and connects with Trincomali Channel. It offers no saving in distance to proceed up Swanson Channel for upper Trincomali Channel, but ferry traffic in Active Pass is avoided.

314 **Calling-in points** of the *Vancouver Traffic Zone*, administered by *Victoria Traffic*, are in Swanson Channel. Assigned frequency is 156.55 MHz, Channel 11. Calling-in points are listed in Table 6.2.

315 **Calling-in Point 6 Turn Point** is on the approach to Haro Strait and is a circle with a 3-mile radius centered on *Turn Point light (255)*.

316 **Calling-in Point 9 Portlock Point** is a line running through *Portlock Point light (267)*.

317 A brief description of the *Vancouver Traffic Zone* is given in *PAC 200 — General Information — Pacific Coast*. Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*.

Table 6.2 Calling-in Points — Swanson Channel

Number	Name	Description
6	Turn Point	A circle centered on 48°41'20"N, 123°14'10"W, radius 3 nautical miles
9	Portlock Point	Line running 090°–270° (True) through 48°49'41"N, 123°21'02"W

318 **Tidal streams** flood NW and north through Swanson Channel, but a branch flows into Navy Channel; the ebb flows SE. At the north end of Swanson Channel, there is another division of flood stream, one part going through Active Pass, the other through Trincomali Channel. Toward Enterprise Reef there is a significant increase in the velocity of the flood stream, and, at the entrance to Active Pass 5 to 7 kn can be expected with large tides; 3 to 5 kn on smaller tides.

319 Secondary current station Swanson Channel (1240), referenced on Race Passage, is given in *Canadian Tide and Current Tables, Volume 5*.

320 **Submarine cables** cross Swanson Channel from close north of Beaver Point to Otter Bay and Willey Point on North Pender Island.

321 The north part of Swanson Channel is used by ferries operating between Swartz Bay, Tsawwassen and the Gulf

GRIMMER BAY (2007)



Islands. Tracks are usually mid-channel, and inter-island ferries cross Swanson Channel between Captain Passage and Otter Bay. Charted ferry routes are general indications of the route followed.

322 **Parkin Point** is the NE extremity of Moresby Island. Beaver Point and its light, 3.3 miles NW of Parkin Point, have been described with Satellite Channel.

323 **Oaks Bluff** *(48°45'N, 123°16'W)* are high cliffs along the SW side of North Pender Island, between Wallace Point and Boat Nook. **Beddis Rock** dries 3.7 m and lies off the north entrance point of **Boat Nook**.

323.1 A Killer Whale Restriction Area is in effect from June 1 to November 30. For additional information see *Notices to Mariners Annual Edition 1 to 46 Section A2, Notice 5*.

324 **Thieves Bay**, 0.5 mile NW of Beddis Rock, is shallow with depths of 0.6 m. A rockfill and piling **breakwater** protects private docks and a launching ramp.

325 *Mouat Point light (257.5),* on the peninsula forming the south side of Thieves Bay, is shown from a white cylindrical tower with a red band at the top.

326 **Mouat Point**, 0.6 mile NNW of the light, is fairly steep-to and forms the south side of **Shingle Bay**. The ruins of an old wharf are on the east side of the bay. A private dock is at the head of the bay.

327 **Anchorage** can be obtained in the centre of Shingle Bay in depths of 20 to 27 m. It is exposed to west winds.

328 A **conspicuous telephone tower**, with a red air obstruction light, is on **Cramer Hill** *(48°47'N, 123°18'W)*.

329 **Otter Bay** *(48°48'N, 123°19'W)* has a ferry landing on its north shore. *Otter Bay Marina* (250-629-3579) is on the north side of Otter Bay, in **Hyashi Cove**. It has transient and permanent moorage, power and water, and a store. **Port hand buoy** *U57* is close SE off the point south of the marina. On the south shore of Otter Bay, **Roe Islet** and adjacent uplands above Ella Bay are part of *Gulf Islands National Park Reserve*.

330 **Anchorage** for small vessels can be obtained in Otter Bay, in 13 to 17 m, mud bottom.

Chart 3442

331 **Grimmer Bay**, the approach to Port Washington, has a chain of above-water and drying rocks extending 0.2 mile WNW from the middle of its east shore. **Boat Islet** is at the outer extremity of these rocks. **Port Washington** is a small settlement with summer resorts. **Percival Cove** is on the north side of Grimmer Bay.

332 *Port Washington light (266.5),* on Boat Islet, is shown from a white cylindrical tower with at red band at the top.

333 The approach to Port Washington is a seaplane landing area.

334 The Port Washington **public wharf**, operated by the *Southern Gulf Islands Harbour Commission* 250 629-6111, is 15.8 m long at its outside face, with 4.6 to

5.8 m alongside. A 21 m dock is on the south side of the wharf, with a 12 m seaplane dock attached to it. A 24 m dock is attached to the north end of the wharf.

335 **Caution. — A rock with less than 2 m over it lies about 46 m south of the SE end of the public wharf.**

336 **Stanley Point** *(48°49'N, 123°20'W)* the NW extremity of North Pender Island lies at the junction of Swanson, Navy and Trincomali Channels.

337 **Prevost Island** *(48°50'N, 123°23'W)* is moderately high, thickly wooded, and separates Captain Passage from Swanson and Trincomali Channels. **Point Liddell**, the SE extremity of Prevost Island, has a reef of drying and below-water rocks extending 0.2 mile SE from it.

338 Point Liddell **daybeacon**, on the outermost of the drying rocks, is a white tower with a green band around the top.

339 **Ellen Bay** has fair **anchorage** near the middle in 27 m, mud bottom, or about 0.1 mile from the head of the bay in 18 m.

340 **Diver Bay** is entered between **Red Islets** and **Bright Islet**. Small craft can obtain **anchorage** in 9 to 13 m, sand and mud; it is exposed to the SE. Red Islets and Bright Islet are part of *Gulf Islands National Park Reserve*.

341 **Portlock Point**, the east extremity of Prevost Island, lies at the junction of Swanson and Trincomali Channels. Portlock Point, excluding the light, is part of *Gulf Islands National Park Reserve*.

342 *Portlock Point light (267)* is shown from a white tower. A windmill generator is close WNW.

Bedwell Harbour, Pender Canal and Port Browning

Chart 3477

Bedwell Harbour

343 **Bedwell Harbour** *(48°45'N, 123°15'W)*, situated on the N side of Haro Strait, is an inlet formed by the overlap of **North Pender Island** and **South Pender Island** and is entered between **Wallace Point** and Tilly Point.

344 The **settlement of Bedwell Harbour** is on the east side of **Egeria Bay**.

345 *Beaumont Gulf Islands National Park Reserve* occupies the NE shore of the harbour and adjacent islets, including **Skull Islet**. **Mooring buoys** are here and in **Peter Cove**.

346 Strong winds funnel through the harbour but no heavy sea is raised.

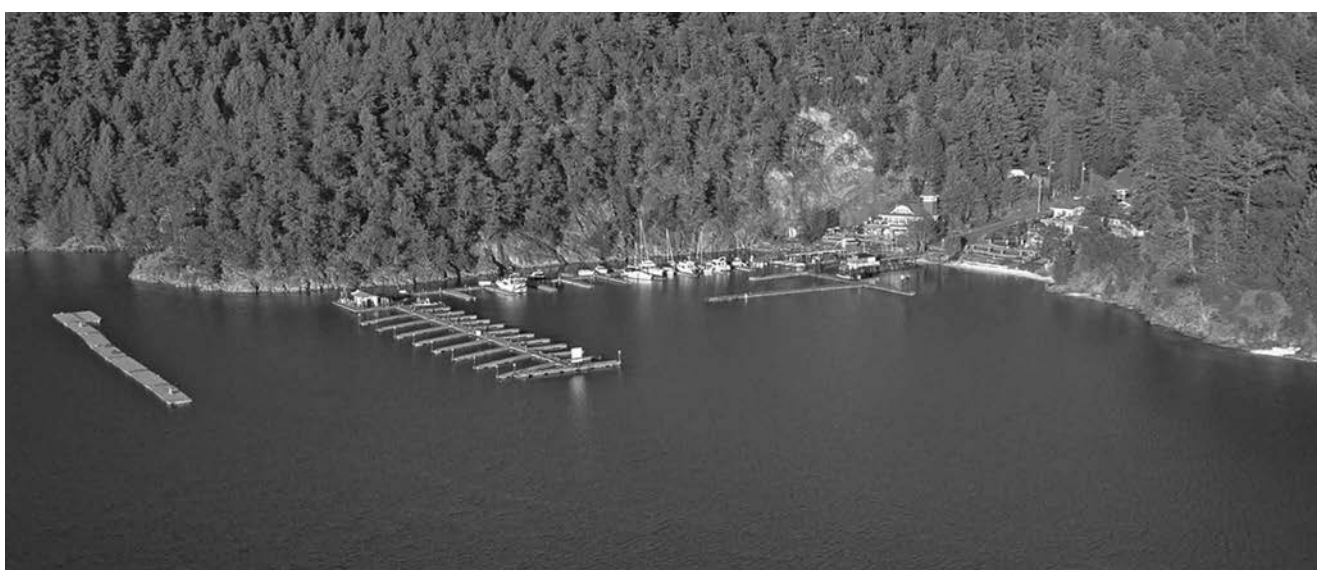
347 *Hay Point light (254)*, on **Hay Point**, is shown from a white cylindrical tower with a red band at the top.

348 Skull Islet **daybeacon** is a white tower with a red band around the top.

349 Bedwell Harbour has a good small craft **anchorage** with a holding ground of stiff mud. The best position is 0.2 mile SE of Skull Islet in 13 to 15 m.

350 *Poets Cove Resort & Spa* 1 866 888-2683 has a large, full-service **marina** with power, water, fuel dock and guest moorage. Piers attached to the south side of the main **public wharf** are reserved for vessels entering and clearing customs. They are

BEDWELL HARBOUR (2005)



PENDER CANAL SOUTH ENTRANCE (2007)



12 to 49 m long, in a T-formation, with 4.6 to 7.6 m alongside. The resort is connected by road to other settlements on South and North Pender Islands.

351 A **breakwater** extending from **Richardson Bluff** protects the berths in Egeria Bay from north winds. Bedwell Harbour is a seaplane landing area. Piers are near the customs office.

352 **Customs** services are provided during the summer months. When personnel is not available, call in using the on-site telephones.

353 A disused **submarine cable** lies across the entrance to Bedwell Harbour.

354 A **submarine pipeline** (sewer) lying close S of the public wharf is marked by a sign.

355 **Caution. — Drew Rock near the head of the harbour has 2.1 m over it. Several rocks, with less than 2 m over them, lie between Drew Rock and the head of the harbour.**

356 **Tidal streams** set N on the in-going stream and S during the out-going; they attain rates of 3 to 4 kn at springs.

357 Mount Norman, 244 m high and wooded, stands on South Pender Island N of the harbour.

Pender Canal

358 **Pender Canal** leads north from the head of Bedwell Harbour into Shark Cove and Port Browning. It is about 23 m wide with a least depth of 1.8 m and is fringed on both sides by drying ledges.

359 In the S entrance a drying rock and a rock awash are marked by **starboard hand buoy** *U54* and **port hand buoy** *U53*.

360 A **road bridge** crosses Pender Canal near its N end. It has a vertical clearance of 8.5 m and a width of 12.0 m between piers.

361 **Overhead cables** close N of the bridge have a vertical clearance of 11 m.

362 A **speed limit** of 5 kn is in effect in Pender Canal.

363 **Shark Cove** close N of Pender Canal is small and shallow. It leads into Port Browning and is sheltered by **Mortimer Spit**.

Port Browning

364 **Port Browning** *(48°46'N, 123°15'W)* can be entered S from Pender Canal or E from Plumper Sound at Razor Point. It is an inlet formed by the overlap of North and South Pender Islands.

PENDER CANAL NORTH ENTRANCE (2007)



365 **Caution. — There is a shoal, with a depth of 4.9 m over it, lying in the middle of the harbour, 2 miles SE of the marina.** Two **wrecks** with 5.2 m and 5.1 m over them lie south of the boat ramp close to shore.

366 The bottom is mainly mud and convenient **anchorage** is in depths of 8 to 9 m, 0.4 mile from the head.

367 An underwater rock and rock which covers and uncovers are off the north entrance point to the marina and marked by **starboard hand buoy** *U52*.

368 The floating **breakwater** at the marina has a green light on its end. When entering keep close to the breakwater.

369 *Port Browning Marina Resort* 250 629-3493 in Hamilton Cove has transient moorage, limited water and power. Refuse disposal, shower, washroom and laundry facilities, accommodation, stores, bank and a post office are available onshore.

370 The Port Browning **public wharf**, operated by the *Southern Gulf Islands Harbour Commission* 250 881-2019, is located ESE of Hamilton Cove. It is 15 m long with a depth of 2.4 m alongside. There are **mooring buoys** S of the pier. A **wreck** with 5.2 m over it lies south of the wharf on the west side of the charted underwater rock and another **wreck** with 0.2 m over it lies on the east side of the same rock.

371 Port Browning is a seaplane landing area. The pier is in the NW corner of the marina.

Plumper Sound and Navy Channel

Charts 3477, 3441, 3442

372 **Plumper Sound** *(48°46'N, 123°13'W)* has Saturna, Samuel and Mayne Islands on its east side; North and South Pender Islands form its west side. Easy of access and entered from Boundary Pass between Blunden Islet and Taylor Point, it leads NW to Navy Channel which in turn leads to the junction of Swanson and Trincomali Channels. Vessels using Boundary Pass frequently use Plumper Sound as an anchorage.

373 Georgeson Passage and Winter Cove, on the NW and SE sides, respectively, of Samuel Island, lead into the Strait of Georgia. Port Browning and Pender Canal, between South and North Pender Islands, lead into Bedwell Harbour and Swanson Channel.

374 Tidal differences in Plumper Sound, referenced on Fulford Harbour, are given for Hope Bay (7360) and Samuel Island, South Shore (7370) in *Canadian Tide and Current Tables, Volume 5*.

PORT BROWNING PUBLIC WHARF (2007)



375 **Tidal streams** flood NW and north through Swanson Channel and NW through Plumper Sound, but a branch flows east into Navy Channel, meeting that flowing through Plumper Sound off Hope Bay, where **tide rips** are formed. From this position the combined stream flows east and north through narrow channels at both ends of Samuel Island into the Strait of Georgia. The ebb tidal stream runs in the reverse direction. Maximum flood tidal stream is 2 to 3 kn, at the east end of Navy Channel. Maximum ebb tidal stream is 2 to 3 kn off Croker Point, and 1 to 2 kn in Navy Channel. Blunden Islet usually has strong **tide rips** in its vicinity.

376 A **submarine cable** crosses Plumper Sound between Razor Point and Breezy Bay. Another cable crosses the sound about 0.5 mile NW of Fane Island. A **submarine cable area** lies in the north part of Plumper Sound, from north of St. John Point on Mayne Island to Digby Point on Saturna Island.

377 **Anchorage** in Plumper Sound is safe, convenient and has easy access to Boundary Pass. There is ample swinging room and depths range from 10 to 37 m, mud and sand bottom. Designated anchorages are in Plumper Sound; anchorages A to D and X are on *Charts 3441, 3442* and *3477*.

378 A **conspicuous television tower** *(48°46'N, 123°10'W)*, near the summit of Mount Warburton Pike, has an approximate height of 62 m and is marked by three red air obstruction lights.

379 *BC Ferries* vessels operating from Tsawwassen on the mainland or Swartz Bay on Vancouver Island pass at frequent intervals through Navy Channel and Plumper Sound, and call into Lyall Harbour, on the west side of Saturna Island. Charted ferry routes are general indications of the route followed.

Plumper Sound

Chart 3477

380 **Croker Point** *(48°46'N, 123°12'W)* has a drying rock, an above-water rock and two rocks with less than 2 m over them close west of it.

381 *Croker Point light (265.2)*, on the above-water rock close west of the point, is shown from a mast and has a **starboard hand daymark**.

382 *Fane Island light (265.8)*, on the east extremity of the island, is shown from a white cylindrical tower with a green band at the top.

383 The NE extremity of North Pender Island bearing 310° and open south of Fane Island, and the SE extremity of Lizard Island bearing 351° and open west of Elliot Bluff, lead south and west, respectively, of the dangers lying within 0.3 mile of Croker Point.

384 **Breezy Bay** lies between Croker Point and **Elliot Bluff**. **Saturna Beach**, in the south part of Breezy Bay, has private docks.

385 **Razor Point**, 1.5 miles WSW of Croker Point, has a drying reef and shoal spit extending 0.2 mile east from it; its outer end is marked by **starboard hand buoy** *U56*.

387 **Perry Rock**, 0.8 mile NNW of Razor Point, has 2.2 m over it. **Bald Cone**, 1.4 miles NW of Razor Point, is a bare sided rock rising steeply from shore.

388 **Hope Bay** *(48°48'N, 123°16'W)*, entered between **Auchterlonie Point** and **Fane Island**, has a **public wharf** operated by the *Southern Gulf Islands Harbour Commission* 250-813-3321. Hope Bay is connected to other settlements on North and South Pender Islands by road.

HOPE BAY (2007)



389 Tidal differences for Hope Bay (7360), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

390 **Anchorage** can be obtained in Hope Bay, about 0.2 mile south of Fane Island, in 13 to 16 m, mud bottom.

Navy Channel

Chart 3442

391 **Navy Channel** *(48°49'N, 123°18'W)* leads WNW between **Mayne Island** and North Pender Island and connects Plumper Sound to the north end of Swanson Channel, and the south end of Trincomali Channel.

392 **Submarine cables** cross Navy Channel in several locations.

393 **Conconi Reef**, about 0.1 mile off the Mayne Island shore, dries 2.4 m at its highest part.

394 *Conconi Reef light (266)* is shown from a white tower with a red band at the top.

Lyall Harbour

Chart 3477

395 **Lyall Harbour** *(48°48'N, 123°12'W)*, on the west side of Saturna Island, is entered between **Payne Point** and **King Islets**. **Saturna Point**, 0.5 mile ENE of Payne Point, can be identified by the conspicuous ferry landing.

396 **Crispin Rock**, 0.2 mile NE of Saturna Point, has less than 2 m over it. A rock with 3.9 m over it lies in the approach to Boot Cove, about 0.15 mile west of Saturna Point; it is marked by **starboard hand buoy** *U58*.

397 *Crispin Rock* ***light buoy*** *UJ (265.5)*, located north of the rock, is a **starboard bifurcation buoy**.

398 A **submarine cable area** crosses Lyall Harbour from the vicinity of King Islets to east of the public wharf.

399 A **submarine pipeline** alongside the ferry wharf extends 91 m offshore.

400 **Anchorage** in Lyall Harbour is sheltered from all but west winds and can be obtained, clear of the submarine cable area, in depths of 13 m in the entrance decreasing to 5 m about 0.1 mile from the mud flat at the head.

401 **Saturna community**, close east of Saturna Point, has a general store and post office.

402 *Lyall Harbour Government Wharf* 250-889-6318 on Saturna Point is 34 m long at its outside face with a depth of 7.8 m alongside. Docks attached to the east side of the **wharf** have a combined length of 60 m with a depth of 5.5 m alongside. Fuel is available.

403 The **ferry wharf** is close west of the government (public) wharf.

404 **Boot Cove**, entered between Saturna Point and **Trevor Islet**, has **anchorage** for small craft on a mud bottom. When entering the cove favour the starboard side to avoid a rock with 0.6 m over it. Because of hills on both sides of the cove, winds from the north or south funnel through and attain a fair strength. Private **mooring buoys** are in the cove.

405 A **submarine cable** crosses the entrance of Boot Cove.

SATURNA POINT (2007)



BOAT PASSAGE (2007)



GEORGESON PASSAGE LOOKING NW (2007)



Winter Cove, Georgeson Passage and Approach

406 **Samuel Island** and **Curlew Island** lie between the NW side of Saturna Island and the east side of Mayne Island.

407 Tidal differences for Samuel Island, South Shore (7370), referenced on Fulford Harbour, and tidal differences for Samuel Island, North Shore (7515), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

408 A **submarine cable area** crosses the south approach to Winter Cove and Georgeson Passage from north of King Islets to close north of **St. John Point**.

409 **Minx Reef** is a drying reef extending 0.3 mile NW from **Mikuni Point**, the south entrance point of Winter Cove. In 2007, the *Robertson II*, a 40 m sail training vessel, was abandoned after grounding on the NW end of Minx Reef.

410 **Irish Bay**, on the south side of Samuel Island, provides good **anchorage** for small craft. Docks in the bay are private.

411 **Winter Cove**, between the NW side of Saturna Island and the SE side of Samuel Island, is shallow and has several drying reefs and below-water rocks in it. A **wreck** with 2 m over it lies east of **Church Cove**, approximately 0.1 mile from shore. It affords shelter for small craft and a route from Plumper Sound to the Strait of Georgia. Private docks and **mooring buoys** are in the cove. The Winter Cove component of *Gulf Islands National Park Reserve* is on the east side of the cove. A portion of the waters of Winter Cove are a protected marine zone managed by *Parks Canada*.

412 **Boat Passage**, between **Ralph Grey Point** and **Winter Point**, leads into the Strait of Georgia. The passage has a least depth of 2.1 m and two drying rocks lay close-off Ralph Grey Point. It is suitable for small craft at or near slack water; local knowledge is advised.

413 Secondary current station Boat Passage (3012), referenced on Active Pass, is in *Canadian Tide and Current Tables, Volume 5*. The flood sets E, and the ebb W through Boat Passage.

414 **Georgeson Passage**, entered from Plumper Sound between the SE extremity of **Lizard Island** and the SW side of Samuel Island, leads NW then north between Curlew and Samuel Islands into the Strait of Georgia. The least depth through the fairway is 10.4 m but dangerous shoals and rocks lie in the north entrance.

415 Secondary current station Georgeson Passage (3010), referenced on Active Pass, is in *Canadian Tide and Current Tables, Volume 5*. The flood sets NW and the ebb SE through Georgeson Passage.

416 **Robson Channel**, between the south end of Curlew Island and Mayne Island, leads into the south part of Horton Bay. A rock, with 0.9 m over it, lies in the east entrance to Robson Channel and a drying ledge extends south from the south extremity of Curlew Island.

417 **Horton Bay** affords snug **anchorage** for small craft; it should be entered at or near slack water. Entering Horton Bay from the north **Paddon Point** can be passed reasonably close-to but **Aitken Point** should be given a reasonably wide berth to avoid the piles extending from it. A **wreck** with 4.5 m over it lies SW of the piles. A rock with less than 2 m over it lies 0.1 mile off the head of the bay. A **submarine cable** crosses the north entrance to Horton Bay.

418 The **public wharf** on the south side of Horton Bay is 24 m long with 1.8 to 3.7 m depths alongside.

HORTON BAY (2007)



REEF HARBOUR AND TUMBO CHANNEL LOOKING ESE (2007)



419 **Bennett Bay**, south of Campbell Point, affords good **anchorage** for small craft but is exposed to SE winds. Private docks are in the bay.

Tumbo Channel to Active Pass

Charts 3441, 3462

420 **Tumbo Channel** is deep but has dangers in both entrances.

421 **Tumbo Island** *(48°48'N, 123°04'W)* is wooded. Steep cliffs 6 to 15 m high extend along its south side. It is part of *Gulf Islands National Park Reserve*; no camping. Waters surrounding Tumbo Island, Cabbage Island and Pine Islet are a protected marine zone managed by *Parks Canada*.

422 Tidal differences for Tumbo Channel (7510), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

423 **Cabbage Island** and **Pine Islet**, both part of *Gulf Islands National Park Reserve*, lie on a drying reef extending WNW from the NW end of Tumbo Island. Foul ground with several rocky heads extends 1 mile beyond this

reef. **Reef Harbour**, between Cabbage Island and the west end of Tumbo Island, can be used as a temporary **anchorage** for small craft, local knowledge is advised. **Mooring buoys** are located here and camping permitted on Cabbage Island.

Charts 3477, 3442

424 **Russell Reef** *(48°49'N, 123°11'W)*, east of Winter Point, lies about 0.1 mile north of Saturna Island and is part of the *Gulf Islands National Park Reserve*. **Mount David**, near the north end of Saturna Island, has a rounded summit and is prominent when seen from the north.

425 Tidal differences for **Samuel Island**, **North Shore** (7515), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

426 **Belle Chain Islets** and **Anniversary Island**, east of and parallel to Samuel Island, consist of a number of islets, drying reefs and below-water rocks, and are part of *Gulf Islands National Park Reserve*. Anniversary Island, at the south end of the chain, has a few trees on it, no camping. Surrounding waters and north to Campbell Point on Mayne Island are a protected marine zone managed by *Parks Canada*.

427 **Georgeson Island** *(48°51'N, 123°14'W)* has a chain of islets, drying reefs and shoals extending 2 miles SE from it; they obstruct the east approach to Georgeson Passage. The passage between Georgeson Island and **Campbell Point**, to the NW, is narrow with a depth of 0.3 m through it. Favour the Georgeson Island side to avoid the drying reef extending from Campbell Point. Georgeson Island and Campbell Point are part of *Gulf Islands National Park Reserve*. Adjacent waters are a protected marine zone managed by *Parks Canada*.

428 **Campbell Bay**, entered between Campbell Point and **Edith Point**, affords temporary **anchorage**, mud bottom and it is exposed to the SE.

Chart 3442

429 **David Cove** *(48°52'N, 123°17'W)* is fringed by drying ledges and has a launching ramp and **submarine cables** running through it.

430 The north end of **Mayne Island** is fronted by Georgina Shoals; these shoals together with Gossip Shoals, Gossip Island and Lion Islets, lie in the north approach to Active Pass.

Active Pass

Charts 3442, 3473

431 **Active Pass** *(48°52'N, 123°19'W)*, between Mayne and Galiano Islands, is a deep, tortuous channel leading from Swanson and Trincomali Channels into the Strait of Georgia. The fairway is about 0.2 mile wide in its narrowest part. Fairway Bank lies in the centre of the north entrance to Active Pass. Local knowledge is advised.

ACTIVE PASS FROM STRAIT OF GEORGIA (2007)



432 Active Pass is frequently used by large, fast ferries linking Victoria and Vancouver. A vessel traversing the pass could meet as many as three such ferries in the pass. It is also frequently used by all types of coastal vessels, including tugs towing barges, coastal tankers and freighters. Particularly during summer months, numerous fishing and pleasure craft are encountered.

433 **Caution. — Great care should always be taken to avoid the dangers at the west entrance, as well as Fairway Bank and the shoals, on either side of the north entrance to the pass. Active Pass is not recommended for transit under sail.**

434 Before entering and after leaving Active Pass report to *Victoria Traffic* on 156.55 MHz, Channel 11. A summary of **Calling-in points** is listed in Table 6.3.

Table 6.3 Calling-in Points — Active Pass

Number	Name	Description
9	Portlock Point	Line running 090°–270° (True) through 48°49'41"N, 123°21'02"W
10	Peile Point	Line running 045°–225° (True) through 48°51'00"N, 123°24'14"W
11	Active Pass	An arc centered on 48°52'24.5"N, 123°17'24.5"W, radius 3 nautical miles

435 **Calling-in Point 9 Portlock Point** is a line running through *Portlock Point light (267)*.

436 **Calling-in Point 10 Peile Point** is a line running through *Peile Point light (268)*.

437 **Calling-in Point 11 Active Pass**, at the east end of Active Pass, is 3 miles NE of *Active Pass light (275)*.

438 A brief description of the *Vancouver Traffic Zone* is in *PAC 200 — General Information — Pacific Coast*. Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*.

439 Visibility is obscured by two bends in the channel. Sound signals prescribed by *Rule 34(e)* of the *Collision Regulations* are used.

440 Upstream direction for buoyage purposes in Active Pass is proceeding from Trincomali Channel toward the Strait of Georgia.

441 Tidal differences in Active Pass, referenced on Point Atkinson, are given for Georgina Point (7525) and Miners Bay (7528) in *Canadian Tide and Current Tables, Volume 5*.

442 Predictions of times and rates of maximum current and times of slack water are given for Active Pass (3000) in *Canadian Tide and Current Tables, Volume 5*. The maximum rate is 8 kn.

443 On the north-going (flood) tidal stream, there is a strong set into Miners Bay along its north shore, and on the south-going (ebb) tidal stream there is a corresponding set into the bay along its south shore. Heavy freshets from the Fraser River increase the rate of the south-going tidal stream.

444 Approaching from south, the flood stream rapidly gains velocity off Helen Point. Turning east in conformity with the channel, the main stream sets close to Matthews Point. From 0.2 mile south of Mary Anne Point, it sets ENE as far as Laura Point, whence it is deflected to NE and follows close along the east shore. This direction is maintained as far as Fairway Bank, where the influence of the flood in the Strait of Georgia is felt and the stream from Active Pass veers to NW in the vicinity of Gossip Shoals.

445 A portion of the flood stream turns south from Laura Point creating a large clockwise eddy in Miners Bay. Off Mayne Island wharf, the current attains 2.5 kn. It returns to the main stream off Mary Anne Point causing great turbulence on strong tides. A weaker eddy occurs on the flood north of the main stream and NE of Mary Anne Point. It sets anti-clockwise and returns to the main stream close to Mary Anne Point.

446 Off Georgina Point, a weak current from the east occurs on the flood.

447 At a point midway between Georgina Point and Fairway Bank, it can set west or even SW at 1 to 1.5 kn.

448 On strong flood tides, violent rips, dangerous to small craft, occur over an area extending from mid-channel, south of Mary Anne Point, to Laura Point. Strong rips also occur near Fairway Bank and are increased in violence during strong winds from the north quadrant.

449 From the Strait of Georgia, the ebb appears to set SSE across the entrance to Active Pass. Near Fairway Bank, it is often weak and variable in direction, but on large tides, the set is south at 1 to 2 kn. After passing Laura Point, the main ebb stream veers west and opposite Matthews Point its greatest strength is found somewhat south of mid-channel. Passing over the shoal area north of Helen Point, it sets across the south entrance to Collinson Point, whence the current disperses in Trincomali Channel.

450 On the ebb an anti-clockwise eddy appears in Miners Bay, which can attain 2 kn, off the Mayne Island wharf on strong tides. An eddy also appears west of Helen Point. The main ebb stream, setting strongly toward Collinson Point, appears to cause this indraught of water from the south that moves anti-clockwise across the entrance. On strong tides, at a point midway between Helen and Collinson Points, the set can be due west at 1 to 1.5 kn. No rips of any violence occur on the ebb tide in Active Pass.

451 **Caution. — On the Strait of Georgia side of Active Pass heavy tide rips occur in the vicinity of Gossip Island, Lion Islets, and Salamanca Point,**

particularly with the flood tidal stream and a strong NW wind.

452 **Submarine cables** (power and telephone) cross Active Pass in the area between Matthews and Mary Anne Points and at Scoones and Rip Points.

West Approach to Active Pass

Chart 3473

453 **Enterprise Reef** *(48°51'N, 123°21'W)* consists of two rocky heads about 0.2 mile apart.

454 *Enterprise Reef lights (271),* on the west rock, are shown from a white tower with a red band at the top. The upper light is visible all round the horizon. The lower light is a sector light.

455 **Port hand buoy** *U51* marks the east end of the reef.

456 **Village Bay**, 1 mile SE of Helen Point, has **anchorage** in about 15 m north of the submarine cable. A ferry landing is on the north shore of the bay. Private lights and radar reflectors are on the ferry dock.

457 Tidal differences for Village Bay (7414), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

Helen Point to Georgina Point

458 **Collinson Point** *(48°52'N, 123°21'W)* is a steep-to, rugged, rocky point rising steeply to a summit about 0.5 mile NW. **Helen Point**, about 0.4 mile SE, is the termination of a thickly wooded slope that rises gently to the summit of Mount Parke.

459 *Helen Point light (272),* on the point, is shown from a cylindrical tower with a red band at the top.

460 **Georgeson Bay**, on the north side of the pass, lies between Collinson Point and **Matthews Point**. Off the west shore is a drying ledge with *Galiano light* on it, and farther north there are several shoals and rocks with less than 2 m over them. **Salalikum Rock**, which dries 0.6 m, lies close SE of Matthews Point.

461 *Galiano light (273),* on the above-mentioned drying ledge, is shown from a white cylindrical tower with a green band at the top.

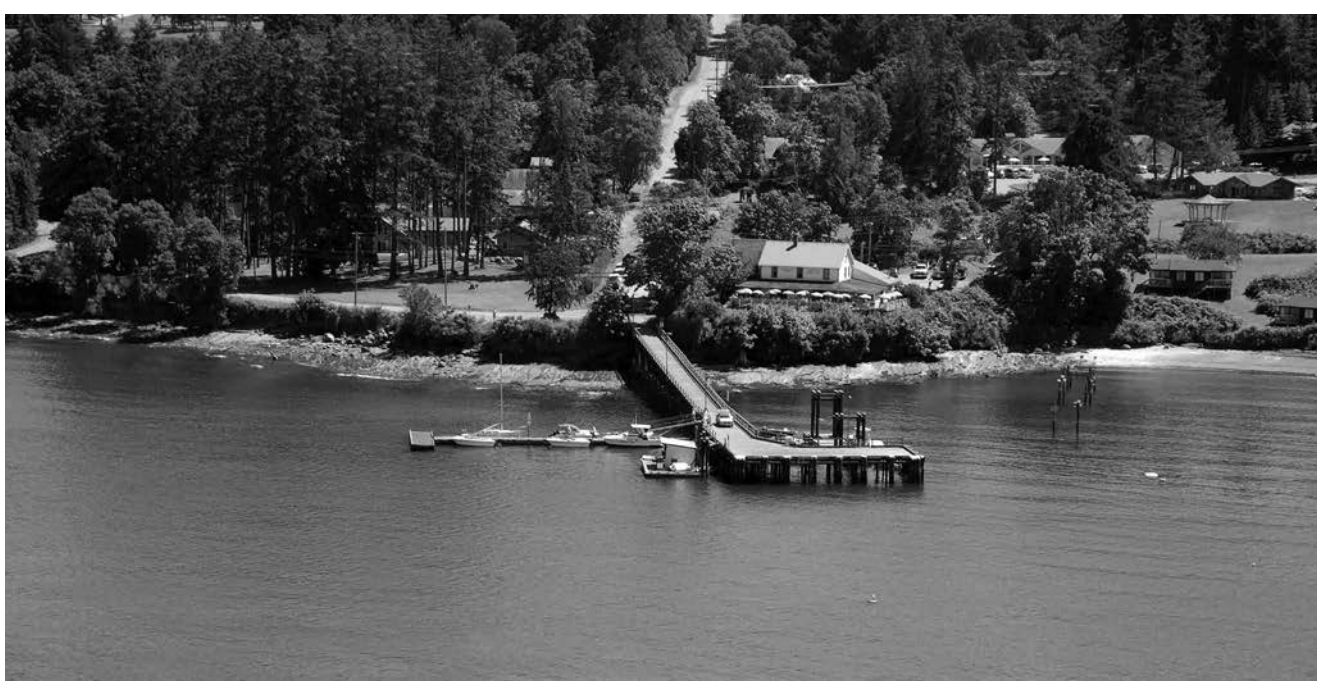
462 **Mary Anne Point**, 0.6 mile east of Matthews Point, is steep-to on its south side.

463 *Mary Anne Point light (274),* on the point, is shown from a white cylindrical tower with a green band on top.

464 **Bellhouse Bay**, between **Scoones Point** and **Burrill Point**, has drying reefs in it.

465 **Miners Bay**, 0.5 mile SE of Mary Anne Point, has an **anchorage** in case of ne-

MINERS BAY PUBLIC WHARF (2007)



STURDIES BAY (2005)



cessity. Mariners must go close inshore to obtain a depth of 20 m, and even there are barely out of the whirl of the **tidal streams**. **Caution is necessary because of the strong eddies that set into the bay.** Numerous private **mooring buoys** lie close offshore. Anchorage is prohibited in the **submarine cable area**.

466 Miners Bay is a seaplane landing area known as Mayne Island.

467 **Mayne**, a settlement in the SE corner of Miners Bay, has a post office, fuel, marine supplies, haulout and heliport. Communication with neighbouring communities is maintained by *BC Ferries* through the terminal at Village Bay.

468 Miners Bay **public wharf**, operated by the *Southern Gulf Islands Harbour Commission* 250 539-5808, has a berthing face of 22 m with a depth of 4 m alongside. Docks are attached to the public wharf. The dock on the south side is for small craft. The dock on the north side is for seaplanes only. Spaces marked in yellow are not available for general moorage. A surge due to traffic of large vessels and ferries is experienced alongside the wharf.

469 **Sturdies Bay** is shallow with some foul ground extending about 0.1 mile from the head. A **public wharf**, operated by the *Southern Gulf Islands Harbour Commission* 250 539-5053, and ferry landing have a depth of 4.9 m alongside its head. The public pontoon, 24 m long, is attached to the west side of the wharf. The yellow zone on the public wharf is for loading only and is not be used by transient vessels. A surge due to traffic of large vessels and ferries is experienced alongside the wharf. The community has stores and resorts.

470 Private lights and radar reflectors are on the outer end of the Sturdies Bay ferry landing.

471 **Fairway Bank** *(48°53'N, 123°18'W)*, which has a least depth of 9.1 m, lies almost midway between **Rip Point**, north of Sturdies Bay, and **Georgina Point** 0.9 mile ESE. There is no kelp on the bank but except at slack water, its position is marked by **tide rips**.

472 *Active Pass light (275)*, on Georgina Point, is shown from a white tower. It is fitted with a **radiobeacon** and has a heliport.

473 **Georgina Shoals** lie about 0.3 mile NE of Active Pass light. The sea occasionally breaks over the shoals where depths are less than 2 m.

474 **Gossip Island**, about 1.3 miles NW of Georgina Point, has drying ledges extending SE from it, into the north approach to Active Pass. **Gossip Shoals**, off the SE end of Gossip Island, consist of drying reefs and several rocks with less than 2 m over them.

475 *Gossip Shoals light and bell buoy U47 (276)*, E of shoal, off SE end of Gossip Island, is a **port hand buoy**. **It is very liable to drag off its charted position** owing to its exposed location and the strength of tidal streams.

ANNETTE INLET AND GLENTHORNE PASSAGE (2007)



Captain Passage

Charts 3478, 3442

476 **Captain Passage** *(48°49'N, 123°24'W)*, entered from Swanson Channel between Beaver Point and Point Liddell, leads NW between Prevost and Saltspring Islands to Ganges Harbour and Trincomali Channel.

477 **Tidal streams** within Captain Passage attain 2 to 3 kn on the flood and 3 to 4 kn on the ebb. The flood sets mainly toward Trincomali Channel and the ebb sets directly onto the south shore, with **tide rips** in the vicinity of Nose Point. Tidal streams in Ganges Harbour are generally weak.

478 *BC Ferries* vessels operating from Tsawwassen, on the mainland, pass at frequent intervals through Captain Passage and call into Long Harbour, at the NW end of the passage. Charted ferry routes are general indications of the route followed.

Chart 3478

479 **Yeo Point** *(48°48'N, 123°24'W)* can be identified by white sandy beaches, on either side of it. Wooded cliffs, about 60 m high, extend 1.3 miles west from Yeo Point.

480 **Marine farm** facilities are in **Cusheon Cove** 0.4 mile west of Yeo Point.

481 **Channel Islands**, 0.3 mile NE of Yeo Point, consist of three islands. The largest island is 24 m high; the other two islands, 4 and 11 m high, are grassy. They are part of *Gulf Islands National Park Reserve*. **Deep Ridge** is a shoal spit extending 0.4 mile SE from Channel Islands. **Acland Islands**, 0.6 mile north of Channel Islands, consist of two islands lying close-off the SW coast of Prevost Island.

482 *Channel Islands light (258)*, on the N end of Channel Islands, is shown from a white tower.

483 *Deep Ridge light buoy UN (257.9)*, SE of Channel Islands, is a **port bifurcation buoy**.

484 *Acland Islands light buoy U60 (258.2)*, SW of the islands, is a **starboard hand buoy**.

485 **Batt Rock**, 1.8 miles NW of Channel Islands, has less than 2 m over it and is marked by **port bifurcation buoy** *UC*.

486 **Horda Shoals**, 0.8 mile NNE of Batt Rock, has less than 2 m over its north part.

487 *Horda Shoals light buoy UD (258.5)*, close SE of the shoals, is a **port bifurcation buoy**.

488 *Captain Passage light buoy U62 (258.4)*, SSW of Annette Point, is a **starboard hand buoy**.

489 **Secret Island** is separated from **Glenthorne Point** on Prevost Island by a very narrow passage. **Glenthorne Passage** has several private **mooring buoys** and docks along its shores. **Annette Inlet** and **Selby Cove**, on the west side of Prevost Island, are narrow and shallow but afford sheltered **anchorage** to small craft. Annette Inlet has a drying rock in its approach and shoal depths on the north and south sides of its entrance. A private **daybeacon** is on the south entrance point to Annette Inlet. **James Bay**, north of Selby Cove, is sheltered from the south but open to the NW.

490 Much of the lands above James Bay and Selby Cove are part of *Gulf Islands National Park Reserve*.

491 **Welbury Bay** *(48°51'N, 123°27'W)* is entered between **Welbury Point** and **Scott Point**. A shoal extending 0.6 mile SE from Welbury Point is marked at its outer end by **port hand buoy** *U49*.

LONG HARBOUR (2007)



492 **Long Harbour**, entered between Scott Point and **Nose Point**, extends 2 miles NW terminating in a mud flat. A group of islets, connected to the north shore by a drying ridge, lie 0.4 mile NW of Nose Point. A rock, with less than 2 m over it, lies close WNW of the above islets and is marked by **starboard hand buoy** *U50*. **Clamshell Islet**, in the middle of Long Harbour, has foul ground extending north marked by **port hand buoy** *U55*.

493 *Nose Point light (259)*, on the point, is shown from a white cylindrical tower.

494 *Long Harbour light (260)*, on a rock close south of Clamshell Islet, is shown from a white cylindrical tower with a red band at the top.

495 Private facilities of the *Royal Vancouver Yacht Club* protected by a rock **breakwater** are 0.6 mile NW of Scott Point. Numerous private wharves and docks lie in the upper reaches of Long Harbour.

496 *BC Ferries* vessels call into Long Harbour at frequent intervals; the ferry landing is 0.2 mile west of *Long Harbour light*.

497 A **submarine cable** crosses Long Harbour 0.6 mile NW of *Long Harbour light*.

498 **Anchorage** can be obtained in Long Harbour, north of the ferry route and midway between the group of islets, near the entrance, and Clamshell Islet in the middle of the harbour, in 17 to 18 m, mud bottom. Small craft can find anchorage near the head of the harbour, clear of the submarine cable. The basin at the NW end of the harbour has foul ground in the centre. The wreck of a small cement hulled power boat is on the south side of the basin and is marked by a **buoy** and pole.

Ganges Harbour and Approach

499 **Ganges Harbour** *(48°51'N, 123°29'W)* is entered from Captain Passage between Welbury Point *(48°50.7'N, 123°26.6'W)* and the coast of Saltspring Island, 1.25 miles south.

500 Captain Passage is free of dangers in the fairway, with the exception of **Ganges Shoal**, which has 4 m over it.

501 The village of **Ganges** lies near the head of the harbour 2.5 miles within the entrance. It is the tourist and commercial centre for Saltspring Island. The community has a post office (V0S 1E0), hospital with a heliport, dental and pharmacy facilities, banks and stores.

502 A **submarine pipeline** (sewer) runs the length of Ganges Harbour, discharging 0.5 nm south of Welbury Point.

503 Ganges Harbour is a seaplane landing area.

504 A **speed limit** of 10 km/h (5 kn) is prescribed by the *Vessel Operation Restriction Regulations* for Ganges Harbour.

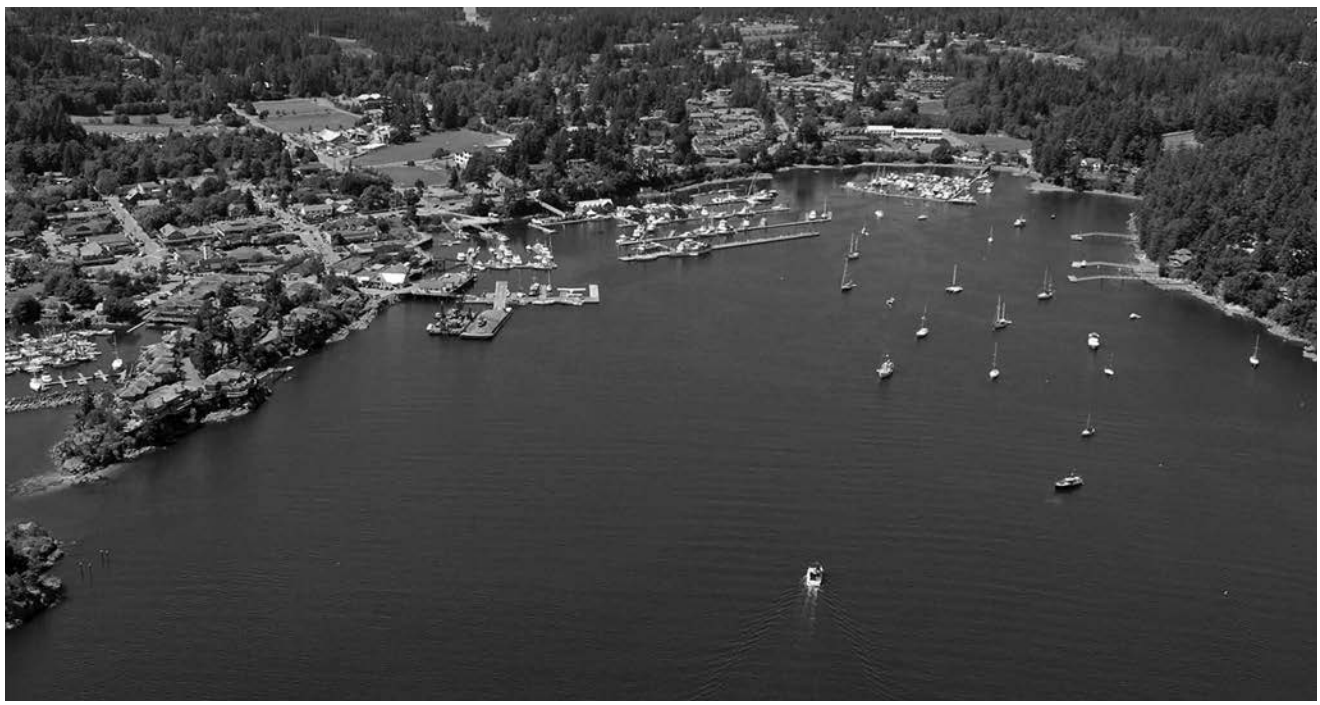
505 Tidal differences for Ganges Harbour (7407), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

506 **Chain Islands** lie on the NE side of Ganges Harbour; named ones are **Second Sister Island**, **Third Sister Island**, **First Sister Island**, **Deadman Islands**, **Goat Island** and **Powder Islet**. **Money Maker Reef** extends 0.3 mile NW of Third Sister Island.

506.1 *Money Maker Reef buoy U61*, NW of the reef, is a **port hand buoy**. It marks the east entrance to Ganges Harbour.

507 A **wreck** with 3.9 m over it lies close south of Goat Island.

GANGES HARBOUR (2007)



508 *Ganges Harbour light (261),* on the south end of Second Sister Island, is shown from a white cylindrical tower with a red band at the top.

508.1 A private ODAS **buoy** is 0.8 mile SE of Second Sister Island.

509 A private **light buoy**, in the centre of Ganges Harbour, is fitted with a speed limit sign and a radar reflector.

510 Ganges Harbour outer **daybeacon**, on a drying reef 0.1 mile NE of Deadman Islands, has a **bifurcation**/**junction daymark**, preferred channel to the right.

511 Ganges Harbour inner **daybeacon**, on a drying reef NW of Goat Island, has a **starboard hand daymark**.

512 **Walter Bay**, on the SE shore of Ganges Harbour, has private docks. *Saltspring Island Sailing Club* docks, protected by a floating **breakwater**, are close NW of Walter Bay. Private lights are shown from the breakwater.

513 **Grace Islet**, 0.4 mile west of Goat Island, is joined to a narrow peninsula, on the west side of Ganges Harbour, by a drying sand bar.

514 *Grace Islet light (262),* on the low water rock E of the islet, is shown from a white cylindrical tower with a green band on the top.

515 **Beacons** mark the entrance to the boat basin west of Grace Islet. Two **daybeacons** have **starboard hand daymarks** and four have **port hand daymarks**.

516 **Caution. — Money Makers Rock is at the head of Ganges Harbour and has less than 2 m over it. *Ganges Marina* docks are close south and care needs to be taken to ensure the rock is given adequate clearance when approaching the marina.**

517 *Ganges Centennial Wharf,* operated by the *Saltspring Harbour Authority* 250 537-5711, is a full-service small craft harbour. The **wharf** is protected on its east side by a **breakwater**. Docks provide 300 m of berthing space. Private docks are close east of the public docks.

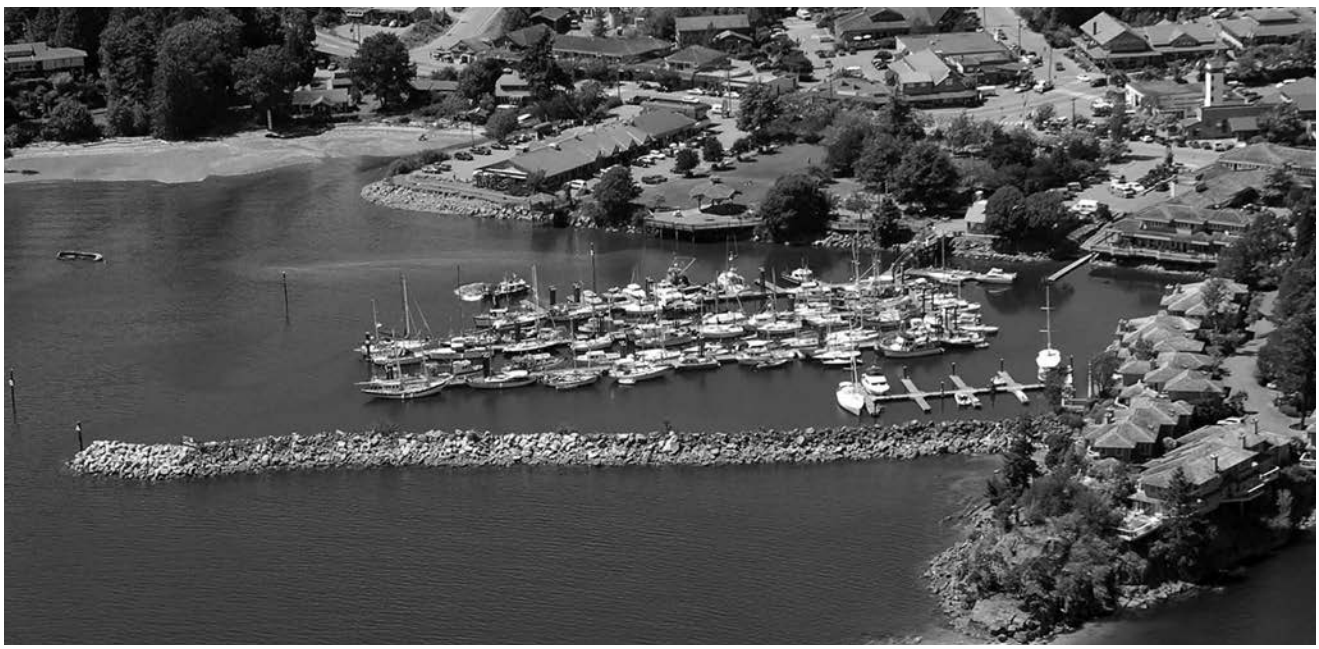
518 *Kanaka Wharf,* operated by the *Saltspring Harbour Authority* 250 537-5711, is the main **public wharf** in Ganges Harbour. Moorage, power, water and garbage disposal is available. Gulf Islands Water Taxi 250 537-2510 operates from here.

519 *Ganges Coast Guard Wharf,* operated by the *Saltspring Harbour Authority* (250-537-5711), is a full-service small craft harbour with pumpout. The *Canadian Coast Guard* has a year-round rescue unit based here. The **wharf** has a berthing length of 41 m and depths of 2.8 to 4.7 m alongside; it can be identified by its white shed with red trim. Commercial seaplanes use this wharf.

520 A floating **breakwater**, NW of the public wharf, protects a marina. A **wreck** with 4.1 m over it lies close-off the breakwater.

521 **Marinas** are near the head of Ganges Harbour. *Ganges Marina* 250 537-5242 is a full-service marina with guest moorage. *Salt Spring Marina*

GANGES CENTENNIAL WHARF (2007)



250 537-5810, at the head of the harbour, is a full-service marina with pumpout nearby. The **wharf**, built in 2020, is protected on its south and east sides by a **breakwater**. Docks provide 365 m of berthing space.

Trincomali Channel

Charts 3478, 3473, 3442, 3443

522 **Trincomali Channel** *(48°55'N, 123°31'W)* leads NW from Navy Channel, Swanson Channel and Active Pass to Pylades and Stuart Channels. The channel is deep throughout and presents no navigational difficulties. It is 0.8 mile wide at its narrowest part.

523 Captain Passage leads west and south of Prevost Island. Houstoun Passage leads around the north end of Saltspring Island, to Stuart Channel. Porlier Pass, on the NE side of Trincomali Channel, leads through to the Strait of Georgia. At the NW end of Trincomali Channel, Stuart Channel is entered between Thetis Island and Pylades Island.

524 The NE side of Trincomali Channel is formed by Galiano Island and Valdes Island; Prevost, Saltspring and Thetis Islands form its SW side.

525 Three **Calling-in points** of the *Vancouver Traffic Zone*, administered by *Victoria Traffic*, are in Trincomali Channel. Assigned frequency is 156.55 MHz, Channel 11. See Table 6.4 for a summary of the calling-in point.

Table 6.4 Calling-in Point — Trincomali Channel

Number	Name	Description
13	West Porlier Pass	An arc centered on 49°00'46.5"N, 123°35'29.5"W, radius 3 nautical miles on a line of bearing from seaward 350°–130° (True)

526 **Calling-in Point 13 West Porlier Pass** is centered on *Virago Rock Sector light (289.3)*. Call in before entry to or after exit from Porlier Pass.

527 A brief description of the *Vancouver Traffic Zone* is in *PAC 200 — General Information — Pacific Coast*. Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*.

528 Designated **anchorages** lie between Valdes and Thetis Islands.

529 Tidal differences in Trincomali Channel, referenced on Fulford Harbour, are given for Village Bay (7414), Montague Harbour (7420) and Porlier Pass (7437) in *Canadian Tide and Current Tables, Volume 5*.

530 **Tidal streams** in the SE and wider part of Trincomali Channel attain 1.5 kn, but north of Wallace Island there is an increase in velocity and up to 3 kn can be expected.

MONTAGUE HARBOUR SOUTH ENTRANCE (2007)



531 Secondary current station Trincomali Channel (1275), referenced on Race Passage, is located about 1 mile south of Wise Island and given in *Canadian Tide and Current Tables, Volume 5*.

532 A **submarine cable area** approximately 2 miles in extent, from the south end of Parker Island to Wilmot Head, its NW extremity, crosses Trincomali Channel to the shore of Saltspring Island. A **submarine cable** crosses Trincomali Channel from Retreat Cove to south of Panther Point then up the centre of Houstoun Passage.

533 The south part of Trincomali Channel is used by large ferries operating between Swartz Bay, on Vancouver Island, and Tsawwassen on the mainland; their route is from Active Pass, west of Enterprise Reef into Swanson Channel. An inter-island ferry calls into Village Bay and crosses Trincomali Channel entering Captain Passage. Charted ferry routes are general indications of the route followed.

Chart 3442

534 **Hawkins Island**, *(48°50'N, 123°22'W)*, 1 mile NW of Portlock Point, has a few bushes on it. It is part of *Gulf Islands National Park Reserve*. Waters north, west and east of the island, 200 m perpendicularly distant from the natural boundary of the land, are a protected marine zone managed by *Parks Canada*. A beach of white shells on the NE side of Prevost Island and close to Hawkins Island is prominent. **Charles Rocks** consist of several drying rocks extending 0.4 mile NW from Hawkins Island.

535 **Marine farm** facilities are on the south side of Hawkins Island.

536 **Peile Point**, the north extremity of Prevost Island, lies at the junction of Captain Passage and Trincomali Channel. **Sutil Mountain**, 1.5 miles NE of Peile Point, is on Galiano Island and rises to an elevation of 300 m, it has prominent cliffs on its south side.

537 *Peile Point light (268)* is shown from a white tower.

538 **Ben Mohr Rock**, 0.8 mile NE of Peile Point, has 4 m over it.

539 *Ben Mohr Rock light buoy UK (270)*, NE of Peile Point light, is a **starboard bifurcation buoy**.

Chart 3473

540 **Parker Island** *(48°53'N, 123°25'W)*, across the entrance of Montague Harbour, has steep cliffs on its SW side. **Julia Island** lies close-off its SE extremity and **Wilmot Head** is the NW extremity of Parker Island. The channel between Wilmot Head and **Sphinx Island** has a depth of 5.2 m through its fairway. Large cable signs are onshore at the NW and SW ends of Parker Island.

MONTAGUE HARBOUR MARINE PROVINCIAL PARK (2007)



541 **Phillimore Point**, about 0.2 mile SE of Julia Island, is the south entrance point of Montague Harbour.

542 *Phillimore Point light (269)* is from a white tower with a red band at the top.

543 **Montague Harbour**, on the SW side of Galiano Island, is sheltered by Parker Island and affords a good **anchorage** for small craft. Its south entrance, between Phillimore Point and Julia Island, is easy of access. The north entrance, between **Gray Peninsula** and the peninsula on the NE side of Parker Island, has a depth of 5.2 m through the centre of its fairway.

544 A **ferry** occasionally calls into Montague Harbour. It generally uses the south entrance and berths on the NE side of the harbour, about 0.4 mile NE of **Winstanley Point**. The ferry landing, with private light and radar reflectors, is close NW of the public wharf.

545 **Overhead cables** (power) cross both the south and north entrances to Montague Harbour; vertical clearance through both entrances is 38 m. Red spheres are attached to the cables to increase visibility. The **tower** on Gray Peninsula is a useful landmark.

546 A **submarine cable area** crosses the south entrance to Montague Harbour from, south of Winstanley Point to the SE side of Parker Island.

547 Tidal differences for Montague Harbour (7420), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

548 **Payne Bay**, north of Phillimore Point, offers temporary **anchorage** on a mud and sand bottom.

549 Numerous **public mooring buoys** are in the north end of Montague Harbour, to the east of Gray Peninsula. Other facilities provided by *Montague Harbour Marine Provincial Park* include campsites, toilets and dinghy dock.

550 Montague Harbour **public wharf**, on the east side of Montague Harbour 0.4 mile NE of Winstanley Point, has 97.5 m of berthing space. The wharf is operated by the *Southern Gulf Islands Harbour Commission* (250-222-0124).

551 *Montague Harbour Marina* 250 539-5733 is a full-service **marina** located close south of the public dock.

552 Numerous private docks line the south and east shores of the harbour.

553 **Wise Island** *(48°54'N, 123°27'W)* and **Charles Island** lie NW of Parker Island. **Ballingall Islets**, NW of Wise Island, are low and covered with stunted shrubs. *Ballingall Islets Park* is a nature reserve.

554 **Atkins Reef** *(48°53'N, 123°28'W)*, 1.4 miles SW of Wise Island, dries 2.6 m.

MONTAGUE HARBOUR PUBLIC WHARF (2007)



MONTAGUE HARBOUR (2005)



555 Atkins Reef **daybeacon**, on the highest part of the reef, has a **bifurcation**/**junction daymark**, preferred channel to the right.

556 **Mount Parke** *(48°50'N, 123°18'W)*, on Mayne Island, has a radar tower with red air obstruction lights on its summit.

557 The summit of Mount Parke in line with the SW extremity of Galiano Island, bearing about 115°, leads about 0.5 mile NE of Atkins Reef and the dangers SE of it.

Chart 3442

558 **Walker Hook** *(48°54'N, 123°30'W)* is a narrow wooded peninsula. A reef with less than 2 m over it extends 0.3 mile ESE. Reasonable **anchorage**, sand bottom, can be obtained inside the reef during west winds.

559 **Governor Rock**, 1 mile north of Walker Hook, lies nearly in mid-channel and has two heads with less than 2 m over them.

560 *Governor Rock light buoy U45 (290)*, east of the rock, is a **port hand buoy**.

561 **Victoria Rock**, 0.8 mile west of Governor Rock, has 4.3 m over it and is marked on its west side by **starboard bifurcation buoy** *UE*.

562 **Victoria Shoal**, 0.3 mile NE of Victoria Rock, has 4.9 m over it.

563 *Victoria Shoal light buoy U43 (291.3)*, NW of Governor Rock, is a **port hand buoy**.

564 **Walker Rock**, 1.5 miles ESE of Panther Point, is a narrow drying ledge with shoal water extending 0.2 mile NW.

565 *Walker Rock lights (291)* are shown from a white cylindrical tower. The upper light is visible all round the horizon. The lower light is a sector light with

RETREAT COVE (2007)



the white sector indicating the preferred channel leading to Houstoun Passage.

566 The NE extremity of Thetis Island bearing 310° and open east of the NE side of Wallace Island leads between Governor and Walker Rocks.

567 **Retreat Cove** *(48°56'N, 123°30'W)* has depths of 1.8 to 8.2 m in its SE corner and affords good shelter for small craft. **Retreat Island**, in the middle of the cove, is connected to shore by a drying flat. **Scarrow Reef** dries 2.7 m.

568 The **public wharf**, operated by the *Southern Gulf Islands Harbour Commission* 250 539-5557, is in the SE part of Retreat Cove. The dock is 31 m long with a depth of 4 m alongside.

569 **Quadra Hill** *(48°56'N, 123°28'W)* is prominent. A conspicuous white patch, shaped like a lug sail, is on the cliffy coast under the hill. **Bodega Hill**, 3 miles NW of Quadra Hill, is conspicuous; it has one very large isolated tree on it and rises above some prominent high cliffs.

570 **Spotlight Cove**, 3.3 miles NW of Retreat Cove, has private **moorings**. **North Galiano**, 1 mile north of Spotlight Cove, has a general store.

571 The *North Galiano Small Craft Harbour* (250-539-5420) has a 3 m depth alongside. The **wharf** on the north side is 2.4 m alongside. Moorage is available.

572 **Hall Island** *(48°59'N, 123°36'W)*, **Reid Island** and **Rose Islets** front Clam Bay and form a chain south and west of Porlier Pass.

573 Rose Islets are *Ecological Reserves*; a permit is required for landing.

574 **Cardale Point** *(49°01'N, 123°37'W)* is a low, sandy projection at the SW end of **Valdes Island**. **Shingle Point**, 2 miles NW of Cardale Point, is also low and sandy.

575 Between Shingle Point and **Blackberry Point**, 1 mile NW, there are high cliffs above which rises **Mexicana Hill**, the highest part of Valdes Island.

576 Stuart Channel can be entered from the north end of Trincomali Channel, between Pilkey Point *(49°01'N, 123°41'W)* and Pylades Island, 2.5 miles north.

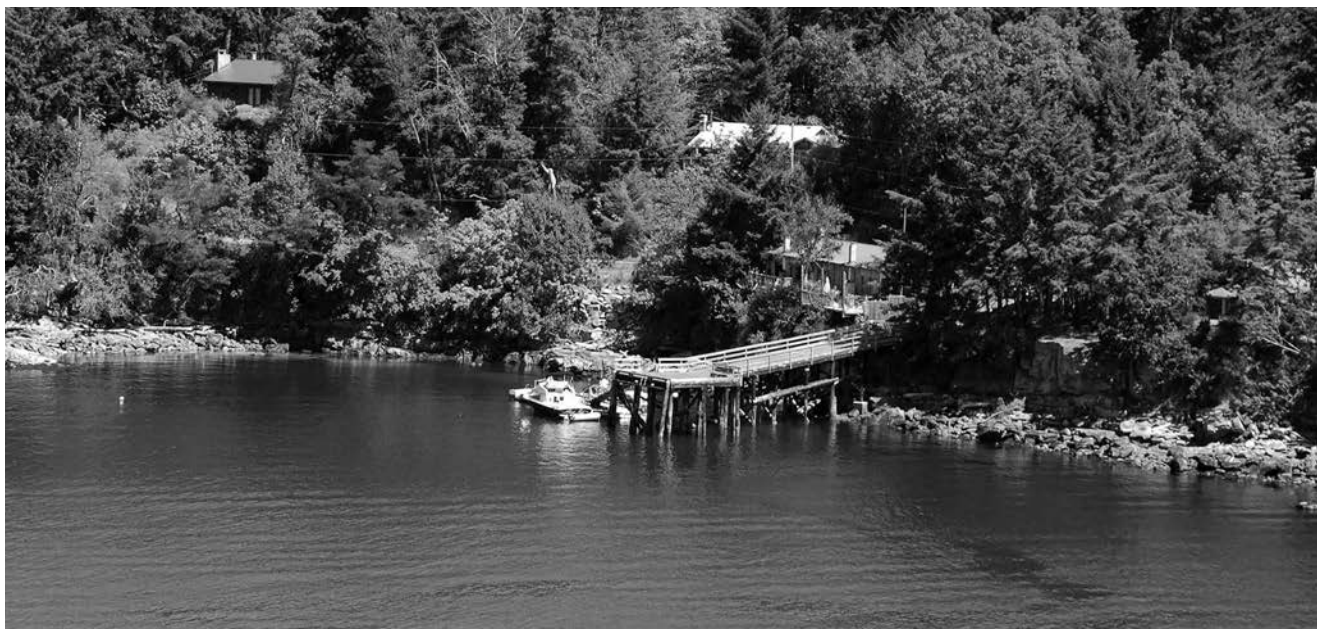
Clam Bay and Approach

Chart 3477

577 *Norway Island light (286.5)*, on the NW end of Norway Island *(48°59'N, 123°38'W)*, is shown from a mast and is private and seasonal.

578 A private **daybeacon** on a rock off the NW extremity of Norway Island has a **starboard hand daymark**.

NORTH GALIANO PUBLIC WHARF (2007)



579 **Penelakut Spit**, 0.3 mile west of Norway Island, is low, white in appearance and composed of broken clam shells. The passage between Penelakut Spit and Norway Island, encumbered with several below-water rocks, is only suitable for small craft; local knowledge is advised. A First Nations village at the south end of Penelakut Spit has a conspicuous church spire.

580 **Clam Bay**, between the north end of **Penelakut (Kuper) Island** and the SE part of Thetis Island, is entered between Penelakut Spit and **Leech Island**. **Centre Reef**, in the entrance to Clam Bay, dries 0.6 m and is marked at its SE end by **starboard hand buoy** *U42*. **Rocket Shoal**, 0.2 mile south of Leech Island, consists of several rocks with less than 2 m over them.

581 A **submarine cable** (power) crosses Clam Bay from south of Leech Island to Norway Island.

582 The SW corner of Clam Bay has **marine farm** facilities which lie off the SW shore.

583 **Anchorage** for small craft can be obtained south of Rocket Shoal in about 9 m, mud bottom.

584 **The Cut**, at the west end of Clam Bay, is a very narrow dredged channel leading to Telegraph Harbour; it is usable by small craft at or near HW. The north side of the passage consists of a revetment formed by dredging overcast; the south side is a drying mud flat.

585 **Caution. — The Cut is not recommended without the aid of local knowledge. Slow speed should be used to avoid excessive wash. Visibility is obscured by a sharp turn at the west end.**

586 The upstream direction for the beacons is when proceeding west from Clam Bay to Telegraph Harbour. The north side of The Cut is marked by **daybeacons** with **starboard hand daymarks**. The south side is marked at the Clam Bay entrance, by a **daybeacon** with a **port hand daymark**. A **daybeacon** on the north side of the narrows, at the west end, has an **orange triangular daymark**.

587 **Tide scales** on beacons at both ends of The Cut are not referenced to chart datum.

588 **Tidal streams** in The Cut flood east and ebb west.

589 **Submarine cables** (telephone) cross The Cut at its west end.

Porlier Pass

Chart 3473

590 **Porlier Pass** *(49°01'N, 123°35'W)* is known locally as **Cowichan Gap**. The pass is entered from Trincomali Channel between **Alcala Point** and **Cayetano Point**, 0.8 mile NNW. It is not less than 0.4 mile wide but the navigable channel is narrow and **tidal streams** run with considerable strength. The channel can be safely taken by a handy vessel at slack water.

591 Before entering and after leaving Porlier Pass report to *Victoria Traffic* on 156.55 MHz, Channel 11. **Calling-in points** are listed in Table 6.5.

THE CUT ENTRANCE FROM CLAM BAY (2007)



THE CUT FROM TELEGRAPH HARBOUR (2007)



592 **Calling-in Point 13 West Porlier Pass** is centered on *Virago Rock Sector light (289.3)*. Call in before entry to or after exit from Porlier Pass.

593 **Calling-in Point 14 East Porlier Pass** is centered on *Virago Rock Sector light (289.3)*. Call in before entry to or after exit from Porlier Pass.

594 A brief description of the *Vancouver Traffic Zone* is in *PAC 200 — General Information — Pacific Coast*. Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*.

Table 6.5 Calling-in Points — Porlier Pass

Number	Name	Description
13	West Porlier Pass	An arc centered on 49°00'46.5"N, 123°35'29.5"W, radius 3 NM on a line of bearing from seaward 350°–130° (True).
14	East Porlier Pass	An arc centered on 49°00'46.5"N, 123°35'29.5"W, radius 3 NM on a line of bearing from seaward 180°–265° (True).

LIGHTHOUSE BAY (2007)



595 Tidal differences for Porlier Pass (7437), referenced on Fulford Harbour, and for Dionisio Point (7535) at the east end of the pass, referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

596 Predictions of times and rates of maximum current and times of slack water are given for Porlier Pass (3100) in *Canadian Tide and Current Tables, Volume 5*.

597 Maximum flood is 10 kn and the ebb is 7 kn; it sets from Trincomali Channel into the Strait of Georgia on the flood and in the reverse direction on the ebb.

598 Upstream direction for buoyage purposes is proceeding NE from Trincomali Channel toward the Strait of Georgia.

599 **Virago Point** *(49°01'N, 123°35'W)* is the extremity of a narrow projection, faced with cliffs on its west side.

600 *Porlier Pass range lights*, in line bearing 196°, are on Virago and Race Points. The rear light *(289)*, on Virago Point, is shown from a white tower. The front light *(288)*, on the extremity of **Race Point**, is shown from a white tower.

601 **Boscowitz Rock**, close SW of Race Point, dries 1.2 m.

602 **Lighthouse Bay**, between Virago and Race Points, has shelter for small craft. Its east shore is cliffy. An **overhead cable**, vertical clearance 23 m, crosses the drying flats at the head of the bay. A **submarine cable** (power) is laid across the entrance of the bay.

603 **Anchorage** for small craft can be obtained in Lighthouse Bay, south of the submarine cable.

604 **Romulus Reef**, 0.25 mile SSW of Virago Point light, has depths of 7.3 m.

605 **Black Rock**, which dries 3.4 m, lies about 0.4 mile NW of Virago Point light. A rock, with 2.6 m over it, lies 0.1 mile SE of Black Rock and a rock with 0.5 m over it is about 61 m ENE from the **daybeacon** on Black Rock.

606 Black Rock **daybeacon**, on the NW end of the rock, has a **starboard hand daymark**.

607 **Virago Rock**, 0.2 mile NE of Black Rock, dries 0.6 m and lies on a shoal with depths of 1.8 to 2.1 m.

608 *Virago Rock Sector light (289.3)* is shown from a white structure with a green band at the top.

609 **Dionisio Point** *(49°01'N, 123°34'W)* is connected to Galiano Island by a narrow ridge of sand.

610 **Vernaci Point**, at the SE end of Valdes Island, should be given a clearance of at least 0.2 mile. The coast between Vernaci Point and **Shah Point**, 0.65 mile NNW, is fringed with drying reefs and shoals. **Canoe Islet**, 0.3 mile east of Shah Point, is 3 m high with drying reefs extending 0.2 mile SSE from it.

611 Canoe Islet and the drying reefs are *Ecological Reserves* and landing is not permitted without a permit.

612 *Porlier Pass light and bell buoy U41 (287)*, off E entrance to pass, is a **port hand buoy**.

613 The historically important **wreck** of the side-wheel steamer *Del Norte* is located at *49°01'35"N, 123°35'18"W*. Vessels should not anchor in this vicinity to avoid damaging the remains.

614 **Galiano Island**, with Porlier Pass at its north end and Active Pass at its south end, is 14 miles long in a NW/SE direction.

WALLACE ISLAND ANCHORAGE (PRINCESS COVE) (2007)



Houstoun Passage

Chart 3442

615 **Houstoun Passage** *(48°57'N, 123°36'W)* connects Stuart Channel to Trincomali Channel. Entered from Stuart Channel between Parminter Point and North Reef it leads north between the NW end of Saltspring Island and the east side of Penelakut (Kuper) Island. At the north end of Saltspring Island it turns SE and leads between the NE side of Saltspring Island and the SW sides of Secretary Islands and Wallace Island. It enters Trincomali Channel between Fernwood and Panther Points.

616 **Tidal streams** within Houstoun Passage are generally weak. The flood sets NW and the ebb SE.

617 A **submarine cable** is laid down the centre of Houstoun Passage. A power cable crosses the passage from SE of Southey Point to Jackscrew Island.

618 **Anchorage** can be obtained in the western portion of Houstoun Passage in 24 to 40 m, mud bottom. Anchorages are designated Numbers 1 to 3.

619 **Tent Island** *(48°56'N, 123°38'W)* is connected to Josling Point by a drying ridge. North Reef lies 0.5 mile south. **Sandstone Rocks** lie close SE of Tent Island.

620 Tent Island Reef **daybeacon**, on a drying rock 0.1 mile NE of Sandstone Rocks, is a white tower with a green band around the top.

621 **Idol Island** lies 1 mile east of Sandstone Rocks. **Stone Cutters Bay** is surrounded by houses. **Grappler Rock** has three drying heads. **Southey Point** is the north extremity of Saltspring Island. **Jackscrew Island** lies 0.5 mile NE of Southey Point.

621.1 A **wreck**, with a depth of 4.3 m, lies about 0.3 mile NE of Idol Island.

622 *Grappler Rock* **light** *(285)*, on the west side of the rock, is shown from a white cylindrical tower with a red band at the top.

623 *Southey Point* **light** *(286)* is shown from a white tower.

624 *Jackscrew Island* **light** *(293.5)*, on the south extremity of the island, is shown from a white tower with a red band at the top.

625 **Secretary Islands**, north of Jackscrew Island, are connected to one another by a drying sand and gravel ridge.

626 **Mowgli Island**, NW of Secretary Islands, is known locally as **Spike Island**. A narrow chain of wooded islets and drying reefs, 0.4 mile long, lies 0.2 mile south of Mowgli Island. The channel between Mowgli Island and **Norway Island** to the north is 0.15 mile wide; it connects the north end of Houstoun Passage to Trincomali Channel.

FERNWOOD POINT (2007)



627 **South cardinal buoy** *UV* is at the SE extremity of the chain of islets and drying reefs.

627.1 A private *ODAS* ***buoy***, is directly west of South **cardinal buoy** *UV*, and 0.3 mile off the coast of Penelakut Island.

628 Houstoun Passage **daybeacon** on the NW extremity of the chain of islets and drying reefs has a **starboard hand daymark**.

629 Norway Island **daybeacon** on an islet close south of Norway Island has a **port hand daymark**.

630 **Wallace Island**, SE of Secretary Islands, is separated from them by a narrow channel that has a drying reef and below-water rocks in the centre of its fairway. A narrow chain of rocky islets, drying rocks and shoals lies parallel with and about 0.2 mile from the SW shore of Wallace Island. **Conover Cove** within *Wallace Island Marine Provincial Park* affords good shelter for small craft and has a small dock. **Princess Cove** affords **anchorage** in the centre and along the SW side where stern lines are usually attached to trees or metal rings. **Panther Point** has a drying ledge extending 0.2 mile SE from it.

631 *Panther Point* ***light buoy*** *U44 (293)*, at the SE extremity of the shoals, is a **starboard hand buoy**.

632 Panther Point **daybeacon**, on the drying ledge, has a **bifurcation**/**junction daymark**, preferred channel to the right.

633 *Saltspring Island Sector* **light** *(291.1)*, 1 mile NW of Fernwood Point, is shown from a white cylindrical tower. The white sector indicates the preferred channel for approaching the east entrance of Houstoun Passage.

634 A **public pier** with a **wharf** attached to its outer end extends over the tidal flats at **Fernwood Point**. This wharf has 24.4 m of berthing space with 3 m alongside.

East Coast Galiano Island and Valdes Island

Chart 3442

635 The passage between Gossip Island and **Cain Peninsula** *(48°53'N, 123°19'W)* leads to **Whaler Bay**; it has rocks and shoals in its SE entrance and a least depth of 10.4 m.

636 **Submarine cables** cross the passage between Cain Peninsula and Gossip Island; they are marked by signs.

637 The north entrance to Whaler Bay lies between Gossip Island and **Twiss Point**. **Lion Islets**, 0.4 mile north of Twiss Point, consist of two islets connected by a drying reef; the passage west of the islets is unusable even for small craft.

638 **Caution. — Heavy tide rips occur in the vicinity of Gossip Island and Lion Islets, particularly with a flood tidal stream and a strong NW wind.**

639 **York Rocks**, off the NW side of Gossip Island, consist of a rock 5 m high and several drying and below-water rocks.

640 The *Whaler Bay Harbour Authority* **public wharf** 250 539-2246 is in the south arm of Whaler Bay, about 0.2 mile south of **Cain Point**. Depths as shallow as 0.3 m are found in the vicinity of this wharf. There are numerous private wharves, docks and flag staffs along the shores of Whaler Bay and Gossip Island.

WHALER BAY (2007)



641 A booming ground and log dump are on the west shore, of the south arm of Whaler Bay.

642 Tidal differences for Whaler Bay (7532), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

643 **Salamanca Point** *(48°54'N, 123°21'W)* is a rocky point on which trees grow nearly to the HW line, and it is prominent from NW and SE.

644 **Caution. — Heavy tide rips occur in the vicinity of Salamanca Point, Lion Islets and Gossip Island, particularly with the flood tidal stream and a strong NW wind.**

645 A **submarine cable area** (power) crosses the Strait of Georgia; its limits are between Salamanca Point and a position on Galiano Island 4 miles WNW. Another submarine cable crosses the strait 2.2 miles WNW.

646 Tidal differences for Dionisio Point (7535), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

647 Between Porlier Pass and Gabriola Passage, 8 miles NNW, the E coast of **Valdes Island** has no distinguishing features. Several shoals lie about 0.3 mile offshore between Shah Point and **Detwiller Point**.

648 Tidal differences for Valdes Island *(49°04'N, 123°37'W)* (7542), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

Sansum Narrows

Chart 3478

649 **Sansum Narrows** *(48°48'N, 123°33'W)* leads from Satellite Channel to Stuart Channel; its narrowest part is about 0.3 mile wide. Wind tends to funnel along the axis of the narrows and down valleys leading into it and tends to be directionally erratic.

650 Numerous sports and commercial fishermen are likely to be encountered in the narrows, especially near Burial Islet, **Bold Bluff Point** and **Sansum Point**.

651 In the narrowest parts of the fairway, or within 300 m of shore, a **speed limit** of 7 kn is prescribed.

652 **Marine farm** facilities are in several locations along the shores of Sansum Narrows. Reduce speed to avoid damaging these facilities.

653 Tidal differences for Maple Bay (7315), at the north end and on the west side of Sansum Narrows, referenced on Fulford Harbour are in *Canadian Tide and Current Tables, Volume 5*.

654 **Tidal streams** flood north and ebb south through Sansum Narrows. In narrower parts of the fairway the tidal stream seldom exceeds 3 kn, in wider portions 1 to 2 kn can be expected.

655 **Caution. — Whirlpools and tide rips occur around Burial Islet, also between Sansum and Bold Bluff Points. Under some conditions of wind and tide these can be hazardous to small craft.**

BURGOYNE BAY (2007)



656 Secondary current station Sansum Narrows (3050), referenced on Active Pass, is in *Canadian Tide and Current Tables, Volume 5*.

657 **Bruce Peak** *(48°46'N, 123°30'W)* is the highest of three peaks at the south end and on the east side of the narrows. **Baynes Peak** *(48°48'N, 123°31'W)*, a remarkable mountain on Saltspring Island, has a conspicuous precipice on its south side near the summit. **Mount Erskine** *(48°51'N, 123°33'W)* has some precipitous sides near its summit. **Maple Mountain** *(48°50'N, 123°36'W)* has a rounded summit conspicuous from all directions. Several towers with red air obstruction lights are on the ridge between Bruce Peak and Mount Tuam.

658 **Musgrave Landing** *(48°45'N, 123°33'W)* is on the north side of **Musgrave Point**. *Musgrave Landing Dock* is operated by the *Saltspring Harbour Authority* 250 537-5711. It has docks on the N shore 70 m long extending west from an approach ramp. Depths alongside range from 1.8 to 6.7 m. Guest moorage is available. Private docks protected by a floating log **breakwater** are on the S shore.

659 **Burial Islet**, 1.3 miles NNW of Musgrave Point, is 2 m high with a grassy top.

660 *Burial Islet* **light** *(251)*, on the NW corner of the islet, is shown from a white cylindrical tower with a red band at the top.

661 **Burgoyne Bay**, entered north of Bold Bluff Point, terminates in a mud and sand drying flat. *Burgoyne Bay Wharf*, operated by the *Saltspring Harbour Authority* 250 537-5711, is on the north side of the bay. It has a dock on its NW side with a berthing length of 10.5 m. A notice on the **wharf** reads "No vessel may berth at this wharf more than 2 hours in a period of 24 consecutive hours when not seeking refuge from inclement weather". Private **mooring buoys** are on the north side of the bay.

662 A **submarine cable** is laid from the public wharf across Sansum Narrows in a NE direction to the launching ramp in Maple Bay.

663 **Anchorage** is available near the head of Burgoyne Bay but is exposed to SE and NW winds. A **wreck**, awash, lies at the head of Burgoyne Bay. Keep a lookout for swimmers in the summer months.

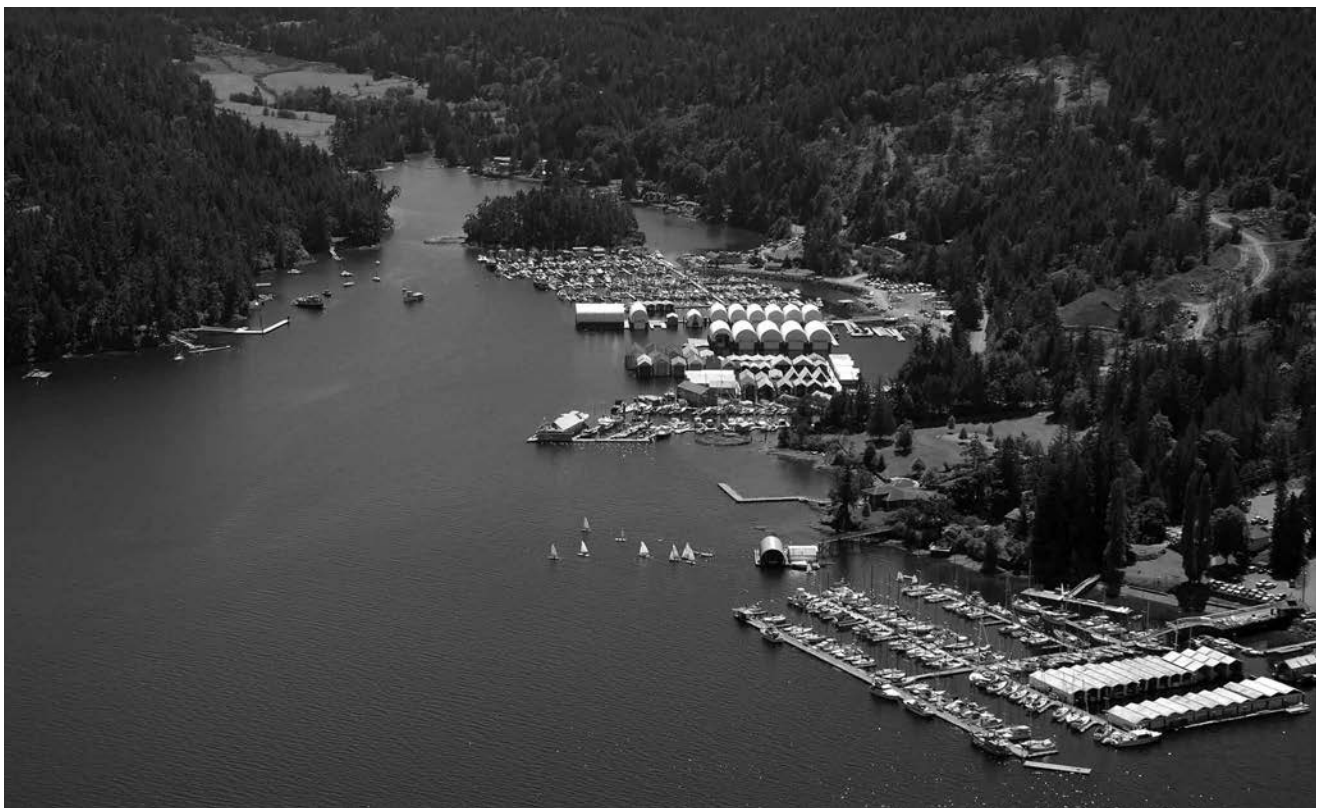
664 **Octopus Point** is on the west side of Sansum Narrows, about 1 mile north of Sansum Point. **Paddy Mile Stone**, 1.2 miles NW of Octopus Point, is the south entrance point of Maple Bay. A conspicuous boulder 2 m high lies close north of the point.

665 *Octopus Point* **light** *(276.1)* is on the point and is shown from a white mast.

666 **Maple Bay** has the community of Maple Bay on its west side. *Maple Bay Marina* 250 746-8482 is a full-service **marina** located in the south end of Maple Bay. Public docks in the west part of the bay have depths of 4.6 to 8.2 m alongside. A swimming dock is north of the public docks. There is a boat launch and a rowing club.

667 **Caution. — A rock with less than 2 m over it, and a shoal with a depth of 2.1 m over it, lie close SE of the public wharf.**

BIRDS EYE COVE (2007)



668 In most parts of Maple Bay depths are too great for anchorage. Temporary **anchorage** can be obtained in 40 to 60 m SE of the public wharf.

669 Tidal differences for Maple Bay (7315), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

670 **Birds Eye Cove**, the south arm of Maple Bay, is a major pleasure boat centre with **marinas** and a yacht club. *Birds Eye Cove Marina* 250 746-5686 has moorage with all services, and facilities including showers, laundry, restaurant and internet centre are available. There are fuel docks and repair facilities including a 100 ton marine railway and 15 ton lift. *Harbour Air* provides scheduled seaplane service to Vancouver.

671 *Maple Bay Speed Control light buoy (276.12)* lies in the entrance of Birds Eye Cove. A **speed limit** of 8 km/h (4 kn) is prescribed by the *Vessel Operation Restriction Regulations* for Birds Eye Cove.

672 A **submarine cable** is laid across the entrance to Birds Eye Cove. A **sewage pipeline** extends NE from the west side of the cove and then north to the entrance.

673 A floating concrete **breakwater**, on the west side of Birds Eye Cove near the entrance, borders the facilities of the *Maple Bay Yacht Club* 250 746-4521. Signs posted on the breakwater read "Warning Anchoring Lines Extend 8 m Do Not Anchor, Max Draft at Float 2 m". Visitor and reciprocal moorage are available. Private lights are shown from north and south ends of the breakwater.

674 **Overhead cables** (power), a short distance north of **Arbutus Point** *(48°49'N, 123°35'W)* and **Maxwell Point**, cross Sansum Narrows. They are suspended from towers and have a minimum vertical clearance of 52 m. Red spheres are attached to the cables to increase visibility and towers are marked by red and white chequered discs.

675 **Grave Point** *(48°51'N, 123°36'W)* and **Erskine Point** are the north entrance points to Sansum Narrows. A conspicuous red cliff and a booming ground with a **breakwater** are close south of Grave Point.

676 *Grave Point* **light** *(276.3)* is on the point and is shown from a mast.

Stuart Channel

Charts 3442, 3443

677 **Stuart Channel** *(48°59'N, 123°44'W)* leads from the north end of Sansum Narrows to Dodd Narrows and is bounded on its east side by Saltspring, Penelakut (Kuper), Thetis, Ruxton and De Courcy Islands. Harbour facilities of Crofton, Chemainus and Ladysmith are on the west side of the channel. Houstoun Passage leads north of Saltspring Island and connects Stuart Channel with Trincomali Channel. Trincomali Channel joins Stuart Channel between Thetis and Pylades Islands.

678 **Tidal streams** in Stuart Channel ebb in a general south direction, following the contour of the channel. A velocity of 1 kn can be expected. The flood stream is weak and variable. At the north end of Stuart Channel in the approach to Dodd Narrows, both the flood and ebb attain 3 kn.

679 Tidal differences in Stuart Channel, all referenced on Fulford Harbour, are given for Crofton (7450), Chemainus (7455), Ladysmith (7460) and Preedy Harbour (7471) in *Canadian Tide and Current Tables, Volume 5*.

680 A regular ferry service crosses the south end of Stuart Channel connecting Crofton, on Vancouver Island, to Vesuvius Bay on Saltspring Island. Farther north, a ferry crosses Stuart Channel connecting Chemainus to Thetis and Penelakut (Kuper) Islands. Charted ferry routes are general indications of the route followed.

681 **Submarine cables** cross Stuart Channel in the following locations: 0.4 mile north of Grave Point; from Houstoun Passage to Hospital Point in Chemainus; from the entrances of Telegraph and Preedy Harbours to Hospital Point; and from the west side of Thetis Island to the coast of Vancouver Island, 0.3 mile north of Coffin Point.

Chart 3442

682 **Booth Bay** *(48°52'N, 123°34'W)* has shoals near its head that extend 0.1 mile offshore. **Marine farm** facilities are in the bay. Temporary **anchorage** can be obtained, 0.3 mile from the head of the bay in a depth of 22 m, mud, but being exposed to prevailing wind is not recommended. A **wreck**, with a depth of 1.7 m, is in Booth Bay.

683 **Vesuvius Bay** is close north of Booth Bay. *Saltspring Island (Vesuvius) dock,* operated by the *Saltspring Harbour Authority* 250 537-5711, has a depth of 2.4 m alongside. Regular ferry service is maintained between Vesuvius Bay and Crofton on Vancouver Island. The settlement has a hotel, stores and is on the main Saltspring Island road system.

684 A private light and radar reflector are shown from the ferry wharf.

684.1 A **wreck**, with a deth of 5.4 m, lies south of the ferry terminal.

685 **Dock Point** has a drying ridge extending 0.1 mile NW from it. **Parminter Point**, the most prominent point on the west side of Saltspring Island, has a prominent house and flagpole on it.

685.1 The **wreck** of the tug *Chugaway II,* with a least depth of 37.9 m, lies 0.3 mile NW of Dock Point..

686 **North Reef** *(48°55'N, 123°38'W)* is a narrow ridge of sandstone 1 m high.

687 *North Reef* **light** *(284)* is on the reef, and is shown from a white cylindrical tower.

688 **Josling Point** *(48°56'N, 123°38'W)* is the south extremity of Penelakut (Kuper) Island which is a First Nations Reserve.

689 **Escape Reef**, 2 miles NW of North Reef, is a narrow drying rock ridge. It is marked by a **daybeacon** consisting of a white tower with a red band around the top.

690 **Scott Island**, 2.2 miles NW of Escape Reef, is joined to Dayman Island by drying ledges.

691 A **submarine cable** crosses from Scott Island to Crescent Point.

692 **False Reef** *(48°59'N, 123°42'W)*, in the NW approach to Preedy Harbour, is marked by a **daybeacon** with a **bifurcation/junction daymark**, preferred channel to the left.

693 A **submarine cable** crosses Stuart Channel 1 mile north of False Reef.

694 **Marine farm** facilities lie off the west shore of Thetis Island close north of the cable sign.

Osborn Bay (Crofton) and Approach

Chart 3475

695 **Osborn Bay** *(48°52'N, 123°38'W)*, on the west side of Stuart Channel, is entered between **Sherard Point** and Crofton light 1.2 miles NNW. The south and SW shores of the bay are fronted by a mud and sand drying bank extending 0.1 mile offshore. The north shore of the bay is formed by the south end of a drying bank and the Shoal Islands.

696 A large dry-land log sorting area and causeway are on the north shore of Osborn Bay. Booming grounds surround the sorting area, **mooring buoys** and numerous **dolphins** are located in the booming ground and it is floodlit at night.

697 The smoke plume from the pulp mill can usually be seen for a considerable distance. A good lookout should be kept for deadheads and floating logs.

698 *Crofton light (277)*, on the SE end of the Shoal Islands, is shown from a white tower.

OSBORN BAY (CROFTON) (2007)



Table 6.6 Major Port Facilities — Crofton

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Deep-sea Dock North Berth 1	170	12	—	Handles pulp, paper and lumber. 1 040 m² covered storage. Lift trucks, pulp and paper handling equipment. Power. Operator: Catalyst Paper Corporation.
Deep-sea Dock Central Berth 2	152	12.2	—	Handles pulp, paper and lumber. 2 600 m² covered storage. Lift trucks, pulp and paper handling equipment. Power. Operator: Catalyst Paper Corporation.
Stuart Channel Wharves Berth 3	138	12	—	Common-user terminal handles pulp, paper and lumber. Accepts largest forest products carriers. Mooring dolphins. 843 m² covered storage. 9.2 ha paved storage. Lift trucks, container lift truck. Power. Operator: TimberWest Forest Corp.

699 **Indian Reef**, 0.5 mile north of Crofton light, dries 1.2 m; it is marked by a **daybeacon** consisting of a white tower with a green band around the top. Towers, 0.3 mile NW of Indian Reef, mark the seaward end of sewer **pipelines** that cross the mud flats. They have **port hand daymarks**.

700 **Submarine pipelines** between the public wharf and Stuart Channel Wharves extend 230 m offshore. A **wreck** lies near shore, visible at LW, between the public and Stuart Channel wharves.

701 Tidal differences for Crofton (7450), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

702 **Crofton**, in the SW part of Osborn Bay, is a community and port engaged in processing and shipping forest products. In addition to cargo ships and tankers bringing fuel for local industry, the harbour is used by tugs and barges and fishing vessels. Bus service is available to Victoria and Nanaimo and a ferry service operates to Vesuvius Bay on Saltspring Island. Crofton has a post office, bank, accommodation, stores and restaurants. The nearest hospital, dentist and pharmacies are in Duncan, a short distance inland.

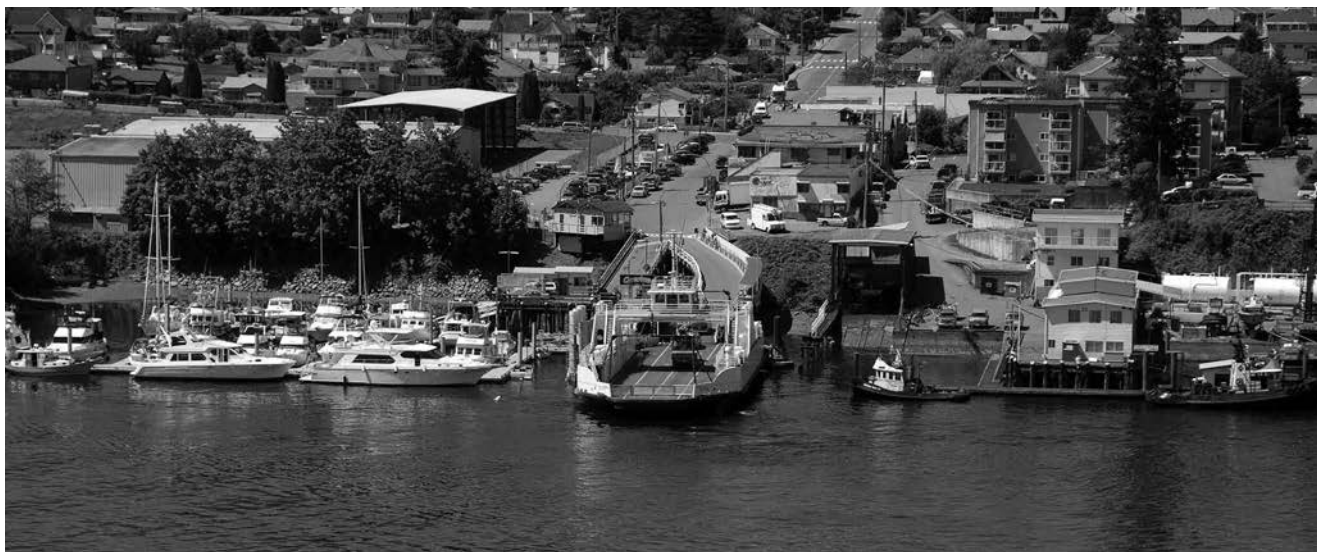
703 **Pilotage** is compulsory. For information on obtaining a pilot see *PAC 200 — General Information — Pacific Coast*.

704 Approaches to berths are deep and free of dangers but occasional strong east winds can make berthing difficult and necessitate use of tugs. Berths suitable for deep-sea ships are at the pulp and paper mill; details are given in Table 6.6.

705 The *Port of Crofton* is operated by *The Corporation of the District of North Cowichan* 250 746-3100. The Harbour Manager can be reached at 250 246-4655 or 250 715-8186.

706 **Barge loading** facilities are north of Deep-sea Dock and at the south end of Berth No. 3.

CHEMAINUS (2007)



707 *Crofton Municipal Dock* 250 246-4655, 0.2 mile south of Berth No. 3, has a berthing length of 18 m with a depth of 4.2 m alongside; it is connected to shore by a causeway. This dock is used mainly by commercial fishing vessels. A 3 tonne crane is on the wharfhead. Power, washrooms, showers laundry and garbage disposal are available. The ferry landing is at the head of the wharf on its south side.

708 A **small craft basin**, close south of the public wharf, has approximately 137 m of berthing. The basin, sheltered by a breakwater, was dredged to a depth of 2.1 m (1976).

709 Tugs are available by prior arrangement. Minor hull repairs can be done. Fuel and provisions are available in small quantities.

Osborne Bay to Chemainus Bay

Chart 3442

710 **Shoal Islands** *(48°54'N, 123°40'W)*, north of Osborn Bay, consist of a number of islands, islets and rocks on a large mud and sand drying flat extending 1 mile offshore. **Chemainus River**, with **Mainguy Island** in its entrance, flows into the north end of the drying flat. **Willy Island** is the largest of the Shoal Islands.

711 Booming grounds surround the dry land sorting area at the south end of Shoal Islands. Another booming ground is at the north extremity of Shoal Islands.

Chemainus Bay and Approach

Chart 3475

712 **Chemainus Bay**, on the west side of Stuart Channel, is entered between **Bare Point** *(48°56'N, 123°42'W)* and **Hospital Point**. The east and south shores of the bay are occupied by booming grounds in which there are numerous piles and **dolphins**. The west side of the bay is occupied by wharves and docks.

713 The *Xihwu Boeing 737* was sunk in January 2006 0.6 mile NW of Bare Point as an artificial reef for divers. Least depth to the top of the tail is 16.5 m. It is marked by **cautionary buoys**.

714 The *BC Hydro and Power Authority* generating station, on the east side of the peninsula of which Bare Point forms the north extremity, is conspicuous. Oil storage tanks are north of the generating station. An oil wharf is on the east side of Bare Point.

715 *Bare Point* **light** *(280)* is on the point and is shown from a white cylindrical tower with a green band on the top.

716 Private lights on a standing boom, within the entrance of Chemainus Bay, mark the outer extremity of the booming grounds along the east side of the bay.

717 Private lights are shown from the sawmill wharf; yellow lights are shown from the vicinity of the ferry wharf.

718 *Chemainus Bay Range* **lights** *(282, 283)*, in line bearing 199°, lead east of Hospital Rock to the north end of the sawmill wharf.

Table 6.7 Major Port Facilities — Chemainus

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Chemainus Sawmill Wharf	170	15.8 North End 9.1 South End	—	Privately owned wharf serving adjoining sawmill. Operator: Weyerhaueser Sawmill Unit.

719 **Hospital Rock**, 0.3 mile west of Bare Point, has 3 m over it.

720 *Hospital Rock* ***light buoy*** *U30 (281),* close east of the rock, is a **starboard hand buoy**.

721 **Bird Rock**, 0.2 mile north of Hospital Point, dries 3 m and is connected to shore by drying mud flats. It is marked by a **daybeacon** consisting of a white tower with a red band around the top.

722 **Submarine cables**, commencing from the north side of Hospital Point, cross the entrance to Chemainus Bay and lead across Stuart Channel to Telegraph and Preedy Harbours and to Houstoun Passage.

723 **Submarine pipelines** extend 0.3 mile offshore from the north side of Hospital Point.

724 **Anchorage** in Chemainus Bay is not advisable because of extensive booming grounds and congestion inside the bay. Vessels awaiting a berth usually anchor in Houstoun Passage.

725 Tidal differences for Chemainus (7455), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

726 The community of **Chemainus**, on the west side of Chemainus Bay, has a hospital, post office (V0R 1K0), stores and accommodations. Bus service is available to Victoria and Nanaimo and a ferry service operates to Thetis and Penelakut (Kuper) Islands. Rail service connects to Victoria and Courtenay. *Nanaimo Airport* is about 32 km north. A sawmill is on reclaimed ground in the SW corner of the harbour.

727 **Pilotage** is compulsory, for information on obtaining a pilot see *PAC 200 — General Information — Pacific Coast*.

728 The *Port of Chemainus* is administered by *The Corporation of the District of North Cowichan*. The facility at the terminal is listed in Table 6.7. South of the sawmill wharf are **barge loading** facilities and conveyor belts.

729 *Chemainus Municipal Dock* 250 246-4655, close north of the sawmill wharf, has docks on its south side for small craft. This wharf has fresh water, a 3 tonne crane, a telephone and garbage disposal facilities.

730 Thetis Island *BC Ferries* **wharf** is close north.

731 Tugs are available but not normally necessary. Underwater inspection and minor repairs can be effected. A marine railway, owned by Chemainus Towing, is available for small vessels in an emergency.

732 Fresh water, provisions, lubricants, diesel fuel and gasoline are usually available. Bunker fuel is not normally available.

LADYSMITH HARBOUR (2005)



Ladysmith Harbour and Approach

Charts 3475, 3442, 3443

733 **Ladysmith Harbour**, also known as **Oyster Harbour**, is entered between **Boulder Point** *(48°58'N, 123°45'W)* and **Sharpe Point**, 1.5 miles NNW. Boulder Point has a large conspicuous boulder close-off its extremity and Sharpe Point has a long wooded hill above it that rises to an elevation of 64 m.

733.1 A private ODAS **buoy** is 0.5 mile NNW of Boulder Point.

734 Designated **anchorages** lie within close vicinity of Ladysmith Harbour. Anchorage berths 1 and A to C are on *Chart 3475*; anchorage berths C to F, in Stuart Channel, are on *Chart 3442*; anchorage berths 8 and 9, in Kulleet Bay, are on *Chart 3443*.

735 Tidal differences for Ladysmith (7460), referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

Chart 3475

736 **Evening Cove**, between Sharpe Point *(48°59'N, 123°46'W)* and **Coffin Point**, has **Collins Shoal** in the centre of its entrance. The shoal has a least depth of 1 m. **Coffin Island** lies 0.2 mile east of Coffin Point and **Nares Rock**, drying 0.1 m, lies 0.1 mile east of Coffin Island.

737 *Coffin Island* **light** *(297)* is shown from a white cylindrical tower with a green band at the top.

738 **Davis Lagoon** *(48°58'N, 123°46'W)* has **marine farm** facilities near its entrance.

739 **Holland Bank**, 1.3 miles NW of Davis Lagoon, is an extensive drying mud flat. **Slag Point**, 0.7 mile NNW of Holland Bank, is steep sided. A large conspicuous blue conveyor, near Williams Point, is for loading barges.

739.1 A **wreck** with 3.9 m of water over it lies 0.1 mile NE of Slag Point and 60 m offshore from Woods Islands, reducing the width of the channel into Ladysmith Harbour to just over 100 m at low water.

740 A **submarine pipeline** commences from a 9 m high tank onshore and crosses Holland Bank to a prominent pipeline notice, at the outer end of the bank; it then extends 0.3 mile east into Ladysmith Harbour.

741 Holland Bank **daybeacon**, on the outer edge of Holland Bank and close north of the pipeline, has a **port hand daymark**.

742 **Dunsmuir Islands**, 0.6 mile NE of Holland Bank, are wooded. **Cluster Rocks**, 0.1 mile south of Dunsmuir Islands, dry 1.2 m at their highest point and are marked by **starboard hand buoy** *U36*.

743 **Sibell Bay**, east of Dunsmuir Islands, and the bay to the north with **Bute Island** in it, has **marine farm** facilities.

743.1 A **wreck** with 4 m of water over it lies between Dunsmuir Islands and Bute Island.

744 Booming grounds occupy a large portion of **Burleith Arm** and the west side of **Woods Islands**. On the west side of Ladysmith Harbour, booming grounds are north and south of **Williams Point**.

744.1 In the vicinity of Williams Point, a **wreck** with 4.2 m of water over it lies 0.1 mile off the western shore of the navigation channel. To the east, another **wreck** with 5.1 m of water over it lies about 100 m off Woods Islands.

TELEGRAPH HARBOUR (2007)



744.2 East of Woods Islands, an **obstruction** (snag) with 4.2 m of water over it lies approximately 100 m off the eastern shore of Burleith Arm.

745 *Ladysmith Harbour Floating Breakwater* **light** *(296.7)*, 0.3 mile NW of Slag Point, is shown from a mast with a **port hand daymark**.

745.1 Between the *Ladysmith Harbour Floating Breakwater light* and the floating breakwater 100 m to its south lies a **wreck** with 0.8 m of water over it.

746 Private lights are on the extremities of *Western Forest Products* **wharf**.

747 A **submarine cable** crosses Ladysmith Harbour about 0.2 mile NW of **Page Point**.

747.1 A **wreck** with 1 m of water over it lies 0.3 mile west of Page Point.

747.2 Commencing at the *Limberis Seafood Processing* plant (not charted), situated 0.7 mile NW of *Western Forest Products*, a water intake **pipeline** extends 300 m ESE into the harbour.

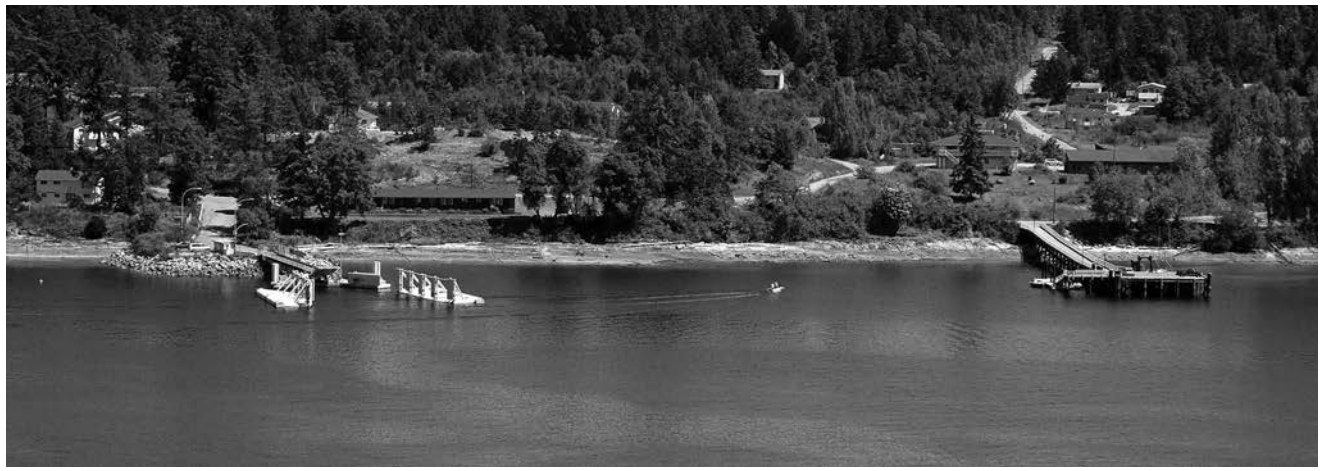
748 **Marine farm** facilities occupy drying flats at the head of the harbour NW of **Wedge Point**.

748.1 A **wreck** with a drying height of 1.9 m lies 0.2 mile south of Wedge Point.

749 **Ladysmith**, on the SW side of the harbour, is a town with a post office (V0R 2E0), hospital, pharmacy, doctors, dentists and several stores.

750 *Ladysmith Fisherman's Wharf* 250 245-7511 is a **public wharf** 0.35 mile NW of Slag Point. It consists of a pier with docks attached. These docks are protected by a rock **breakwater** on the SE and E sides and a timbered **breakwater** on the NW side. The area around the docks has been dredged

TELEGRAPH HARBOUR BC FERRIES AND PUBLIC WHARF (2007)



PREEDY HARBOUR (2007)



to 3 m. Power is laid on the docks; water, garbage and used oil disposal facilities are available on the wharfhead. A tidal grid, launching ramps and a launching dock are on the south side of the wharf. This facility is used mostly by commercial fishing vessels.

751 *Western Forest Products* **wharf** is NW of Williams Point.

752 Full-service **marinas** at Ladysmith include *Ladysmith Maritime Society Marina* 250 245-1146, *Ladysmith Marina* 250 245-4521 and *Page Point Inn & Marina* 250 245-2312.

753 Ladysmith is connected with Victoria and Nanaimo by road and rail. *Nanaimo Airport* is 8 km north.

Telegraph and Preedy Harbours

Chart 3477

754 False Reef *(Chart 3442)* can be passed on either side, but the preferred side is to the north taking care to avoid foul ground in its vicinity. A mid-channel course should be steered through the entrance between Crescent Point and Dayman Island.

755 When entering Preedy Harbour through the passage between Hudson and Dayman Islands, favour the north side of the fairway to avoid drying reef extending from Hudson Island.

756 Using the SE entrance from Telegraph Harbour keep on the SW side of Hudson Island North light and the two **daybeacons** that mark the mid-channel reefs. Maintain a mid-channel course until Preedy Harbour light is well abaft the beam.

757 **Telegraph Harbour** *(48°58'N, 123°40'W)* entered between **Alarm Rock** and **Active Point** lies between the NW side of Penelakut (Kuper) Island and the SE extremity of **Thetis Island**. Pleasure craft congregate in the harbour and a ferry that plies between Penelakut (Kuper) Island and Chemainus makes frequent calls. The post office (V0R 2Y0) is near the head.

758 *Alarm Rock* **light** *(294)* is shown from a white cylindrical tower.

759 Private lights and a radar reflector are on the outer end of the ferry landing.

760 A **submarine cable** commencing from the public wharf on the east side of the harbour passes down the centre of the entrance. Another **cable** runs from close west of Foster Point to Hudson Island.

761 A booming ground lies between the public wharf and **Donckele Point**.

762 Two **daybeacons**, about 0.5 mile north of **Foster Point**, are on the north and south ends of a **breakwater** fronting the marina; they have **port hand daymarks**.

763 A daybeacon in the entrance to The Cut has a **starboard hand daymark**. A tide scale fitted to this piling is not referenced to chart datum.

764 **Anchorage** can be obtained in Telegraph Harbour for vessels of moderate size, in a depth of 13 m, mud, NW of the public wharf and submarine cable.

765 The **public wharf**, 0.3 mile NNE of Donckele Point is 18.3 m long with a depth of 3 m alongside. A dock 12.2 m long is attached to the SE side of the wharf.

766 The **ferry landing** close north of the public wharf is used by the Chemainus to Penelakut (Kuper) Island ferry.

767 *Thetis Island Marina* 250 246-3464 and *Telegraph Harbour Marina* 250 246-9511 are full-service **marinas** located in the harbour. Use fresh water sparingly.

768 **Preedy Harbour** fronted by **Hudson Island** and **Dayman Island** has three entrances. The entrance from Telegraph Harbour, between Hudson Island and Foster Point, has drying reefs along its centre line; the fairway that lies between the drying reefs and Hudson Island has a least depth of 3 m.

769 *Hudson Island North* **light** *(294.5)*, on the south extremity of the drying reefs between Hudson Island and Foster Point, is shown from a white cylindrical tower with a green band at the top.

770 Two **daybeacons** with **starboard hand daymarks** are on the drying reefs.

771 **Entrance Channel** between Hudson and Dayman Islands has a least depth of 4.3 m between drying ledges extending from both islands.

772 **Port hand buoys** *U33* and *U35*, off Dayman Island, are on the NW side of the channel.

773 *Preedy Harbour* **light** *(295)*, on the drying ledge extending NW from Hudson Island, is shown from a white cylindrical tower with a red band at the top.

774 Private lights are shown from the outer end of the ferry landing and from a **dolphin** close SW.

775 The NW entrance to Preedy Harbour is between Dayman Island and **Crescent Point**; shoal soundings extend at least 0.1 mile from both sides of this channel but it has 11 m through the centre of the fairway.

776 A **submarine cable** crosses the south side of Preedy Harbour and continues SW along the centre of the channel between Dayman and Hudson Islands. Another cable crosses the harbour from south of the ferry landing to Dayman Island.

777 Tidal differences for Preedy Harbour (7471), referenced on Fulford Harbour, are given in *Canadian Tide and Current Tables, Volume 5*.

778 Preedy Harbour has good **anchorage**, mud bottom, in its north part avoiding the submarine cables

778.1 **Caution. — Mariners are advised to avoid anchoring in the vicinity of the ferry routes in Preedy Harbour.**

779 A dinghy dock is in the NE shore of Preedy Harbour. The **ferry landing** close north of the dinghy dock is used by the ferry that runs to Chemainus.

780 **Caution. — A rock with 0.3 m over it lies about 45 m due south of the head of the dinghy dock.**

Gulf Islands North — Thetis Island to Nanaimo Harbour

General

Charts 3443, 3458

1 This chapter describes the **Gulf Islands** from the north end of Thetis Island to Nanaimo. Facilities in Nanaimo Harbour are described.



Thetis Island to Dodd Narrows

Chart 3443

2 **North Cove** *(49°01'N, 123°42'W)*, at the north end of Thetis Island, lies between **Fraser Point** and **Pilkey Point**. A rock breakwater and a private dock are in the SW part of the cove. **Cufra Inlet**, in the SE corner of North Cove, has a private **breakwater** near its entrance that extends out from its east shore. This breakwater affords good shelter to small craft, but most of Cufra Inlet dries. A **submarine cable** crosses Cufra Inlet.

3 **Anchorage** in a depth of 13 m mud can be obtained in the middle of North Cove which affords shelter from south winds. The cove is however open to the north and especially in summer prevailing NW winds need to be carefully monitored.

4 **Ragged Islets**, 0.4 mile NW of Pilkey Point, consist of three islets on a drying rock ledge. The middle islet has some bushes on it.

5 A **daybeacon** on the NW end of the drying ledge off Ragged Islets has a **starboard hand daymark**.

6 **Miami Islet** *(49°02'N, 123°43'W)* is 2 m high, bare and rocky. Reefs with less than 2 m over them extend NW and SE from the islet.

7 A **wreck** lies 0.3 mile SSE of Miami Islet and another is 0.2 mile NW of the islet, near the north edge of the reef.

8 **Starboard hand buoy** *U40* is at the NW extremity of the reef extending NW from Miami Islet.

9 **Kulleet Bay** *(49°01'N, 123°46'W)* is entered south of **Deer Point**. It is a good **anchorage** in fine weather only as it is exposed to east winds. Recommended anchorages are designated Numbers 8 and 9. Number 8

anchorage is in 33 m and Number 9 is in 60 m, both with mud bottom.

10 **Danger Reefs** consist of several submerged rocks and drying reefs, the highest of which dries 1.2 m.

11 *Danger Reefs light (292)*, on the north end of centre rock, is shown from a white tower.

12 **Caution. — When using the passage between Miami Islet and Danger Reefs give Danger Reefs light structure a clearance of at least 0.5 mile to avoid shoal water south of Danger Reefs.**

13 **Tree Island** *(49°04'N, 123°42'W)* has some stunted trees on it. **Pylades Island** has some broken cliffs about 24 m high on its west side.

14 **Whaleboat Passage**, between Pylades Island and **Ruxton Island**, has a least depth of 2.1 m in mid-channel and is suitable only for small craft. Several private **mooring buoys** lie close to shore. **Whaleboat Island** lies in the NE approach to Whaleboat Passage. *Whaleboat Island Marine Provincial Park* is undeveloped.

15 **Yellow Point** *(49°02'N, 123°45'W)* is low and grassy but immediately inland it rises to a wooded summit, elevation 73 m. A resort is on the point and another in **Nicholson Cove** both have docks and private **mooring buoys**.

16 A **daybeacon** on a drying rock in the entrance to Nicholson Cove has a **starboard hand daymark**.

17 **Boat Harbour**, entered between **Flewett Point** and **Reynolds Point**, is often used as a temporary **anchorage** for vessels awaiting slack water in Dodd Narrows. **Kenary Cove** is in the south part of Boat Harbour, west of Flewett Point.

18 A **daybeacon**, on the SE end of a drying reef extending from the north entrance point of Boat Harbour, has a **starboard hand daymark**.

19 **Anchorage** can be obtained in the entrance of Boat Harbour, in 15 m, mud bottom. Small craft can obtain sheltered anchorage in Kenary Cove, in 3 to 5 m, mud bottom.

20 **Submarine pipelines**, 0.2 mile north of Reynolds Point, extend seaward to the 20 m contour.

Chart 3475

21 **Ruxton Passage** *(49°05'N, 123°43'W)*, between Ruxton Island and **De Courcy Island**, connects Stuart Channel to Pylades Channel. A shoal with 7.6 m over it lies on the north side of the east entrance, otherwise the fairway is deep.

22 **Ruxton Passage daybeacon**, on a drying reef on the south side of Ruxton Passage, has a **starboard hand daymark**.

NICHOLSON COVE (2007)



BOAT HARBOUR (2007)



DE COURCY ISLAND SOUTH (2007)



23 **Herring Bay**, at the NW end of Ruxton Island, offers good **anchorage** for small craft though it is exposed to the west and space is limited. **Caution is advised because of drying reefs making entry difficult, especially at high tide. West Bay** on the E side of Ruxton Island provides limited **anchorage**.

24 **Link Island** is connected to the north end of De Courcy Island and the south end of **Mudge Island** by drying ridges. **No attempt should be made by any vessel to pass between these islands.**

25 **Round Island** *(49°07'N, 123°48'W)*, in the south approach to Dodd Narrows, is surrounded by drying ledges and shoals.

25.1 A private ODAS **buoy** is 0.3 mile SE of Round Island.

Dodd Narrows

26 **Dodd Narrows**, separated from False Narrows by Mudge Island, connects Stuart Channel with Northumberland Channel. It is used mainly by tugs with barges and log booms, and by small craft. Because of the narrowness of the channel and velocity of **tidal streams**, it is not a recommended passage for larger craft. However, vessels up to 70 m have passed through without undue difficulty at slack water. The narrows are best navigated at slack water but traffic at these times can be quite heavy. However the narrows are quite short and can be easily navigated as long as a good look out is kept and other vessel traffic respected.

27 Dodd Narrows is more difficult to pass through when entering from north than from south. From north the slight alteration of course necessary when passing through has to be made immediately on entering the narrow part. Also the entrance to Dodd Narrows is difficult to see when approaching from Northumberland Channel.

28 It is recommended that passage through Dodd Narrows be made at slack water. Before passing through Dodd Narrows other than at slack water, be sure the vessel is able to proceed against the **tidal stream**. If there is any doubt passage should be delayed until slack water.

29 Predictions of times and rates of maximum current, and times of slack water are given for Dodd Narrows (3500) in *Canadian Tide and Current Tables, Volume 5*. The maximum flood (north) is 9.5 kn and the ebb (south) is 8.5 kn.

30 When the **tidal stream** is running at strength **tide rips**, formed by the stream and its counterflow, occur off the north entrance on the flood, and in vicinity of the overhead cable on the ebb. No attempt should be made to alter course out of the main stream until clear of this turbulence.

HERRING BAY (2007)



RUXTON ISLAND — WEST BAY (2007)



DODD NARROWS LOOKING NORTH (2007)



DODD NARROWS LOOKING SOUTH (2007)



Gradual disappearance of these tide rips is an indication of slackening in the tidal stream.

31 Care should be taken not to hinder tugs with barges passing through, and attention should be given to sound and radio signals for narrow channels.

32 The SW limit of Nanaimo Harbour crosses Dodd Narrows; regulations for Nanaimo Harbour apply north of this limit.

33 An **overhead cable** (power), vertical clearance 37 m, crosses Dodd Narrows about 0.2 mile south of Purvis Point.

34 **Purvis Point**, the west extremity of Mudge Island, forms the east side of Dodd Narrows, and **Joan Point**, about 0.1 mile SW, forms the west side.

35 *Joan Point light (298)*, on the west side of Dodd Narrows, is shown from a white tower with a green band at the top.

Northumberland Channel

Chart 3458

36 **Northumberland Channel** *(49°09'N, 123°51'W)* leads NW from Dodd and False Narrows, between Vancouver Island and the SW coast of Gabriola Island, toward Nanaimo and the Strait of Georgia.

37 Northumberland Channel, within the harbour limits of Nanaimo, is regulated by *Harbour Operations* established by the *Nanaimo Port Authority*.

38 Tidal differences for Harmac (7913), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

39 **Tidal streams** in Northumberland Channel are unusual as the set is continually to the east, due to the more rapid progression of the tide in the Strait of Georgia than in the channels south of Dodd Narrows. Maximum of this east-going stream is 1 to 2 kn at springs.

40 **Ferries** on regular schedules cross the north end of Northumberland Channel from the Duke Point ferry terminal to Tsawwassen and between Nanaimo and Descanso Bay on Gabriola Island.

40.1 A **submarine cable** (fibre optic) extends from Descanso Bay on Gabriola Island towards Vancouver Harbour ending at the seaplane base. For detailed information see https://connectedcoast.ca/.

41 A **submarine cable** crosses Northumberland Channel from a position 0.5 mile west of Dodd Narrows.

42 A **tower** at *49°09.2'N, 123°50.5'W* has red air obstruction lights.

43 A **submarine pipeline** (sewer), 0.2 mile west of *Harmac*, extends 0.6 mile north into Northumberland Channel. A salt water intake, constructed of concrete with 14 m over it, from which a pipeline leads shoreward lies close-off the *Canexus Chemicals* wharf. A pipeline extends 152 m offshore 0.1 mile west of the chemicals wharf.

44 **Harmac**, on the south side of Northumberland Channel about 1.5 miles west of Joan Point, is the site of a large pulp mill. The mill has a conspicuous 87 m chimney,

Table 7.1 Major Port Facilities — Northumberland Channel

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Harmac Pacific West Dock	122	10	–	152 m berthing between dolphins off each end of wharf, mooring buoys off each end of wharf. 8 tonne forklift trucks, 2 18 tonne straddle carriers. Loading rates average 150 tonnes/gang hour. Fresh water at 10.8 tonnes/hour through 1½" hose, power 110v/20 amps.
Canexus Chemicals	70	11	–	Used for unloading caustic soda. Mooring buoys off each end of wharf. Submarine pipeline close north of wharf.
Barge Ramp	–	–	–	Used for loading railway freight cars.
Duke Point Deep Sea Terminal	170	13.5	2	Forest products, general and project cargoes. Berthing dolphins 50 m NW & SE and connected to wharf by catwalk. 40 tonne container crane, 80 000 lb container lift truck. 6 ha paved open storage. Operator: Nanaimo Port Authority. Contractor for services: Western Stevedoring.
Duke Point Barge Berth	–	4.2	–	100 tonne capacity barge ramp. 19.5 ha open storage. Designed for barges 63 m long. Operator: Nanaimo Port Authority. Contractor for services: Western Stevedoring.
Scow Loading Float	121	3.7	–	Mooring buoys north of wharf.
Western Forest Products South Barge Wharf	140	–	–	Used by nearby sawmill for loading scows.
Western Forest Products North Barge Wharf	140	–	–	Used by nearby sawmill for loading scows. Rockfill breakwater at north end.

which together with its smoke can be seen for many miles. Details of wharves in Northumberland Channel are given in Table 7.1.

44.1 Designated deep sea ship **anchorage** NA-1 lies in the centre of Northumberland Channel across from Harmac. Two **wrecks** lie in the vicinity of the anchorage; one, with 67 m over it, lies just north and the other, 1 mile NW, has 105 m over it.

45 Private lights are on the east and west extremities of *Harmac Pacific West Dock*. The container crane at the terminal is also lit.

46 Booming grounds with many **mooring buoys** lie between Joan Point and *Harmac*. Booming grounds fronting *Harmac* are flood lit. The north shore of Northumberland Channel is also a booming ground.

47 **Duke Point** has a deep sea terminal and barge berth. Private lights are on the east and west extremities of the deep sea terminal. See Table 7.1 for details.

48 *BC Ferries* Duke Point terminal is 0.3 mile SSE of **Jack Point**. Regular ferry service is maintained with Tsawwassen via Fairway or Rainbow Channels.

49 *Jack Point light (438.5)* is on the east side of the point and is shown from a white cylindrical tower with a green band at the top.

50 **Tidal streams** are strong in the vicinity of Jack Point, especially at spring tides.

51 **Descanso Bay** *(49°11'N, 123°52'W)*, south of **Malaspina Point**, has a ferry landing in its NE part. Frequent ferry service to and from Nanaimo is maintained. Private lights and a radar reflector are on the ferry landing. Precipitous cliffs extend south from the south entrance point and a large white guano patch on the cliff is near the bay.

52 *Descanso Bay light (438),* on the south entrance point to the bay, is shown from a white tower.

Pylades Channel

Charts 3475, 3443

53 **Pylades Channel** *(49°06'N, 123°43'W)* leads NW from Trincomali Channel, between the west side of Valdes Island and the **De Courcy Group** to the SE. From the NW end of Pylades Channel, Gabriola Passage leads east into the Strait of Georgia and False Narrows leads NW into Northumberland Channel.

54 **Designated anchorages** 7, 8 and 9 lie along the centre of Pylades Channel.

55 **Tidal streams** in Pylades Channel attain 2 kn at times. The flood sets NW and the ebb SE.

56 The NE shore of Pylades Channel, between Blackberry Point *(49°03'N, 123°39'W)* and Dibuxante Point, 5 miles NW, is mainly composed of cliffs. **Coal Mine Bay**,

0.7 mile SE of Dibuxante Point, is a booming ground and has **mooring buoys** in it.

57 Private **mooring buoys** lie close offshore from Ruxton Island.

Chart 3475

58 *Pirates Cove Marine Provincial Park (49°06'N, 123°44'W)* is on the SE side of De Courcy Island. A drying reef in the entrance of **Pirates Cove** extends NW from the north end of this peninsula. It is marked by a **daybeacon** with a **port hand daymark**. **Starboard hand buoy** *U38* is west of the daybeacon. Pass between the beacon and buoy when entering. A white arrow painted on a rock and a white cross on a tree above it serves as a range to clear the north end of the drying reef. As soon as the daybeacon is passed on the port side, turn sharply to port and leave **buoy** *U38* to starboard. Public dinghy docks are in the cove.

59 **Anchorage** for small craft can be obtained in Pirates Cove. It is sheltered from all but north winds however holding is reported to be only moderate and larger vessels have been known to drag anchor. Ring bolts for stern **mooring** are located along the shore of the peninsula on the east side of the cove.

60 **Port hand buoy** *U37* marks the outer edge of the drying reefs extending from the NE extremity of De Courcy Island.

FALSE NARROWS WEST ENTRANCE (2007)



FALSE NARROWS EAST ENTRANCE (2007)



False Narrows

Chart 3475

61 **False Narrows** *(49°08'N, 123°47'W)* leads from Pylades Channel to Percy Anchorage and Northumberland Channel. It is suitable only for small craft and local knowledge is advised. The navigable channel, with depths of 0.6 to 1.5 m, leads north of a long narrow drying ledge near the middle of the passage. Kelp grows profusely in the narrows during summer and autumn and is a hazard.

62 The SE limit of Nanaimo Harbour crosses False Narrows. Regulations for Nanaimo Harbour apply west of this limit.

63 **Tidal streams** through False Narrows, in the vicinity of the drying reef, run parallel with the shore on both flood and ebb. The flood sets NW and the ebb SE. At the east end of the narrows at LW the stream runs smoothly along the north shore of Mudge Island. It gradually extends over the whole narrows as the tide rises. On a falling tide the effect is reversed.

64 Secondary current station False Narrows (3510), referenced on Dodd Narrows, is in *Canadian Tide and Current Tables, Volume 5*.

65 False Narrows East Range, on the north side of False Narrows 0.8 mile NW from the east extremity of Mudge Island, in line bearing 326° leads to the channel north of the long drying ledge.

66 False Narrows West Range, on the north side of False Narrows and about 0.3 mile west of the East Range, in line bearing 088° leads to the channel north of the long drying ledge. Drying boulders lie close to the north side of False Narrows, close east of the West Range.

67 A **submarine cable** crosses False Narrows in a NE direction from close west of the West Range.

68 Log booms are often towed through False Narrows, usually southbound with the first of the ebb, and should be given adequate clearance. Approaching False Narrows from Pylades Channel hold to the Mudge Island shore to avoid the drying area to the north that has a number of large boulders on it. At the west end keep on the West Range until close to the Mudge Island shore to avoid the drying spit extending west of the West Range.

69 **Percy Anchorage**, at the west end of False Narrows, is a convenient place to anchor to wait for slack water in Dodd and False Narrows. On the north shore of Mudge Island, close east of the power line, is a small cove occupied by the *Moonshine Cove Yacht Club*.

70 **Tidal streams** in Percy Anchorage are weak.

71 **Overhead cables**, vertical clearance 26 m, cross the west entrance to Percy Anchorage.

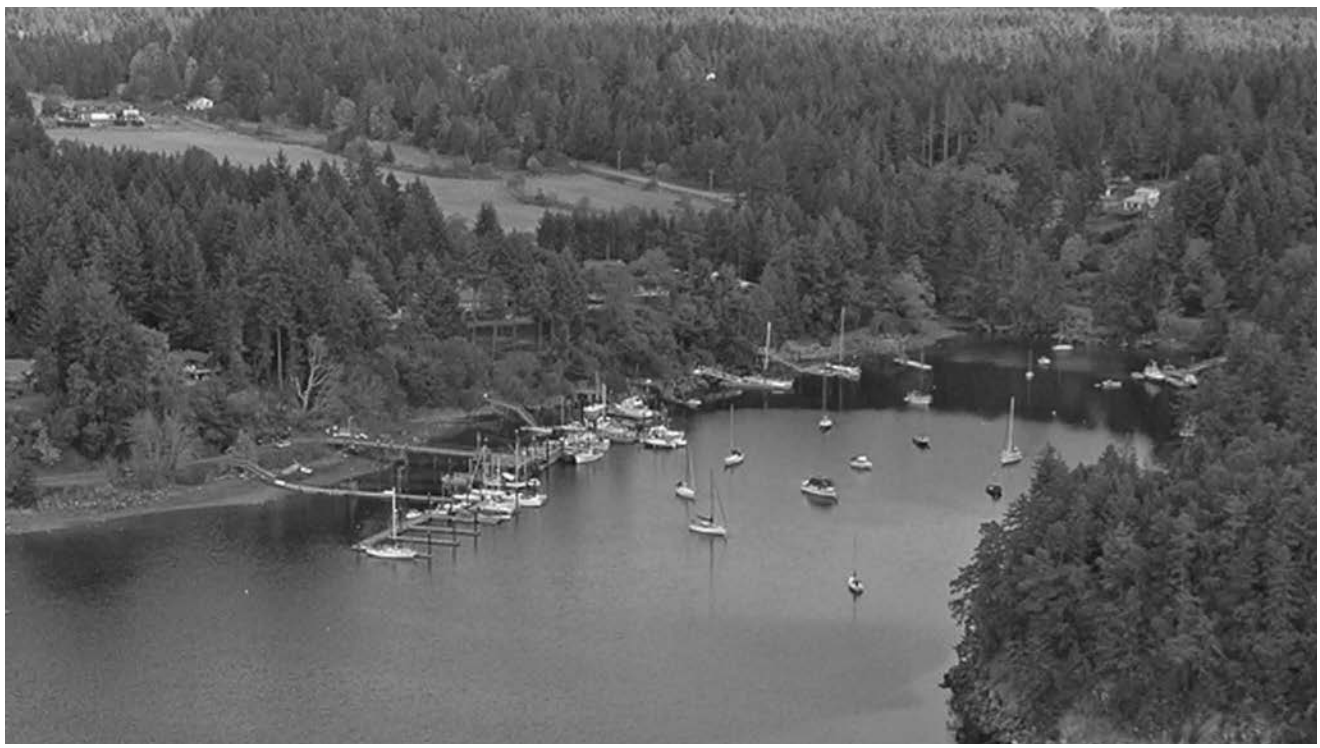
Gabriola Passage

72 **Gabriola Passage**, between Valdes Island and **Gabriola Island**, is narrow, intricate and has numerous dangers in its east approach. This combined with the velocity of the **tidal streams** means it

GABRIOLA PASSAGE WEST ENTRANCE (2007)



DEGNEN BAY (2005)



should be navigated only at slack water by those familiar with local conditions.

73 Tidal differences for Degnen Bay (7445) inside Gabriola Passage, referenced on Fulford Harbour, are in *Canadian Tide and Current Tables, Volume 5*.

74 Predictions of the times and rates of maximum current and the times of slack water are given for Gabriola Passage (3300) in *Canadian Tide and Current Tables, Volume 5*. The flood sets east and the ebb west through Gabriola Passage. Maximum rate on the flood is 8.5 kn and on the ebb 9 kn.

75 **Dibuxante Point**, the NW extremity of Valdes Island, is the SW entrance point to Gabriola Passage. A drying rock ledge extends 0.1 mile NW of Dibuxante Point.

76 *Dibuxante Point light (433.8)* is on the W entrance to Gabriola Pass and is shown from a white cylindrical tower with a red band at top.

77 **Degnen Bay**, on the north side of Gabriola Passage, affords excellent shelter for small craft. Holding ground for **anchorage** is reported to be good but debris on the bottom may foul anchors. A **public wharf** on the north shore has a dock on its NE side providing 120 m of berthing space with a depth of 3 m alongside. A 5 tonne crane, power, garbage and used oil disposal facilities, telephone and tidal grid are available. Commercial vessels have priority. Several private docks are close NE of the public wharf.

78 **Wakes Cove** offers **anchorage** for small craft but is exposed to the NW. Holding has reported to be marginal with large patches of kelp and bottom debris from logging. A small dock provides access to the provincial park.

79 The three small islets SE of **Cordero Point** *(49°08'N, 123°42'W)* are wooded; the largest of these is **Kendrick Island**. The bay formed between these three islets and the east shore of Valdes Island is known locally as **Dogfish Bay**. It offers good sheltered **anchorage** and is used regularly by towboats with rafts when awaiting tides or weather-bound. Docks and **mooring buoys** of the *West Vancouver Yacht Club* are on the west side of Kendrick Island.

80 *Gabriola Passage East light (433.5)* is off the NE side of Valdes Island and is shown from a white cylindrical tower with a green band at top.

81 **Breakwater Island**, 0.7 mile east of Cordero Point, lies across the east approach to Gabriola Passage. **Rogers Reef**, on the north side, at the east entrance to Gabriola Passage, consists of a group of drying and sunken rocks.

82 *Rogers Reef light (433.3)*, on the E entrance of Gabriola Pass, is shown from a white tower.

83 *Breakwater Island light (433.2)* is on the west side of the island, opposite the entrance to Gabriola Passage and is shown from a mast.

Silva Bay and Approaches

Chart 3475

84 **Thrasher Rock** *(49°09'N, 123°38'W)* is steep to on all but its west side.

85 *Thrasher Rock light (433)* is shown from a white tower with a green band at the top and is fitted with a **Racon** (— • • —).

86 **Gabriola Reefs**, extending about 1.5 miles SSW from Thrasher Rock, consist of drying and below-water rocks.

87 *Gabriola Reefs light buoy UM (433.1)*, at the south extremity of the reefs, is a **port bifurcation buoy**.

88 **Flat Top Islands**, north of Breakwater Island, consist of **Bath Island**, **Saturnina Island**, **Sear Island**, **Tugboat Island**, **Vance Island**, **Lily Island**, **Carlos Island**, **Gaviola Island** and **Acorn Island**. **Brant Reef**, 0.2 mile NE of Acorn Island, is 1 m high.

89 **Commodore Passage** is formed by Tugboat and Vance Islands on its SW side, Acorn and Gaviola Islands form its NW side. A reef which dries 4.8 m lies 0.1 mile SE of Acorn Island, and a rock awash lies close south of this reef.

90 *Tugboat Island light (434)* is on a drying reef about 0.2 mile SE of the island and is shown from a white cylindrical tower.

91 An **overhead cable**, vertical clearance 14 m, joins Tugboat and Sear Islands and is marked by orange spheres. **Submarine cables** cross the passage between Breakwater and Tugboat Islands and between Gabriola and Sears Islands.

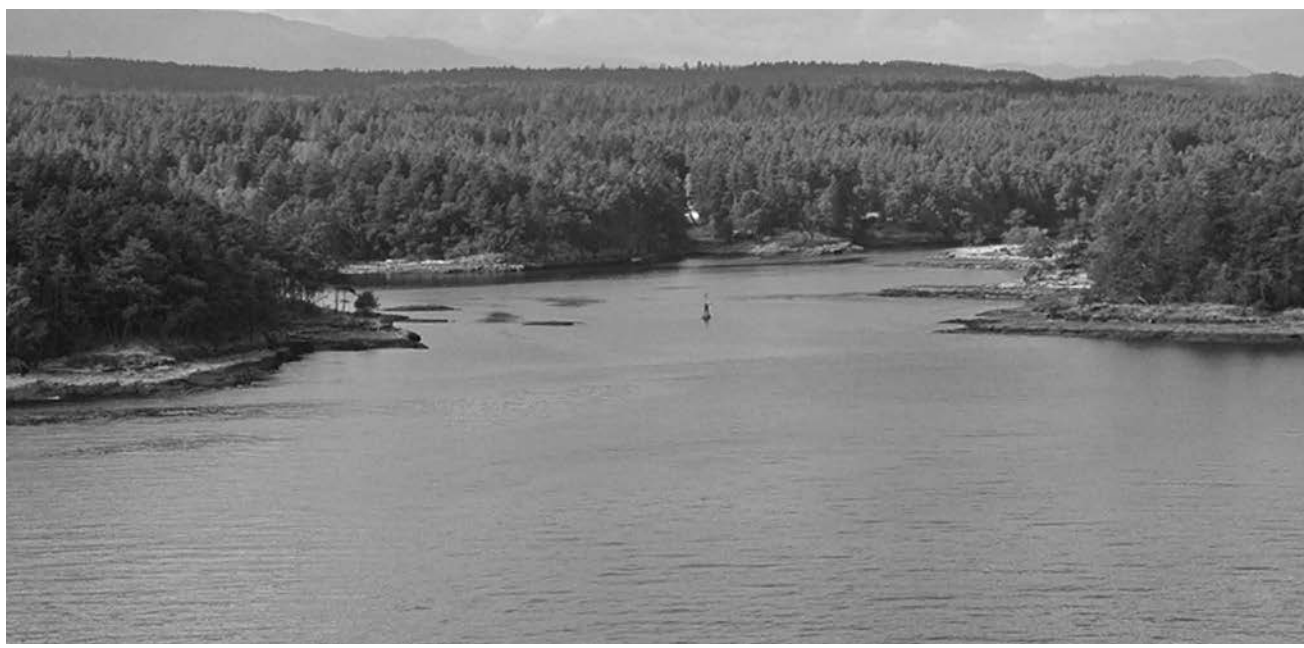
92 **Silva Bay** has three passages leading into it and is frequently used by small craft. The main entrance to Silva Bay is between Tugboat and Vance Islands. It is encumbered with a drying **reef** projecting north from Tugboat Island and **Shipyard Rock** in mid-channel. Least depth in the channel north of Shipyard Rock is 5.9 m.

93 **Caution. — The safe channel between Tugboat and Vance Islands is narrow. Underwater rocky ledges restrict the channel width with those projecting from the north and NW side of Tugboat Island being particularly extensive. A number of vessels have grounded here. Keep to the north of the light on Shipyard Rock. Ensure that shoals extending west from Shipyard Rock and NW from Tugboat Island are cleared. Maintain a westerly heading until about halfway to Law Point before turning toward facilities on the SW side of Silva Bay.**

94 *Silva Bay light (434.3)*, NW of Tugboat Island on Shipyard Rock, has a **port hand daymark** and is shown from a white mast.

95 **Port hand buoy** *U39* marks the NW extremity of the drying reef off Tugboat Island.

SILVA BAY MAIN ENTRANCE (2007)



SILVA BAY (2007)



96 The south entrance to Silva Bay leads between Sear and Gabriola Islands. It is about 30 m wide and has a least depth of 1 m.

97 The north entrance to Silva Bay, between Lily and Vance Islands, is entered at its north end between Carlos Island and the shoals north of Lily Island. The least depth through this channel is 3.6 m. **East cardinal buoy** *PA* marks the shoals north of Lily Island.

98 Silva Bay offers various activities, shops, general store, restaurants, marine repairs and resorts. It is home to a wooden boat building school. A private light is shown from the *Royal Vancouver Yacht Club* docks on Tugboat Island. *Silva Bay Resort & Marina* (250-247-8662) has full facilities including transient moorage. *Page's Resort and Marina* (250-247-8931) has full facilities including transient moorage. Silva Bay Inn (250-247-9351) has some guest moorage. There is ample **anchorage** with mixed reports about holding between Tugboat and Sear Islands and the **marinas**.

99 Tidal differences for Silva Bay (7550), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

Charts 3443, 3458

100 The north coast of **Gabriola Island** between **Law Point** *(49°09'N, 123°42'W)* and **Orlebar Point**, 5.5 miles NW, is bold and thickly wooded.

101 **Lock Bay** *(49°11'N, 123°49'W)* is exposed and not recommended as an anchorage.

Nanaimo Harbour and Approach

Charts 3458, 3463

102 The NE approach to **Nanaimo Harbour** lies between Entrance Island, 0.5 mile NE of Orlebar Point, and Neck Point *(49°14'N, 123°58'W)*.

103 The **approach to Nanaimo Harbour** *(49°10'N, 123°56'W)* from the Strait of Georgia is between Entrance Island and Lagoon Head, 5.5 miles WNW. Navigable channels in this approach from east to west are Fairway Channel, Rainbow Channel and Horswell Channel. These channels, divided by islands and shoals, are deep and well lighted. The usual approach is through Fairway Channel. Entry into the inner portion of Nanaimo Harbour is through McKay and Meakin Channels using the Colliery range beacons. Berths for Duke Point Terminal and Harmac are in Northumberland Channel.

104 The city of **Nanaimo**, along the west side of the harbour, had its beginning in 1851 when coal was discovered. By 1898 coal exporting had reached its peak and by 1930 most of the coal mines had closed. Today main industries are lumber, pulp, newsprint, fisheries and tourism. The city has a full range of municipal services including a post office, hospital with heliport, shopping centres and recreational facilities.

105 Nanaimo Harbour in Sector One of the *Vancouver Traffic Zone* is administered by *Victoria Traffic*; assigned frequency is Channel 11 (156.55 MHz). A brief description of *Vessel Traffic Services (VTS)* is in *PAC 200 — General*

Information — Pacific Coast. Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*. See Table 7.2 for **Calling-in point** details.

106 **Calling-in point 23 Entrance Island/Five Fingers Island** is a line joining *Entrance Island light (435)* and Five Finger Island.

107 **Pilotage** is compulsory. Nanaimo Harbour is in Area 2 of the *Pacific Pilotage Region*. For details regarding obtaining a pilot when arriving or departing see *PAC 200 — General Information — Pacific Coast*.

Table 7.2 Calling-in Point — Nanaimo Harbour

Number	Name	Description
23	Entrance Island/Five Fingers Island	Line running from *49°12'34"N, 123°48'25"W* to *49°13'53"N, 123°54'52"W*

108 Large, fast, passenger and vehicle **ferries** on regular schedules between Departure Bay and Horseshoe Bay, Howe Sound, and Duke Point and Tsawwassen generally use Rainbow or Fairway Channels. A freight ferry operating between Nanaimo and the Fraser River generally uses Fairway Channel and the Gabriola Island ferry operates from Meakin Channel.

109 Tidal differences for Nanaimo (7917), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

110 Meteorological information for *Nanaimo Airport* is in the Appendices.

111 **Entrance Island** *(49°13'N, 123°49'W)* is a sandstone rock 9 m high bare of trees with some stunted vegetation on it. Foul ground extends west and SW from the island. Conspicuous white buildings with red roofs, a radio tower and flag staff are on the island. Vessels bound to and from Nanaimo, or passing through the Strait of Georgia, should pass north of this island.

112 *Entrance Island light (435)* is shown from a white tower.

113 **North cardinal buoy** *PE* marks the NW extremity of the foul ground extending from Entrance Island. **Starboard hand buoy** *P0* marks the south edge of the foul ground extending SW from Entrance Island.

114 **Forwood Channel**, between **Orlebar Point** and Entrance Island, is partially obstructed by foul ground extending about 0.2 mile south and west from the island. A **submarine cable** (power) crosses this channel.

115 **Pilot Bay** and *Gabriola Sands Provincial Park* are at the north end of Gabriola Island. Good **anchorage** is available for small craft in southwesterly winds, but is open to the northwest.

Chart 3447

116 **Fairway Channel**, between the NW end of Gabriola Island and Snake Island, has a navigable width of about 0.7 mile. **Snake Island** is a smooth topped, grassy island fringed by drying reefs. A shoal, 0.3 mile SE of Snake Island, has a least depth of 1.3 m over it. Passage between Snake Island and this shoal is not recommended.

117 *Snake Island light (436)*, on the north end of the island, is shown from a white tower with a green band at the top.

118 *Snake Island Reef light and bell buoy P2 (437)*, south of the shoal lying SE of Snake Island, is a **starboard hand buoy**.

119 *HMCS Saskatchewan* has been sunk close east of Snake Island as an **artificial reef** for divers. It is marked by **cautionary**/**information buoys** and has **mooring buoys**. This former *Royal Canadian Navy* destroyer escort is 111 m long and was sunk in 1997.

120 *HMCS Cape Breton* has been sunk SE of Snake Island as an **artificial reef** for divers. It is marked by **cautionary buoys**. This former *Royal Canadian Navy* supply ship is 134 m long and was sunk in 2001.

121 **Rainbow Channel** lies between Snake Island and Five Finger Island and Hudson Rocks, about 1.5 miles NW. **Five Finger Island** is bare and rugged. It gets its name from five hummocks which on certain bearings resemble knuckles of a clenched fist. **Hudson Rocks Ecological Reserve** consists of five islets and rocks from 1 to 10 m high encircled by reefs.

122 *Hudson Rocks light (447)* is on the summit of the SW islet and is shown from a white cylindrical tower with a red band at top.

123 **Horswell Channel** lies between Hudson Rocks and the coast of Vancouver Island. **Clarke Rock**, on the west side of Horswell Channel, is separated from Vancouver Island by a narrow channel.

124 *Clarke Rock light (447.2)* is on the rock and is shown from a white cylindrical tower with a green band at top.

125 **Lagoon Head**, 0.3 mile NW of Clarke Rock, has several drying rocks on its NW side.

126 **Hammond Bay**, entered between Lagoon Head and **Neck Point**, is exposed to NE weather. However, holding is reported to be good with a sand and mud bottom and shelter from NW and SE winds. **Anchorage** is available at the head of the bay opposite **Shack Island** (local name). Makeshift wood cabins and low trees are on this island. A **submarine pipeline** (sewer) passes through the centre of the bay and extends 1.1 miles NE.

127 **Icarus Point**, 3 miles WNW of Neck Point, is not well defined and difficult to identify.

128 **Horswell Bluff**, 0.7 mile south of Clarke Rock, is fronted by foul ground. **Horswell Rock**, at the outer end of this foul ground, has 1.8 m over it.

129 *Horswell Rock light buoy PL (446.5)*, east of Horswell Rock, is an **east cardinal buoy**.

130 **Port hand buoy** *P15*, 0.2 mile north of Horswell Rock, marks the edge of the shoal area extending east of Horswell Bluff.

131 **Submarine cables** run from the north side of Departure Bay through Rainbow Channel. Through Fairway Channel there is a cable from Newcastle Island and a cable from Departure Bay. These cables all cross the Strait of Georgia to Point Grey and are abandoned.

Nanaimo Harbour

132 **Nanaimo Harbour** is operated by:

Nanaimo Port Authority
P.O. Box 131, 104 Front Street
Nanaimo, B.C.
V9R 5K4
Tel: 250-753-4146
Fax: 250-753-4899
Email: info@npa.ca
Web: www.npa.ca

133 **Nanaimo Harbour** comprises all waters south of a line from a position on Vancouver Island *49°13'16"N, 123°56'42"W* to a point on Gabriola Island *49°11'26"N, 123°52'22"W*, including Descanso Bay, Departure Bay, Northumberland Channel, False Narrows as far east as *123°46'38"W*, and Dodd Narrows as far south as *49°08'02"N*.

134 *Harbour Operations* established by the *Nanaimo Port Authority* apply to all ships within the harbour limits.

Deep Sea Ship Anchorages

Located within Port Limits, off the east side of Protection and Newcastle Islands, are six deep sea ship anchorages. Designated NA1 through NA6 these provide anchorage for ships up to 300 metres in length in depths of 40 to 80 metres. All deep sea ship anchorages are assigned by the Harbour Master 250-753-4146, ext 239.

Harbour Dues are payable by any ship assigned an anchorage.

Ships assigned an anchorage within Port Limits shall have on board the largest scale chart available, such as Canadian Chart 3447 which is available through the local Agent or Chart Supplier. An anchored ship shall at all times have its engine(s) on standby, ready for immediate manoeuvring and its second anchor ready to let go should the wind at the ship exceed twenty-five (25) knots.

Pilot transfers to or from ships at anchor can be arranged through the local Agent or by contacting the Harbour Master. Deliveries of stores, crew transportation, etc must be arranged by the local Agent.

Ships at anchor should expect representatives from the Nanaimo Port Authority to board the vessel to conduct bilge, sewage and ballast water checks. Ships are prohibited from dumping, releasing or discharging any pollutants overboard and from using on-board incinerators while within Port Limits.

Debris Control

The Nanaimo Port Authority, in cooperation with local industry, contract out for debris clean-up within Port Limits. Daily patrols are made throughout the harbour and all floating debris is collected, removed from the water and sorted on Port Property. Logs that have commercial value are sold back to industry to off-set the cost of operations. Wood with no commercial value is disposed of.

Environmental Protection

The Nanaimo Port Authority, through a Letter of Understanding with the Canadian Coast Guard, is the first response to pollution reports within Port Limits. Each report is investigated and where the source of the pollution can be determined the polluter is charged all costs for the investigation, response, clean up and disposal of all contaminants.

All oil spills are reported to the Canadian Coast Guard.

Holding an Event Information

Any organized event on Port Property or on, below or above the water within Port Limits must be approved by the Nanaimo Port Authority.

The Nanaimo Port Authority may choose to monitor any event on the water for safety or navigational reasons, especially when the event disrupts or may disrupt normal Port operations, this service is provided free of charge and event coordinators will be expected to comply with any directions given to them by Port Authority Staff.

Examples of events on, below or above the water which require Port Authority approval are, but not limited to, Bathtub Races, Silly Boat Regatta, Yacht Races, Dragon Boat Races, Kayak or Outrigger Canoe Races, Fireworks Displays, Swimming Contests, Demonstrations, Air Shows and Waterskiing Contests.

Some events may require additional approvals ie: City, Bylaws, Fire Department, RCMP, etc. You should enquire with each to ensure that you have the necessary approvals in place to hold your event.

If in doubt as to whether or not you require Port Authority approval please call our main office at 250-753-4146 or email info@npa.ca. This email address is being protected from spambots. You need JavaScript enabled to view it.

Rental Facilities

Visiting Vessel Pier

The Visiting Vessel Pier measures 600 ft x 30 ft and can accommodate several hundred persons. Tents/awnings may be erected on the Pier (with Port Authority approval). Due to its exposed location, if tents are required please ensure that there are sufficient leg anchor weights. A clear fire lane must be maintained along the length of the VVP in case of emergency.

Power, lighting and water is available on the pier. There is access for vehicles not exceeding 9 tonnes in weight (with Port Authority approval). The Visiting Vessel Pier can be used for events such as Weddings, Shows and Receptions.

For more information call our main office at 250-753-4146 or email info@npa.ca. This email address is being protected from spambots. You need JavaScript enabled to view it.

Seaplane Operations

The Nanaimo Port Authority, local seaplane operators and members of the public developed recommendations regarding seaplane operations in the Harbour.

The Port operates two water-dromes. Area "A" is in the inner harbour adjacent to the Visiting Vessel Pier and Area "B" is in Departure Bay adjacent to the BC Ferry Departure Bay Terminal.

For boating safety, aircraft operated strobe lights have been installed. One is on the Central Breakwater next to the Visiting Vessel Pier and covers Area "A", the other is set on top of a piling at the north entrance to Newcastle Island Channel.

Each strobe light operates independently and when flashing indicates that an aircraft is preparing for take-off or landing in the applicable water-drome.

Port Security

The Nanaimo Port Authority operates a number of facilities within Port Limits.

Each facility is fully ISPS/MTSR compliant.

135 A **speed limit** of 10 km/h (5 kn) is prescribed by the *Vessel Operation Restriction Regulations* for Nanaimo Harbour, excluding Dodd Narrows.

136 The Nanaimo Harbour patrol vessel may exhibit two blue strobe lights on either side of the yardarm for identification purposes.

137 Nanaimo is a port of entry and customs officers board on arrival. The customs office is in the federal building near Commercial Inlet.

138 Ample supplies of fresh provisions are available. Bunkering is limited to delivery by tanker truck or barge; large quantities have to be obtained from Vancouver.

139 *Nanaimo Shipyard*, on the west side of Newcastle Island Passage, has three sets of marine ways capable of hauling vessels up to 270 tonnes. Underwater repairs for larger vessels are done by divers. Propulsion machinery repair is limited to vessels up to about 300 tonnes although auxiliary machinery and electrical repairs can be done by local machine shops. Electronic repairs, including radar, can be carried out. Tugs are available.

140 Nanaimo has bus service to all Vancouver Island points and is connected to Vancouver (Horseshoe Bay and Tsawwassen) and Gabriola Island by regular ferry services. Rail service is available to Victoria and Courtenay. Seaplane services are available in the harbour area and the Nanaimo Airport is 9 km south of the city. A small foot passenger ferry operates between Nanaimo and Newcastle and Protection Islands.

Table 7.3 Major Port Facilities — Nanaimo

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Nanaimo Assembly Wharf Berth B	183	12.6	–	Project cargo handling, light industrial use. Full range of cargo handling equipment is available. 8 333 m² covered storage, 15 hectares paved open storage. Approach limited by 9 m patch. Owner/Operator: Nanaimo Port Authority/Nanaimo Assembly Wharf (250-753-3425).
Nanaimo Assembly Wharf Berth C	183	10.4	–	As above.
Nanaimo Cruise Ship Terminal	110	10.0	–	Concrete pontoon designed to accommodate ships up to 360 m.

141 **Ferries** frequently cross the north entrance of Northumberland Channel in the vicinity of the designated anchorages.

142 Terminal facilities in Nanaimo Harbour are listed in Table 7.3.

143 **Caution. — Depths in the approach to wharves B and C are limited to 9 m.**

144 **Batchelor Point** *(49°11'N, 123°55'W)* is the NE extremity of Protection Island. **Power Squadron Reef** is 0.2 mile NW of Batchelor Point. **McKay Point** and **Angle Point** form the NE extremity of Newcastle Island.

145 The drying channel between Protection and Newcastle Islands, known locally as **Reef Bay**, has a private **daybeacon** in its central part.

146 **Submarine cables** and **pipelines** cross the drying channel between Protection and Newcastle Islands. An abandoned cable lands in the bay south of Angle Point. A pipeline (sewer outfall) extends 0.2 mile offshore 0.3 mile west of McKay Point.

Nanaimo Harbour — Inner Portion

Chart 3447

147 The inner portion of **Nanaimo Harbour** *(49°10'N, 123°56'W)*, entered 1 mile west of Jack Point, has a large mud flat on its south side and is protected on its north and east sides by **Newcastle Island** and **Protection Island**.

148 **Gallows Point**, the south extremity of Protection Island, is surrounded on its seaward faces by a drying ledge. A passenger ferry wharf, close NW of Gallows Point, is protected by a rock breakwater. A **public wharf** is alongside the ferry wharf. A public dock and ferry landing are at **Good Point**. **Satellite Reef**, 0.4 mile NW of Gallows Point, dries 0.7 m.

149 *Gallows Point light (439)*, on the drying ledge close south of Gallows Point, is shown from a white cylindrical tower with a red band at top.

150 **Starboard hand buoy** *P4* marks the edge of foul ground 0.1 mile south of Gallows Point.

151 **West cardinal buoy** *PS* is on the west side of Satellite Reef. A booming ground with **mooring buoys** lies between Protection Island and Satellite Reef.

152 *Nanaimo Harbour Entrance light (440)*, 0.25 mile SSE of Gallows Point light, is shown from a white cylindrical with green band at top on a dolphin.

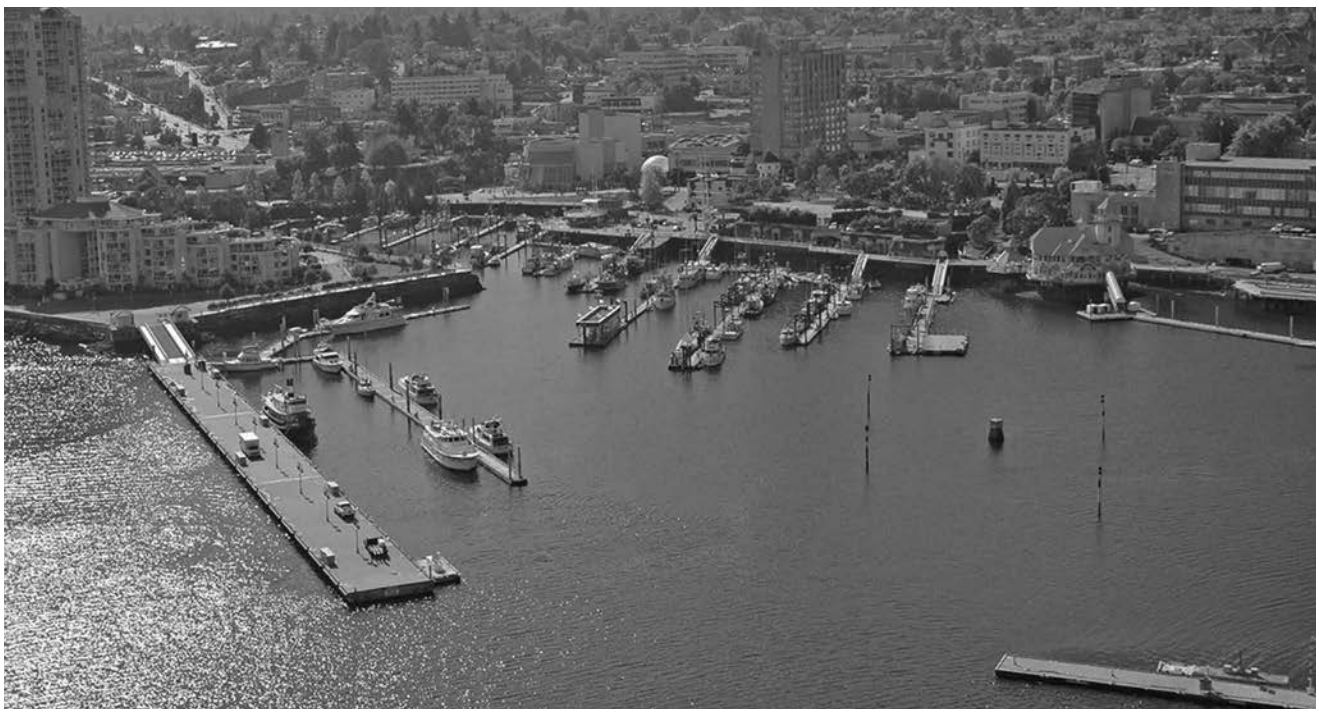
153 *Nanaimo Harbour Sector light (441.6)*, at the Gabriola ferry landing, has a white sector indicating the preferred channel south of Gallows Point.

154 *Colliery range lights (442, 443)*, 0.5 mile WSW of Gallows Point light, in line bearing 255° lead

NANAIMO HARBOUR APPROACH — McKAY CHANNEL (2005)



COMMERCIAL INLET (2005)



through the channel south of Gallows Point. Both lights are shown from tripod skeleton towers and have **red** and **white daymarks**.

155 **McKay Channel**, between Protection Island and **Middle Bank**, is deep and without dangers. **Meakin Channel** leads SW from McKay Channel to the *Nanaimo Assembly Wharf*.

156 The *Nanaimo Port Authority Cruise Ship Terminal* is located at the *Nanaimo Assembly Wharf*. Private lights are on the outer end of the pier.

157 Nanaimo Harbour Entrance Groyne private port hand daybeacon *(5283.5)*, 0.25 mile SW of Nanaimo Harbour Entrance light, is shown from a dolphin.

158 Nanaimo Harbour, south of Newcastle Island and west of Protection Island, is a seaplane landing area. Limits are marked by **light buoys**. The terminal is at the north end of Commercial Inlet. An aeronautical strobe light activated by the aircraft to alert mariners of aircraft landing or taking off is on the central breakwater at the entrance to Commercial Inlet.

159 The *Seaspan Coastal Intermodal* loading dock handling rail cars and trailers, and the *BC Ferries* Gabriola Island vehicle and passenger ferry operate from ferry landings NW of the *Nanaimo Assembly Wharf*.

160 A 50 m long central **breakwater** lies in the entrance to Commercial Inlet. The entrance south of the breakwater is used by vessels. The entrance north of the breakwater is 50 m wide and for exclusive use of seaplanes. The *Eco-Barge* is a solar powered small ship sewage pumpout barge on the breakwater.

161 **Beacon Rock**, in the entrance to Commercial Inlet, dries 1.2 m. **Carpenter Rock**, 0.1 mile north of Beacon Rock, is awash.

162 Private lights are shown from the outer end of the small vessels pier, both ends of the breakwater, and the outer end of the fishing pier. Beacon Rock is marked by private lighted north, south, east and west cardinal aids.

163 The *W.E. Mills Landing & Marina* (250-755-1216) pier (previously *Cameron Island Marina & Visiting Vessel Pier*) extends north from **Cameron Island** (local name) along the east side of Commercial Inlet Basin. A **submarine cable** (power) is laid from the end of the pier to the central breakwater; it is marked by signs. The **marina** has a 1 000 lb crane, fuel dock with gas and diesel, and power and fresh water.

164 *Port of Nanaimo Boat Basin* (250-754-5053) in **Commercial Inlet** is for small craft and has 2 800 m of berthing. In winter, the basin is used by fishing vessels. Contact the main Wharfinger's (VHF channel 67, 250-754-5053, marina@npa.ca) office for general information and berth allocation. Reservations for moorage must be made at least 24 hours in advance. Facilities include showers,

NANAIMO HARBOUR EAST (2005)



laundry, and washrooms. Gas and diesel are available. The seaplane terminal is at the north end of the boat basin. An L-shaped **public fishing pier** extends 100 m offshore north of the seaplane terminal.

165 A **submarine cable** crosses the harbour from Good Point on Protection Island to the shore west of Carpenter Rock. A second **submarine cable** crosses the harbour 0.2 mile further south.

166 A **submarine pipeline** crosses the harbour from Good Point to the mouth of **Millstone River**.

167 *Newcastle Island Marine Provincial Park* has **public docks** and **mooring buoys** in **Mark Bay**. Camping, picnic area, garbage drop, telephone, showers and washrooms are available.

168 **Newcastle Island Passage**, between Vancouver and Newcastle Islands, leads north from the inner portion of Nanaimo Harbour to Departure Bay. It is narrow, shallow and suitable only for small vessels. Heading north is the upstream direction for aids to navigation with red channel markers on the starboard or Newcastle Island side.

169 No vessel shall proceed at a speed greater than 5 kn in Newcastle Island Passage between **Bate Point** and Pimbury Point. **Buoys** 0.1 mile SW of Bate Point have speed caution signs and speed restriction signs posted along Newcastle Island Passage.

170 *Bate Point light buoy P12 (445)*, south of the drying flat extending from the point, is a **starboard hand buoy**.

171 *Millstone light buoy P9 (444)* and *Millstone Creek light buoy P11 (444.5)*, at the outer edge of a drying flat on the west side of the passage, are **port hand buoys**.

172 **Oregon Rock**, 0.2 mile NNW of Bate Point, dries 0.2 m and is marked by **port hand buoy** *P13*. **Passage Rock**, close north of Oregon Rock, dries 0.1 m and is marked by a **daybeacon** with a **port hand daymark**. Vessels should not pass between these markers as the channel lies to the east side, off the Newcastle Island shore.

173 **Caution. — Many vessels have struck Oregon Rock. The safe channel through Newcastle Island Passage is east of Oregon Rock, between Oregon Rock and Newcastle Island. Starboard hand buoys *P14* and *P16* are on the east (Newcastle Island) side of the passage. Port hand buoy *P13* and a daybeacon are on the west (Nanaimo) side of the passage.**

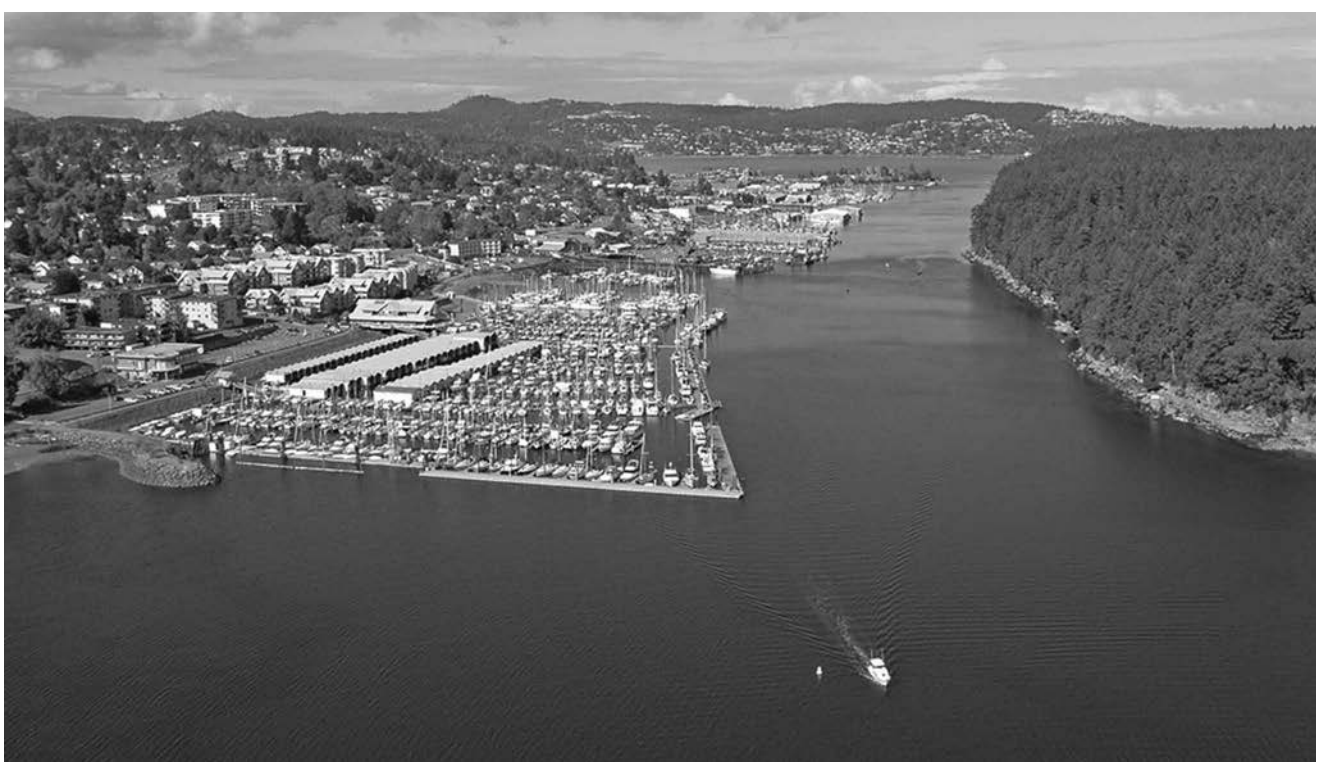
174 **Submarine cables** cross Newcastle Island Passage in the vicinity of Oregon Rock and at **Brechin Point**, 0.6 mile NNW. **Submarine pipelines** cross the passage close north of Bate Point and near Pimbury Point at the north end.

175 The west shore of the passage has numerous **marinas**, fuel docks, ship repair facilities and chand-

NEWCASTLE ISLAND PASSAGE LOOKING SE (2005)



NEWCASTLE ISLAND PASSAGE LOOKING NW (2005)



DEPARTURE BAY ENTRANCE (2005)



lers. *Townsite Marina* (250-244-2920) is located adjacent to the *Nanaimo Yacht Club*; no guest moorage available. *The Waterfront Suites and Marina* (250-753-7111), formerly known as *Moby Dick Oceanfront Lodge & Marina*, is undergoing extensive upgrades and renovations (2010). *Nanaimo Shipyard Group* (250-753-1151) provides haulouts and repairs for vessels up to 200 feet; for supplies call 250-753-1244. *The Palms Harbourside Marina* (250-591-0880) is a full-service marina offering 100 slips, permanent and transient moorage, metered power, and resort facilities onshore. *Newcastle Marina* (250-753-1431) provides mostly permanent moorage. Haulouts, repairs, welding services, 15 amp power, showers, laundry and washrooms are available. *Blue Peter Marine Services* (250-754-7887) is a shipyard providing all marine repairs. *Stones Marina & Boatyard* (250-753-4232) is a full-service moorage facility.

Departure Bay

176 **Departure Bay** *(49°12'N, 123°57'W)*, NW of Newcastle Island, is entered between Horswell Bluff and **Nares Point**, 0.6 mile south. It is well sheltered but a constant passage of ferries causes large swells which can be a problem to small craft. Departure Bay, north of the ferry terminal, is part of Nanaimo seaplane landing area. No ship shall anchor within a designated seaplane landing area.

177 **Jesse Island** lies on the north side of the east entrance. The channel to the north of Jesse Island has several **submarine cables** in it.

178 *Jesse Island light (446)* is on the east extremity of the island and is shown from a white cylindrical tower with a red band at top.

179 **Inskip Rock**, on a drying ledge 0.2 mile west of Jesse Island, is 1 m high. A shoal, with 1.4 m over it, lies in the centre of the channel between Inskip Rock and Jesse Island.

180 **Cautionary buoy** *PC* marks the west extremity of the shoal extending from Inskip Rock.

181 The *Pacific Biological Station (Fisheries and Oceans Canada)* is on the north shore of Departure Bay across from Brandon Islands. This is a fisheries research facility. **Submarine pipelines** (water intakes) extend about 0.1 mile SW. A **submarine cable** is laid between the *Biological Station* and Brandon Islands. Anchorage is prohibited in the approaches to the *Biological Station.*

182 **Brandon Islands**, west of Jesse Island, have a **daybeacon** with a **starboard hand daymark** on their west extremity. Experimental fish farm pens lie off the north shore of Brandon Islands. Mariners are requested to exercise caution when navigating in its vicinity and reduce speed to less than 5 kn.

183 Swimming area marker floats and diving rafts are moored off the west shore of Departure Bay during summer months. No ship shall move at a speed greater than 5 kn within 180 m of a swimmer or 365 m of a beach.

184 *BC Ferries* **Departure Bay** terminal is about 0.2 mile west of **Pimbury Point** in the south part of the bay. Regular ferry service is maintained with Vancouver (Horseshoe Bay) via Rainbow Channel.

185 A barge loading ramp and dolphins belonging to a cement company is between the ferry terminal and Pimbury Point. *Esso Oil* bulk plant **wharf** at Pimbury Point is 49 m long with a least depth of 3 m alongside.

186 Pimbury Point and **Shaft Point** to the NE form the north entrance to Newcastle Island Passage. An aeronautical

strobe light activated by the aircraft to alert mariners of aircraft landing or taking off is on a piling close-off Shaft Point.

187 *Departure Bay light buoy PW (445.5)*, about 0.1 mile NW of Shaft Point, is a **west cardinal buoy**.

188 **Porta Reef** (local name) is a fish haven close ENE of buoy *PW*. It consists of concrete pieces, has a least depth of 3 m and is about 85 m long in a NE/SW direction by 40 m wide. Anchorage is prohibited in the vicinity of the reef.



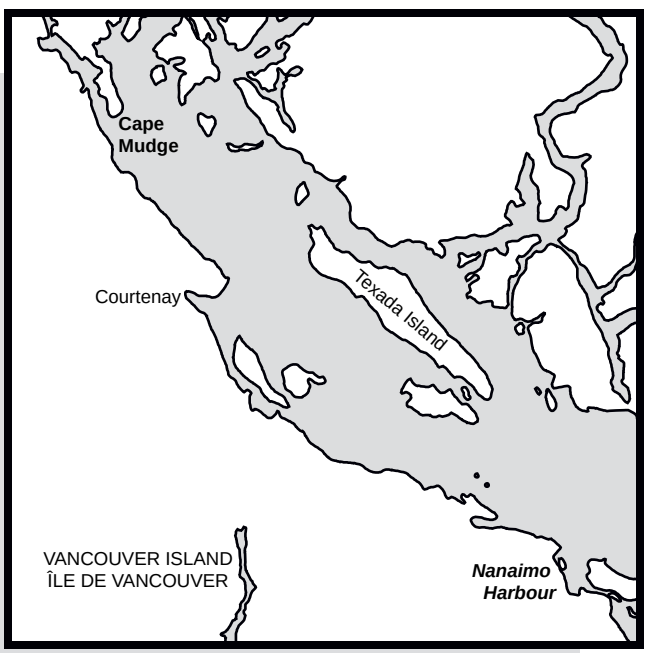
189 *Rivtow Lion* was sunk in 2005 close north of the fish haven as an **artificial reef** for divers. Built in 1940 and formerly *His Majesty's Rescue Tug Prudent* the vessel originally worked as part of a rescue fleet in the North Atlantic. Retired from *Navy* service the vessel worked from 1966 to 1985 towing log booms on the West Coast before being used as a marina breakwater. This 47 m steel hulled vessel rests bow down with a 15 degree list to port. Least depth to the funnel is 6.6 m.

Strait of Georgia — NW Portion

General

Charts 3512, 3513

1 This chapter describes the NW part of the Strait of Georgia from the east coast of Vancouver Island from Nanoose Bay to Cape Mudge. It also includes Denman Island, Hornby Island, Lasqueti Island and the west coast of Texada Island.



Strait of Georgia — NW Portion

2 The main shipping route through the **Strait of Georgia — NW portion** is between Hornby Island and Sisters Islets or by way of Stevens Passage. It then passes between Montgomery Bank and Vancouver Island into the south entrance of Discovery Passage.

3 **Texada Island** *(49°40'N, 124°23'W)* is 27 miles long in a NW/SE direction and approximately 5 miles wide. It separates the main shipping route through the Strait of Georgia from Malaspina Strait. A ridge of rugged mountains runs throughout its length but reaches its greatest elevations near the south end. Lasqueti Island, SW of Texada Island, is separated from it by Sabine Channel.

4 **Halibut Bank** *(49°20'N, 123°43'W)*, with 20.1 m over it, and **McCall Bank** *(49°21'N, 123°36'W)*, with 29 m over it, lie in the Strait of Georgia SW of the entrance to Howe Sound.

5 *Halibut Bank ODAS* ***light buoy*** *46146 (447.5)* is on the centre of the bank.

6 **Achilles Bank** *(49°33'N, 124°30'W)* has a least depth of 26.5 m. **Exeter Shoal** *(49°40'N, 124°39'W)* has a least depth of 14.6 m. **Ajax Bank** *(49°39'N, 124°42'W)* has a least depth of 29 m. These banks lie along the centre of the fairway in the main shipping route.

7 **Montgomery Bank** *(49°54'N, 124°57'W)* lies in the north part of the Strait of Georgia. **Sentry Shoal**, on the NW part of the bank, has a least depth of 7 m.

8 *Sentry Shoal ODAS* ***light buoy*** *46131 (509.5)* is SSE of the shallowest part of the shoal.

9 The NW part of the Strait of Georgia is in Sector Four of the *Vancouver Traffic Zone* and is administered by *Victoria Traffic*. Sector Four is bounded on the south by a line from *Reception Point light (448.8)*, to

Merry Island light (449), to *Ballenas Islands light (490)*, to Cottam Point *(49°18'15.7"N, 124°12'45"W)*; and bounded to the north by a line from *Cape Scott light (66)* to *Cape Caution light (578)*. Frequency is Channel 71 (156.575 MHz).

10 Special operating procedures when changing from Sector One to Sector Four require:

a) Northbound vessels to call *Victoria Traffic* Channel 11 and check out of Sector One then call *Victoria Traffic* Channel 71 for Sector Four
b) Southbound vessels to call *Victoria Traffic* Channel 71 and check out of Sector Four then call *Victoria Traffic* Channel 11 for Sector One.

11 A brief description of this *Vessel Traffic Service (VTS)* is in *PAC 200 — General Information — Pacific Coast*. Details are in *Radio Aids to Marine Navigation (Pacific and Western Arctic)*. **Calling-in points** are listed in Table 8.1.

Table 8.1 Calling-in Points — Strait of Georgia

Number	Name	Description
24	Ballenas Island/ Merry Island/ Welcome Passage	Line running from *49°28'15.9"N, 123°53'12"W* to *49°28'03.5"N, 123°54'40"W* to *49°21'02"N, 124°09'32"W* to *49°18'57"N, 124°12'45"W*
25	Cape Lazo/Powell River	Line running from *49°42'24.5"N, 124°51'41.5"W to 49°51'36.9"N, 124°33'05.7"W*

12 **Calling-in Point 24 Ballenas Island/Merry Island/Welcome Passage** is a change from Sector One *(Victoria Traffic)* to Sector Four *(Victoria Traffic)*. It is a line joining *Ballenas Islands light (490)* and *Merry Island light (449)*, then *Reception Point light (448.8)*. When northbound, mariners shall indicate whether their route is through Malaspina Strait via Epsom Point or Welcome Passage, Sabine Channel, Stevens Passage, west of Sisters Islets or Ballenas Channel.

13 **Calling-in Point 25 Cape Lazo/Powell River** is a line joining Cape Lazo and *Powell River Floating Breakwater Entrance South light (476.3)*. When southbound, mariners shall indicate if their route is through Malaspina Strait via Epsom Point or Welcome Passage, Sabine Channel, Stevens Passage, west of Sisters Islets or Ballenas Channel.

14 Regular **ferry** services cross the Strait of Georgia and the north entrance to Malaspina Strait. **Ferry** services commence from Westview on the mainland, close south of Powell River. Landings are at Blubber Bay on the north end of Texada Island, and at Little River about 3 miles NW of Cape Lazo on Vancouver Island. Another ferry crosses the Strait of Georgia from False Bay on Lasqueti Island to French Creek on Vancouver Island. Charted ferry routes are general indications of the route followed.

15 **Military exercise areas** include:

- **Area WF** SE of Texada Island is an air, subsurface and surface operations area
- **Area WG** is an air, subsurface and surface operations area and a firing exercise (torpedo) area
- **Area WI** west of Texada Island is an air and subsurface exercise area and firing exercise (air dropped explosives) area.

For details see *Notices to Mariners 1 to 46 Annual Edition*.

16 **Caution. — Mariners are advised to avoid Exercise Area WG, particularly during hours of darkness or reduced visibility. Equipment recovery vessels operate by day or night and exhibit a flashing red light in addition to the prescribed lights and shapes. They should not be approached closer than 1 400 metres due to outlying unlit buoys.**

17 **Caution. — The portion of Area WG enclosed by pecked lines is an active surface, subsurface, air and torpedo firing operations area which may also include the use of active sonar. Operations are generally (though not exclusively) conducted from 07h00-17h30 Monday to Saturday during which times area WG is considered to be extremely hazardous to marine traffic. Additionally, any number of lit and unlit mooring buoys may be within Area WG at various locations throughout the year to be used for military purposes. These buoys may be placed, moved and/or removed without notice. Mariners are to exercise caution whenever transiting this area, and vessels are required to remain clear whenever WG is active. Area WG constitutes a defence establishment as defined in the *National Defence Act* to which the *Defence Controlled Area Regulations* apply. Range vessels operate by day or night and exhibit a flashing red light in addition to the prescribed lights and shapes. They should not be approached closer than 3 000 metres due to outlying unlit buoys.**

18 Additional information is available from:

- Winchelsea Control VHF Channel 10 or 16
- Winchelsea Control toll free 1-888-221-1011
- VHF Channel 21B (NAVWARN)

19 Small craft may avoid Area WG by taking a course NW from Schooner Cove passing off Nankivell Point and keeping clear of Schooner Reef.

20 Ocean **dump sites**, under permit through the *Ocean Dumping Control Act*, are east of Cape Lazo *(49°41.7'N, 124°44.5'W)* and SE of Cape Mudge *(49°57.7'N, 125°05'W)*.

21 **Submarine cables** cross the Strait of Georgia from Nile Creek *(49°25'N, 124°38'W)* on Vancouver Island to Texada Island in the vicinity of Mount Davies *(49°35'N, 124°21'W)*. The cable area is approximately

1.5 miles wide and passes close north of Sisters and Fegen Islets. Flashing yellow lights maintained by *BC Hydro* are on Vancouver and Texada Islands shores to mark the landing site of this cable crossing. A cable crosses the Strait of Georgia between Qualicum Beach on Vancouver Island and Burrard Inlet, and another cable crosses the Strait between Qualicum Beach and Spanish Bank. A cable crosses the Strait between Qualicum Beach and False Bay on Lasqueti Island. An abandoned cable crosses the Strait between Cape Lazo and Powell River.

22 **Submarine pipelines** (gas) cross the Strait of Georgia from Powell River *(49°51'N, 124°33'W)* to Little River *(49°45'N, 124°56'W)*.

23 Tidal differences in the NW part of the Strait of Georgia, all referenced on Point Atkinson (7795), are in *Canadian Tide and Current Tables, Volume 5*. Along the mainland shore they are given for Halfmoon Bay (7830), Irvines Landing (7836), Pender Harbour (7837), Blind Bay (7865), Powell River (7880) and Lund (7885); along the central islands for False Bay (7982), Blubber Bay (7875), Welcome Bay (7990), Twin Islands (7892) and Mitlenatch Island (7895); and along the Vancouver Island side for Northwest Bay (7938), Hornby Island (7953), Denman Island (7955), Comox (7965) and Little River (7993).

24 **Tidal streams** entering the Strait of Georgia round the SE end of Vancouver Island meeting the corresponding tidal stream that flows round the NW end of the island between Cape Mudge *(50°00'N, 125°11'W)* and Cape Lazo *(49°42'N, 124°52'W)*. The meeting usually occurs much nearer Cape Mudge than Cape Lazo, but the place varies because of differences in character of opposing tides and the state of weather. At this meeting a considerable race often forms. **Tide rips dangerous to small craft can occur during strong east or SE winds.**

25 Within the central portion of the Strait **tidal currents** attain maximums of about 2 kn. In the northern Strait, where the tides propagating from the south meet those propagating from the north, tidal currents are less than 1 kn and variable in direction from one flood tide to the next. Only on the flood, within 1 mile of the approach to Discovery Passage, do tidal currents become appreciably greater than 1 kn. There is also an increase in maximum attainable speeds within some of the more confined passages such as Sabine Channel and Malaspina Strait, but these never attain speeds to be found in the southern end of the Strait.

26 *Current Atlas, Juan de Fuca Strait to Strait of Georgia* is available from Canadian Hydrographic Service authorized chart dealers. A list of authorized dealers can be found in the Canadian Hydrographic Service chart catalogue or at www.charts.gc.ca.

27 Information on natural conditions for the Strait of Georgia is given in *PAC 200 — General Information — Pacific Coast*.

Nanoose Harbour and Approaches

Chart 3459

28 **Blunden Point** *(49°15'N, 124°05'W)* is wooded and cliffy. **Edgell Banks**, 0.6 mile east of **Maude Island**, have a least depth of 9.1 m.

29 *Maude Island (Nanoose Harbour)* **light** *(486)*, near the east end of island, north side of entrance to the harbour, is shown from a white cylindrical tower with a red band at the top.

30 A **submarine cable** is laid from 0.3 mile SE of Blunden Point to the north Winchelsea Island. A **submarine pipeline** lays from E of Fleet point to the middle of the entrance.

31 **Nanoose Harbour**, entered between Blunden Point and **Wallis Point**, is a *Canadian Forces Base*. Wallis Point, the east extremity of a low island, has a number of stunted trees on it. **Nanoose Hill**, on the north side of the harbour, has two summits which from the south appear as a notched peak. The head of the harbour is low and swampy and its south shore is low with no natural distinguishing features. The north side is bolder in character and fringed with rock cliffs. **Marine farm** facilities are in several locations around the harbour, some marked by buoys. Radio **towers** on the north shore are marked by red air obstruction lights.

32 Nanoose Harbour is defined as "All tidal waters West of a line drawn South from the high water line at Wallis Point to the high water line of the southerly shore of the harbour". It is governed by the *Canada Marine Act* and the *Natural and Man-made Harbour Navigation and Use Regulations*. The north shore and adjacent waters of the harbour are an *Administration Control and Benefit Area of the Department of National Defence (DND)*. Naval vessels use Nanoose Harbour for exercises and mooring. Shore areas within these limits are restricted and landing is prohibited. Pleasure craft may only anchor south of a line drawn west of Datum Rock and in the vicinity of Fleet Point. All pleasure craft anchored in Nanoose Harbour shall be moored in the manner directed by a harbour official. Rafting of pleasure craft, at anchor, is not permitted. A harbour official must first approve anchoring in any other area of the harbour. All pleasure craft must call in to Winchelsea Control (VHF Channel 10 or 16), when south of Maude Island, to inform of their visit to Nanoose Harbour.

33 Nanoose Harbour is a **Controlled Access Zone**. For details see *Notices to Mariners 1 to 46 Annual Edition*.

NANOOSE HARBOUR — FLEET POINT (2005)



34 **Anchorage** can be obtained 0.3 mile WNW of Fleet Point, behind the shelter of the **breakwater**, in a depth of 24 m. It can also be obtained about 0.2 mile WSW of Ranch Point in a depth of 24 m or closer inshore in a depth of 18 m. Good shelter is afforded from all except infrequent south winds. Anchorage can also be obtained near the head of the harbour but landing is restricted.

35 Tidal differences for Nanoose Bay (7930), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

36 **Nonooa Rock**, 0.3 mile SSW of Wallis Point, has 1.8 m over it and is steep-to on its south side. It is marked by **starboard hand buoy** *P20*.

37 **Richard Point**, 0.5 mile west of Nonooa Rock, has a drying rock ledge extending east from it.

38 *Nanoose Harbour* **light** *(487)* is on the point SW of Richard Point and is shown from a white cylindrical tower with a red band at the top.

39 **Impérieuse Rock**, 0.25 mile SW of Richard Point, has 1.8 m over it. **Entrance Rocks**, 0.1 mile south of Impérieuse Rock, are a group of drying rocks on a mud flat extending north from **Fleet Point**.

40 *Impérieuse Rock* ***light buoy*** *P21 (488),* north of the rock, is a **port hand buoy**.

41 A rockfill **breakwater** extends north from Fleet Point. **Datum Rock**, 0.1 mile west of the outer end of the breakwater, dries 3.8 m. **Port hand buoy** *P23* is 0.2 mile west of Datum Rock on the edge of the mud flat.

42 A **daybeacon**, 1.7 miles west of Fleet Point in the SW part of the harbour, has an **orange daymark**. **Dolphins** and numerous **piles** front the mud bank to the east and west of the daybeacon. Some cover at HW and could be dangerous.

43 A light, 0.5 mile west of Nanoose Harbour light, is on the outer end of a *DND* **wharf**. Lights are shown from the *DND* wharf at **Ranch Point** 1.1 miles west of Richard Point. Ranch Point is the site of a *Canadian Forces Base*. Several *DND* orange and white **mooring buoys** are in Nanoose Harbour.

44 The *DND* **wharf** at Ranch Point is T-shaped and its outer face is 155 m long, 16 m wide with a least depth of 16.7 m alongside. The deck elevation is 2.3 m. An L-shaped dock, 145 m long, is close NW of the wharf. Another *DND* **wharf** and dock is 0.5 mile east of Ranch Point. It extends 44 m from the west side of a rock causeway and its south face is 12 m long with a least depth of 7.3 m alongside. A dock on the north side of this wharf is 24 m long.

45 **Nanoose Bay settlement**, at the head of Nanoose Harbour, offers a variety of activities nearby and has a post office, golf course, schools, stores, and resorts. Highway 19 and *E&N Railway* are adjacent to the community.

46 **Southey Island** *(49°17'N, 124°06'W)* and **Ruth Island** to the NW are surrounded by drying reefs. The passage between Southey Island and the Vancouver Island shore is encumbered with drying rocks. Reference to Chart 3459 and close position monitoring or local knowledge is required. The passage between Ruth Island and the Vancouver Island shore has a shoal with 2.7 m over it in mid channel. The cove on Vancouver Island, 0.5 mile WSW of Southey Island, affords temporary shelter during strong south or west winds. It is not recommended as an anchorage as the bottom is rocky and it is open to swells during onshore winds. The southern half of this cove is within the *Department of National Defence Administration Control and Benefit Area*.

47 **Ada Islands** together with numerous rocks and shoals lie between Ruth and Southey Islands on the SW, and Winchelsea Islands to the NE. A **port hand buoy** is SE of the shoals north of the group.

48 **Winchelsea Islands** *(49°18'N, 124°05'W)* are covered with grass and have a few stunted trees on them. A conspicuous white building, radar dome, and radio masts with red air obstruction lights are on the north island. **Grey Rock**, 0.2 mile east of Winchelsea Islands, is 0.6 m high. **Rudder Rock**, 0.2 mile SE of Grey Rock, is awash.

49 A *DND* dock, connected to shore by a ramp, is in the small bay on the south side of the north Winchelsea Island. It is protected by a **breakwater** that connects the north island with the small island south of it. A light is on the SW extremity of the north Winchelsea Island.

50 The south Winchelsea Island is owned by *The Land Conservancy*. A dock is open to the public, but access is limited to a single trail. A cottage on the island can be rented.

51 A **daybeacon**, on Grey Rock, has an **orange diamond-shaped daymark**.

51.1 *Rudder Rock* ***buoy*** *(5204.4)*, is an **unlit yellow cautionary buoy** close SSE of Rudder Rock.



52 A **submarine cable** is laid from the north Winchelsea Island to Blunden Point on Vancouver Island. A **submarine cable area** (power) extends from the north Winchelsea Island to a point on Vancouver Island 0.45 mile SW from the east extremity of Ruth Island.

53 Tidal differences for Winchelsea Islands (7935), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.



54 **Tidal streams** between Winchelsea and Ada Islands are weak and irregular.

55 **Nankivell Point** *(49°17'N, 124°08'W)* is a thickly wooded promontory and has a submarine pipeline (sewer outfall) that extends out in a NE direction. **Schooner Reef**, 0.3 mile NE of Nankivell Point, is a group of drying rocks.



56 *Schooner Reefs* **light** *(488.5)*, on the south side of the reef, is shown from a white cylindrical tower with a red band on top.



57 *Schooner Cove Breakwater* **light** *(488.3)*, on the north end of the rock **breakwater**, has a **port hand daymark** and is shown from a white mast.



58 A **submarine pipeline** (sewer outfall) is laid in a NE direction from the south entrance point of Schooner Cove.




59 **Schooner Cove**, on the south side of Nankivell Point, has a rock **breakwater** across its entrance. A dangerous underwater rock of 2 m or less lies 0.06 mile WSW of the breakwater light and is marked by a private **starboard hand buoy**. *Fairwinds Schooner Cove Resort and Marina* (250-468-5364) is a large full-service **marina** with guest moorage, fuel and onshore accommodations.

60 Between Nankivell Point and **Dorcas Point**, about 2.5 miles NW, the coast is rugged and cliffy in places. **Yeo Islands**, **Douglas Island**, **Gerald Island**, **Amelia Island** and several reefs and shoals lie within 1 mile offshore, local knowledge is advised to navigate safely.

61 Private **daybeacons** with orange and white striped masts are on the east extremity of Yeo Islands and on the east extremity of the island 0.4 mile south of Yeo Islands.

62 **Cottam Reef** extends 0.5 mile NNW from Dorcas Point. **Dorcas Rock** near its north extremity dries 0.3 m and is marked by **port hand buoy** *P27*.



63 **Nuttal Bay**, between Dorcas and Cottam Points, has a **submarine cable** along its east side and private **mooring buoys**.



64 A **submarine cable** (power) is laid between **Cottam Point** and **Mistaken Island**.



65 **Northwest Bay** is completely exposed to NW winds and affords no anchorage for large vessels. **Anchorage** for small craft can be obtained close to shore near the head.

66 A rock **breakwater**, 0.9 mile SE of Cottam Point on the east side of Northwest Bay, extends south from the shore toward a drying reef. A **daybeacon** with a **port hand daymark** is on the drying reef. **Port hand buoy** *P29* is close SSE of the drying reef and **starboard hand buoy** *P30* is NW of a rock awash.



67 *Beachcomber Marina* (250-468-7222) has no facilities for visiting vessels. The inner west shore of Northwest Bay is a booming ground with several **dolphins**.

68 Tidal differences for Northwest Bay (7938), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

69 **Craig Bay**, between **Madrona Point** and **Brant Point**, is filled with drying flats extending 0.6 mile offshore.

Craig Bay is a residential community with several resorts. *Rathtrevor Beach Provincial Park* has camping and picnic facilities.

Ballenas Channel

Charts 3456, 3459, 3512

70 **Ballenas Channel** *(49°19'N, 124°09'W)*, between Ballenas Islands and the islands between Nankivell and Dorcas Points, is deep and not less than 0.8 mile wide in the fairway.

71 **Military exercise area WG** encompasses the eastern half of Ballenas Channel. It is described at the beginning of this chapter and in *Notices to Mariners 1 to 46 Annual Edition*.

Chart 3512

72 **Ballenas Islands** *(49°21'N, 124°09'W)* are two in number. The north island is sparsely wooded. The south island is for the most part bare but its north end is heavily wooded. A white radar dome on the south island is conspicuous from eastward.

73 The narrow passage between the two Ballenas Islands is almost closed and only navigable by small craft at or near HW, local knowledge is advised. In the middle the channel opens out forming a sheltered cove on the north side of the south island, a sandy beach forms its south side. A large sign at the head of this cove reads "Do Not Anchor in this cove — submerged cables".

74 *Ballenas Islands* **light** *(490)*, on the N point of North Ballenas Island, is shown from a white tower.

75 A **submarine cable** (power) is laid between Ballenas Islands light and the head of Nuttal Bay. Another **submarine cable** (power) is laid on the east side of the islands from the lighthouse to the south island.

Ballenas Channel to Baynes Sound

76 The coast between Craig Bay *(49°19'N, 124°15'W)* and Baynes Sound, 20 miles NW, consists of a series of wooded bluffs of moderate height that terminate in points of sand and shingle. Mountain ranges about 6 km inland rise to considerable elevations and have conspicuous peaks. **Mount Arrowsmith** *(49°13'N, 124°36'W)*, the most conspicuous peak, rises to an elevation of 1 817 m.

77 **Parksville Bay** *(49°20'N, 124°19'W)* has a drying sand beach extending 0.4 mile from the HW line in places. Under ideal conditions, small craft can find **anchorage** but allowance must be made for afternoon on-shore wind. The town of **Parksville** surrounds the bay and is a summer resort and retirement community. It has a shopping centre, stores, accommodation, restaurants and a post office. Highway 19A and the *E&N Railway* passes close by.

Charts 3512, 3513

78 **French Creek** *(49°21'N, 124°22'W)*, 2 miles NW of Parksville, has a harbour in its entrance that is protected by rock **breakwaters**. The entrance channel is 49 m wide and the harbour is 183 m by 91 m, and both were dredged to a depth of 3 m (1965). The entrance channel is marked by **daybeacons**.

FRENCH CREEK (2005)



79 *French Creek* **light** *(491)* is shown from a mast near the outer end of the W **breakwater**.

80 A **submarine pipeline** extends 1.2 miles north from the inner end of the north **breakwater**.

81 *Harbour Authority of French Creek* (250-248-5051) has a **public wharf** and the only **breakwater** protected harbour between Northwest Bay and Deep Bay. Full services are provided at this facility, including fuel, haulout, waste oil disposal, launch ramp, marine supplies and restaurant. Commercial vessels have priority; docks in the SW part of the harbour are reserved. Moorage for transient vessels may be available.

82 A privately-owned **ferry** travels between French Creek and False Bay on Lasqueti Island and operates from a **wharf** in the SE part of the harbour. This service provides transportation for passengers and light freight and is dependent on favourable weather and tidal conditions. Fuel is available from a dock adjacent to the seafood plant on the east side. The *Canadian Coast Guard* has a year-round rescue unit based at French Creek.

83 It was reported that fishers foul their gear on a **wrecked barge** off the 50 m contour north of French Creek.

Chart 3513

84 **Qualicum Beach** *(49°21'N, 124°26'W)* is a town and summer resort with stores, post office, hotels and recreation facilities. Highway 19A is close by and *E&N Railway* passes through the town. An asphalt airstrip is 3.2 km south of Qualicum Beach. There are no marine facilities.

84.1 A **submarine cable** (fibre optic) extends from Qualicum Beach through Lambert Channel ending between Cape Lazo and Balmoral Beach. For detailed information see https://connectedcoast.ca/.

85 **Submarine cables** cross the Strait of Georgia from Qualicum Beach to False Bay, on Lasqueti Island, and to Burrard Inlet.

86 Many private **mooring buoys** lie close offshore between Qualicum Beach and Bowser.

Chart 3527

87 **Qualicum Bay** *(49°25'N, 124°38'W)* lies between the entrances of **Qualicum River** and **Nile Creek**. A launching ramp is at the Indian Reserve, SE of the bay.

88 A **submarine pipeline** (water intake) extends 0.8 mile offshore, 1 mile south of Qualicum Bay at **Dunsmuir**.

89 **Submarine cables** cross the Strait of Georgia from Nile Creek to Texada Island; the cable area is about 1.5 miles wide. A flashing yellow light maintained by *BC Hydro*, close north of Nile Creek, marks the landing site. Conspicuous hydroelectric **towers** are at the mouth of Nile Creek.

90 **Bowser**, 2.5 miles NW of Qualicum Bay, has a post office. A prominent microwave **tower** with red air obstruction lights is on a hill west of Bowser. A large marine farm, 0.75 mile off Bowser, has its boundary marked with private yellow lighted spar buoys.

Baynes Sound

91 **Baynes Sound** *(49°32'N, 124°50'W)* separates **Denman Island** from Vancouver Island. It is entered from the south between Chrome Island and Mapleguard Point, and from the north by way of Comox Bar. Generally the sound is about 1 mile wide broadening to about 2 miles at its north end. The fairway is reduced in several places by extensive drying sand and mud flats. Its narrowest part between Mapleguard and Repulse Points is 0.3 mile wide. The *E&N Railway* and a road run along the west shore of the sound.

92 Baynes Sound is one of the largest oyster producing regions on the British Columbia coast. Facilities consist of long-line oyster culture rafts and some are marked by **buoys**. Tidelands are leased for commercial production of oysters and harvesting oysters in these areas is a criminal offence.

93 Tidal differences in Baynes Sound, referenced on Point Atkinson, for Denman Island (7955) and Comox (7965) are in *Canadian Tide and Current Tables, Volume 5*.

94 **Tidal streams** in Baynes Sound attain 2 or 3 kn in the south entrance, but within the sound the rate is considerably less decreasing as the channel widens. When tide flows against an opposing wind a nasty chop can be raised that can be uncomfortable for small craft. For further details see *Current Atlas, Juan de Fuca Strait to Strait of Georgia*.

95 Regular **ferry** service crosses Baynes Sound connecting Denman Island to Buckley Bay on Vancouver Island.

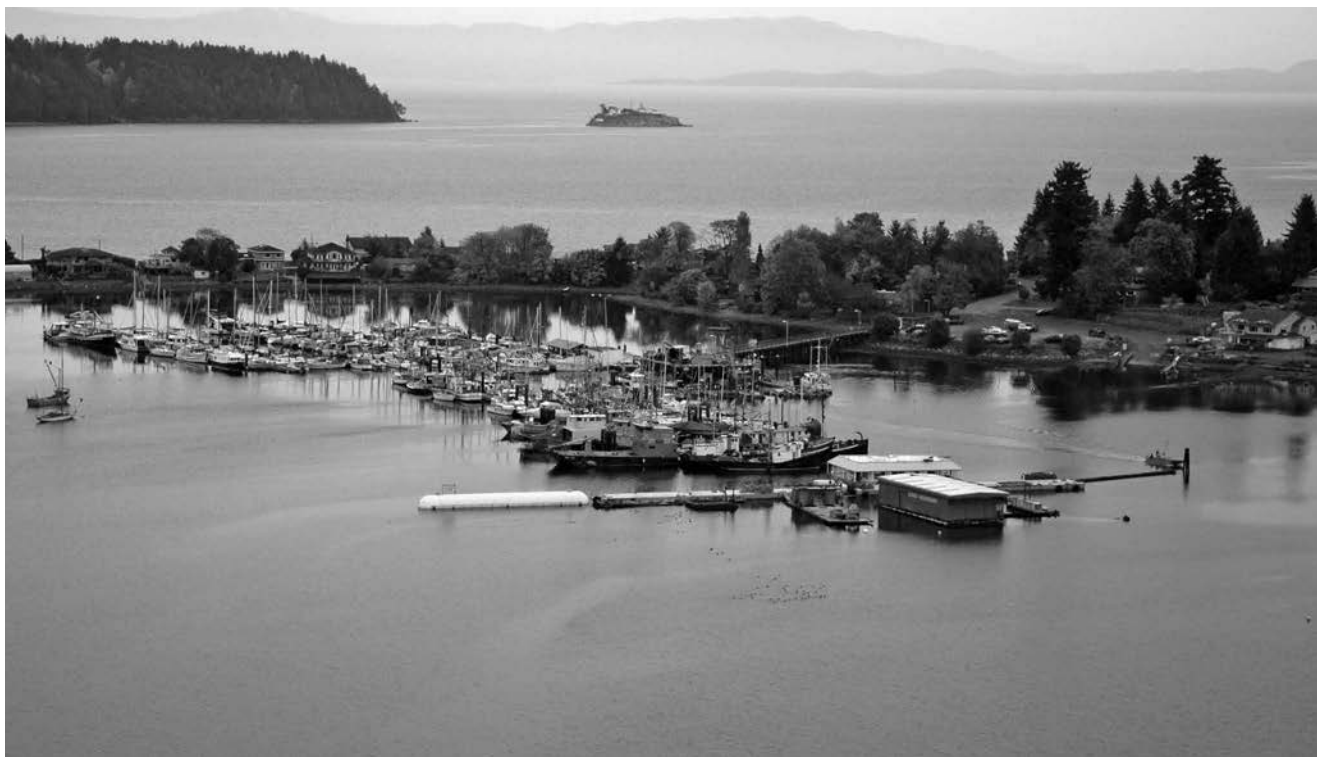
96 **Chrome Island** *(49°28'N, 124°41'W)*, known locally as **Yellow Island**, is bare and yellow. White buildings with red roofs make a conspicuous landmark. **Boyle Point**, the south extremity of Denman Island, is steep sided and flanked on its east side by massive yellow sandstone pillars streaked with guano.

96.1 A **wreck** with 34 m of water over it lies 0.6 mile SSE of Chrome Island.

97 **Overhead cables**, vertical clearance 15 m, cross between Chrome Island and Boyle Point. They are marked by red and white air obstruction balls.

98 *Chrome (Yellow) Island Range* **lights** *(495, 496)*, in line bearing 098°, lead through the channel south of Repulse Point. The front light shown from a cylindrical tower, visible in line of the range only, is fitted with a **red daymark with a white vertical stripe**. The rear light is

DEEP BAY (2005)



shown from a white cylindrical tower on the east end of the island.

99 **Mapleguard Point** is low, few maple trees remain and there are houses all along the point. **Exercise caution when rounding Mapleguard Point because of shoal water extending 0.5 mile east and drying sand flats extending 0.3 mile north from it.**

100 **Repulse Point** is a cliff of red earth. A drying reef extends about 0.3 mile south from the point.

101 **Starboard hand buoy** *P40* marks the extremity of the reef extending from Repulse Point. **Port hand buoy** *P41* marks the west extremity of the drying sand flats extending from Mapleguard Point.

102 *Maple Spit* ***light buoy*** *P39 (497.5)*, marking the north extremity of the drying flats extending from Mapleguard Point, is a **port hand buoy**.

103 *Repulse Point* ***light buoy*** *P42 (498)*, 0.7 mile WSW of Repulse Point, is a **starboard hand buoy**.

104 *Deep Bay* **light** *(497)*, on the SW extremity of Mapleguard Point, is shown from a white cylindrical tower with a green band at the top. A light is on the NW end of a floating **breakwater** that protects the public docks.

105 **Deep Bay** *(49°28'N, 124°44'W)* has a resort with boat launch, general store, café and campground, and public docks near its NE end. These are managed by the *Harbour Authority of Deep Bay* (250-757-9331). **Public wharves**, 18 to 146 m long with power and fresh water, have a common connection to a pier and are protected by a floating **breakwater**. A sewage pumpout facility is located on the main dock. A 3 tonne crane, public telephone, garbage and used oil disposal facilities are on the pier. Washroom and shower facilities are located near the office at the pier entrance and near the parking lot. Tidal grids lie on both sides of the pier. Space for transient vessels may be limited. Private docks and **mooring buoys** are also in the bay.

106 **Anchorage** can be obtained in Deep Bay in a depth of about 30 m, mud bottom. Be aware of tucking in too close and ensure adequate scope.

107 The **wreck** of a 14 m fishing vessel, sunk in 2003, is 0.1 mile WNW of the public docks. It is reported to lie in 18 m of water.

108 **Mud Bay** is encumbered with mud flats and boulders, and is fronted by steep-to drying reefs. A rock awash is in the centre of the south entrance.

108.1 A private lighted platform, 7 m in diameter, is located in the middle of Baynes Sound across from Mud Bay. A **submarine cable** runs from Deep Bay to the platform.

109 **Ship Peninsula** *(49°30'N, 124°48'W)* is fringed with reefs extending 0.15 mile from shore. A housing development

FANNY BAY (2005)



on its east side and dark trees make the peninsula conspicuous. Land west of it is low and partially cleared of trees. **Base Flat**, 1.5 miles NW of Ship Peninsula, is encircled by a steep-to drying mud flat. Its outer extremity is marked by **port hand buoy** *P43*.

110 **Fanny Bay** is bounded on its south side by a drying mud flat and on its NW side by the drying flat off Base Flat. When entering from the south, give **Ship Point** a berth of not less than 0.3 mile. **Marine farm** facilities and a booming ground are in the bay. The settlement of Fanny Bay has a store, hotel and restaurant, the post office is 1.6 km north.

111 The *Fanny Bay Harbour Authority* **public wharf** (250-335-9171) has a depth of 4.6 m at its head. A dock is attached to the NW end of the public wharf. A conspicuous white **tower**, close SW of the public wharf, is 39 m high. This facility is used primarily for commercial purposes.

112 *Fanny Bay Breakwater* **light** *(498.5)* is on a floating **breakwater** protecting the public wharf and is shown from a mast.

113 **Anchorage** in Fanny Bay can be obtained in 13 to 15 m, mud bottom, with the extremity of Ship Point in line with the SW extremity of Denman Island bearing 117° and Denman Island light structure bearing 345°.

114 **Submarine cables** cross Baynes Sound between Base Flat and Denman Island settlement.

115 A cable **ferry** crosses between **Buckley Bay** and Denman Island village. The cable is attached to concrete ramps on each side. A green **light** is shown from each side when the ferry is docked and the cable lies on the bottom. A red **light** is shown on either side when the ferry is underway and the cable lies near the surface. No vessel should transit when the red light is on and the ferry is crossing.

116 *Buckley Bay Ferry Landing* **light** *(496.2)* is shown from a **dolphin**.

117 **Denman Island village**, on the east side of Baynes Sound opposite Buckley Bay, is the site of a cable ferry landing providing regular service to Buckley Bay. A post office and general store are within walking distance. There is road connection to the ferry landing at Gravelly Bay, then by **ferry** to Hornby Island.

118 Tidal differences for Denman Island (7955), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

119 *Denman Island Ferry Landing* **light** *(496.1)* is shown from a **dolphin**.

120 *Denman Island* **light** *(499)*, on a reef 0.3 mile NW of the ferry landing, is shown from a white tower with a red band at the top.

121 **Denman Point**, 1.5 miles NW of the ferry landing, is low. Good **anchorage** can be obtained 0.35 mile NNW from Denman Point and about 0.25 mile offshore. The anchorage may be restricted by **marine farm** facilities. **Starboard hand buoy** *P44* marks a drying ledge off Denman Point.

122 **Union Bay** *(49°35'N, 124°53'W)* was a bunkering and shipping port for coal. Facilities and mines closed in 1959. **Union Bay settlement** is connected to highway 19A and *E&N Railway*; it has a hotel, post office and a store. A rockfill **breakwater** protects a launching ramp. **Anchorage** can be obtained close offshore in the vicinity of Union Bay.

122.1 A **wreck,** with a depth of 25 m, lies 0.7 mile SE of Union Point. Another **wreck**, with a depth of 9.1 m, lies 0.1 mile east of Union Bay.

123 **Union Point**, north of Union Bay, is fronted by an extensive drying flat, marked at its outer end by **port hand buoy** *P45*.

124 **Henry Bay** *(49°36'N, 124°50'W)* is the site of commercial oyster beds. A sand and mud drying spit extends 2.5 miles NNW from **Longbeak Point**, the north extremity of Denman Island, and terminates at **White Spit**. **Sandy Island**, known locally as **Tree Island**, and **Seal Islets** lie on the above-mentioned drying spit and comprise *Sandy Island Marine Provincial Park*. **Palliser Rock** lies close-off its east edge.

125 Safe and convenient **anchorage** can be obtained in Henry Bay in about 16 m. Good temporary anchorage for small craft is available to the west of Sandy Island where the sand spit drops off sharply, or south of the island with good protection from the NW. The sand spit between Sandy Island and Longbeak Point protects this anchorage from SE seas but not from SE winds.

Lambert Channel and Hornby Island

126 **Lambert Channel** *(49°30'N, 124°43'W)* separates Hornby Island from the SE side of Denman Island. The fairway through Lambert Channel is about 0.5 mile wide but reefs and shoal spits lie close-off the Hornby Island shore. The Denman Island shore is free of dangers beyond a distance of 0.15 mile except near the north end, in the vicinity of *Fillongley Provincial Park*, where a drying mud flat extends nearly 0.5 mile offshore. Its outer edge is steep-to and has several large drying boulders on it. Houses lie along the Denman Island shore and along the Hornby Island shore north of Hornby Island settlement. A scheduled **ferry** crosses Lambert Channel connecting Gravelly Bay on Denman Island to Hornby Island.

127 Tidal differences for Hornby Island (7953), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

128 **Submarine cables** cross Lambert Channel from 0.4 mile NW of **Whalebone Point** and from **Phipps Point**.

129 **Eagle Rock** *(49°29'N, 124°41'W)* is 15 m high and connected to the Denman Island shore by a drying ledge.

130 **Gravelly Bay** is the site of Denman Island East Ferry Landing. Regular **ferry** service for passengers and vehicles operates to Hornby Island. A launching ramp is located south of the ferry landing at *Bill Mee Park*.

131 *Denman Island East Ferry Landing* **light** *(496.3)* is shown from a **dolphin**.

132 **Hornby Island** *(49°31'N, 124°40'W)* rises precipitously in terraces on its west side to the summit of **Mount Geoffrey** from which it slopes more gently east. The island is easily identifiable from all angles of approach. Several resorts are on the island.

FORD COVE (2006)



133 **Norman Point** is the south extremity of Hornby Island, **Toby Island** and **Heron Rocks** lie close SE of it. The channel between **Norris Rocks** and Heron Rocks is not recommended.

134 **Ford Cove** *(49°30'N, 124°41'W)* can be entered north or south of **Maude Reef**. A rock **breakwater** extends NW from the south entrance point of the cove and a floating **breakwater** connected to it protects the NW side of the berths. **Marine farm** facilities line the north side of Maude Reef.

135 *Ford Cove Floating Breakwater North* **light** *(494.5)* is shown from a short white cylindrical mast and has a **red and white triangular daymark**.

136 **Port hand buoy** *P37* is close to the SE extremity of Maude Reef. A **daybeacon** on the NW extremity of Maude Reef has a **starboard hand daymark**.

137 *Ford Cove Harbour Authority* (250-335-2141) **Public Wharf**, with a common connection to shore, is in the SE corner of Ford Cove. Guest moorage, tidal grid, power, waste oil and garbage disposal, and telephone are available. *Ford's Cove Marina Ltd.* (250-335-2169) has some facilities and may offer transient moorage.

138 **Savoie Rocks** have three heads with less than 2 m over them. **Shingle Spit**, with a clump of trees near its extremity, projects as a drying spit for about 0.15 mile into the channel.

139 **Hornby Island settlement** and ferry landing near Shingle Spit has stores, a motel with a small float, a campsite and launching ramp. The ferry landing is protected by a rockfill **breakwater**. Regular **ferry** service for passengers and vehicles operates to Gravelly Bay on Denman Island.

140 *Hornby Island Ferry Landing* **light** *(496.4)* is shown from a **dolphin**.

141 **Anchorage** for small craft can be obtained in the lee of Shingle Spit, taking care to anchor well clear of the **submarine cables**. Predominating winds during summer months are from NW, which blow strongly at times through Lambert Channel. Larger vessels can obtain anchorage with good holding ground north of Shingle Spit in about 26 m.

142 **Tribune Bay** *(49°31'N, 124°38'W)* is low and shelving with drying ledges on its west shore and has bold cliffs on its NE shore. It is entered between **Nash Bank**, marked at its outer end by **port hand buoy** *P35*, and **St. John Point**. The post office is at the Hornby Island Co-op store, within walking distance of Tribune Bay.

143 **Anchorage** can be obtained in Tribune Bay in 15 m, mud and sand bottom. It is exposed to ESE and SE winds but sheltered from other winds.

144 **Flora Islet**, close east of St. John Point, is a low, grassy islet surrounded by drying rock ledges extending 0.4 mile SE from it.

145 *Flora Islet* **light** *(494)*, on the north side of the islet, is shown from a grey skeleton tower.

146 **Caution should be exercised when rounding Flora Islet, as rocks on the ledge do not always break. Chrome Island lighthouse bearing more than 244° and open south of Norris Rocks leads south of both Nash Bank and this ledge.**

147 **Collishaw Point** *(49°33'N, 124°41'W)*, known locally as **Boulder Point**, is the north extremity of Hornby Island. Drying rock ledges studded with boulders extend 0.8 mile NW from the point.

148 **Komas Bluff** *(49°35'N, 124°48'W)* on the NE side of Denman Island is formed of sandstone and rises to a height of about 150 m. Comox Bar extends NNW from the north end of Denman Island and is the north entrance to Baynes Sound.

Comox Harbour and Approach

149 **Caution. — When approaching Comox Bar from the north, clear the shallow spit extending SE from Cape Lazo by hauling in for the leading line when Willemar Bluff bears 250° or more. When departing Comox note the range is obscured by houses and trees until about 0.1 mile from the leading line.**

150 **Comox Bar** extends NNW from White Spit to the beach fronting **Willemar Bluff** *(49°40'N, 124°54'W)*. The passage across the bar is marked by **range lights**.

151 **Caution. — Survey operations in 2007 found a number of large boulders, the least depth being 1.4 m just south of the range line, about 250 m east of buoy *P50*. Vessels have reported grounding while crossing the shallowest part of the bar. Tide, sea state, and vessel draught must be carefully considered before a decision is made to cross the bar.**

152 *Comox Bar Range* **lights** *(501, 502)*, on the west shore of Baynes Sound about 2 miles west of Sandy Island, when in line bearing 222° indicate the track across Comox Bar. The lights are shown from square skeleton towers and have **white daymarks with a red vertical stripe**.

153 *Comox Bar* ***light and bell buoy*** *P54 (500)*, at the east edge of Comox Bar and close north of the leading line, is a **starboard hand buoy**.

154 **Starboard hand buoys** *P50* and *P52* are on Comox Bar SW of the light buoy.

155 **Gartley Point** *(49°39'N, 124°56'W)*, the south entrance point to Comox Harbour, is low and swampy. **Port hand buoy** *P47* marks the east edge of the drying flats around the point.

156 **Royston**, about 1 mile west of Gartley Point on the south side of Comox Harbour, is a settlement connected to

COMOX HARBOUR (2007)



highway 19A and *E&N Railway*. It has a store, hotel, launching ramp and post office.

157 A **breakwater** of derelict ships, close west of Royston at the outer end of the Courtenay River mud flats, provides protection for a booming ground.

158 **Goose Spit**, on the north side of the entrance to Comox Harbour, is a narrow tongue of land extending SW and west from Willemar Bluff. It is mainly grassy, with some sandy hillocks and clumps of trees. A *Canadian Forces Base (HMCS Quadra)* is on the middle section of the spit. A *Department of National Defence (DND)* **wharf** is on the north side of Goose Spit. An Indian Reserve is on the north side and a recreation area is on the narrow section of land at the east end of the spit. A drying sand flat extends south from the south side of Goose Spit for about 0.25 mile in places, the west side of this flat is steep-to. A booming ground with **mooring buoys** is north of the spit.

159 *Goose Spit* **light** *(503)* is on the west extremity of the spit and is shown from a white cylindrical tower with a red band at the top.

160 A **submarine pipeline** (sewer outfall) crosses the drying flats north of Goose Spit and extends 0.5 mile SE of the spit.

161 **Comox Harbour**, entered between Gartley Point and Goose Spit, is a well-protected **anchorage** available to all but very large vessels. Depths range from 20 to 26 m and drying mud flats extend a considerable distance from its shores. Small craft can obtain anchorage off Royston. It is partially protected from southeasterlies by the mud flats of the **Trent River** off Gartley Point. The approach to Comox Harbour through Baynes Sound is deep.

162 A **local magnetic disturbance**, 2° in excess of normal variation, has been reported but it does not appear to extend beyond the confines of the harbour.

163 Tidal differences for Comox (7965), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

164 **Tidal streams** in Comox Harbour are complicated by eddies due to fresh water discharged by the Courtenay River, which causes surface currents to flow in directions different from those of the salt water underneath. In addition these latter are complicated by configuration of the mud banks.

165 **Comox**, on the north side of the harbour, is a town and the centre of an agricultural and residential district. It is the site of a *Canadian Forces Base* (airfield). Facilities include accommodation, stores, marinas, launching ramps, a hospital and post office.

166 Provisions, marine supplies, restaurants, accommodation, diesel fuel and gasoline are obtainable. The harbour has several launching ramps for small craft. It also has a marine railway, small craft can obtain hull and engine repairs.

167 Highway services are available. Scheduled air services are available at the *Comox Valley Airport*. **Ferry** service to Powell River operates from Little River, 5 miles north of Comox.

168 Meteorological information for *Comox Valley Airport* is in the Appendices.

169 Rockfill **breakwaters**, protecting boat basins, extend ESE and WNW from the outer end of the causeway that leads to the public wharf. A public recreation and fishing pier is on the western **breakwater**. A *DND* wharf extends south from the outer end of the causeway leading to the **public wharf**. It is used for delivering fuel to *CFB Comox*.

170 *Comox Harbour Breakwater* **light** *(504)* is 0.6 mile NNW of Goose Spit light on the seaward end of the west **breakwater** and is shown from a mast.

171 *Comox Harbour East Breakwater* **light** *(504.1)* is on the outer end of the east **breakwater**, 0.5 mile north of Goose Spit light and is shown from a mast. A private light is on the east side of the entrance to the east boat basin.

172 The Comox visitor docks are entered east of the eastern **breakwater**. Pumpout is available here.

173 The *Comox Fisherman's Wharf*, operated by the *Comox Valley Harbour Authority* (250-339-6041), is a large facility used primarily by commercial fishing vessels. It consists of a gangway leading to two lines of pontoon docks. Guest moorage is available; rafting allowed. *Comox Municipal Marina* (250-339-3141) has a boat launch and two tidal grids; contact *Comox Town Hall* for details (250-339-2202). *Gas N Go Marina* (250-339-4664) has gas, diesel and limited guest moorage.

174 A rockfill **breakwater** protects the *Comox Bay Marina* (250-339-2930). Transient and permanent moorage available; reservations recommended. Water, power, garbage disposal, shower and laundry are also available.

174.1 A submerged **wreck** lies to the SW of the *Comox Bay Marina*, approximately 0.5 mile NNW from the western tip of the Goose Spit.

175 **Courtenay River** has an estuary filled with drying mud flats. The channel across these drying flats is marked by **daybeacons** and **ranges** and was dredged (1982) to a width of 35 m and depth that dries 1 m. The river is fed partly by tributaries leading from glaciers and snowfields on **Forbidden Plateau**. Even in late summer, when most other island rivers are almost dry, there is usually 1.8 m of water right up to the Courtenay Bridge south of *Lewis Park*. The mouth of the Courtenay River is a seaplane landing area.

176 A **speed limit** of 8 km/h (4 kn) is prescribed by the *Vessel Operation Restriction Regulations* for Courtenay River.

177 Water levels in the estuary are affected by tidal and weather conditions along with fresh water runoff that is controlled by a *BC Hydro* dam upstream. It is essential that mariners check local water level conditions before attempting to navigate the river.

178 **Caution. — Due to changing conditions in the estuary, aids to navigation are moved to mark the best channel. Local knowledge and familiarity with local conditions are advised before attempting to navigate the river. Numerous deadheads can be encountered in the channel.**

179 *Courtenay River Beacon #1* **light** *(504.3)*, on mud flats in the river entrance, is shown from a **dolphin** with **port hand daymarks**.

180 *Courtenay River Range* **lights** *(505, 506)*, on the north bank of the river, form a leading line across the mud flats. The front light is shown from a **pile** and the rear light from a **dolphin**. Both lights have **red daymarks with white vertical stripes**.

181 **Range beacons**, each with a **diamond-shaped daymark**, form leading lines through the channel from Courtenay River range lights into the Courtenay River.

182 A highway **bridge** with a lift span, operated by the *Ministry of Transportation and Infrastructure*, crosses Courtenay River. The bridge has a vertical clearance of 2.1 m and maximum width of the channel is 13.7 m. To request an opening of the bridge telephone 250-336-8897 at least 24 hours in advance. A dock, on the west shore downstream of the bridge, can be used for temporary mooring while waiting for the bridge to open.

183 **Overhead cables** (power), upstream from the bridge, have a vertical clearance of 18 m. **Submarine pipelines** and a fixed span highway **bridge**, upstream from the overhead cables, crosses the Courtenay River.

184 **Courtenay** is the terminus of the *E&N Railway* from Victoria. It has a post office, banks, comprehensive shopping facilities, doctors, dentists and pharmacies. Bus service operates to Nanaimo and Campbell River. An aircraft landing strip with an asphalt runway 549 m long is operated by the *Courtenay Airpark Association*.

185 Marine railways, which can handle vessels up to 21 m, are located in Courtenay River. *Courtenay Slough Marina* is a **public wharf** located in the basin between the overhead cables and the fixed span highway bridge; the basin is known locally as **Courtenay Slough**. There are several small wharves with berthing lengths of 37 m and depths alongside up to 1.8 m at river LW. Services include power, water, garbage disposal, washrooms and moorage. Contact the *Comox Valley Harbour Authority* (250-339-6041) for more information on how to navigate the river.

Lasqueti Island

Chart 3512

186 **Lasqueti Island** *(49°29'N, 124°16'W)* is about 9 miles long and 4 miles wide. The islands and islets lying around it provide shelter for small craft proceeding to and from Desolation Sound.

187 **Young Point** *(49°26'N, 124°10'W)* is the SE extremity of Lasqueti Island. **Trematon Mountain** near the middle of Lasqueti Island has a conspicuous turret shaped summit.

188 **Sangster Island** is quite heavily forested and has reefs extending from its NW and SE extremities. **Elephant Eye Point** consists of eroded cliffs and forms the SE side of Sangster Island.

188.1 A **rock** with 0.4 m over it is close NNW of Sangster Island.

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189 *Sangster Island* **light** *(490.3)*, on the SE tip of the island, is shown from a white cylindrical tower with a red band on top.

190 A **daybeacon** with a **starboard hand daymark** is near the centre of **Seal Reef**.

191 **Boat Cove** has a number of drying and sunken rocks in its SE approach and is exposed to the south and SE. It offers good protection from west winds. **Anchorage** for small craft can be obtained at the head of **Old House Bay** and in **Richardson Cove**.

192 **Jenkins Island** *(49°27'N, 124°18'W)* is separated from Lasqueti Island by a narrow, deep passage. Least depth in the fairway is 29 m. **Sea Egg Rocks** lie 0.3 mile west of Jenkins Island, the highest has an elevation of 8 m. The Lasqueti Island shore between Richardson and Jenkins Coves is an *Ecological Reserve*.

Charts 3512, 3513

193 **Finnerty Islands** *(49°30'N, 124°24'W)* are separated from the west end of Lasqueti Island by a shallow passage suitable for small craft, least depth 4.6 m. Care must be taken to avoid drying reefs on the west side of the passage and drying rocks on the east side. With strong north winds steep seas break in this passage.

194 **Sisters Islets** *(49°29'N, 124°26'W)* consist of two bare, rocky islets the highest of which has an elevation of 2.7 m.

195 *Sisters Islets* **light** *(493)*, on the east islet, is shown from a white cylindrical tower. White buildings are nearby.

196 **Stevens Passage** separates Sisters Islets from Finnerty Islands. It is a deep passage providing Finnerty Islands are given a berth of at least 0.3 mile.

Chart 3533

197 **False Bay** *(49°30'N, 124°22'W)*, entered between **Olsen Island** and **Heath Islet**, is open to the Qualicum, a strong west wind that blows in from the Pacific Ocean and funnels through the Qualicum Beach area. **Jeffrey Rock**, 0.2 mile south of Olsen Island, has 1.7 m over it. A rock, with 1.6 m over it, lies midway between Olsen Island and **Higgins Island**. False Bay is a seaplane landing area known as Lasqueti Island.

198 **Heath Islet daybeacon** has a **starboard hand daymark**. A private **daybeacon** is on a drying rock 0.2 mile east of Higgins Island.

199 *False Bay* **light** *(492)* is on **Prowse Point** at the south side of the entrance to the bay. It is shown from a white cylindrical tower.

200 Tidal differences for False Bay (7982), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

201 A **submarine cable** commencing from close south of the public wharf passes along the centre of False Bay. A **cable** crosses the entrance channel to the lagoon SE of Prowse Point, and another **cable** crosses the lagoon.

202 The lagoon entered east of Prowse Point is completely protected and often used by wintering fish boats. A reef that dries 3.7 m lies in the middle of the entrance and the entrance channel dries at about half tide. It is best to use this channel only at HW as there is a 3 to 4 kn current when the tide is running. The deepest part of the channel is on its north side but care must be taken to avoid rock ledges projecting from shore. A rock that dries 3.6 m lies about midway through the channel. **Marine farm** facilities are located at the head of the lagoon.

203 **Anchorage** sheltered from most winds can be obtained in the north part of False Bay NE of Higgins Island in a depth of about 13 m. Small craft can find anchorage with good holding ground in shallower water closer to shore.

204 **Lasqueti**, near the SE end of False Bay, has a post office, restaurant, store and accommodation. A privately-owned passenger **ferry** travels between False Bay and French Creek on Vancouver Island and is dependent on favourable weather and tidal conditions.

205 The **public wharf** in Lasqueti has a depth of 5.4 m alongside. A float 37 m long attached to its south side has a seaplane dock at its outer end. A dock attached to the north side of the public wharf is 12 m long. A 3 tonne crane, power and fresh water are available on the wharf. At times, there is a considerable sea at these docks making berths uncomfortable particularly during evening westerly winds.

Sabine Channel

Chart 3512

206 **Sabine Channel** *(49°32'N, 124°16'W)* separates Lasqueti Island and islands to the east from Texada Island. The fairway through Sabine Channel is deeper than 200 m. **Rabbit Island**, **Sheer Island** and **Circle Island** lie on the south side at the east end of the fairway through Sabine Channel, drying reefs lie 0.2 mile north of Sheer Island.

207 **Tidal streams** in Sabine Channel seldom exceed 2 kn but rough seas can be encountered when wind opposes tide.

208 **Upwood Point** *(49°30'N, 124°08'W)* is rugged and precipitous with stunted pines between bare rock crevices, the land behind is more thickly wooded. **Mount Dick**, 1.6 miles NW of Upwood Point, is a very well defined hill. **Mount Shepherd**, 3.5 miles NW of Upwood Point, is the highest summit on Texada Island.

209 **South cardinal buoy** *QT*, 0.2 mile south of Upwood Point, marks a rock that dries 4.6 m.

210 *Upwood Point* **light** *(465)*, on the southeastern extreme of Texada Island, is shown from a white cylindrical tower with a red band at the top.

211 *Texada Island* **light** *(465.5)*, on **Partington Point**, is shown from a white cylindrical tower with a red band at the top.

212 **Cook Bay**, 1.6 miles NW of Partington Point, is too deep for anchorage. Two islets lie off its west entrance and a drying rock lies off the head of the bay.

213 **Mount Davies** *(49°36'N, 124°19'W)* has conspicuous hydroelectric towers running from the shore up its west face.

214 **Submarine cables** cross the Strait of Georgia, from the vicinity of Mount Davies to Qualicum Bay, on Vancouver Island. The cable area is approximately 1.5 miles wide. A flashing yellow light, maintained by *BC Hydro*, marks the landing site of the submarine cables.

215 *Squitty Bay Provincial Park* encompasses the area around **Squitty Bay** *(49°27'N, 124°10'W)*, a small indentation on the east end of Lasqueti Island. The approach to the public wharf is narrow with pinnacle rocks on the north side and drying ledges on the south side. The **public wharf** is 40 m long with 2.2 m alongside. There are picnic tables and pit toilets, but no camping.

216 **Bull Passage**, along the NE shore of Lasqueti Island, is separated from Sabine Channel by **Bull Island**, **Jedediah Island**, **Paul Island** and **Jervis Island**. It is often used by tugs towing logbooms and affords good shelter in all weather; local knowledge is advised. Drying rocks lie close offshore in several locations. A drying rock lies off **Rouse Bay** in the south approach to Bull Passage.

217 A **submarine cable** is laid from Rouse Bay to Thormanby Islands.

218 **Boho Island** lies on the west side of Bull Passage. Small craft can find good **anchorage** south of Boho Island in **Boho Bay** or west of the island in **Skerry Bay**. A drying rock lies in the middle of the north entrance to Skerry Bay. **Marine farm** facilities are in the north part of Skerry Bay and along the NW shore of the north entrance to the bay.

219 **Little Bull Passage** separates the steep cliffs on the SW side of Jedediah Island from Bull Island. It has a least depth of 0.5 m. A drying rock lies at the west end of the passage, close to Jedediah Island. Dangerous pinnacle rocks resulting from a rockslide on the Bull Island shore lie

about halfway through the passage. *Jedediah Island Marine Provincial Park* has few **anchorages**. Chains for stern ties have been installed along the north shore in the little notch opposite the south end of Paul Island, known locally as Deep Bay.

220 **West Point** *(49°31'N, 124°17'W)* is sloping, partially bare of trees and prominent from most directions.

221 **Tucker Bay** is entered between West Point and some easily identified wooded islets off the NW side of Jervis Island. **Avery Reef** lies in the middle of Tucker Bay. **Larson Islet**, close-off **Wells Point**, is 9 m high. **Tuck Rock**, midway between Wells Point and Larson Islet, is awash.

222 **Anchorage** in Tucker Bay is fair in a depth of about 30 m with the NW islet on the east side of the entrance bearing 048° and West Point bearing 313°. With a strong NW wind and a NW going tidal stream, this anchorage though safe would be uncomfortable. Small craft can anchor south of Larson Islet in 9 to 11 m where they will be almost completely sheltered. When approaching this small craft anchorage, pass within a distance of 90 m of the west end of Larson Islet.

223 **Marine farm** facilities are SE and west of West Point.

224 **Scottie Bay**, south of **Lindbergh Island**, is protected from virtually all winds and sea. Enter close to the Lasqueti Island shore to avoid the reef extending south from Lindbergh Island. **Anchorage** for a small number of small craft is reported to be good. The wharf and slipway are private.

225 **Fegen Islets** *(49°32'N, 124°23'W)* are off the NW end of Lasqueti Island.

226 *Fegen Islets* **light** *(466)*, on the W entrance to Sabine Channel, is shown from a white cylindrical tower.

227 **Spring Bay**, east of Fegen Islets, offers good **anchorage** in SE winds but Fegen Islets give only minimal protection from NW winds and sea.

Texada Island — West Coast

Chart 3513

228 **Davie Bay** *(49°36'N, 124°23'W)* is exposed and suitable only for small craft. Two islets lie off its entrance and a rock awash lies NW of the east islet.

229 **Mouat Bay** has **Mouat Islands** lying in its entrance and is fronted by a boulder foreshore. A log dump and **breakwater** lie close south of **Harwood Point**, another log dump and **breakwater** are 1 mile SE. **Dick Island** is connected to Harwood Point by a drying boulder bar.

230 **Gillies Bay** can easily be identified by houses around its shores when approaching from the south. The community has a store, post office, library, *Royal Canadian Mounted Police (RCMP)* office, medical clinic and resident doctor. There is no wharf or jetty in the bay. An asphalt airstrip NW of the bay is 915 m long. A red and white radio mast, 63 m high, is on the north entrance point of Gillies Bay.

231 **Anchorage** can be obtained 0.2 mile offshore in Gillies Bay in a depth of about 20 m but it is quite exposed to most winds.

232 **Beale Cove**, 3 miles NW of Gillies Bay, has a **wharf** and conspicuous orange conveyor belonging to *Texada Quarrying Ltd*. Inland from the wharf are conspicuous open pit mines, a **tower**, storage tanks and some buildings. The wharf is 275 m long with a depth of 13 m alongside. A private flashing amber light is shown from the wharf. **Welcome Bay** is close NW of Beale Cove.

233 Tidal differences for Welcome Bay (7990), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

234 **Surprise Mountain** rises steeply from shore between Welcome Bay and **Davis Bay**.

235 **Favada Point** *(49°44'N, 124°38'W)* is moderately steep-to and has a conspicuous house on it. **Crescent Bay** and **Limekiln Bay**, north of Favada Point, are separated by **Marshall Point** and have extensive shallow beaches. A conspicuous house is reported to be at the south end of Crescent Bay.

Cape Lazo to Cape Mudge

236 From Cape Lazo *(49°42'N, 124°52'W)* to the south entrance to Discovery Passage, 20 miles NW, the shore is fronted by beaches of stones and boulders backed by ranges of thickly wooded hills. Mountain ranges 10 km inland rise to considerable elevations. **Constitution Hill** *(49°47'N, 125°11'W)* makes a good radar target.

237 **Cape Lazo** *(49°42'N, 124°52'W)*, known locally as **Point Holmes**, is a prominent headland with a flat summit, its seaward sides are faced with yellow clay. From the SE, this headland appears to be an island and it is not until north of Hornby Island that it can be seen to be part of Vancouver Island. Drying rock ledges surround the cape and **Kye Bay**, on its north side, dries completely.

238 *Comox Aeronautical Beacon* **light** *(508)* is 1.25 miles NW of Cape Lazo.

238.1 A **conspicuous** radio **tower** is approximately 3.3 miles west of the *Comox Aeronautical Beacon light*.

239 **East cardinal buoy** *PJ* and *Cape Lazo east cardinal light buoy PB (507.5)* mark the outer edge of the shoal area east of Cape Lazo.

240 A **large white radar dome**, 1.1 miles NW of Cape Lazo at the *Comox Valley Airport*, has fixed red lights and is the first identifiable feature when approaching Cape Lazo from north. A microwave **tower** and a radio **tower** are at the north end of Cape Lazo.



241 A **submarine pipeline** (sewer outfall), at the south end of Cape Lazo, extends 1.6 miles seaward.

242 A ferry landing, 3 miles NW of Cape Lazo, is close east of the mouth of **Little River**. It is operated by *BC Ferries* and provides regular service for passengers and vehicles to Westview on the mainland.



242.1 A **submarine pipeline** (sewer outfall), east of the ferry landing, extends 0.2 mile seaward.



242.2 A **submarine cable** (fibre optic) extends from a point 4 miles NW of Little River towards Oyster Bay. From that point it continues north ending and starting at several points. It is recommended that mariners consult CHS charts to avoid damaging the cables. For detailed information see https://connectedcoast.ca/.

243 Tidal differences for Little River (7993), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

245 A radio **tower** with red air obstruction lights is 0.5 mile WNW of the *Comox MCTS Centre*.



246 **Submarine pipelines** (gas) cross the Strait of Georgia from close NW of the ferry landing.



247 A **wreck** with 45 m over it lies 1.8 miles ENE of the ferry landing.

248 **Elma Bay** *(49°51'N, 125°06'W)*, at the entrance to **Black Creek**, has a launching ramp.



249 **Oyster River**, 1.5 miles NW of Elma Bay, is a stream of considerable size with a drying bank of shingle extending 0.3 mile from its mouth. A dredged channel leading to a boat basin and *Pacific Playgrounds International Resort, RV Park & Marina* (1-877-239-5600) in the mouth of Oyster River is marked by a series of **piles**. Due to storms and unstable shoreline the channel and boat basin require dredging annually; local knowledge is advised before entering the channel.



250 **Anchorage** open to most winds can be obtained about 0.5 mile from shore midway between Elma Bay and Oyster River in 18 to 30 m.



251 **Kuhushan Point** *(49°53'N, 125°07'W)* is a low, sandy projection. Trees, which in thick weather can be mistaken for the extremity of the point, are about 0.15 mile inland. Several houses are near the point and close north of the light structure there is a large low building with a conspicuous pyramidal roof marked "Pub", which in daytime can be seen long before the light structure can be identified. A dredged channel close north of **Oyster Pond** leads to *Salmon Point Resort & Marina* (250-923-6605). This full-service **marina** requires annual dredging therefore local knowledge is advised.



252 *Kuhushan Point* **light** *(509)* is shown from a white skeleton tower.



253 **Oyster Bay** lies between Kuhushan Point and **Shelter Point**, 4 miles NW, is the site of several resorts. A reef extends 0.4 mile SE from Shelter Point and affords considerable protection to the anchorage in the bay.



254 **Anchorage** with fair shelter from all but SE winds can be obtained in Oyster Bay in 10 to 20 m about 1 mile offshore.

255 **Montgomery Bank** *(49°54'N, 124°57'W)* lies in the centre of the Strait of Georgia, SE of Mitlenatch Island. **Sentry Shoal**, on the NW part of Montgomery Bank, has a least depth of 7 m.

256 *Sentry Shoal ODAS* ***light buoy*** *46131 (509.5)* is moored close south of the shoal.

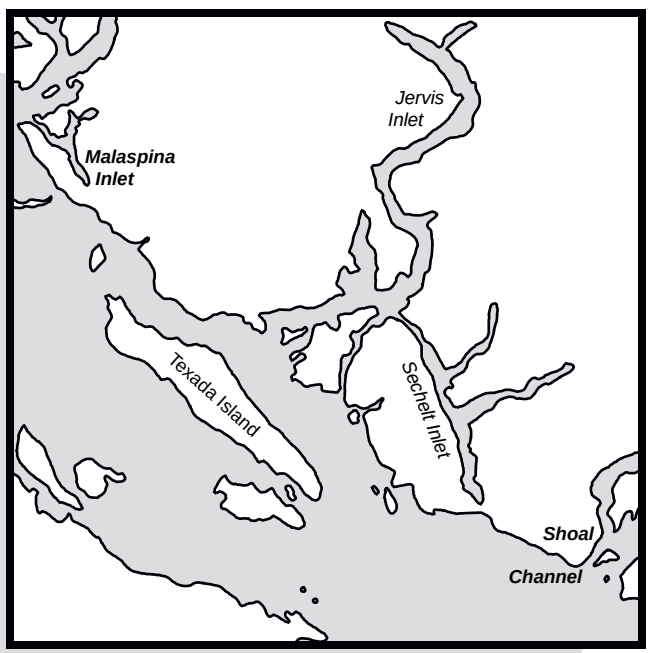
257 **Mitlenatch Island** *(49°57'N, 125°00'W)* is rocky with two bare peaks separated by a grassy valley. A shoal spit extends 0.5 mile north from its north extremity; otherwise, the island is steep-to. The best landing is in a semi-protected cove at the SE corner of the island, a small cabin is on the shore of this cove. The island and adjacent waters to 305 m comprise *Mitlenatch Island Nature Provincial Park*.

258 Tidal differences for Mitlenatch Island (7895), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

Sunshine Coast

General

1 This chapter describes the NE part of the Strait of Georgia from the west entrance of Howe Sound to Desolation Sound. It includes Sechelt, Pender Harbour, Jervis Inlet, Sechelt Inlet, Powell River and Malaspina Inlet.



Howe Sound to Sargeant Bay

Chart 3512

2 **Gower Point** *(49°23'N, 123°32'W)*, the west entrance point to Howe Sound, is low, rounded and not well defined. About 2 miles NW of Gower Point the words "Camp Byng" in large white letters are prominently displayed and make an excellent reference mark.

3 **Roberts Creek**, 4.5 miles WNW of Gower Point, is a residential area with no boating facilities. A rockfill **breakwater** is on the east side of the mouth of the creek. Stores, schools, restaurants and a post office are at Roberts Creek. *Roberts Creek Provincial Park* has camping and picnic facilities.

4 Tidal differences for Roberts Creek (7824), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

5 **White Islets**, 2.8 miles west of Roberts Creek, are two white, bare, steep-to rocky islets.

6 *White Islets light (448)* is shown from a white cylindrical tower.

7 **ts'ukw'um**, 1.2 miles north of White Islets on the east side of **Mission Point**, is a large rural and residential community with commercial development. ts'ukw'um is the site of the *Sechelt-Gibsons Municipal Airport,* which has a 730 m asphalt runway. Camping facilities, shops, a fish processing plant and sawmilling operations area are nearby. *Port Stalashen Marina* (604-886-8686) is part of the local waterfront community and does not accept transient moorage.

8 A sand and gravel spit, at the mouth of **Chapman Creek**, extends 0.2 mile south of Mission Point. It can be a hazard at LW.

9 **Davis Bay**, close north of Mission Point, has motels, restaurants and a public fishing pier.

TRAIL BAY (2005)



10 **Trail Bay** is an indentation between Mission Point and a point 3 miles NW. Its head is formed by a low isthmus that joins Sechelt Peninsula to the mainland and separates the Strait of Georgia from Sechelt Inlet. A road, about 1 km long, crosses this isthmus. Numerous private **mooring buoys** are located throughout Trail Bay.

11 A **submarine pipeline** (sewer outfall) extends 0.3 mile from Sechelt into Trail Bay.

12 **Anchorage** can be obtained in Trail Bay in a depth of about 27 m off the village of Sechelt, abreast a bluff in the NE corner of the bay. This anchorage is exposed to south winds.

13 **Selma Park**, 1 mile north of Davis Bay, is a quiet residential neighborhood. It has a small boat harbour, about 53 m wide, protected by a rock **breakwater**.

14 *Selma Park Breakwater light (448.5)*, on the outer end of the breakwater, is shown from a white tower with a red band at top.

15 An aggregate loading facility consisting of a trestle pier, 0.2 mile north of the boat harbour, is 480 m long with **dolphins** at its outer end. It has a loading conveyor on it.

16 **Sechelt**, at the head of Trail Bay, is a town with a hospital, post office, major shopping centre, galleries, motels, restaurants, marine repairs and marinas (on the Sechelt Inlet side). The church at Sechelt is conspicuous.

17 **Trail Islands** lie within 1 mile of the shore and **anchorage** for small craft can be obtained to the north of Trail Islands. This anchorage is frequently used by tugs with log booms.

18 A **submarine cable** (power) and a **submarine pipeline** (water) cross the channel between Sechelt Peninsula and the 58 m high Trail Island.

19 **Sargeant Bay**, 2 miles NW of Trail Islands, is deep but offers shelter and **anchorage** for small vessels close to shore. Drying and below-water rocks lie within 0.2 mile of its west entrance point. *Sargeant Bay Provincial Park* has a picnic area.

Welcome Passage

Chart 3535

20 **Welcome Passage** *(49°30'N, 123°56'W)*, at the SE end of Malaspina Strait, separates **Thormanby Islands** from the British Columbia mainland. The fairway is deep but has several dangers on either side. It has a minimum width of 0.2 mile. A local **magnetic disturbance** has been reported in Welcome Passage.

21 **Tidal streams** are strongest in the narrow portion of Welcome Passage where 2 to 3 kn can occur. At the south end of the passage streams decrease in strength and seldom attain more than 2 kn. The flood sets NW and the ebb SE.

22 In the south entrance the flood stream has a tendency to set toward dangers off Lemberg Point. The ebb stream generally sets fairly through the channel and its south approach.

23 A **submarine cable** crosses the channel between Merry Island and Sechelt Peninsula. An abandoned **cable** is laid across Welcome Passage close NW of Jeddah Point. A **cable** commences at the head of Halfmoon Bay and passes along the centre of the passage landing in Buccaneer Bay at Oaks Point.

24 The south entrance to Welcome Passage is between **Reception Point** on the mainland, and **Dennis Head** the SE extremity of **South Thormanby Island**. **Bertha Island** lies 0.3 mile SW and **Pirate Rock** lies 0.2 mile SE of Dennis Head. **Merry Island** and **Franklin Island** lie in the centre of the south entrance. A shoal with 8 m over it lies in mid-channel east of Merry Island, and a 10.1 m shoal lies 0.2 mile NE of Merry Island. Foul ground with an islet and drying rocks extends 0.2 mile south of Merry Island. The channel west of Merry Island is deep.

25 *Reception Point light (448.8),* on a drying spit extending south from the point, is shown from a white tower with a red band at top.

26 *Merry Island light (449)*, on the SE extremity of island at the SE entrance to Welcome Passage, is shown from a white tower. Conspicuous white buildings with red roofs stand nearby.

27 **South cardinal buoy** *QK* is 0.3 mile SE of Merry Island.

28 **Pirate Rock daybeacon** has a **port hand daymark**.

29 *Simson Provincial Park* encompasses the south and east portion of South Thormanby Island and is undeveloped.

30 **Lemberg Point**, 1.5 miles north of Pirate Rock, has several rocks east and SE of it. **Fraser Rock** 0.2 mile east has 1.3 m over it. **Egerton Rock** 0.4 mile SE has 2.3 m over it.

31 **Jeddah Point**, 0.7 mile NNE of Lemberg Point, is the west entrance point to Halfmoon Bay. Islets and rocks extend SE from it. A rock with less than 2 m over it lies 0.4 mile SE of Jeddah Point.

Halfmoon Bay

32 **Halfmoon Bay** *(49°30'N, 123°56'W)* is exposed to the south and during SE winds a heavy sea sets into it. **Priestland Cove**, at the head of Halfmoon Bay, has above-water and drying rocks in it. Numerous private docks are in the small coves along the north shore of Halfmoon Bay.

33 Booming grounds lie along the shores of Halfmoon Bay and Priestland Cove.

34 A **sewer outfall** extends almost 0.2 mile offshore from 0.4 mile WNW of the public wharf in Priestland Cove. Another **pipeline** in **Brooks Cove**, 0.3 mile NE of Jeddah Point, extends about 0.3 mile into Halfmoon Bay.

35 Tidal differences for Halfmoon Bay (7830), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

36 **Anchorage** in Halfmoon Bay is not recommended. In fine weather small craft can obtain anchorage in Priestland Cove.

37 **Halfmoon Bay settlement**, at the head of Priestland Cove, has a post office, store and resorts. The road to Howe Sound passes through the settlement.

38 The **public wharf** at Halfmoon Bay has a berthing length of 12 m on the west side of its head, with depths of 3 m alongside. A dock, on the west side of the wharf, is 27 m long with depths of 1 to 2.7 m alongside. For information on moorage and docking times, contact the *Sunshine Coast Regional District* at 604-885-6800.

39 **Grant Island**, 0.9 mile NW of Jeddah Point, is separated from **Wilbraham Point** by a narrow passage obstructed by drying reefs.

40 *Wilbraham Point light (450)* is shown from a white tower with a red band at top on the west side of Grant Island.

41 **Derby Point** is the north extremity of South Thormanby Island. **Tattenham Ledge** is a narrow reef extending 0.5 mile NNW from Derby Point. The shoalest part of this reef dries 0.3 m.

42 *Tattenham Ledge light buoy Q51 (451),* at the north extremity of the ledge, is a **port hand buoy**.

Buccaneer Bay

43 **Buccaneer Bay** *(49°30'N, 123°59'W)*, entered between Derby Point and **Oaks Point**, lies between the NW side of South Thormanby Island and the east side of North Thormanby Island. At the SW end of the bay, the two islands are joined by a drying flat. **Surrey Islands**, on the east side of the bay, are steep-to on their west sides but the channel east of them is foul. **Vaucroft Beach** is a summer resort on the west side of the bay.

44 Epsom and Oaks Points should also be given a wide berth due to changes in depths caused by shifting shallows. **Caution must be exercised when entering Buccaneer Bay because of Tattenham Ledge and the shoal water extending north from the north end of North Thormanby Island.** The middle of **Gill Beach**, at the head of the bay, bearing 165°, leads in the fairway between these dangers and to the anchorage. **Tidal streams** may also push vessels sideways onto the rocks.

45 **Buccaneer Bay daybeacon**, on a drying rock in the entrance to **Water Bay**, has a **port hand daymark**.

46 **Anchorage** can be obtained between **Wolf Point** and **Grassy Point** in a depth of about 30 m, sand bottom. It is exposed to north winds.

47 The **public wharf** at Vaucroft Beach has a berthing length of 12 m. A dock attached to the wharf is 18 m long; the wharf and dock have a depth of 5.4 m alongside. These facilities are for loading only.

48 *Buccaneer Bay Provincial Park* at Grassy Point has limited onshore development.

49 **North Thormanby Island** *(49°30'N, 124°00'W)* is flat topped and wooded. A conspicuous white cliff on the north end of the island has boulders at its foot. **Epsom Point** forms the west extremity of the island.

50 *Epsom Point light (452)* is shown from a mast close-off the point.

Smuggler Cove

51 **Smuggler Cove** *(49°31'N, 123°58'W)* is suitable only for small craft. **Great care is required when entering the cove.** A provincial park sign with a dogwood emblem is on the north side of the entrance. It is entered by passing close south of **Isle Capri** to avoid rocky ledges extending from the south shore. Two islets, 0.2 mile within the entrance, are connected to the south shore by drying ledges. **France Islet**, the higher of the two, has drying reefs extending north and east from it. A rock with 0.4 m over it lies in the middle of the cove NW of France Islet.

52 **Smuggler Cove daybeacon**, on the drying reef extending north from France Islet, has a **starboard hand daymark**.

53 **Anchorage** in Smuggler Cove is suitable for small craft and provides good protection with fairly good holding ground. Many eye bolts for stern lines are located along the shore.

54 *Smuggler Cove Marine Provincial Park* has camping and sanitary facilities and is connected to the highway between Powell River and Howe Sound.

Secret Cove

55 **Secret Cove**, entered between the south end of **Turnagain Island** *(49°32'N, 123°58'W)* and **Jack Tolmie Island**, is only suitable for small craft. A drying rock lies in the entrance and a rock with 1.5 m over it lies about 0.15 mile NE of the drying rock. The cove consists of three arms and has several marinas. Fuel, water and provisions are available. Numerous private docks and moorings line the shores. Secret Cove is on the main highway between Powell River and Howe Sound.

56 A yellow sign, on the SE end of Turnagain Island, reads *"Speed 5 MPH"*.

57 *Secret Cove Entrance light (450.5)*, on the drying rock in the entrance to Secret Cove, is shown from a mast and has a **starboard hand daymark**.

58 **Secret Cove daybeacon**, on the north side of the entrance to the south arm of the cove, has a **port hand daymark**.

59 **Buoys** reading *"Outfall"* mark the **submarine pipeline** east of Turnagain Island; these are private.

60 **Submarine cables** and **pipelines** in Secret Cove are marked by signs. Sanitary outfalls commence on the north side of the cove and pass close east of Turnagain Island and down the entrance channel between Turnagain and Jack Tolmie Islands. A **pipeline** crosses the south arm and a cable crosses the entrance to the south and east arms. **Cables** are laid from the 50 m high island, known locally as **Echo Island**, to the shore north of it.

61 **Anchorage** for small craft can be obtained near the head of the north arm. However, holding is reported to be poor and anchors to drag when the wind blows.

62 The **public wharf** in the north arm of Secret Cove is 44 m long with a depth of 4.6 m alongside. Power is available. *Secret Cove Marina* (604-885-3533) is a full-service **marina** located on the east side of the north arm. *Jolly Roger Inn & Resort* (604-885-7860) has limited marine facilities and is located on the north side of the central arm. *Buccaneer Marina & Resort Ltd.* (604-885-7888) is a full-service marina with limited guest moorage and is located on the NE side of the central arm.

Malaspina Strait

Charts 3512, 3513

63 **Malaspina Strait** *(49°38'N, 124°12'W)* separates the NE side of Texada Island from the mainland of British Columbia. It is entered from the south between Epsom and Upwood Points, or by way of Welcome Passage. The north entrance points are Grief Point and Grilse Point. Texada Island has a bold shoreline with narrow beaches of shingle or boulders. Agamemnon Channel, on the mainland side of Malaspina Strait, separates Nelson Island from Sechelt Peninsula. Jervis Inlet is entered along the north sides of Hardy and Nelson Islands. Malaspina Strait is 27 miles long with a least width of 2.5 miles and the fairway is deep.

64 **Sinclair Bank** *(49°42'N, 124°16'W)*, in mid-channel, has 33 m over it.

65 Tidal differences along Malaspina Strait for Irvines Landing (7836), Blind Bay (7865), Blubber Bay (7875) and Powell River (7880), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

66 **Tidal streams** in the Strait are generally weak, and seldom exceed 1 kn; see *Current Atlas, Juan de Fuca Strait to Strait of Georgia*.

67 Sea and wind conditions east of Upwood Point are often completely different from conditions to the west. With strong west or NW winds the razor back ridge of Texada Island acts as a windbreak and calm conditions often prevail as far north as Pender Harbour.

68 **Submarine pipelines** (gas) cross Malaspina Strait from south of Wood Bay on the mainland to north of Anderson Bay on Texada Island.

69 **Submarine cables** cross Malaspina Strait from Cape Cockburn, on Nelson Island, to Texada Island at **Mount Grant** *(49°37'N, 124°18'W)*. They are marked by flashing yellow lights on both shores. Another **cable area** crosses the north end of the strait from Grief Point, on the mainland, to Van Anda Cove on Texada Island.

70 An **ocean dump site**, under permit through the Ocean Dumping Control Act, is in *49°45'N, 124°27'W*.

Texada Island — East Coast

Chart 3512

71 **Anderson Bay**, 1.5 miles north of Upwood Point on Texada Island, offers very good protection from all except SE winds. Small craft can anchor near the head. An island lies across the entrance. The passage north of this island has a drying rock close-off the north entrance point, pass south of this rock. A log dump and booming ground are in the bay.

72 **Submarine pipelines** (gas) that cross Malaspina Strait land on the Texada Island shore 0.7 mile north of Anderson Bay.

73 **Northeast Point** *(49°42'N, 124°21'W)* has a radio tower with red air obstruction lights 3 miles WSW of it on **Mount Pocahontas**. **Northeast Bay**, 1 mile NW of the point, has **McQuarry Island** (local name) near its centre and provides some shelter for small craft from west and SE winds.

74 *Northeast Point light (467)* is shown from a white tower with a green band at top. A windmill generator is near the light.

Secret Cove to Black Point

75 **Wood Bay** *(49°33'N, 123°59'W)*, NNE of Secret Cove on Sechelt Peninsula, has **marine farm** facilities marked by **cautionary buoys** close north and 0.5 mile SE of it. **Bjerre Shoal**, 1.2 miles NW of **McNaughton Point**, has 5.2 m over it.

76 **Anchorage** for small craft, with fair shelter, can be obtained inside **Harness Island**.

Pender Harbour and Approaches

Chart 3535

77 **Francis Peninsula** *(49°37'N, 124°03'W)* is connected to Sechelt Peninsula by a bridge and drying flats at Bargain Narrows. **Francis Point** is its SW extremity and **Moore Point** its west extremity.

78 *Francis Point light (453)* is shown from a white cylindrical tower.

79 **Pearson Island** and **Martin Island**, NW of Francis Peninsula, lie in the approach to Pender Harbour. **Temple Rock**, 0.6 mile WSW of Pearson Island, has 5.3 m over it. **Jacob Rock**, 0.3 mile west of Pearson Island, has 7.7 m over it. **Nares Rock**, 0.3 mile north of Martin Island, dries 0.6 m.

80 **Nares Rock daybeacon** has a **bifurcation**/**junction daymark**, preferred channel to the right.

81 **Pender Harbour** is the only completely sheltered **anchorage** on this part of the coast. The main entrance is between **Henry Point** and **Williams Island**. The channel between Williams Island and **Charles Island** has a drying reef in the centre of its fairway at the east end. **The Gap**, south of Charles Island, is obstructed by an islet and some drying reefs; it should not be attempted. Pender Harbour is a seaplane landing area.

82 **Caution. — During SE gales passages in Pender Harbour are subject to strong squalls.**

83 *Harbour Authority of Pender Harbour Hospital Bay* (604-883-2234) **public wharf** on the east side of Hospital Bay has 180 m of dock space, depths alongside are 3 to 6 m. Power, water, internet and garbage and used oil disposal facilities are available.

84 *Harbour Authority of Pender Harbour Madeira Park* (604-883-2234) **public wharf** at the head of Welbourn Cove has a depth of 4.8 m alongside. Docks attached to the west side of the wharf have a combined length of 104 m with depths of 4 to 8.4 m alongside. Power is available on the docks, and water, washrooms, showers, pumpout station, a 3 tonne derrick and garbage and used oil disposal facilities are available on the wharfhead. Stores and a medical clinic are in Madeira Park.

85 *Harbour Authority of Pender Harbour Whiskey Slough* (604-883-2234) **public wharf** at the south end of Gerrans Bay has a berthing length of 264 m. Power is available.

86 **Marinas** on the north side of Pender Harbour are numerous. *Pender Harbour Resort & Marina* (604-883-2424) in Duncan Cove has some facilities and guest moorage; *John Henry's Marina* (604-883-2253) in Hospital Bay has full facilities including a fuel dock; *Garden Bay Hotel Marina & Pub* (604-883-2674) in the NW corner of Garden Bay is a large full-service facility with guest moorage.

PENDER HARBOUR ENTRANCE (2005)



87 **Marinas** on the east side of Pender Harbour include *Sunshine Coast Resort & Marina* (604-883-9177), on the south side of the entrance to Gunboat Bay, has resort facilities and guest moorage; *Madeira Marina* (778-654-8786), on the SE side of Welbourn Cove, has haulout and repair facilities; and *Coho Marina* (604-883-2248), on the east side of Gerrans Bay, has limited facilities and guest moorage.

88 Private docks are in **Bill Bay**, **Dingman Bay** and **Farrington Cove**. The *Royal Vancouver Yacht Club* has docks on the west side of Garden Bay; the *Seattle Yacht Club* is on the east side.

89 **Anchorage** can be obtained west of Garden Peninsula in 15 to 20 m, mud bottom, or off **Welbourn Cove** in 11 to 15 m, mud bottom. Small vessels can obtain anchorage in 6 to 11 m in Gerrans Bay, or in about 9 m in **Garden Bay** though swinging space is limited. Small craft can obtain good anchorage with mud bottom in Gunboat Bay.

90 Post offices are at Garden Bay and Madeira Park. A pharmacy, medical clinic and stores are in Madeira Park.

WELBOURN COVE (2005)



HOSPITAL BAY SE (2005)



Gasoline, diesel fuel and provisions can be obtained at some marinas. Repair facilities for small craft with boat hoists or marine ways are available in Hospital Bay, Garden Bay, Madeira Park and Gerrans Bay. Accommodation and restaurants are in the area.

91 Pender Harbour is connected by road to Langdale where it connects with a **ferry** to Horseshoe Bay and then by road to Vancouver. Scheduled bus service operates to Vancouver and Powell River.

92 Tidal differences for Pender Harbour (7837), and Irvines Landing (7836), referenced on Point Atkinson are in *Canadian Tide and Current Tables, Volume 5*.

93 *Pender Harbour light (454)* is on a reef NW of Williams Island and is shown from a white cylindrical tower with red band at top.

94 **Charles Island daybeacon**, on a drying reef between Charles and Williams Islands, has a **starboard hand daymark**.

95 **Pender Harbour daybeacon**, 1 mile ENE of Williams Island, is on a drying rock in the entrance of **Hospital Bay** and has a **bifurcation/junction daymark**, preferred channel to the right.

96 **Skardon Islands**, 0.2 mile east of Williams Island, consist of four islands; the three eastern ones are joined by drying ledges. A rock with less than 2 m over it lies about 90 m ESE from the south extremity of the east Skardon Island and is marked by **port hand buoy** *Q39*. The fairway north of Skardon Islands has a depth of 8.3 m through it. The fairway south of the group has a depth of 6.2 m through it. A rock that dries 1.4 m lies close offshore about 0.4 mile ENE of Pope Landing. A rock, with less than 2 m over it, lies on the south side of the fairway, north of **Donnely Landing**, and is marked by **starboard hand buoy** *Q40*.

97 A **submarine cable** passes along the centre of the entrance channel between Henry Point and Williams Island and lands on the west side of **Joe Bay**, close east of Henry Point. **Submarine cables** (telephone/power) are laid from Pearson Island to the mainland, close south of Fisher Island. **Submarine cables** cross Pender Harbour from Donnely Landing to the west side of **Duncan Cove** and from **Madeira Park** to the south side of **Garden Peninsula**. A **submarine cable** is laid across Gunboat Bay 0.2 mile east of the **overhead cable**.

98 *Garden Bay Marine Provincial Park*, on the north shore of Garden Bay, has a dinghy dock, picnic facilities and washrooms.

99 **Gunboat Bay**, at the head of Pender Harbour, is entered through a narrow channel that has a least depth of 0.7 m. A rock that dries 1.1 m lies in the entrance close to the north shore. Currents in the entry channel are strong except at slack water.

100 An **overhead cable**, vertical clearance 24 m, crosses the entrance to Gunboat Bay.

101 **Gerrans Bay**, the south arm of Pender Harbour, is suitable for small craft but has a number of dangers within it. A **wreck** lies on the SW side of

GERRANS BAY SW (2005)



Dusenbury Island in 6.3 m of water and is considered a hazard. A narrow tortuous passage in the SE part of the bay leads to Bargain Narrows. **Griffin Ledge** in the entrance of the bay and SE of **Mary Islet** has 1.3 m over it.

102 **Gerrans Bay daybeacon** *No. 1*, on a drying rock close south of Mary Islet, has a **port hand daymark**. **Daybeacons** with **port hand daymarks** are on drying rocks in the approach to Bargain Narrows.

103 **Overhead cables**, vertical clearance 14 m, cross the channels between **Calder Island**, **Dusenbury Island** and Francis Peninsula. **Submarine cables** cross the channel between Mary Islet and Calder Island. A **submarine pipeline** crosses Gerrans Bay, from Mary Islet to the mainland.

104 **Bargain Narrows**, known locally as **Canoe Pass**, leads from the SE end of Gerrans Bay to Bargain Bay. A rock that dries 1.1 m lies in the north approach and is marked by a **daybeacon** with a **starboard hand daymark**. The passage, about 25 m wide at its narrowest part, dries 2.1 m and is navigable only at or near HW. Local knowledge is advised.

105 A fixed span road **bridge**, vertical clearance 4 m, crosses Bargain Narrows at its narrowest part.

106 The approaches to Bargain Bay, Pender Harbour and Agamemnon Channel lie between Harness Island and Fearney Point, 4.5 miles NW.

107 **Whitestone Islands** *(49°36'N, 124°03'W)*, south of Francis Peninsula, and Edgecombe Island, 0.5 mile NE, lie in the approach to Bargain Bay. The channel east of **Edgecombe Island** is foul and should not be attempted.

108 A **submarine cable** is laid across the channel east of Edgecombe Island. A **submarine cable** crosses the channel east of the 27 m high island that lies 0.2 mile SE of Edgecombe Island.

109 **Bargain Bay** is best approached west of Edgecombe Island but local knowledge is advised. A shoal with 2.2 m over it lies on the east side of the fairway, about 0.1 mile west of Edgecombe Island. Two rocks, 0.2 mile NW of Edgecombe Island, have less than 2 m over them, and the fairway between these two rocks is about 100 m. The head of the bay provides sheltered **anchorage** for small craft in a depth of about 7 m.

Approach to Agamemnon Channel

110 **Fearney Point** *(49°39'N, 124°06'W)*, the SW entrance point of Agamemnon Channel, is bold and has cliffs on its east side.

111 **Hodgson Islands**, 0.4 mile south of Fearney Point, lie in the centre of the SW approach to Agamemnon Channel and have foul ground around and between them. Shoals lie to the NW, SE and east of Hodgson Islands.

112 **Daniel Point** lies 1 mile SE of Fearney Point. A shoal with 2.5 m over it, and a rock with less than 2 m over it, lie within 0.2 mile NW of Daniel Point. **The rock should**

be given a wide berth to avoid striking it. Lee Bay lies between Daniel Point and **Fisher Island**.

113 **Submarine cables** cross the south approach to Agamemnon Channel.

Malaspina Strait — NE Portion to Albion Point

Chart 3512

114 **Nelson Island** *(49°42'N, 124°06'W)* is indented by several bays on its south and west sides. This coast should be given a berth of at least 1 mile to ensure clearing several shoals and rocks. **Nelson Rock**, 1 mile west of Fearney Point and about 0.5 mile offshore, is steep-to. **Acland Rock**, 1.3 miles WNW of Nelson Rock, has 7.9 m over it.

115 *Nelson Rock light (456)* is shown from a white tower with a red band at top. A large rectangular base of a former light structure is beside the light.

116 **Submarine cables** run parallel to the south and west coasts of Nelson Island.

117 **Mermaid Point**, 0.6 mile NW of Nelson Rock, is the east entrance point to Quarry Bay. **Flat Rock Bay**, the second small bay NW of Mermaid Point, has a private float.

118 **Quarry Bay** has **submarine cables** along its centre; do not anchor here. Small craft can find **anchorage** close to shore. Numerous above and below-water rocks are at the head of the bay. Private docks, a floating log **breakwater** and private **mooring buoys** are near the head of the bay.

119 A **pier**, on the south coast of Nelson Island about 2 miles west of Quarry Bay and 1 mile east of Cape Cockburn, is 110 m long and has a float 137 m long at its outer end. It is used by barges for loading gravel and has a conveyor on it.

120 **Cape Cockburn** *(49°40'N, 124°12'W)* is composed of white granite and has a few stunted trees on its summit. A drying rock lies 0.1 mile south of the cape. A *BC Hydro* terminal for **submarine cables** is on the cape; cable towers are conspicuous.

121 *Cape Cockburn light (455)*, on the cape on the W side of Nelson Island, is shown from a white cylindrical tower with a red band at top.

122 A flashing yellow light, about 0.2 mile north of Cape Cockburn light, maintained by *BC Hydro*, marks the landing site of the submarine cables.

123 A **submarine cable area** crosses Malaspina Strait from the vicinity of Cape Cockburn. A water intake pipe and an outfall pipe enter Malaspina Strait in the vicinity of the cape.

124 **Cockburn Bay** has an entrance less than 90 m wide and is almost completely obstructed by drying rocks. It can be entered by small craft at or near HW, local knowledge is advised. A **submarine cable** passes through the entrance and lands on the south shore of the bay. **Marine farm** facilities, private docks and a *BC Hydro* dock are in the bay.

125 **Strawberry Islet** and several unnamed islets lie close offshore between Cockburn and Billings Bays.

126 **Billings Bay**, SE of **Maynard Head**, has a rock, that dries 2.4 m, 30 m off its NE shore. A **submarine cable** passes along the centre of the bay.

127 **Hidden Basin** has an islet 30 m high in the centre of its entrance. The channel north of the islet dries and is encumbered with boulders that dry 3.4 m. The entrance channel south of the islet has boulders that dry 3 m. There are strong **tidal streams** in the entrance. **The south passage is preferred and should be entered only at or near HW slack**, local knowledge is advised. A drying spit, 0.2 mile east of the islet, extends from the north shore and considerably narrows the entrance channel. Several drying rocks lie close-off the south and east shores of the basin inside the 10 m contour line. Private docks are located along the shores.

128 **Anchorage** can be obtained in 10 to 15 m at the NE end of Hidden Basin. The maximum depth in the basin is 38 m.

129 **Blind Bay**, between the NW side of Nelson Island and the SE side of **Hardy Island**, has a number of islands and islets on either side of its entrance, with a deep channel between them. **Fox Island**, **Oyster Island**, **Kelly Island**, **Nocturne Island** and **Clio Island** are named islands in the bay. **Marine farm** facilities may be found along both shores of Blind Bay and numerous private docks line the shores. Small craft are reported to be able to find good protection from NW winds on the Hardy Island side of Blind Bay.

130 Booming grounds lie along the south shore of Hardy Island.

131 **Submarine cables** cross the entrance of Blind Bay and run along its south and east sides. **Submarine cables** are laid in Ballet Bay.

132 **Anchorage** in Blind Bay is reported to be good north of Fox Island.

133 Tidal differences for Blind Bay (7865), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

134 *Hardy Island Marine Provincial Park* encompasses the islet between Hardy and Fox Islands.

135 **Ballet Bay**, on the SE shore of Blind Bay, is sheltered by numerous islands. Some reefs in the entrance are marked by private **daybeacons**. Mariners without local knowledge are advised to approach with **caution** and at LW when reefs are more likely to be visible.

136 **Alexander Point** *(49°44'N, 124°13'W)* is the SW extremity of Hardy Island. **Scotch Fir Point**, 2 miles NW of

Alexander Point, is rocky and rises to a thickly wooded hill. Another hill, 0.8 mile NW of the first hill, has a bare summit. Jervis Inlet is entered between these two points.

137 **Neville Rock**, 0.4 mile SSW of Scotch Fir Point, has 7.3 m over it. **Western Rock**, 0.8 mile WNW of Neville Rock, has 3 m over it. **McRae Islet**, 0.2 mile north of Western Rock, has foul ground in its vicinity and should be given a wide berth.

138 **McRae Cove**, NW of Scotch Fir Point, has several islets and drying rocks in its entrance and offers some shelter for small craft, local knowledge is advised. **Frolander Bay** is NW of McRae Cove.

139 **Stillwater Bay**, 2.5 miles NW of Scotch Fir Point, is almost filled with booming grounds. An A-frame and log dump are at the head of the bay. **Stillwater settlement**, at the head of the bay, is connected to the main highway.

140 A hydroelectric power plant, on the north shore of Stillwater Bay, and a light coloured water tank a short distance inland from the power plant, are conspicuous landmarks.

141 **Overhead cables**, vertical clearance 15 m, cross Stillwater Bay from a logging wharf close east of the power plant to a spar tree on the south shore.

142 Small craft can obtain temporary **anchorage** in a depth of about 30 m with the west end of the power plant bearing about 037°, distant 0.35 mile.

143 **Lang Bay**, 1.3 miles WNW of Stillwater Bay, has a rock, with 4 m over it, in its entrance. The **public wharf** has a depth of 3.4 m alongside. A store is near the wharf. A boulder **breakwater** at the west end of the bay protects a booming ground.

144 **Black (Albion) Point** *(49°46'N, 124°24'W)* is composed of earth cliffs. A shoal spit extends 0.3 mile south from the point.

Agamemnon Channel

Charts 3512, 3514

145 **Agamemnon Channel** *(49°43'N, 124°03'W)*, about 9 miles long, separates Nelson Island from Sechelt Peninsula. It leads north then NE from Malaspina Strait to Sechelt and Jervis Inlets. The channel is about 0.5 mile wide with fairway depths from 35 to 260 m.

146 **Tidal streams** in Agamemnon Channel attain 1 to 2 kn and follow the general direction of the channel. The flood sets NE and the ebb SW.

147 Booming grounds and log dumps are in several locations along the shores of Agamemnon Channel. **Marine farm** facilities may be found in several locations; reduce speed when passing to avoid damage.

148 **Overhead cables** (power), 3 and 6.5 miles north of Fearney Point, cross Agamemnon Channel and have vertical clearances of 38 and 34 m. Red spheres are attached to the cables to make them more visible. Red and white chequered boards located at the HW line to mark the crossings are visible from all directions of approach. A **submarine cable** crosses Agamemnon Channel 0.5 mile north of Fearney Point.

AGAMEMNON CHANNEL SOUTH ENTRANCE (2005)



149 A scheduled **ferry** operates between Earls Cove, at the NE end of Agamemnon Channel, and sḵelhp in Jervis Inlet.

150 The east shore of Agamemnon Channel SE of Caldwell Island is an *Ecological Reserve*.

Chart 3512

151 **Green Bay** *(49°42'N, 124°05'W)* has rocks close-off its east shore and a drying rock near the head of the bay. A log dump and booming ground are at the NW end of the bay.

152 **Anchorage** with limited swinging room for small craft can be obtained in 10 to 30 m in Green Bay.

Chart 3514

153 **Caldwell Island** *(49°45'N, 124°03'W)* is steep-to and has a drying rock close-off its south side.

154 **Annis Bay**, 1.5 miles NE of Caldwell Island, has a booming ground in its NE part and a **marine farm** in its SW part.

155 **Agamemnon Bay** is near the north end of Sechelt Peninsula. **Earls Cove**, a small indentation near the west entrance point of Agamemnon Bay, is the site of a ferry landing from which regular service for passengers and vehicles is maintained to sḵelhp. The ferry landing is connected by road to Pender Harbour and Howe Sound.

156 **Nile Point**, at the NE extremity of Nelson Island, is the NW entrance point to Agamemnon Channel.

157 **Agnew Passage** separates Captain Island from Nelson Island. It is about 0.3 mile wide and deep.

158 *Agnew Passage light (460)* is on the north side of an islet, at the SE end of the passage. It is shown from a white cylindrical tower with a green band at the top.

Malaspina Strait — NW Portion

Chart 3513

159 **Pocahontas Bay** *(49°44'N, 124°26'W)* is small but provides emergency shelter for small craft during SE winds. **Spratt Bay**, close south of **Butterfly Point**, has a limestone quarry and **wharf** for loading limestone.

160 **Van Anda Point**, 1.7 miles WNW of Butterfly Point, is a high, steep-to point. A conspicuous quarry is 0.6 mile ESE of it.

161 **Eagle Cove**, 1.3 miles NW of Van Anda Point, provides limited shelter to small craft from west and SE winds.

162 **Myrtle Rocks** *(49°47'N, 124°29'W)* are a group of rocky islets connected to the mouth of **Myrtle Creek** by drying flats. A reef that dries 4 m lies 0.2 mile SE of Myrtle Rocks; the south extremity of the reef has 2.1 m over it. Booming grounds lie between the rocks and creek.

163 **Grief Point** *(49°48'N, 124°31'W)* is low, grassy and fringed with a sandy beach. *Beach Gardens Resort & Marina* (1-800-663-7070), just south of Grief Point, is a full-service **marina** including a fuel dock. Guest moorage is available.

164 *Grief Point East light (468.5)* is on the SW end of a **breakwater** and is shown from a white mast.

165 *Grief Point light (469)*, on the west extremity of the point, is shown from a white cylindrical tower with a red band at the top.

166 **Submarine cables** cross Malaspina Strait from the vicinity of Grief Point to Van Anda Point.

Sturt Bay and Van Anda Cove

Chart 3533

167 **Sturt Bay** *(49°46'N, 124°34'W)*, known locally as **Marble Bay**, is entered between **Marble Bluff** and **Hodgson Point**. **Scott Rock**, on the north side of the entrance, has 2.1 m over it. **Ursula Rock**, on the south side near the boat basin, is 1 m high and has a drying ledge extending north from it.

167.1 A submerged **wreck** with 9.9 m of water over it lies just north of Scott Rock.

168 **Hodgson Point daybeacon** has a **starboard hand daymark**.

169 **Ursula Rock daybeacon**, NE of Ursula Rock on the extremity of the drying ledge, has a **port hand daymark**.

170 Booming grounds lie between Marble Bluff and Ursula Rock and at the NW end of Sturt Bay.

171 A rockfill **breakwater**, extending NW from the shore to Ursula Rock, protects a small boat basin and docks belonging to the *Texada Boat Club* (604-486-7574). Guest moorage, power and water, and a mechanic are available.

171.1 A submerged **wreck** west of the *Texada Boat Club* lies at the entrance to Ceasar Cove.

172 **Caesar Cove**, west of **Grant Bluff**, has a quarry and ruins of conveyors and mooring ramps on its west side.

173 **Anchorage** can be obtained by small vessels in 25 m in the middle of Sturt Bay, west of Ursula Rock. Anchorage is poor in the SW. Small craft can find shelter in Caesar Cove.

174 **Van Anda Cove** offers no protection from the north. A drying spit and shoal water extend NW from its east entrance point. Conspicuous white cylindrical fuel storage tanks are on the SE side of the cove.

175 Van Anda/Sturt Bay **public wharf**, on the SE side of Van Anda Cove, has 2.4 m alongside the NE side of its wharfhead. A moveable ramp lies off the end of the wharf and a dock 16 m long is on the NE side of the wharf. The wharf is exposed to north winds.

176 **Van Anda** has a post office, store, hotel, restaurant and laundromat. Fuel and fresh supplies are available. Water taxi service operates to Westview and the community is on the Texada Island road system.

Jervis Inlet and Approaches

Chart 3514

177 **Jervis Inlet**, entered from Malaspina Strait, is 46 miles long with a general width of 1 to 1.5 miles. The main entrance is between Alexander Point *(49°44'N, 124°14'W)* and Scotch Fir Point, 2 miles NW. It can also be entered from Telescope Passage, which separates the east end of Hardy Island from Nelson Island, or from Agamemnon Channel along the east side of Nelson Island.

178 Depths in Jervis Inlet range from 300 m at the entrance to over 600 m in the inlet. High rugged mountains rise steeply from its steep-to shores. Slopes in most places are thickly wooded, but there are bare strips caused by logging, winter storms, or avalanches during spring thaws. Several rivers entering the inlet have flat deltas at their mouths, while other rivers or creeks plunge as waterfalls off mountain sides.

179 Logging camps in the inlet are served by tug and barge services from Vancouver. The more permanent camps are usually sited on beaches at the head of bays. Temporary ones are usually on docks moored to shore and are moved according to requirements.

180 Tidal differences in Jervis Inlet, referenced on Point Atkinson, are given for skelhp (7868) in *Canadian Tide and Current Tables, Volume 5*.

181 **Tidal streams** in Jervis Inlet are weak, irregular and influenced by winds. In the entrances of Princess Louisa and Sechelt Inlets they are strong.

182 A **submarine cable** crosses the entrance of Jervis Inlet between Alexander and Scotch Fir Points. A fibre optic communications **submarine cable** crosses from skelhp to Agamamnon Bay via Agnew Passage.

183 **Overhead cables** cross Jervis Inlet from a position on Nelson Island about 3.5 miles east of Ball Point to the mainland at Ahlstrom Point. They have a vertical clearance of 49 m and orange spheres are attached to make them more visible. Red and white chequered boards, conspicuous from all directions of marine approach, are located at the HW line to mark the crossing.

184 **Marine farms** are in several locations in Jervis Inlet. Reduce speed when passing to avoid damage.

Hardy Island to Captain Island

185 **Ball Point** *(49°45'N, 124°13'W)* is the NW extremity of Hardy Island. Several islets and rocks lie close offshore between 1 and 1.5 miles east of Ball Point.

186 **Marine farm** facilities lie along the north shores of Hardy and Nelson Islands.

187 **Telescope Passage** *(49°45'N, 124°09'W)* separates the islands NE of Hardy Island from Nelson Island and connects the head of Blind Bay with Jervis Inlet. It is very narrow and has drying rocks in mid-channel and on its west side. Favour the Nelson Island shore. The least depth through the fairway is 7.2 m. Mariners not familiar with Telescope Passage are advised to navigate at LW when dangers are visible. **Marine farm** facilities are along the Nelson Island shore of Telescope Passage.

188 **Thunder Bay** *(49°46'N, 124°16'W)* is one of the few places in Jervis Inlet where **anchorage** can be obtained. Depths in the bay range from 20 to 50 m, and

JERVIS INLET ENTRANCE FROM MALASPINA STRAIT (2005)



beyond the 5 m line there is a sudden drop to greater depths. A sandy beach is at the head of the bay.

189 **sḵelhp**, 4 miles east of **Thunder Point**, has depths of 14 m and provides limited **anchorage** to small craft. A log dump and booming ground occupy the east part of the bay. There is a highway connection with Powell River and Vancouver via the **ferry**. A ferry landing is in the bay and service is maintained with Earls Cove in Agamemnon Channel. The *Saltery Bay Harbour Authority* (604-885-3714/0196) **public wharf** is adjacent to the ferry landing and has 133 m of dock space.

190 *Hummingbird Cove Lifestyles Cottages* (604-487-1499) **marina** in **Hummingbird Cove** (local name) has limited services and dock space.

191 Tidal differences for sḵelhp (7868), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

192 *Saltery Bay Provincial Park* is divided into campground and day-use areas. Washrooms and water are available. A launching ramp is in the day-use area.

193 **Ahlstrom Point** lies 1 mile east of sḵelhp.

194 *Ahlstrom Point light (457)* is on the N shore of Jervis Inlet, and is shown from a white cylindrical tower with green band at top.

195 **Vanguard Bay**, 2 miles SE of Ahlstrom Point, is too deep for anchorage but small craft can find limited **anchorage** close inshore north of the islets off its east shore. A private **mooring buoy** is on the east side of the bay. **Marine farm** facilities are in several locations in the southern portion of the bay.

196 **Captain Island** *(49°47'N, 123°59'W)* is bold, steep-to and thickly wooded. It is separated from Nelson Island by Agnew Passage.

197 *Captain Island light (458)*, on the NW shore, is shown from a white cylindrical tower.

198 **Military exercise area WN**, the area between St. Vincent Bay, Captain Island and the entrance of Hotham Sound, is used for surface and subsurface general operations. For details see *Notices to Mariners 1 to 46 Annual Edition*.

199 **St. Vincent Bay** *(49°49'N, 124°04'W)*, entered between **Culloden Point** and **Elephant Point**, is too deep for anchoring. Extensive booming grounds lie between its west shore and **Sykes Island**. Several houses with docks lie on the north shore of the bay. **Marine farm** facilities are on the south, east and north sides of Sykes Island and near the head of St. Vincent Bay. A private daybeacon marks a drying rock at the head of the bay.

200 **Junction Island**, close SW of Elephant Point, is connected to the north shore by drying and above-water rocks. **Marine farm** facilities lie north of Junction Island.

Hotham Sound

201 **Hotham Sound**, entered east of Elephant Point, extends 6 miles north and is lined by mountains rising from its steep-to shores.

202 **Granville Bay** *(49°50'N, 124°00'W)* has a conspicuous waterfall at its north end. **Marine farm** facilities are at the head of the bay and in the small bay 0.6 mile south of Granville Bay.

203 **Harmony Islands** lie close-off the east side of the sound, midway between Granville Bay and **Syren Point**. *Harmony Islands Marine Provincial Park* includes north and south islands, and the passage between the islands and the mainland. It is undeveloped.

204 **Anchorage** for small craft can be obtained east of Harmony Islands or in the basin formed by the three north islands. Most craft anchor with a stern line to shore. A rock with less than 2 m over it lies in the entrance to the basin.

205 **Mooring buoys**, WSW of Syren Point, are marked "NAVY" and have radar reflectors. They are maintained by the *Department of National Defence (DND)* for use by Navy vessels.

206 A **conspicuous landslide** is on the west side of the sound, 1.5 miles NW of Syren Point.

207 **Baker Bay**, at the head of Hotham Sound, has a conspicuous peak on its west side. It has been reported that small craft can anchor here.

208 **Marine farm** facilities are in several locations NNW of Elephant Point and at the head of the sound in **Lena Bay**. A booming ground is 1 mile south of Lena Bay.

Prince of Wales Reach

209 **Prince of Wales Reach**, entered between **Foley Head** *(49°48'N, 123°58'W)* and Egmont Point, trends 6 miles NNE to **Saumarez Bluff** then about 7 miles NW to **Moorsam Bluff**.

210 **Miller Islet**, 0.7 mile north of Egmont Point, is steep-to on its west side and bare except for a topknot of trees. A drying rock lies 140 m SE of the islet.

211 **Killam Bay**, 1 mile east of Miller Islet, is deep but has small craft **anchorage** close inshore. A small **breakwater** is at the head of the bay.

212 **Dark Cove**, north of Foley Head, provides **anchorage** to small vessels west of **Sydney Island** in 30 m, but holding ground is reported to be poor. A wrecked barge is on the north shore of Sydney Island. **Marine farm** facilities are west and NE of Sydney Island. Private moorings and several houses are located around the cove.

213 **Goliath Bay**, north of Dark Cove and west of **Dacres Point**, is deep and does not have anchorage. **Marine farm** facilities are in the SW part of the bay.

214 **Treat Creek**, 2.2 miles ENE of Dacres Point, has a pier with dock attached, conveyor belt loading facilities, and oil tanks near its entrance. Quarrying operations north and south of the creek are conspicuous.

215 **Vancouver Bay** *(49°55'N, 123°53'W)* is too deep for anchorage. Sides of the bay are precipitous but the head is low with steep-to drying flats formed by sediments from **Vancouver River** and **High Creek**. A house is on the south side of Vancouver River entrance.

216 **Brittain River**, at the junction of Prince of Wales Reach and Princess Royal Reach, flows into the inlet through a prominent U-shaped valley. Sand and gravel drying flats front its entrance.

Princess Royal and Queens Reaches

217 **Princess Royal Reach** extends 10 miles NE from Brittain River to **Patrick Point**.



218 **Deserted Bay**, at the NE end of Princess Royal Reach, has **anchorage** for small craft in its SE part in a depth of about 30 m. A large valley containing the **Deserted River** trends NE from the head of the bay.

219 **Queens Reach** extends 10 miles NW from Patrick Point to the head of Jervis Inlet. **Hill Rock**, 2.5 miles NW of Patrick Point and about 0.4 mile offshore, has 3.2 m over it. Booming grounds are at the head of the inlet.



220 **Skwawka River** enters the head of Jervis Inlet across low, swampy ground. Some buildings are at the head of the inlet. **Anchorage** for small craft is available close to shore or near the mud flats. Water is often discoloured by glacial runoff.

Malibu Rapids and Princess Louisa Inlet

221 **Malibu Rapids** *(50°10'N, 123°51'W)* flows through a narrow gorge that forms the entrance to Princess Louisa Inlet. It is suitable for small vessels and should be negotiated at or near slack water. **Malibu Islet** and several other islets lie in its south entrance. Keep in mid-channel between the light and Malibu Islet. The channel east of Malibu Islet is not recommended. Before entering from either direction, make a securité call on Channel 16 to announce passage to other vessels.



222 **Caution. — Hazardous eddies and strong tidal streams make transit at times other than slack water very dangerous.**



223 *Malibu Rapids light (459)* is on a rock on the west side of the entrance to the rapids. It is shown from a white cylindrical tower with a green band at the top.



224 **Tidal streams** in Malibu Rapids attain 9 kn on the flood and ebb on large tides. Times of turn to flood and ebb in Malibu Rapids can be obtained from secondary current station Malibu Rapids (4375) in *Canadian Tide and Current Tables, Volume 5*.



225 **Malibu**, on the peninsula forming the NW side of Malibu Rapids, is a summer camp. A dock on the north shore of the peninsula is 62 m long and owned by the camp. Overnight moorage is not permitted. A **submarine pipeline** is laid close east of the dock.

226 **Princess Louisa Inlet** extends 4 miles NE from Malibu Rapids and is hemmed in by high mountains. Depths in the inlet are great. **Chatterbox Falls** at the head of the inlet can be heard from a considerable distance when running strongly.

227 *Princess Louisa Marine Provincial Park* which includes Chatterbox Falls and **Macdonald Island** has picnic, camping and sanitary facilities. Garbage disposal facilities and fresh water are available. Docks close south of Chatterbox Falls have 274 m of berthing space. **Mooring buoys** are NE of Macdonald Island and mooring rings for stern ties have been set in shoreside rocks in many places.



228 **Anchorage** with good shelter can be obtained by small craft inside Macdonald Island. In settled weather small vessels can find anchorage in the narrow belt of depths under 20 m off Chatterbox Falls. If there is significant up-inlet winds be prepared to move.

Sechelt Inlet and Approaches

Charts 3512, 3514

229 **Sechelt Inlet** *(49°36'N, 123°48'W)* commences at the junction of Agamemnon Channel and Jervis Inlet and leads 20 miles SSE between **Sechelt Peninsula** and the mainland, terminating in Porpoise Bay. Narrows and Salmon Inlets lead NE from its east side. Apart from Skookumchuck Narrows and Sechelt Rapids in the entrance, the inlet and its branches are deep. Extensive logging operations are carried out in Sechelt, Narrows Inlet and Salmon Inlet. Gravel quarrying operations, logging, and **marine farm** facilities for salmon and oysters are located in Sechelt Inlet. Numerous private docks line the shores of Sechelt and Narrows Inlets. The entrance to Sechelt Inlet is a seaplane landing area known as Egmont.



230 **Caution. — Due to the tortuous nature of the fairway and strong tidal streams in Sechelt Rapids, no vessel more than 40 m long and 3.4 m draught should attempt to enter. Entry to Sechelt Inlet is governed**

entirely by tidal conditions at Sechelt Rapids, and in general can be made only at slack water.

231 Tidal differences in Sechelt Inlet, referenced on Point Atkinson, for Egmont (7842), Storm Bay (7847) and Porpoise Bay (7852) are in *Canadian Tide and Current Tables, Volume 5*.

232 *Sechelt Inlets Marine Provincial Park* includes Tzoonie Narrows, Kunechin Point, Thornhill Creek, Nine Mile Point, Tuwanek Point, Piper Point, Skaiakos Point and Halfway Beach. Most are marked by park signs and have primitive camping and sanitary facilities.

Skookumchuck Narrows

Chart 3514

233 **Skookumchuck Narrows** *(49°45'N, 123°55'W)* forms the entrance to Sechelt Inlet and is about 3 miles long. **Sutton Islets**, 0.7 mile south of **Egmont Point**, consist of three islets lying in mid-channel. A safe passage through the narrows is on either side of these islets.

234 *Skookumchuck Narrows light (461)* is on a drying rock SE of Sutton Islets, and is shown from a white cylindrical tower with green band at top.

235 **Skookumchuck Narrows daybeacon**, on Sechelt Peninsula 0.3 mile SW of light, has a **starboard hand daymark**.

236 *Backeddy Resort & Marina* (604-883-2298) is close west of the daybeacon. This facility is a full-service **marina**.

237 A **submarine cable area** (power) crosses Skookumchuck Narrows 0.4 mile SSE of Skookumchuck Narrows light. Another **cable** crosses the narrows 0.8 mile SSE of the light.

238 **Secret Bay** *(49°45'N, 123°56'W)* has an islet, 2 m high, in the centre of its entrance and offers very limited **anchorage** out of the tidal stream to small craft. The settlement of **Egmont** has a post office, stores, museum, fish plant, air service, and is connected by road to the main highway at Earls Cove. *Bathgate General Store, Resort & Marina* (604-883-2222) is close south of the public wharf. This is a full-service **marina** with fuel, haulout, repairs and limited guest moorage. Private wharves and **mooring buoys** lie around the bay.

238.1 A **wreck** is reported to be in Secret Bay at *49°45'3.5"N, 123°55'29.2"W*.

239 **Secret Bay daybeacon**, on the NW side of a drying rock, in the approach to the marina, has a **port hand daymark**. A **daybeacon** with a **starboard hand daymark**, close SE of Secret Bay daybeacon, marks the SE side of the drying rock. **Do not pass between these daybeacons.** A yellow diamond-shaped **daybeacon** marked "Danger" is on the centre of the drying rock.

240 Tidal differences for Egmont (7842), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

241 The *Egmont Harbour Authority* (604-883-0089) **public wharf** has a wharfhead width of 15 m with a depth of 3 m alongside its north face. A dock 9 m long is attached to the north side of the wharfhead. Docks attached to the south side of the wharfhead are 62 and 49 m

SKOOKUMCHUCK NARROWS LOOKING SE (2006)



long. The south dock is reserved for seaplanes. A 3 tonne derrick, garbage and used oil disposal facilities are available.

242 A **conspicuous quarry**, 1.3 miles ESE of Secret Bay on the east side of the channel and close north of Sechelt Rapids, has a barge loading dock and barge ramp. A log dump and booming ground are close south of the barge dock.

243 **Sechelt Rapids**, known locally as **Skookumchuck Rapids**, is at the south end of Skookumchuck Narrows. It is formed by **Boom Islet**, **Sechelt Islets** and numerous rocks and shoals. The roar from the rapids can be heard for several miles. Several shoals lie in the centre of the fairway through the rapids and the least depth of 4.6 m is about 0.1 mile SSE of Sechelt Islets light.

244 *Sechelt Islets light (462)* is on the south end of the centre islet. It is shown from a white cylindrical tower with a green band at the top.

245 **Caution. — It is hazardous for any vessel to attempt to navigate Sechelt Rapids except at or near slack water. Large whirlpools, dangerous upwellings, 4 m standing waves and back eddies may be encountered at other times. Tugs towing logbooms or gravel barges can be encountered in vicinity of the rapids near slack water.**

246 **Tidal streams** attain 16½ kn on the flood and 16 kn on the ebb during large tides. The turn to flood occurs earliest off **Roland Point**, approximately 0.15 mile south of Sechelt Islets light. Flood streams of 5 kn can be experienced as little as 15 minutes after LW slack off Roland Point.

247 Daily predictions for times of slack water, and times and rates of maximum flood and ebb, are tabulated for current station Sechelt Rapids (4200) in *Canadian Tide and Current Tables, Volume 5*.

248 The strongest flow occurs off Roland Point and to the SE, where an extremely hazardous rip forms shortly after slack water. West of Sechelt Islets light the flood stream attains a maximum of approximately 8 kn. A back eddy forms east of the light that might be used as a haven in an extreme emergency.

249 The strongest ebb stream occurs just west of Sechelt Islets light with a strong cross-channel set toward the WNW. A large back eddy occurs to the north of the light and whirlpools form close to the light, where they break away and are carried downstream. During large tides ebb streams of 5 kn can be encountered as far as 0.4 mile SE of Sechelt Islets light.

250 The preferred time for transit of Sechelt Rapids is at HW slack. The best route through is west of Boom Islet and Sechelt Islets light. Give Roland Point a wide berth on the flood to avoid dangerous rips and heavy overfalls.

251 When the ebb is running it is recommended that larger vessels avoid the passage between Sechelt Islets light and the small island 0.2 mile NW. The main ebb stream runs approximately WNW from the light toward the opposite shore. Low powered vessels, or those that answer the helm sluggishly, can find themselves being spun about or set upon the west shore if attempting to abort passage through the rapids.

Skookum Island to Porpoise Bay

Chart 3512

252 **Skookum Island** *(49°43'N, 123°53'W)* has a drying rock about 0.1 mile west of its west end.

253 *Skookum Island light (463)*, on the NW end of the island, is shown from a white cylindrical tower.

254 Booming grounds and a log dump are close north of **Doriston** *(49°43'N, 123°53'W)*, on the west side of the inlet.

255 **Storm Bay** *(49°40'N, 123°50'W)*, east of **Cawley Point**, provides good **anchorage** for small vessels near its head. Small craft can find good shelter south of the islets on the west side of the entrance.

256 Tidal differences for Storm Bay (7847), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

257 **Overhead cables**, vertical clearance 39 m, cross Sechelt Inlet about 1 mile south of Cawley Point. Red and white spheres are attached to the cables to increase visibility and large **billboard daybeacons** are on both shores.

258 *HMCS Chaudiere* was sunk in 1992 as an artificial reef for divers in the bay NW of Kunechin Point. This former *Royal Canadian Navy* destroyer escort is 111 metres long. It is marked by **cautionary buoys**.

259 **Kunechin Islets** *(49°37'N, 123°48'W)* and **Kunechin Point** form the north entrance point to Salmon Inlet.

260 *Kunechin Islets light (464)* is on the south tip of the largest islet and is shown from a white mast.

261 A **measured distance** of 1 853 m is close NW of **Piper Point**, marked by a pair of beacons at each end. It is laid out for courses 151° and 331°.

262 **Lamb Islets** *(49°33'N, 123°46'W)* lie 0.7 mile SSE of **Tuwanek Point**. A drying rock lies close NE of the north islet. A **submarine cable** connects the islets to the mainland.

263 Booming grounds and a log dump are in a bay 0.2 mile SE of Lamb Islets and in the bay NW of **Carlson Point**.

264 **Tillicum Bay**, close south of **Gray Creek**, is the site of *Poise Cove Moorage* (604-885-2895), protected by a rock **breakwater**. Limited guest moorage and facilities are available. A **submarine pipeline** (outfall/intake) is laid about 0.15 mile north of the **marina**.

PORPOISE BAY (2005)



265 **Four Mile Point** lies 1 mile SW of Tillicum Bay. **Four Mile Shoal**, 0.2 mile west of the point, has 4.9 m over it.

266 *Porpoise Bay Provincial Park*, SE of **Angus Creek**, has **mooring buoys** close offshore.

267 **Porpoise Bay** is at the head of Sechelt Inlet. A narrow isthmus, connecting Sechelt Peninsula to the mainland, separates the bay from the Strait of Georgia. **Poise Island** has a shoal with 2.7 m over it lying 0.2 mile NNE of it and another shoal with 5.8 m over it lies 0.2 mile NW of the island. Drying flats fill the head of the bay. Residential development stretches along the east side of the bay as far north as Tillicum Bay. Porpoise Bay is a seaplane landing area known as Sechelt.

267.1 A **wreck** lies close north of the public wharf.

268 Tidal differences for Porpoise Bay (7852), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

269 **Anchorage** with good holding ground can be obtained west of Poise Island in about 15 m and off the public wharf in 12 m.

270 The *Corporation of the District of Sechelt* (604-885-1986) **public wharf**, at the head of Porpoise Bay and close west of the drying flats, has docks attached to its head. Power, water and pumpout are available and a 3 tonne crane is on the wharf. It is connected by road to the village of Sechelt, centered on the south side of the isthmus. A tidal grid is west of the public wharf and a launching ramp is on its east side.

271 Adjacent to the public wharf is the *Lighthouse Marina* (604-885-9494), a full-service **marina** with pumpout facilities. Nearby is a pub.

272 *Tofino Air* (1-888-436-7776) has limited guest moorage for small vessels and fuel. *Choquers & Sons Machine & Welding Ltd.* (604-885-9244) has a travel lift and repair facilities.

Narrows Inlet

273 **Narrows Inlet**, entered between **Highland Point** *(49°41'N, 123°50'W)* and **Sockeye Point**, extends 8 miles NE from Sechelt Inlet. A drying rock lies 0.1 mile west of Highland Point. Depths within the inlet are too great for anchorage.

274 Booming grounds are 0.6 mile east and 1.7 miles NE of Sockeye Point.

275 **Tzoonie Point**, 2.2 miles NE of Sockeye Point, has above and below-water rocks NE of it.

276 **Tzoonie Narrows**, 0.7 mile NE of Tzoonie Point, is about 90 m wide. A depth of 9 m can be carried through the narrows but is so constricted it is suitable only for small vessels.

277 **Tidal streams** in Tzoonie Narrows attain 3 to 4 kn. Secondary current station Tzoonie Narrows (4210), referenced on Sechelt Rapids, is in *Canadian Tide and Current Tables, Volume 5*.

278 Rocks, with less than 2 m over them, lie on the east side of the inlet 2.5 miles above Tzoonie Narrows.

279 Booming grounds are on both shores and near the mud flats of the **Tzoonie River** at the head of the inlet. There are numerous **piles** and a logging camp on the east shore. Good **anchorage** for small craft has been reported all around the mouth of the Tzonnie River.

Salmon Inlet

280 **Salmon Inlet**, entered between Kunechin Islets *(49°37'N, 123°48'W)* and **Nine Mile Point**, extends 12 miles ENE from Sechelt Inlet.

281 **Overhead cables** traverse the south shore of Salmon Inlet. At a number of points they pass over navigable water, vertical clearance 7.6 m. **Caution** should be exercised when approaching the south shore. **Overhead cables** (power), vertical clearance 30 m, cross Salmon Inlet near the mouth of Sechelt Creek. This power line cuts a conspicuous swath along the north shore of the inlet.

282 **Marine farm** facilities are in several locations along the north shore between Kunechin Islets and **Mid Point** and along the south shore from SW of **Black Bear Bluff** to Chum Point. Booming grounds are 3 miles east of **Chum Point**, in Misery Bay and at the head of the inlet.

283 **Sechelt Creek**, 10 miles ENE of Nine Mile Point, enters the south side of the inlet. A drying spit extends 0.1 mile north from the mouth of the creek; give it a wide berth.

284 **Clowhom River** flows into the head of Salmon Inlet. A dam and power generating plant are in the entrance of the river. A water-tower 60 m high makes a conspicuous landmark. A **wharf**, near the entrance of the river, is protected from the power station runoff by a rockfill **breakwater**.

285 **Anchorage** can be obtained in 20 to 40 m near the head of Salmon Inlet. Small craft can obtain good anchorage in **Misery Bay**, about 0.5 mile west of Sechelt Creek, in 10 to 20 m.

Algerine and Shearwater Passages

Chart 3513

286 **Ahgykson Island** *(49°51'N, 124°39'W)* separates Algerine Passage from Shearwater Passage and is flat topped and wooded. Its south extremity is steep-to and its east side is fringed with boulders and drying reefs extending up to 0.5 mile offshore. Its west side is fringed with steep-to banks of stones and boulders. It is a First Nations reserve.

287 **Algerine Passage**, between the north end of Texada Island and Ahgykson Island, is 2.5 miles wide. **Kiddie Point** is the NW extremity of Texada Island. **Rebecca Rock**, 1.2 miles NNW of Kiddie Point, is 2 m high, bare and foul on all sides.

288 *Rebecca Rock* **light** *(471)*, on the **rock**, is shown at an elevation of 7.8 m from a white square tower and is fitted with a **radar reflector**.

289 **Submarine pipelines** (gas) cross the Strait of Georgia and the north end of Malaspina Strait, landing at Kiddie Point. They are marked by a sign.

290 **Grilse Point**, the NE extremity of Texada Island, has foul ground extending north and east from it. **Cyril Rock**, north of Grilse Point, dries 3 m.

291 *Cyril Rock* **light** *(470)* is shown from a white cylindrical tower with a green band at the top.

292 **Alan Bank** lies 0.7 mile NNW and **Oswald Bank** 0.5 mile NW from Grilse Point.

293 **Blubber Bay**, on the north side of Texada Island, is entered between **Blubber Point** and **Treat Point**. Both points should be given a berth of at least 0.1 mile. Blubber Bay settlement has a post office and is connected by road to Van Anda and Gillies Bay.

294 Tidal differences for Blubber Bay (7875), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

295 *BC Ferries* maintains a regular schedule between Blubber Bay and Westview. Take care not to anchor in the route of the **ferry**.

296 A private fixed green light is shown from the end of a catwalk that extends NE from the lime works wharves. A private flashing yellow light is shown from the outer end of the floating leads of the ferry landing.

297 **Anchorage** can be obtained by large vessels, off the entrance of Blubber Bay, in 35 m, sand, with Grilse Point bearing 092° distant about 0.6 mile. Inside the bay the bottom is mud and sand but space is restricted and used frequently by the **ferry**.

298 The **public wharf** (250-978-1307) on the west side of Blubber Bay has had the dock permanently removed and access to the shore is no longer possible. The ferry landing is close south of the wharf. The wharf on the east side of Blubber Bay is in ruins. Wharves and barge loading facilities of a lime works are in the south part of Blubber Bay. Docks belonging to the *Blubber Bay Boat Club* are close west of the lime works wharves.

299 **Shearwater Passage** is bounded on its SE side by Ahgykson Island and on its NW side by Mystery Reef. The fairway is about 2.5 miles wide. The south side of Savary Island has conspicuous white sandy cliffs backed by grassy patches. **Stradiotti Reef** extends about 1 mile from the south shore of Savary Island and has numerous boulders on it.

BLUBBER BAY (2005)



300 **Vivian Island**, 1 mile west of the south end of Ahgykson Island, is rocky, treeless and almost flat. A drying rock lies close east of it.

301 **Grant Reefs** *(49°53'N, 124°48'W)* have drying rocks and a rock awash near their east end. **Mystery Reef**, 3 miles SE of Savary Island, is a group of drying boulders connected to Savary Island by a shoal spit. It is steep-to on its SW, S and SE sides. Do not pass between Mystery Reef and Savary Island.

301.1 The **wreck** of the *Capilano*, with 31 m of water over it lies close south of Grant Reefs.

302 *Grant Reefs light buoy QM (477)*, close south of the east end of the reefs, is a **port bifurcation buoy**.

303 *Mystery Reef light and bell buoy Q25 (478)*, NE of the reef, is a **port hand buoy**.

Powell River and Westview

Chart 3533

304 The approach to Powell River is deep and without dangers. **Powell Hill**, 1.8 miles NNE of the town *(Chart 3513)*, has a bare summit and is a conspicuous landmark. Close SE of the main wharves an encircling **breakwater** of floating hulks protects shore facilities.

305 **Powell River** *(49°52'N, 124°33'W)*, on the slope of a hill SE of a river of the same name, is the site of a paper mill operated by Catalyst Paper Corporation. It exports newsprint and imports pulp and general supplies. There are two deep-draft berths and other docks for discharging barges and carrying out tug and vessel maintenance. The port has been used by barges only in recent years. Foreign going cargo vessels have used these facilities in the past, the largest being 178 m long

Table 9.1 Major Port Facilities — Powell River

Berth	Wharf Length (m)	Least Depth (m)	Elevation (m)	Remarks
Powell River Paper Dock Pier A	148	9	–	Berth 1 (NW side of pier) has a barge ramp and is used for exporting paper rolls. NOTE: SE winds may cause difficult docking. Tugs are available. Berth 2 is general purpose. Lift trucks with a loading rate of 27 tonnes/gang hour. Owner/operator: Catalyst Paper Corporation.
Pier C	50	–	–	Used for tugs and vessel maintenance.
Pier D	179	5.8	–	Used for unloading pulp. Elevators are decommissioned.
Pier E	128	–	–	Used for unloading materials and general supplies. Rail barge berth is close north.

POWELL RIVER PULP MILL (2005)



POWELL RIVER PULP MILL (2005)



with an approximate draught of 10 m. The city has the usual municipal amenities that include a post office and a hospital.

306 Details of port facilities are given in Table 9.1. Depths are subject to silting but are maintained as necessary by dredging.

307 The port is administered by the *Corporation of the District of Powell River* through a Wharfinger. The office is located in Westview; VHF 68, 604-485-5244.

308 **Anchorage** can be obtained SW of the wharves, but it is exposed to west winds.

309 Supplies are available in quantity from local stores, and diesel fuel and gasoline can be obtained at the public wharf at Westview. Bunker fuel in large quantities can be delivered by barge from Vancouver.

310 Tugs are available to assist in docking. Underwater inspection and repair can be carried out by local divers. Hull, engine, electrical and electronic repairs can be done by local firms. Small craft repair facilities including a marine railway are available. Powell River is a customs entry port.

311 Regular daily bus service to and from Vancouver is available by road and ferries. The airport has an asphalt runway 1 105 m long and maintains scheduled flights to and from Vancouver. There are regular tug and barge freight services between Powell River, Westview, Seattle and Vancouver, and **ferry** services for passengers and vehicles from Westview to Little River, near Cape Lazo on Vancouver Island, and to Blubber Bay on Texada Island.

312 Tidal differences for Powell River (7880), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

313 Meteorological information for *Powell River Airport* is in the Appendices.

WESTVIEW (2005)



314 *Powell River Floating Breakwater Entrance North and South lights (476.2, 476.3),* and *Powell River Floating breakwater light (476.35),* are private. They are located on the **breakwater** of derelict vessels that protects shore facilities.

315 Powell River light range on the NW side of Berth A is private.

316 A **submarine outfall pipeline** extends 0.45 mile in a SW direction NW of the main wharves. Close south of Powell River, two gas **pipelines** extend seaward to Kiddie Point on Texada Island, and cross the Strait of Georgia. These pipelines are marked by signs.

317 A **submarine cable** (abandoned) commences from close south of the **breakwater** and extends seaward through Algerine Passage into the Strait of Georgia.

317.1 A **submarine pipeline** (outfall), south of the breakwater, extends 0.4 mile offshore.

318 **Westview**, 2 miles south of Powell River, is a residential suburb of Powell River. The *Canadian Coast Guard* has a year-round rescue unit based at Westview.

319 *Westview Fishing Harbour South light (472)* is at the seaward end of the south **breakwater**.

320 *Westview Boat Harbour North light (476),* at the north extremity of the north **breakwater**, is shown at an elevation of 6.1 m from a mast.

321 A **submarine pipeline**, marked by a sign, is laid close north of the north **breakwater**.

322 The *Westview North Harbour* has **breakwaters** protecting its north and west sides. Permanent moorage is available and numerous docks are in the basin. Extensive renovations are planned to commence in fall 2010; contact the *City of Powell River, Waterfront Projects*, at 604-485-6291 for more information.

323 The tanker landing between the north and south basins and west of the rockfill **breakwaters** is used mainly for handling petroleum products. It has a berthing length of 59 m on its west side, 46 m at its north end and 30 m at its south end. The least depth alongside is 9 m on the west side.

324 The *BC Ferries* ferry landing extends from the south side of the tanker landing. A private light is close south of the landing.

325 The *Westview South Harbour* (604-485-5244) is protected by a rock mound **breakwater**. This facility is used primarily by commercial fishers; transient moorage is available on a first-come, first-served basis. Washrooms, showers, laundry, customs clearance, power, water, and garbage and waste oils disposal area available. Extensive renovations to the South Harbour commenced in spring 2010.

326 *Westview Fuels* (604-485-2867), on the south side of the south harbour, has gas, diesel and supplies. A barge loading **wharf** behind the south **breakwater** has depths of 3.6 to 4.2 m.

Powell River to Sarah Point

Chart 3513

327 **Sliammon** *(49°54'N, 124°36'W)* is a First Nations village near the mouth of **Sliammon Creek**.

328 **Submarine pipelines** (outfalls) extend about 140 m seaward 1 mile SE of Sliammon and 0.25 mile in a SW direction close north.

329 **Anchorage** can be obtained off Sliammon village but it is open. Keep Dinner Rock *(49°57'N, 124°43'W)* bearing more than 308° and open of the point west of the village.

LUND (2005)



330 **Atrevida Reef**, 2.5 miles NW of Sliammon, extends 0.3 mile from shore. A prominent house and wind-powered generator are on the point 1.5 miles NW of Atrevida Reef.

331 *Atrevida Reef light buoy Q26 (477.5)* is a **starboard hand buoy**.

332 **Dinner Rock**, 2.7 miles NW of Atrevida Reef, is 16 m high and bare.

332.1 A **wreck** with 32 m of water over it lies close south of Dinner Rock.

Chart 3538

333 **Hurtado Point** *(49°58'N, 124°45'W)* is bold and cliffy. **Mace Point**, the east extremity of Savary Island, is bold and steep-to. The channel between Hurtado and Mace Points is deep and free of dangers.

334 **Submarine cables** cross the channel from Lund to the NE end of Savary Island.

Chart 3554

335 **Lund**, 1.3 miles NW of Hurtado Point, is a small settlement at the northern terminus of the main highway from Vancouver. The settlement has provisions, restaurants, accommodations, and a post office. Marine facilities, supplies, and repairs are available.

336 Tidal differences for Lund (7885), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

336.1 Restricted anchoring areas have been established in Lund Harbour extending from the public wharf out beyond the harbour, and from the public wharf to Finn Cove. No anchorage is permitted in these areas.

337 A **submarine pipeline** (sewer outfall), marked by a sign, is laid near the public docks and extends out of the harbour. The pipeline has two private **warning buoys** marked *No Anchoring*.

338 *Lund Breakwater South, Centre and North* **lights** *(478.2, 478.3, 478.4)* are shown from masts. The north light has a **starboard hand daymark**.

340 *Lund Harbour Authority* (604-483-4711) **public wharf**, depth 11 m alongside its seaward face, is 24 m long. A 3 tonne crane, washrooms and showers are on the wharf head. Docks south of the wharf provide 200 m of docking space and have a common connection to an approach structure. Water, power, pumpout and a boat launch are available. A water taxi dock is in the harbour between the public docks and the wharf head. A rockfill **breakwater** is south and a floating three-section concrete **breakwater** is west of the docks.

FINN COVE (2005)



341 *Lund Resort at Klah Ah Men* (604-414-0474), close north of the public docks, has provisions, vessel supplies, accommodations, and a restaurant. Moorage (*13 Moons Marina*) is available on the north dock. The south dock has gasoline and diesel.

342 **Finn Cove**, 0.4 mile north of Lund, offers protection to small craft from west winds. *Jack's Boat Yard* (604-483-3566), with a travel lift for vessels up to 18 m or 30 tons, repair and dry storage, is on the E side of the bay. A mooring for a barge facility is also in the bay, as is a 40 m mooring float with no shore access.

343 **Caution. – Anchorage in Finn Cove is prohibited due to underwater hazards**. Numerous no anchoring **buoys** have been established in the area.

344 A **submarine pipeline** (sewer) is laid along the east side of Finn Cove and extends to the Lund public wharf. Another s**ubmarine pipeline** (sewer) is laid along the west side of Finn Cove. An additional **submarine pipeline** (water) crosses the mouth of the cove to **Sevilla Island.** An **overhead cable** (telephone), vertical clearance 10 m, crosses from Sevilla Island to the SW shore of Finn Cove. Another **overhead cable**, vertical clearance 8 m, is NE.

Chart 3538

345 **Major Islet** *(49°59'N, 124°49'W)* is bare and composed of white granite. A drying ledge extends 0.1 mile from its NE point and a detached rock, with less than 2 m over it, lies 0.2 mile NE of the islet. The south side of the islet is steep-to.

346 *Major Islet* **light** *(479.2),* on the south end of the islet, is shown at an elevation of 31.1 m from a white cylindrical tower with a red band on top and is fitted with a **radar reflector**.

347 *Lund* **light** *(479)*, on the SE end of the south Copeland Island, is shown at an elevation of 6.4 m from a white cylindrical tower and is fitted with a **radar reflector.**

348 **Thulin Passage** separates **Copeland Islands**, known locally as **Ragged Islands**, from the mainland. The passage, not less than 137 m wide, is used by tugs with logbooms or scows. Logbooms are often secured to the east shore where there are a number of concrete abutments and **dolphins**. *Copeland Islands Marine Provincial Park* encompasses the Copeland Islands and has minimal development.

349 The **wreck** of a 37 m long tug with a wood hull is on the west side of a bay formed by two large islands at the south end of the Copeland Islands, at the SW end of Thulin

Passage. Water depth is 9.7 m. The **wreck** of a fishing vessel with a wood hull is on the NW side of the same bay close to shore. A metal stack is visible at low water. **Avoid anchoring in these areas.**

350 **Tidal streams** within Thulin Passage are weak.

350.1 **Shapes Bay** *(50°01'N, 124°48'W)*, on the east side of Thulin Passage, has a private marina for the residents of the neighbouring community. No guest moorage is available. A private light is on the SW side of the outer dock.

351 *Thulin Passage* **light** *(479.5)*, on the north end of Copeland Islands, is shown at an elevation of 8.5 m from a white cylindrical tower with a green band on top and is fitted with a **radar reflector**.

352 **Bliss Landing** *(50°02'N, 124°49'W)* is at the head of **Turner Bay**. *Bliss Landing Estates Marina* (604-414-9417), in the bay, provides guest moorage. Power, water, washrooms, showers, laundry, and garbage disposal facilities are available.

353 **Bliss Landing daybeacon**, on a rock near the north side of Turner Bay, has a **starboard hand daymark**.

354 **Powell Islets** *(50°02'N, 124°52'W)* and **Townley Islands** have a reef with less than 2 m over it between them, pass west of Powell Islets.

355 **Sarah Point**, the NW extremity of **Malaspina Peninsula**, is rounded and rocky. A hill rises a short distance within the point and from its summit the land on the NE side slopes gradually to the water's edge. **Marine farm** facilities are 1 mile south of Sarah Point.

356 A **submarine cable area** crosses south of Sarah Point, to Tiber Bay on Cortes Island. A **submarine cable** is laid south of the cable area and extends from south of Sarah Point to NNW of Mary Point.

Manson Passage

357 **Manson Passage**, between **Savary Island** *(49°56'N, 124°49'W)* and **Hernando Island**, is only suitable for small craft; local knowledge is advised. A drying rock lies in mid-channel and a drying spit, with large boulders on it, extends 1.3 miles SSE from **Ashworth Point**. A drying ledge with large boulders on it extends 0.4 mile west from Savary Island. **Keefer Rock** lies 1.3 miles ENE of Ashworth Point.

358 **Tidal streams** attain 2 kn at times. A strong wind opposing the tide creates rough, steep seas in the shallow waters of Manson Passage.

359 **Keefer Bay**, on the north side and at the east end of Savary Island, has a drying spit on its west side that extends 0.6 mile north from the island. It is reported that the soft sand bottom off Savary Island affords a poor holding ground. The **public wharf** in Keefer Bay has a wharfhead length of 12 m and is equipped with a 3 tonne crane. A dock for small craft is secured to the south side of the wharfhead. There is a store and water taxi service (*Savary Island/Lund Water Taxi*, 604-483-9749) to and from Lund.

360 *Savary Island wharf light (478.5)*, on the wharf on the N side of the island, is shown from the top of a shed on the public wharf.

Baker Passage

361 **Baker Passage**, between Hernando Island and **Twin Islands**, is deep and about 0.7 mile wide at its narrowest part. **Spilsbury Point** *(50°00'N, 124°57'W)* is low, sandy and covered with trees. Local **magnetic disturbances** have been experienced in the vicinity of Spilsbury Point.

362 *Spilsbury Point light (481.5)*, on the north tip of Hernado Island, is shown from a white skeleton tower.

363 Tidal differences for Twin Islands (7892), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

364 **Tidal streams** in Baker Passage attain 2 kn at times.

365 **Stag Bay**, between Spilsbury and Hidalgo Points, has a conspicuous white boulder on its shore about 0.7 mile west of **Hidalgo Point**. Private wharves are in Stag Bay. **Dog Bay**, SE of Hidalgo Point, has **Dog Rock** in its north part and drying rocks in its centre. **Iron Point** is the SE extremity of Twin Islands and **Echo Bay** lies close west of it.

366 **Little Rock**, in the west entrance to the channel between Twin Islands and Cortes Island, is 4 m high. **Central Rock** is a drying rock midway between the north end of Twin Islands and Cortes Island. Drying ledges and reefs extend from the SE coast of Cortes Island between Little Rock and Sutil Point.

367 **Marine farm** facilities are off the NW shore of the north Twin Island.

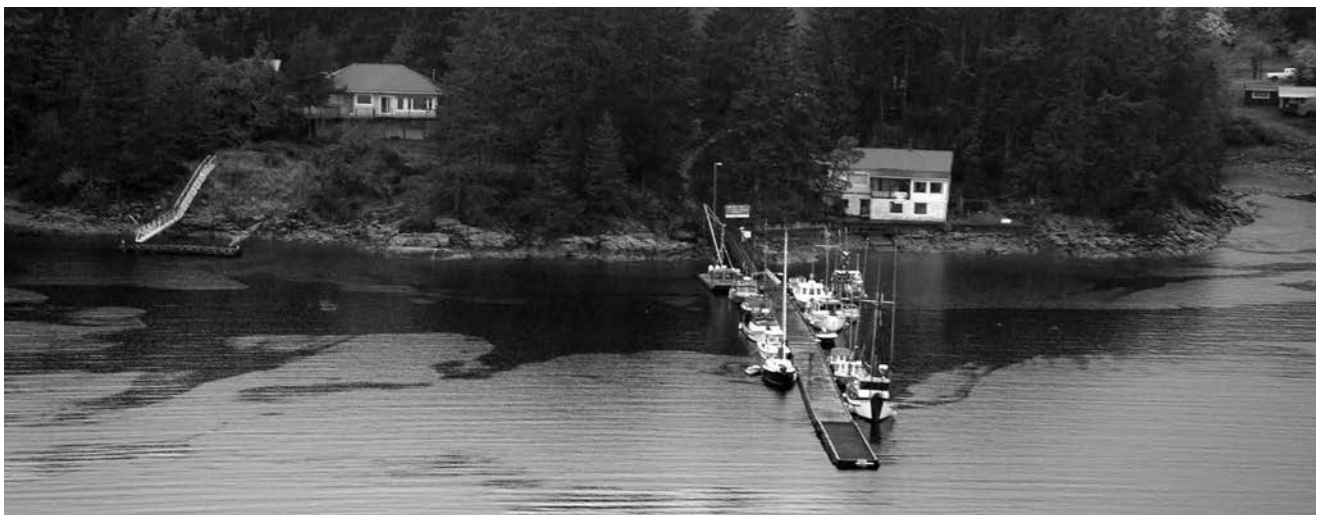
368 **Three Islets** *(50°03'N, 124°55'W)*, in the approach to Cortes Bay, are white, bare and rocky.

Chart 3554

368.1 Two underwater **rocks**, close NE of Three Islets are a **hazard** to navigation. These rocks, and Three Islets collectively, are known locally as **Cod Rocks**. Mariners are advised to give Cod Rocks a wide berth.

369 **Cortes Bay** has a narrow entrance encumbered by a drying rock with a light on it. When entering Cortes Bay pass to the south of the light. A rock with 2.7 m over it lies in the centre of the bay.

CORTES BAY PUBLIC WHARF (2005)



370 *Cortes Bay light (481)* is on a drying rock in the entrance. It is shown from a white cylindrical tower with a red band at the top.

371 The *Harbour Authority of Cortes Island* (250-935-0180) **public wharf**, on the SW side of the bay, is 87 m long with a depth of 9 m alongside. Yacht club docks are on the north and south shores.

372 **Anchorage** can be obtained in Cortes Bay in 9 to 15 m, soft mud bottom, but holding ground is poor. NW winds funnel in from the head of the bay and with strong SE winds a rough sea can be encountered.

Malaspina and Adjacent Inlets

Chart 3538

373 **Malaspina Inlet**, entered from Desolation Sound between **Myrmidon Point** *(50°04'N, 124°48'W)* and **Zephine Head**, is a popular small craft cruising area. **Stacey Rock**, a drying rock, lies close offshore west of Myrmidon Point. A drying rock is off the west end of Zephine Head and should be given a wide berth. Several logging camps are in the inlet.

374 **Marine farm** facilities, vulnerable to damage from vessel wash, are in several locations along the shores of Malaspina Inlet. Reduce speed when passing these facilities.

375 **Tidal streams** in the entrance attain 2 to 4 kn, but within the inlet are weak.

376 **Galley Bay** *(50°04'N, 124°47'W)* is a popular small craft **anchorage** with the best berths in the westernmost cove and behind the island in the east part of the bay. Drying reefs lie in the central portion of the bay. Rocks with 1.3 m and 1.1 m over them lie south and SE of the largest island on the east side of the bay. Private docks are in several locations and **marine farm** facilities are at the south end of the bay.

377 **Hare Point**, on the NE side of the inlet, is steep-to. A rock, with 1.2 m over it, lies 0.25 mile NW.

378 **Beulah Island** and the large island close SE are joined together and to the mainland by drying ridges. The coves north and south of these drying ridges are known locally as **Parker Harbour**. Temporary **anchorage** can be obtained in the north part of the harbour. The dock on the mainland shore is private. It is reported that more protected **anchorage** can be found in the south part of Parker Harbour, which is entered north of the drying reefs lying north of **Thorp Island**. A **wreck** lies close to the shore on the west side of the cove. **Marine farm** facilities are south of Thorp Island.

379 **Josephine Islands**, east of Beulah Island, lie in the middle of the inlet. **Cavendish Rock** and a rock close west of it lie east of the south extremity of Josephine Islands.

380 **Cross Islet** has a drying rock and unnamed islets between it and the mainland shore to the east. **Rosetta Rock** dries 2.8 m and lies in the middle of the fairway, SW of Cross Islet.

381 **Cochrane Islands**, joined by a drying ledge with several rocks and islets on it, have several detached drying rocks north and west of them. Good **anchorage** can be found SW of the islands.

382 **Neville Islet** is surrounded by drying ledges close-off the NE shore.

383 **Kakaekae Point**, on the NE side of the inlet, is bold and steep-to. Temporary **anchorage** can be obtained in the bight on the east side of the point.

384 **Grace Harbour**, entered between **Scott Point** and **Moss Point**, affords **anchorage** for small vessels NE of **Jean Island** in about 25 m. The inner part of the harbour provides completely protected **anchorage** for small craft. A 2.2 m shoal is in the middle of the approach to this anchorage.

385 **Coode Island** and **Coode Peninsula** form the east side of **Trevenen Bay**. **Marine farm** facilities, some marked by **buoys**, are in Trevenen Bay, in the channel between Coode and Isbister Islands and along the east side of Coode Peninsula. The north island of **Isbister Islands** has a detached rock with 3.8 m over it close NE of it. Drying rocks lie farther NE and east, on the east side of the fairway. **Anchorage**, sheltered from SE winds, can be obtained in Trevenen Bay.

386 **Lion Rock** lies near mid-channel SSE of **Selina Point**.

387 **Marine farm** facilities are in **Salubrious Bay**, which is between Selina Point and **Edith Island**.

388 **Okeover Inlet** is entered between the north end of Coode Peninsula and **Hillingdon Point** *(50°02'N, 124°43'W)*, a bold headland. **Marine farm** facilities are in several locations along the shores of Okeover Inlet.

389 Tidal differences for Okeover Inlet (8006), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

390 **Boundary Rock** lies close SE of the south extremity of Coode Peninsula. **Penrose Bay**, on the SW side of Coode Peninsula, has small craft **anchorage** in 7.4 m at the head of the bay.

391 The *Okeover Harbour Authority* (604-483-3258) **public wharf**, on the west side of Okeover Inlet and 1 mile south of Penrose Bay, has a derrick, docks with 73 m of berthing space, a rock mound and two floating **breakwaters** and a launching ramp. A resort above the wharf has a restaurant, small store and public telephone. A road leads to Lund and the main highway leading south.

392 *Okeover Inlet Light (479.7)* is on the seaward end of the floating **breakwater** north of the public wharf.

393 **Okeover Inlet daybeacon**, on the seaward end of the floating breakwater north of the public wharf, has a **port hand daymark**.

394 *Okeover Arm Provincial Park*, close north of the public wharf, has camping and picnic facilities. A launching ramp is immediately adjacent to the park.

395 A **submarine cable** crosses the inlet close north of the public wharf and is marked by signs on both shores. Booming grounds, a log slip and spar pole are close south of the cable on the east shore.

396 Buildings and a causeway, ramp and dock of *Sliammon Indian Seafoods Company* lie 1.3 miles SE of the public wharf. A **submarine pipeline** (water) is laid across **Freke Anchorage** from the dock.

397 **Marine farm** facilities are along the west shore of Freke Anchorage.

398 **Lancelot Inlet**, east of **Gifford Peninsula**, is entered between Hillingdon Point and Edith Island *(50°02'N, 124°44'W)*. **Stopford Point** is 0.65 mile NE of Edith Island.

398.1 **Caution**. — Charted horizontal discrepancies of up to 35 m may exist in the area of Okeover Inlet and Lancelot Inlet.

399 **Marine farm** facilities, protected by booms and marked by **buoys**, line the shore between Hillingdon Point and **Bunster Point**.

400 **Isabel Bay** *(50°03'N, 124°44'W)* is entered between **Polly Island** and **Madge Island**. A rock, which dries 0.4 m, lies 90 m NE of Polly Island and drying ledges extend north and NE from Madge Island. Isabel Bay is a popular **anchorage** for small craft in its south extremity or west of Madge Island.

401 **Thors Cove**, although open to west winds which are reported to exist even when a SE wind is blowing up Okeover Inlet, provides **anchorage** for small vessels in its centre in 30 m, mud. A good **anchorage** for small craft is behind the islet close-off the south shore. **Marine farm** facilities are on the north and south sides of the cove. **Theodosia Arm**, at the head of the cove, dries.

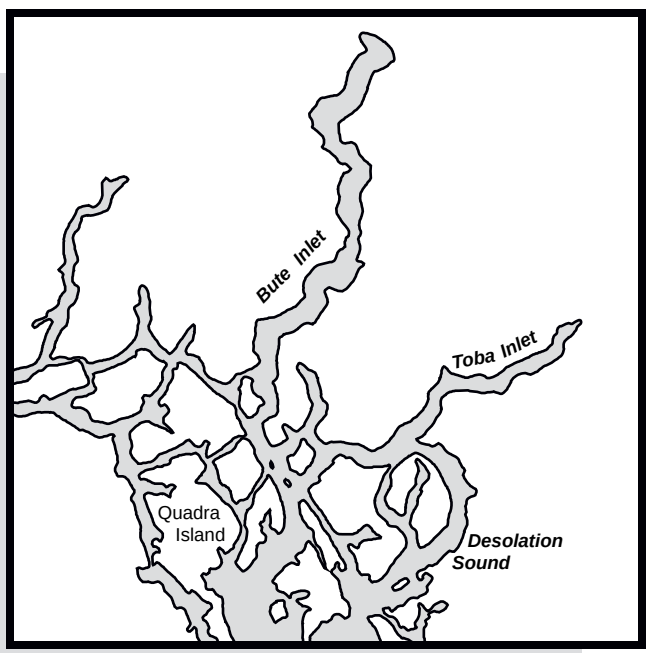
402 **Thynne Island** lays close-off **Bastion Point**. A drying rock lies in the passage east of the island.

403 **Theodosia Inlet**, entered SE of **Galahad Point**, provides good **anchorage** for small craft. The narrow entrance channel has a rock that dries 0.4 m on its north side, 0.2 mile SE of Galahad Point, and a least depth in the fairway of 1.0 m. Booming grounds and **marine farms** are in several locations.

404 The smaller of **Susan Islets**, SE of **Grail Point**, has a prominent pointed rock on its summit. Small craft can find good **anchorage** behind the islets, mud bottom. **Marine farm** facilities are off the south shore, south of Susan Islets.

405 **Wootton Bay**, at the head of Lancelot Inlet, has **anchorage** for small vessels. A **wreck** lies near the center of the anchorage with a known depth of 18.5 m.

Desolation Sound, Toba Inlet and Bute Inlet



General

Chart 3001

1 This chapter describes the inlets, channels and passages between Sutil Channel and Homfray Channel, as well as Toba and Bute Inlets on the mainland.

2 Passages and waters in this area are generally narrow and very deep with few anchorages. Marine traffic comprises fish boats, tugs with barges or log booms, and pleasure craft. Terrain is mountainous and heavily wooded. Industries are fishing, marine farming, logging and tourism. There are a number of small settlements and a few transient camps in support of them. Of the many First Nations Reserves charted, few are permanently occupied. Whether occupied or not, a First Nations Reserve should not be landed on without permission.

3 A series of channels and passages are used by low-powered or small vessels and by tugs with barges or log booms as a means to avoid strong tides and winds that funnel through Johnstone Strait. This route, known locally as the **Inside Passage**, leads NW from Powell River *(49°52'N, 124°33'W)* through Desolation Sound and Lewis Channel, or through Sutil Channel to Calm Channel, then through Yuculta Rapids, Cordero Channel and Chancellor Channel to join Johnstone Strait near Race Passage. An alternative route from Chancellor Channel leads NW and WSW through Wellbore and Sunderland Channels to join Johnstone Strait NW of Hardwicke Island.

Sutil Channel

Charts 3538, 3541

4 **Sutil Channel** *(50°06'N, 125°07'W)* leads 17 miles north and NNE along the west side of **Cortes Island**, and connects the Strait of Georgia to the junction of Calm Channel, Lewis Channel and Deer Passage.

5 Tidal differences for Gorge Harbour (8037) and Whaletown Bay (8038), referenced on Point Atkinson (7795), are in *Canadian Tide and Current Tables, Volume 5*.

6 **Tidal streams** in Sutil Channel are weak, rarely exceeding 2 kn. The flood stream flows north

in the south portion, south in the north portion, meeting about Penn Islands.

7 A passenger and vehicle **ferry** crosses Sutil Channel between Heriot Bay and Whaletown. The charted ferry route is a general indication of the route followed.

8 A **submarine cable** (fibre-optic) crosses Sutil Channel between Moulds Bay, Quadra Island, and 0.5 mile W of Whaletown Bay, Cortes Island.

Wilby Shoals to Moulds Bay

Chart 3538

9 **Wilby Shoals** *(49°59'N, 125°08'W)*, with a least depth of 3.2 m, are steep-to and extend 2.5 miles off the south end of **Quadra Island**. In summer, shoals are marked by kelp.

10 *Wilby Shoals* ***light buoy*** *P60 (510)*, off the south edge of Wilby Shoals, is a **starboard hand buoy**.

11 **Port hand buoy** *P61* marks the east extremity of Wilby Shoals.

12 **Francisco Point** *(50°01'N, 125°09'W)* is high and cliffy with drying rocks extending almost 0.3 mile off it.

13 **Drew Harbour** *(50°06'N, 125°12'W)*, sheltered by **Rebecca Spit**, provides good **anchorage** but the bottom is hard; small craft may have difficulty getting an anchor to hold. The harbour is subject to strong squalls during south or SE gales. The best shelter for small craft is close south of the north tip of Rebecca Spit. The harbour is surrounded by a white sandy beach and *Rebecca Spit Marine Provincial Park* has picnic and sanitary facilities, a launching ramp and fresh water. *Taku Resort & Marina* (1-877-285-8258) is a **marina** with laundry, accommodations and camping. **Marine farm** facilities are located close south of Rebecca Spit Marine Park.

14 *Drew Harbour* **light** *(485)*, at the tip of Rebecca Spit, is shown from a white cylindrical tower with a green band at the top.

Charts 3538, 3539

15 **Heriot Bay** *(50°06'N, 125°13'W)* is entered between a rock with 1.2 m over it close SE of **Heriot Island** and a shoal spit marked by **port hand buoy** *N3* projecting from the east entrance point. The bay has fair **anchorage** in its west part, away from the **ferry** route. The ferry landing, providing service to Cortes Island, is on the east side of the bay. The settlement has a general store with post office and bakery. The *Heriot Bay Inn and Marina* (1-877-605-4545) has a full-service **marina**, accommodation and camping. A road connects the settlement to Quathiaski Cove where a ferry operates to Campbell River.

16 The *Quadra Island Harbour Authority* (250-285-3622) **public wharf**, at the head of Heriot Bay, is protected by a floating breakwater, with private lights on each end. It has a berthing length of 12 m with docks at the outer end providing 397 m of berthing. A 3 tonne crane is on the wharf. Moorage, power, water, garbage disposal and a launching ramp are available. Heriot Bay is a seaplane landing area.

17 **Hyacinthe Bay** and **Open Bay**, separated by **Hyacinthe Point**, are open with scattered rocks and shoals and not suitable as anchorages. A rock **breakwater** and **piles** are at the head of Open Bay.

18 **Moulds Bay** is reported to offer good **anchorage** to small craft in 7 to 10 m. The narrow passage leading from the NE corner of Moulds Bay toward Hoskyn Channel is further restricted by a rock ledge that extends about 6 m out from the small island 3 m high.

Hoskyn Channel

Chart 3539

19 **Hoskyn Channel** *(50°11'N, 125°08'W)* leads north between Quadra Island and Read Island to Surge Narrows and Whiterock Passage. Several cabins lie along the shores of the channel.

20 Tidal differences for Surge Narrows (8045), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

21 **Tidal streams** ebb north and flood south at 1-2 kn.

22 **Breton Islands** *(50°08'N, 125°11'W)* have reefs extending from them.

23 A detached shoal with a least depth of 3.7 m lies close-off the SW extremity of Read Island, midway between **Read Point** and **Hoskyn Rock**. An isolated 7.9 m shoal lies almost midway between **Dunsterville Islet** and **King Islets**.

24 **Marine farm** facilities are in the bays south and north of Dunsterville Point and in the channel east of King Islets.

25 **Village Bay**, in the SE part of Quadra Island, is open to the SE but has temporary **anchorage** for small vessels in its centre part and in the SW corner near the head. Several cottages lie around the shores of the bay. **Marine farm** facilities are in the south part of the bay.

26 **Crescent Channel** *(50°10'N, 125°10'W)* is entered west of **Bold Point**, a prominent point at the south end of **Bold Island**. **Marine farm** facilities are in Crescent Channel. Well protected **anchorage** for small craft is available in the channel. Take care to avoid drying rocks and rocks with less than 2 m over them.

27 **Marine farm** facilities front **Bold Point settlement**.

28 **Conville Bay** and **Conville Point** lie on the west side of Hoskyn Channel. An isolated 5.8 m shoal lies 0.3 mile south of Conville Point. **Marine farm** facilities are in Conville Bay and close south of Conville Point.

29 **Anchorage** for small craft can be obtained in **Hjorth Bay**, on the east side of Hoskyn Channel, or farther north on the east side of **Sheer Point**, in a bay known locally as **Boulton Bay**.

Chart 3537

30 **Surge Narrows settlement**, NE of **Surge Point** *(50°13'N, 125°08'W)*, is on the east side of Hoskyn Channel. The store has closed but the post office remains open.

31 The **public wharf** provides 55 m of berthing space; the outer dock is reserved for seaplanes.

32 A rock that dries 0.3 m, NW of the public wharf, is marked by **port hand buoy** *Q1*.

33 A **submarine pipeline** (sewer outfall) is laid close north of the public wharf.

34 Waters off the settlement are seaplane landing areas.

Whiterock Passage

35 **Whiterock Passage** *(50°15'N, 125°06'W)* leads NE from Hoskyn Channel to Calm Channel and provides a safe route away from the strong currents in Surge Narrows and Hole in the Wall. The passage has drying banks on both sides and is obstructed at the south end by an islet and several drying rocks. A channel with a least depth of 1.5 m has been dredged through the bank. Several cabins lie along the shores of the passage.

36 **Tidal streams** in Whiterock Passage are weak, usually less than 2 kn. The flood stream sets north.

37 *Whiterock Passage* **light** *(484)*, on the islet in the SW entrance to the passage, is shown from a white tower.

38 *Whiterock Passage 1 Range* **lights** *(484.1, 484.2)*, bearing 065½°, lead through the south part of the dredged channel.

39 *Whiterock Passage 2 Range* **lights** *(484.3, 484.4)*, bearing 211½°, lead through the north part of the dredged channel.

Okisollo Channel

40 **Okisollo Channel** leads from Surge Narrows to Discovery Passage, separating Quadra Island from **Maurelle Island** and **Sonora Island**. Hole in the Wall connects the NE part of Okisollo Channel to Calm Channel. Because of currents and shoal rocks in Surge Narrows, Upper and Lower Rapids and Hole in the Wall, the route through Okisollo Channel is suitable only for small vessels and small craft.

41 **Tidal streams** reach 12 kn in Okisollo Channel.

42 Predictions of times and rates of maximum current and times of slack water for Hole in the Wall (West End) (5100) and Beazley Passage (Surge Narrows) (5200), and secondary current station Okisollo Channel (5030), referenced on Seymour Narrows, are in *Canadian Tide and Current Tables, Volume 6*.

Surge Narrows to Upper Rapids

43 **Surge Narrows** *(50°14'N, 125°10'W)* joins Hoskyn Channel to Okisollo Channel leading SW of **Antonio Point**. It is obstructed at its SE end by the **Welsford Islands** and the **Settlers Group**. The name Surge Narrows is applied locally to the entire route, from Hoskyn Channel through Beazley Passage, described below, to Okisollo Channel. **This route should be navigated only at or near slack water.**

44 **Beazley Passage**, between **Sturt Island** and **Peck Island**, is the only navigable passage through or around Settlers Group into Okisollo Channel. It has a minimum width of 60 m. **Tusko Rock**, which dries 1.6 m, lies at the NW end of the passage.

45 Anchorage in the vicinity of Settlers Group is not recommended because of strong **tidal streams** and poor holding.

46 Tidal differences for Surge Narrows (8045), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

47 The strongest **tidal streams** in the Surge Narrows area occur in Beazley Passage, where at large tides they reach 11½ kn on the flood and 9½ kn on the ebb. Duration of slack water throughout Surge Narrows varies from 5 to 11 minutes. Daily predictions for times of slack water, and times and rates of maximum flood and ebb streams, are tabulated for current station Beazley Passage (Surge Narrows) (5200) in *Canadian Tide and Current Tables, Volume 6*.

48 **Anchorage** for vessels awaiting slack water in Surge Narrows can be obtained in **Yeatman Bay** *(50°14'N, 125°11'W)*. The bottom, near shore, is rock and holding ground is indifferent.

49 **Cyrus Rocks** lie on the west side of the channel 1.5 miles NNW of Yeatman Bay. **Barnsley Shoal** is an isolated reef near mid-channel east of Waiatt Bay.

50 **Marine farm** facilities are ENE of Cyrus Rocks.

51 **Waiatt Bay** provides well-protected **anchorage** for small vessels in its centre and for small craft near its head or in small bays in the marine park. Bottom is mud with some sand and shale near shore.

52 The entrance to Waiatt Bay south of **Octopus Islands** has several islets, shoals and drying reefs in it. Local knowledge is advised as there are no natural leading marks for clearing these reefs. The narrow passage from Bodega Anchorage to Waiatt Bay, leading west of Octopus Islands, is clear of dangers except for a drying reef and a rock with 0.2 m over it at the south entrance to this passage. These reefs are reported to be easy to see in the clear water of the bay.

53 *Octopus Islands Marine Provincial Park,* on the north side of Waiatt Bay, is undeveloped.

54 Tidal differences for Octopus Islands (8050), referenced on Campbell River, are in *Canadian Tide and Current Tables, Volume 6*.

55 **Bodega Anchorage**, north of Octopus Islands, is useful for craft awaiting slack water for passage through Hole in the Wall or Upper Rapids. Holding is reported to be good. **Chasina Island** is in the entrance to the anchorage.

56 **Francisco Island** has a 4.4 m shoal 0.1 mile SE of it and a rock that dries 3.2 m 0.1 mile NW of it.

57 **Diamond Bay**, NW of Springer Point, and the bay close north have private docks in them.

58 **Bentley Rock**, which dries 0.1 m, and a reef with 3.4 m over it close SE, lie near mid-channel at the SE end of Upper Rapids. A rock that dries 0.1 m lies close offshore SE of Cooper Point.

59 **Upper Rapids** *(50°18'N, 125°14'W)*, between **Cooper Point** and islands off the east shore, has a maximum rate of 11 kn. **Overfalls and eddies are extremely dangerous. Upper Rapids should be navigated only at or near slack water.** Secondary current station Okisollo Channel (5030), referenced on Seymour Narrows, is in *Canadian Tide and Current Tables, Volume 6*.

Hole in the Wall

60 **Hole in the Wall** *(50°19'N, 125°10'W)*, entered between **Springer Point** and **Etta Point**, leads from Okisollo Channel to Calm Channel. It is normally used by commercial traffic in preference to Surge Narrows as the channel is wider. **Hole in the Wall should be navigated only at or near slack water.**

61 *Hole in the Wall West* **light (***528)*, on the south shore at the west end of the channel, is shown from a white cylindrical tower with a red band at the top.

62 Two shoals lie in the west entrance to Hole in the Wall. Midway through the passage a drying rock lies close-off the north shore, and a rock with less than 2 m over it lies close-off the south shore.

63 **Florence Cove** indents the south shore of Hole in the Wall. It is well positioned as an **anchorage** for small vessels but reports of its suitability are mixed. **It has been reported that log hauling cables were dumped in the south end of the cove and weed has fouled anchors.** Other reports indicate that it offers good, quiet anchorage.

64 Tidal differences for Florence Cove (8055), referenced on Campbell River, are in *Canadian Tide and Current Tables, Volume 6*.

65 **Tidal streams** in Hole in the Wall reach 12 kn on the flood and 9½ kn on the ebb in the narrows, at the west entrance of the channel. The flood sets NE, and the duration of slack on average is four minutes. The stream in the east entrance, between **Bernard Point** and **Bassett Point**, is about 2 kn. Times and rates of maximum flood and ebb streams are tabulated for current station Hole in the Wall (West End) (5100) in *Canadian Tide and Current Tables, Volume 6*.

Upper Rapids to Discovery Passage

66 **Owen Bay** *(50°19'N, 125°14'W)* is entered through a channel less than 0.1 mile wide between a drying reef close-off the SE side of **Walters Point** and **Grant Island**. A drying reef lies 0.1 mile SW of Grant Island. **Take care not to be set by the currents and eddies into the reefs. The NE part of Owen Bay is subject to strong outflow winds from Bute Inlet.**

67 **Owen Bay settlement**, on the SE shore, has no supplies or services. The **public wharf** provides 17 m of berthing.

68 Good **anchorage** is available in Owen Bay over a mud bottom. It is reported that the islands SW of the wharf should be avoided as the **tidal currents** rush between them with remarkable force.

69 Tidal predictions for Owen Bay (8120) are in *Canadian Tide and Current Tables, Volume 6*.

70 **Tidal streams** reach 11 kn in Upper Rapids in Okisollo Channel. Times of turn in the Lower Rapids are almost the same as those at Upper Rapids and maximum rates are about 6 kn.

71 **Lower Rapids**, which lead south of **Okis Islands**, are obstructed by **Gypsy Shoal**, which has two heads. The SW rock dries 0.4 m and the NE rock has 0.2 m over it. The fairway passes south of Gypsy Shoal and **it should be navigated only at or near slack water**. Lower Rapids can be avoided by passing north of Okis Islands where the channel is free of dangers although the currents are still strong.

72 **Barnes Bay** *(50°19'N, 125°16'W)* has **anchorage** for vessels in its east part. The bottom is reported to be rock. **Marine farm** facilities are in the east part of the bay.

73 **Nutcracker Bay** is close west of **Haro Island**. **Woods Bay**, west of Nutcracker Bay, has an extensive drying reef near its head.

74 **Pulton Bay**, south of Barnes Bay, has a drying reef close-off its SE shore and a house with a boathouse and private floats on its SW shore.

75 Booming grounds line the south shore west of **Pulton Point** and are in the bay 1.2 miles west of Pulton Point.

76 **Bjerre Rock** is an isolated drying rock lying near mid-channel NNW of **Chonat Point** *(50°18'N, 125°19'W)*.

77 Bjerre Rock **daybeacon** has a **bifurcation/junction daymark**, preferred channel to the right.

78 **Marine farm** facilities lie off the north shore of the channel 0.7 mile NNE of Bjerre Rock.

79 **Chonat Bay**, which is used for storing log booms, has a conspicuous cliff on the south side of its entrance. **Anchorage** is available in the middle of the bay, but note the 5.8 m shoal in the middle of the entrance.

80 **Venture Point** is a bold point on the north side of the channel. **Brent Island**, to the south, is wooded. **Metcalf Islands** lie close to the south shore, near the west entrance of Okisollo Channel.

81 **Fresh water** is reported to be obtainable from a waterfall on the Sonora Island shore, north of Metcalf Islands.

82 **Min Rock** *(50°17'N, 125°23'W)* is a detached rock with 0.6 m over it. It is usually marked by kelp in summer.

Gorge Harbour and Approaches

Chart 3538

83 **Sutil Point** *(50°01'N, 124°59'W)* has extensive drying banks studded with numerous boulders extending 0.9 mile SW.

84 *Sutil Point* ***light and bell buoy*** *Q20 (482)*, near the SW extremity of the banks, is a **starboard hand buoy**.

85 **Smelt Bay**, 1.5 miles north of Sutil Point, is lined with houses. *Smelt Bay Provincial Park* is in the south part of the bay. Campsites, picnic facilities, water, pit toilets, and a boat launching ramp are available. Temporary **anchorage** for small craft can be found close to shore.

86 **Marina Island** *(50°04'N, 125°03'W)* is fringed by sandy beaches strewn with boulders. **Marina Reef** is a drying spit, studded with boulders, extending 1 mile south from the island. It is marked at its south end by **starboard hand buoy** *Q16*.

87 Cliffs on the SW side of Savary Island, bearing less than 125° and open south of Hernando Island, leads SW of Marina Reef. The east extremity of Subtle Islands *(50°07'N, 125°05'W)*, bearing more than 000° and open west of Marina Island, leads west of Marina Reef.

88 **Submarine cables** (abandoned) run from Marina Island to Quadra and Cortes Islands.

89 The area between Marina Island and Cortes Island is a seaplane landing area called Mansons Landing.

90 **Manson Bay** *(50°04'N, 124°59'W)* is exposed to SW winds but has temporary **anchorage** for small craft. Some shelter is available behind the islets off its west entrance point.

91 *Mansons Landing Marine Provincial Park*, with beaches fronting on Sutil Channel and **Hague Lake**, has picnic and sanitary facilities.

92 **Mansons Landing** is located on a spit fronting a drying lagoon along the east side of Manson Bay. Vessels dock here and visitors access Mansons Landing community by road. A market, museum, café, post office, bank and other services are available at Mansons Landing community.

93 *The Harbour Authority of Cortes Island* (250-935-0180) **public wharf** at Mansons Landing has a berthing length along its T-shaped head of 22 m and a least depth of 5.2 m alongside. Docks with a berthing length of 110 m are attached to the north side of the wharf. Moorage, power and garbage disposal is available. The end wharf is reserved for seaplanes. A pay phone is near the wharf.

94 **Deadman Island**, 0.7 mile west of Manson Bay, is joined to the shore by a drying sand bar.

95 **Guide Islets** *(50°05'N, 125°01'W)*, in the approach to The Gorge, are two bare, yellow-topped islets that are conspicuous from the south, being identifiable from alongside Mitlenatch Island. A windmill on a **trestle** tower is on the point 0.3 mile NW of Guide Islets.

96 **The Gorge**, north of Guide Islets, is the narrow entrance to Gorge Harbour. It is about 0.5 mile long and less than 61 m wide in places. Least depth in the fairway is 10.5 m. On the west side of The Gorge are First Nations rock paintings on flat patches of rock, and on the east side there are huge boulders that formed burial caverns.

97 **Tidal streams** attain 4 kn at the entrance to The Gorge.

98 Tidal differences for Gorge Harbour (8037), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

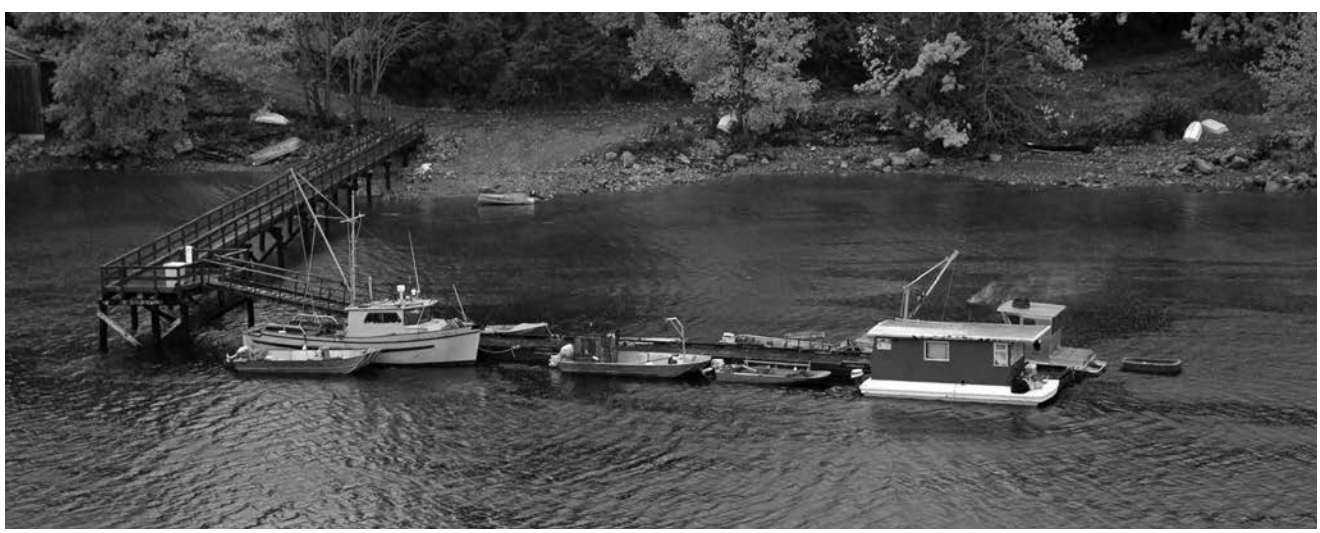
99 **Tide Islet** lies mid-channel at the north end of The Gorge. A rock, dries 3.4 m, lies close east of Tide Islet. Preferred channel is west of Tide Islet.

100 **Gorge Harbour** provides good **anchorage** for vessels of moderate size and is a popular small craft anchorage although squalls sweep down from the surrounding

MANSONS LANDING PUBLIC WHARF (2005)



GORGE HARBOUR PUBLIC WHARF (2005)



hills. The best anchorage is south of the public wharf in 18 to 22 m. **Tan Island**, **Ring Island**, **Neck Islet**, **Pill Islets**, **Stove Islets**, **Bee Islets** and numerous drying and below-water rocks lie in Gorge Harbour. Private docks and **mooring buoys** are in the harbour. **Marine farm** facilities are west and north of Stove and Pill Islets, northwest of Ring Island, in the bay at the east extremity of the harbour, and close north of Bee Islets.

101 Sewage disposal in the waters of the approach to and within Gorge Harbour is prohibited under the *Canada Shipping Act, 2001 — Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*.

102 A **submarine cable** (power) is laid along the south shore of Gorge Harbour, it is marked by signs.

103 *Gorge Harbour Marina Resort* (250-935-6433), at **Gorge Harbour settlement**, in the NW part of the harbour, is a full-service **marina**.

104 The *Harbour Authority of Cortes Island* (250-935-0180) **public wharf** at Gorge Harbour has depths of 2.4 to 3 m alongside and 33 m of berthing space; it is located in the NW part of Gorge Harbour. Commercial vessels have priority; service is limited to moorage.

105 **Uganda Passage** *(50°06'N, 125°02'W)*, which leads around the end of **Shark Spit**, at the north end of Marina Island turns through more than 90°. It is encumbered with rocks and shoals and its least depth is 11 m. **Heather Islets** lie in the south approach.

106 *Uganda Passage* **light** *(483)*, on a rock in the passage, is shown from a white cylindrical tower with a red band at the top.

107 Uganda Passage is marked by **starboard hand buoy** *Q14* and **port hand buoys** *Q13* and *Q11*. Upstream direction for buoys is proceeding north through the passage.

108 **Tidal streams** in Uganda Passage are reported to be 2 to 3 kn.

109 Waters off Whaletown Bay are a seaplane landing area.

110 **Whaletown Bay** *(50°06'N, 125°03'W)* has a rock with 1 m over it marked by **starboard hand buoy** *Q10* in the middle of its approach. *Whaletown Bay* **light** *(483.2)*, shown from a white tower with a green band on top, marks a drying rock in the bay. The *BC Ferries* ferry landing, with service to Quadra Island, is on the north shore of the bay. **Whaletown**, on the south shore, has a post office and store.

111 *Whaletown Bay Entrance* **light** *(483.3)*, on a drying rock off the west entrance point, is shown from a white cylindrical tower with a green band at the top.

112 The *Harbour Authority of Cortes Island* (250-935-0180) **public wharf** at Whaletown Bay is 15 m long along its north face with a least depth of 3.4 m alongside. Wharves, with 96 m of berthing space, extend NE from the SE corner of the wharf. The outer wharf is reserved for seaplanes. Power, garbage disposal and a 3 tonne crane are on the wharf.

113 Tidal differences for Whaletown Bay (8038), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

Plunger Passage to Lewis Channel

114 **Subtle Islands** *(50°07'N, 125°05'W)*, connected by a causeway, are separated from the west extremity of Cortes Island by **Plunger Passage**. The passage between Subtle Islands and **Centre Islet**, which is treeless, is restricted by a drying spit projecting from Subtle Islands. Both passages are suitable for small craft.

115 **Submarine cables** (power and telephone) are laid across Plunger Passage from Cortes Island to the south Subtle Island.

116 **Coulter Bay** is reported to have good **anchorage** for small craft, with fair protection from westerly winds being found close to **Coulter Island**.

117 **Carrington Bay** has **Jane Islet** and drying and below-water rocks near its centre and **Carrington Lagoon** at its head. It is reported that the bottom is rocky and holding ground poor.

118 Sewage disposal in the waters of Carrington Bay and Carrington Lagoon is prohibited under the *Canada Shipping Act, 2001 — Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*.

119 **Quartz Bay** is reported to provide limited **anchorage** for small craft. **Marine farm** facilities are located throughout Quartz Bay and in the bay 1.1 miles NE.

120 **Von Donop Inlet** *(50°10'N, 124°57'W)* is a good **anchorage** for small craft, the most popular berths being at the head, with good holding reported. In the narrowest part of the inlet, about 50 m wide, a rock with less than 2 m over it lies in mid-channel. It is usually marked by kelp and only visible at LW. The preferred route leads west of this rock. A rock that dries 2.8 m is at the head of the inlet.

121 *Ha'thayim (Von Donop) Marine Provincial Park* includes Von Donop Inlet, **Robertson Lake** and **Wiley Lake**. It is an undeveloped marine wilderness park.

Chart 3541

122 The coast from Von Donop Inlet to **Bullock Bluff** is fringed by rocks and reefs for about 0.1 mile offshore. **Robertson Cove** (local name) lies at the outlet to Robertson Lake. The bottom of the cove is reported to be unreliable for holding.

123 **Marine farm** facilities are in Robertson Cove and in the cove 0.5 mile NW.

Viner Point to Drew Passage

Chart 3538

124 **Viner Point** *(50°08'N, 125°08'W)*, the south extremity of **Read Island**, is bare and steep-to. **Lake Bay** and **Twin Bay** are deep and offer limited **anchorage**.

125 **Burdwood Bay** has several islets and rocks in it. An islet in the south part of the bay has a drying rock close north of it.

126 **Anchorage** for small vessels is available west of the **Wild Flower Islands** but is exposed to southerly winds and seas. Unsheltered anchorage can be obtained in the north part of Burdwood Bay.

127 **Hill Island** *(50°10'N, 125°04'W)* has a private lodge with docks, protected by a floating **breakwater** in **Totem Bay** on its north shore. Large barrel **buoys** marking the entrance are at the ends of the breakwater.

Charts 3538, 3541

128 **Evans Bay** *(50°12'N, 125°05'W)* is entered SW of **Frederic Point**, which is bold. The bay does not have suitable anchorage for large vessels. Small craft can find **anchorage**, open to southerly winds,

in **Bird Cove** and in the NE arm of the bay. A **wreck** with a depth of 11.5 m lies in the bay close north of Bird Cove. It is reported that the NE arm, which can be recognized by its logged hillside, has the best all-weather shelter.

129 **Read Island settlement** has a **public wharf** providing 60 m of berthing. The wharf is reported to be well protected from all winds although strong SE winds sometimes raise an uncomfortable sea. A drying rock, east of the dock, is marked by **port hand buoy** *Q3*.

130 **Whale Passage** separates **Penn Islands** from Read Island. A 3.7 m shoal lies midway between the two west Penn Islands. **Marine farm** facilities are south of the north Penn Island.

131 The east coast of Read Island north of Penn Islands is rocky and steep-to but fringed in places by shoals and rocks.

132 **Drew Passage**, which leads west of **Rendezvous Islands**, is clear of dangers. The passage between the middle and south Rendezvous Islands is foul but small craft can carry 8 m through it; local knowledge is advised. *Rendezvous Lodge* (1-888-225-4050), on north Rendezvous Island, has guest moorage, accommodations and a restaurant. A logging camp and log dump are in the bay on Maurelle Island 1 mile NW of the north Rendezvous Island (1995).

Calm Channel

Chart 3541

133 **Calm Channel** *(50°18'N, 125°04'W)*, entered SW of Raza Island, leads about 8 miles NW from Sutil and Lewis Channels, joining Bute Inlet and Cordero Channel at Stuart Island.

134 **Tidal streams** are weak in Calm Channel but strong in the adjoining section of Cordero Channel leading west of Stuart Island.

135 **Church House** *(50°20.2'N, 125°04.6'W)* is an unoccupied First Nations settlement. The conspicuous church has partially collapsed and the public wharf is in a state of poor repair.

Cordero Channel

Chart 3543

136 **Cordero Channel**, whose east end is entered either SW or north of **Stuart Island** *(50°23'N, 125°07'W)*, leads about 20 miles NW and west to join Chancellor Channel north of West Thurlow Island. The route between the Strait of Georgia and Johnstone Strait leading through Calm and Cordero Channels is more protected and has less traffic than that through Discovery Passage.

137 Tidal differences for Big Bay (8060), referenced on Campbell River, and for Mermaid Bay (8135), Shoal Bay (8145), **Cordero Islands** (8150), use Blind Channel in Mayne Passage (8155), and Sidney Bay in Loughborough Inlet (8162), referenced on Owen Bay, are in *Canadian Tide and Current Tables, Volume 6*.

138 Strong **tidal streams** with overfalls, eddies and whirlpools exist in parts of Cordero Channel. During large tides these tidal streams reach maximum velocities of 10 kn in Yuculta Rapids, 12½ kn in Barber and Gillard Passages, 14 kn in Arran Rapids, 11 kn in Dent Rapids and 7 kn in Greene Point Rapids.

139 Predictions for times of turn to flood and ebb, and maximum rates in Gillard Passage (5500) and Arran Rapids (5600), and time differences and maximum rates for secondary current stations Yuculta Rapids (5505) and Dent Rapids (5530), referenced on Gillard Passage, and for Greene Point Rapids (5045), referenced on Seymour Narrows, are in *Canadian Tide and Current Tables, Volume 6*.

140 Duration of slack water at all places is very brief, usually not more than 5 minutes. Local weather and the amount of land drainage can affect the turn of the stream, which at times can be abrupt with no period of dead slack water.

141 Due to the strength of **tidal streams** and turbulence that develops in various areas, **navigation of Yuculta, Arran, Dent and Greene Point Rapids, and Gillard and Barber Passages should not be attempted other than at or near slack water**, at which time they can be taken without difficulty.

142 Small craft with low power bound westward are advised to approach Yuculta Rapids about one hour before turn to ebb, taking advantage of a back eddy along the Stuart Island shore until off **Kellsey Point** *(50°22'N, 125°09'W)*, then to cross to the Sonora Island shore where there is a prevailing northerly current. This should allow time to transit Gillard and Dent Rapids before the ebb current reaches full force. If late for slack water and unsure of Dent Rapids, small craft are advised to wait in Big Bay for the next slack water.

Yulculta Rapids to Dent Rapids

143 **Yuculta Rapids** is entered west of **Harbott Point** *(50°22'N, 125°08'W)*. **The Yucultas** is a local name used to cover the Yuculta Rapids proper, Gillard and Barber Passages and Dent Rapids.

144 *Harbott Point* **light** *(529)*, on the SW end of Stuart Island, is shown from a white cylindrical tower with a red band at the top.

STUART ISLAND COMMUNITY DOCK (R) IN BIG BAY (2005)



145 Shoals with 3.7 and 4.9 m over them lie on the west and east sides respectively of the rapids close south of **Sea Lion Rock** and **Whirlpool Point**.

146 Private docks and a closed marina and a closed fishing resort are on Sonora Island south and east of Sea Lion Rock.

147 **Big Bay** *(50°24'N, 125°08'W)* has a detached shoal with 4 m over it, marked by kelp, in its central part. Water taxi service is available from Campbell River and daily flights from Seattle, Vancouver and Campbell River. Reduce speed to avoid excessive wake before entering the bay. Big Bay is a seaplane landing area.

148 *Stuart Island Community Dock,* in Big Bay, is protected by a **breakwater**. It has docks with 200 m of berthing and a seaplane dock. Fresh water, showers, laundry, post office, small general store, ice, fishing licenses and gear are available. No power or fuel. Note the charted shoal near the approach to the dock. Contact on VHF Channel 66A; telephone 250-202-3625.

149 Tidal differences for Big Bay (8060), referenced on Campbell River, are in *Canadian Tide and Current Tables, Volume 6*.

150 A southerly current is felt close to the community dock on both ebb and flood tides.

151 **Innes Passage**, which leads south of the largest of the **Gillard Islands**, is narrow, shallow and suitable only for small craft and local knowledge is advised.

152 **Gillard Passage** *(50°24'N, 125°10'W)*, between the large Gillard Island and **Jimmy Judd Island**, is used by vessels bound east or west. Shoal depths, including **Jimmy Judd Reef**, fringe the south shore of Jimmy Judd Island.

153 *Gillard Islands* **light** *(530)*, on the NE extremity of the large island, is shown from a white cylindrical tower with a green band at the top.

154 Dangerous **whirlpools** form east of Gillard Islands, between two hours after turn to flood and one hour before turn to ebb.

155 **Barber Passage** leads between Jimmy Judd Island and Stuart Island. A drying rock and shoal depths fringe the east side of the passage near **Hesler Point**.

156 **Arran Rapids** *(50°25'N, 125°08'W)*, which join Cordero Channel to Bute Inlet, have **Arran Point** and **Turnback Point** on the south side.

157 **Vancouver Bay**, 0.6 mile WNW of Arran Point, is a First Nations Reserve with private docks.

158 **Dent Island** *(50°24'N, 125°11'W)* is joined to the north shore by drying ledges. *Dent Island Lodge, Resort and Marina* (250-203-2553) is on the islet NNE of Dent Island. The **marina** has numerous amenities except fuel.

158.1 A floating current turbine is located close to shore on the NW side of Dent Island. A **submarine cable** runs from the turbine alongside the north side of Dent Island.

159 **Engels Rock**, with 3.7 m over it, lies close-off the SE shore of Dent Island. **Mermaid Bay**, on the south side of the island, is a mooring ground for tugs with log booms awaiting slack water to navigate the rapids.

160 Tidal differences for Mermaid Bay (8135), referenced on Owen Bay, are in *Canadian Tide and Current Tables, Volume 6*.

161 **Tugboat Passage**, between Dent Island and **Little Dent Island**, is not recommended because of islets, shoals

and confused currents, but is used extensively by tugs, local knowledge is advised.

162 *Dent Islands* **light** *(531)*, on the west extremity of Little Dent Island, is shown from a white tower with a red band at the top.

163 **Dent Rapids**, between Little Dent and Sonora Islands, are swift and turbulent with dangerous overfalls and eddies. In **Devils Hole**, violent eddies and whirlpools form between two hours after turn to flood and one hour before turn to ebb. Favour the Sonora Island shore of Dent Rapids.

164 **Caution. — A shoal, with 6.4 m over it, 0.5 mile NW of Dent Islands light, creates dangerous turbulence and a large overfall on ebb tides.**

165 Tugs towing log booms will frequently be found moving with the last of the ebb from **Horn Point** *(50°26'N, 125°14'W)* to **Burnt Bluff** and from there through Tugboat Passage to Mermaid Bay, or from Mermaid Bay through Gillard Passage. Tugs with booms can also be encountered at Dent Rapids on the turn of the flood. The bay north of Horn Point is used as a mooring ground for tugs with log booms.

166 **Secord Rock**, a drying rock NNW of Horn Point, and **Denham Rock**, ESE of **Denham Islet** *(50°26'N, 125°15'W)*, sometimes marked by kelp, are isolated dangers. A shoal with 3.7 m over it lies 0.1 mile offshore, 0.5 mile north of Horn Point.

Bute Inlet

Charts 3541, 3542

167 **Bute Inlet**, entered WNW of **Johnstone Bluff** *(50°21'N, 125°06'W)*, has mountains on both sides rising abruptly to high peaks. Several large rivers empty into the inlet and the water is often milky.

168 **Caution. — River valleys contribute to the funneling and acceleration of arctic outflow winds arriving from the Chilcotin region of the interior. Wind speeds of up to 60 to 70 knots can occur at the mouth of Bute Inlet. It is reported that shelter can be obtained close south of Fawn Bluff and below Johnstone Bluff, just south of Stuart Island.**

169 **Henrietta Point**, the east extremity of Stuart Island, lies on the west side of Bute Inlet 2 miles within the entrance.

170 Due to land drainage, a definite overlay of fresh water flows almost constantly out of the inlet at 1 to 2 kn, and is strongest during spring runoff and weakest during a dry summer. This overlay, augmented by runoff along the way, increases in volume and rate as it flows from the head toward the foot of the inlet.

171 Tidal differences for Orford Bay (8065) and Waddington Harbour (8069) at the head of the inlet, referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

Chart 3542

172 **Lawrence Point** *(50°27'N, 125°06'W)*, **Amor Point**, **Alpha Bluff**, **Boyd Point**, **Mellersh Point**, **Bear Bay** and **Littleton Point** are on the west side of Bute Inlet. On the east side are **Fawn Bluff**, **Clipper Point**, **Orford Bay**, **Hovel Bay**, **Purcell Point** and **Ward Point**.

173 **Waddington Harbour** *(50°54'N, 124°50'W)* has **Southgate River** flowing into its SE part through **Pigeon Valley**, and **Homathko River** flows into its NW corner. **Hamilton Point** and **Potato Point** are on the west side of the harbour. Booming grounds are north of Hamilton Point. The water is pale green due to the mineral content of the runoff from **Homathko Icefield**, 5 miles NE. A dock with 4.3 m alongside, protected by a **breakwater**, lies along a logging camp on the north side of Southgate River.

173.1 **Caution.** — A drying **rock** with 0.2 m over it, is located in Waddington Harbour approximately 0.8 mile ESE of Potato Point. Several other **shoals** are in the vicinity.

174 **Anchorage**, unsafe in strong SW winds, can be obtained close to the edge of the drying flats. As the bottom shoals rapidly and the flats are subject to change pay close attention to depths.

175 Booming grounds and logging camps are near the entrance to **Moh Creek**, in Orford Bay, SE of Boyd Point and east of Littleton Point. A **breakwater** is SW of Mellersh Point. A booming ground with **mooring buoys** is off the west shore 1.5 miles north of Littleton Point.

176 An aircraft landing strip owned by a logging company is at Homathko River.

Raza Passage

Chart 3541

177 **Raza Passage** *(50°19'N, 125°01'W)*, entered north of **Raza Point**, connects Calm Channel to Ramsay Arm and Pryce Channel.

178 **Frances Bay** *(50°21'N, 125°02'W)*, locally known as **Fanny Bay**, provides **anchorage** for small craft at its head with protection from all but SE winds. The bottom is reported to be foul with logging cable.

Ramsay Arm

179 **Ramsay Arm**, entered west of **George Head** *(50°21'N, 124°58'W)*, is deep with no good anchorages. **Quatam Bay** is the site of a logging camp located on the north side of **Quatam River**. A log dump is at the head of Ramsay Arm.

Deer Passage

180 **Deer Passage** leads between **Raza Island**, which rises steeply to a peak, and **West Redonda Island**.

181 **Redonda Bay** *(50°16'N, 124°58'W)* has **Deceit Rock** near its centre and a shoal projecting from its south shore. It is too exposed for comfortable anchorage as seas form with almost any wind. The old public wharf and cannery wharf have been demolished, and only a few **piles** remain. **Marine farm** facilities are in the east part of the bay. Booming grounds are in the bay, SSE of Deceit Rock.

182 Tidal differences for Redonda Bay (8025), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

Pryce Channel

Chart 3541

183 **Pryce Channel** leads 7 miles along the north shore of Redonda Islands, joining Homfray Channel to Deer and Raza Passages, which lead to Calm Channel.



184 *Pryce Channel* **light** *(527.2)*, on the north side of the channel opposite **Gloucester Point** *(50°17'N, 124°49'W)*, is shown from a white cylindrical tower with a green band at the top.

185 **Elizabeth Island** is 1 mile west of the light. A rock which dries at 1.5 m is on the south side of the island.



186 **Anchorage** for small vessels is available in the bay east of Gloucester Point.

187 **Connis Point** is the NE and **Tibbs Point**, on Raza Island, the NW entrance points of Deer Passage.

Toba Inlet



188 **Toba Inlet**, entered west of **Brettell Point** *(50°19'N, 124°44'W)* between **Channel Island** and **Double Island**, leads 20 miles NE to the sand and mud flat estuary of the **Toba River** at its head. *Toba Wildernest Marina* (250-830-2269) is NW of Double Island and has guest moorage, water, washrooms and showers.

189 Tidal differences for Channel Island (8015), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

190 A conspicuous waterfall is on the west side of the inlet 2.8 miles NNE of Brettell Point.

191 A log dump and booming ground are in **Higgins Bay** (local name), 3.5 miles NE of Brettell Point.

192 **Brem Bay** *(50°26'N, 124°40'W)* is reported to have a private logging camp dock and log booms in the NW side of the bay. An old stone **breakwater** is reported to provide indifferent shelter for small craft.

193 **Snout Point**, on the south shore, is prominent. A conspicuous waterfall is about 3.5 miles east of the point. A log dump and booming grounds are on the east shore, 0.8 mile south of **Chusan Creek**. A log dump with booming grounds and conspicuous oil tanks are on the west side, at the head of Toba Inlet.





194 **Anchorage** can be obtained in 35 m at the head of the inlet. **Caution is advised because depths shoal rapidly and the bottom is not visible through milky water.**



195 **Caution. — Recent hydrographic surveys (2010) have revealed that depths at the head of Toba Inlet are subject to change. Material deposited by Toba River is causing the estuary to extend seaward and depths are currently significantly shoaler than charted.**

Homfray Channel

Charts 3538, 3541

196 **Homfray Channel** entered south of Horace Head *(50°10'N, 124°44'W)* separates **East Redonda Island** from the mainland. The channel is very deep with no off-lying dangers.



197 **Tidal streams** in Homfray Channel seldom exceed 1½ kn, the flood stream flowing south throughout most of the channel but north in the south part. Rates and boundary between north and south flowing flood streams are greatly influenced by winds.

198 The east arm of East Redonda Island is an **Ecological Reserve**. **Mount Addenbroke** is dome shaped.

199 **Price Point** *(50°09'N, 124°39'W)* and **Lloyd Point** are on the east side of the channel.

Chart 3541

200 **Forbes Bay** *(50°15'N, 124°36'W)*, north of **Bohn Point**, is too deep for anchorage, except for small vessels near shore, and offers little shelter. **Booker Point** is west of Bohn Point.

201 **Foster Point** and **Homfray Creek** are north of Forbes Bay.

202 **Attwood Bay** *(50°19'N, 124°40'W)* has a private dock and a log dump in its NE corner. **Anchorage** with good shelter can be obtained by small vessels.

203 **Hepburn Point** is the north extremity of East Redonda Island.

Waddington Channel

Charts 3538, 3541

204 **Waddington Channel**, entered from south between **Marylebone Point** *(50°10'N, 124°45'W)* and **Horace Head**, separates East and West Redonda Islands and connects Desolation Sound to Pryce Channel.

205 **Tidal streams** in Waddington Channel flood north and seldom exceed 1 kn.

Chart 3554

206 **Roscoe Bay**, entered north of Marylebone Point, is a popular small craft anchorage. Access to the head of the bay is restricted by a drying bar 0.4 mile inside the entrance. The inner bay, which offers a sheltered **anchorage**, should be entered on a rising tide at or near HW. *Roscoe Bay Marine Provincial Park* has camping and sanitary facilities.

207 Sewage disposal in the waters of Roscoe Bay is prohibited under the *Canada Shipping Act, 2001 — Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*.

Charts 3538, 3541

208 **Elworthy Island**, 1 mile NW of **Church Point**, has **marine farm** facilities off its SW shore. **Anchorage** for small vessels can be obtained behind the island clear of the marine farms.

Chart 3541

209 **Allies Island** *(50°13'N, 124°49'W)* has **marine farm** facilities and booming grounds NNW of it.

210 *Waddington Channel* **light** *(527.7)*, on the west side of the channel alongside **Shirley Point** *(50°14'N, 124°49'W)*, is shown from a white cylindrical tower with a green band at the top.

ROSCOE BAY (2007)



211 **Doctor Bay**, west of **Bishop Point** *(50°15'N, 124°49'W)*, has **marine farm** facilities in it.

Chart 3554

212 **Walsh Cove** provides sheltered **anchorage** for small vessels. **False Passage** leads north of the **Gorges Island**. *Walsh Cove Marine Provincial Park* is undeveloped. The recommended approach to Walsh Cove is from the south, west of **Bluff Point**.

Chart 3541

213 The channel close south of **Dean Point** is fringed on both sides by shoals. **Dean Rock**, 0.2 mile south of the point, lies in mid-channel and has 1.6 m over it.

214 *Dean Point* **light** *(527.9)*, on the NE extremity of West Redonda Island, is shown from a white cylindrical tower with a green band at the top.

Pendrell Sound

215 **Pendrell Sound** is entered between **Durham Point** *(50°12'N, 124°45'W)* and **Walter Point**. The waters of Pendrell Sound are warmer than most in this region and allow the production and collection of oyster spat, usually in July.

216 The east shore of Pendrell Sound is an **Ecological Reserve**.

217 A speed limit of 6 km/h (4 kn) is prescribed by the *Vessel Operation Restriction Regulations* in Pendrell Sound.

218 A floating sign, 0.3 mile NW of Durham Point, reads *"Provincial Shellfish Reserve. Vessels with TBT (Tributyltin) anti-fouling paint on hull please do not enter beyond this point"*.

219 A **submarine cable** has been reported off the NW shore of the large island near the head of the sound. The cable is considered a hazard to vessels anchoring in the area.

Desolation Sound

Chart 3538

220 **Desolation Sound** *(50°06'N, 124°49'W)* lies south of West Redonda Island. It is entered from south between **Sarah Point** and **Mary Point**, which is high and cliffy. The sound joins Lewis Channel at Junction Point on Cortes Island and joins Homfray Channel south of Horace Head on East Redonda Island.

221 This is the region where the flood stream from Queen Charlotte Sound through Johnstone Strait meets the flood stream from Juan de Fuca Strait, via the Strait of Georgia. **Tidal streams** are inconsistent and weak, seldom exceeding 2 kn, and are strongly affected by winds. The flood stream flows north up the west side of Kinghorn Island, E along the north side of the island then NE through Desolation Sound. The boundary between the flood streams from north and south can be alongside Squirrel Cove in settled weather, or as far north as the north entrance of Lewis Channel in sustained SE winds.

222 *Desolation Sound Marine Provincial Park,* on the south shore of the sound, includes Gifford Peninsula, Prideaux Haven, Tenedos Bay and Grace Harbour. There are no docks or **mooring buoys**.

223 Sewage disposal in the waters of Desolation Sound Marine Provincial Park is prohibited under the *Canada Shipping Act, 2001 — Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*.

224 **Submarine cables** cross the entrance to Desolation Sound, from south of Sarah Point to the SE corner of Cortes Island. A **submarine cable area** is laid south of Sarah Point to Tiber Bay.

225 **Kinghorn Island** *(50°05'N, 124°51'W)* has **Station Island**, **Kinghorn Rocks** and several shoal and drying rocks lying off its north part. The isolated drying rock between Kinghorn Island and Stations Island is in the middle of the channel and has resulted in groundings. **Martin Islands** lie close-off the south extremity of West Redonda Island. **Marine farm** facilities lie off the West Redonda Island shore, north of Martin Islands.

226 **Mink Island** *(50°07'N, 124°46'W)* affords **anchorage** for small craft in the bay on its SE coast; a dock is at the head of the cove. **Curme Islands** and several drying rocks lie close-off the NE end of Mink Island. **Portage Cove**, on the mainland SE of Mink Island, has drying rocks on its east side.

Chart 3554

227 **Tenedos Bay**, on the mainland east of Mink Island, has several drying rocks in it but affords good **anchorage** for small vessels in its north extremity in 12 m. Other good anchorages are in several coves within the bay. When approaching Tenedos Bay from the NW, do not pass between **Ray Rock** and **Bold Head** and give Bold Head a wide berth when entering to avoid a submerged rock.

228 **Otter Island** *(50°08'N, 124°44'W)* has a very small protected **anchorage**, suitable for small craft, in the passage on its east side. When approaching this anchorage from the north take care to avoid **Sky Pilot Rock**, which dries 2.1 m.

TENEDOS BAY (2007)



PRIDEAUX HAVEN (2007)

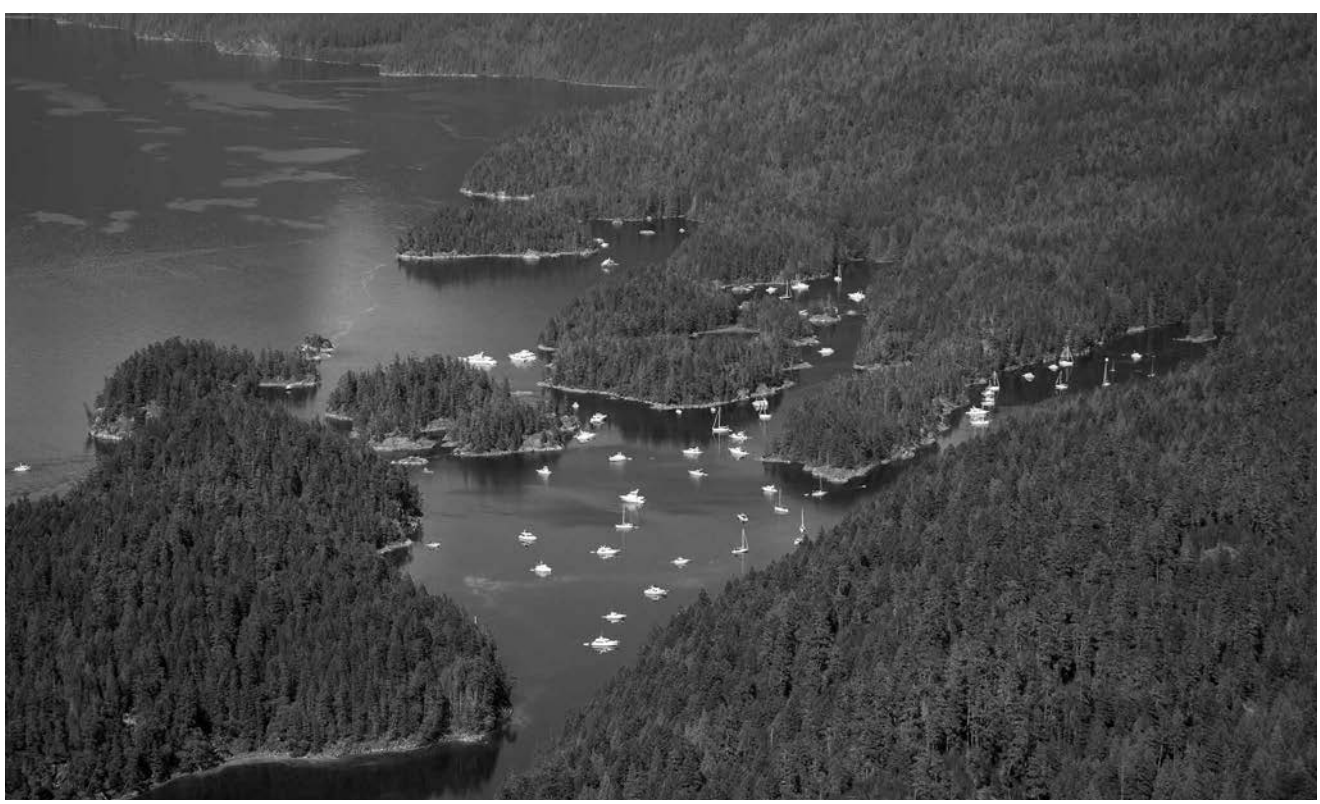


Chart 3538

229 **Morgan Island** and **Melville Island** lie off the south shore at the entrance to Homfray Channel. **Pringle Rock**, which dries 4.9 m, lies west of Morgan Island.

Prideaux Haven

Chart 3554

230 **Prideaux Haven** *(50°09'N, 124°41'W)* has many well-protected anchorages used extensively by small craft.

231 Sewage disposal in the waters of Prideaux Haven is prohibited under the *Canada Shipping Act, 2001 — Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*.

232 **Tidal streams** in the north approach to Prideaux Haven anchorages are weak, influenced by winds, and seldom exceed 1.5 kn.

233 Tidal differences for Prideaux Haven (8008), referenced on Point Atkinson, are in *Canadian Tide and Current Tables, Volume 5*.

234 **Mary Islands**, with **Grass Islet** at their east end, lie in the west approach to Prideaux Haven.

235 **Eveleigh Anchorage**, entered SW of **Eveleigh Island**, provides anchorage for small vessels in 13 fathoms (23.8 m), sand. A **wreck** lies near the center of the anchorage with a known depth of 14 fathoms (25.5 m). The passage between Eveleigh Anchorage and Prideaux Haven is blocked by a drying bank and no attempt should be made to traverse it.

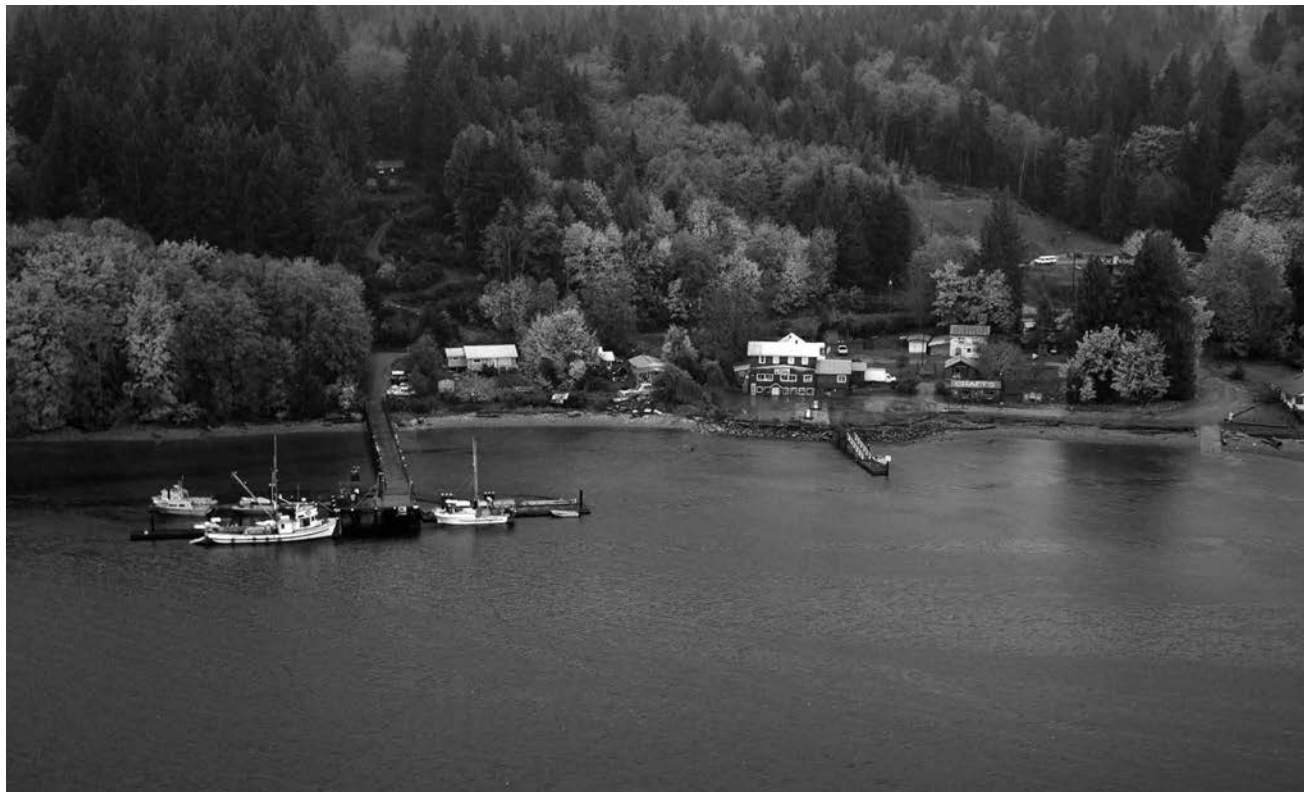
236 Prideaux Haven is entered east of **Lucy Point** and west of **Scobell Island** and **William Islands**. The fairway has a least depth of 17 feet (5.2 m) and narrows to about 100 feet (30 m) between a ledge with 2 feet (0.6 m) over it projecting from Eveleigh Island and a ledge with 5 feet (1.5 m) over it projecting from **Oriel Rocks**.

237 When entering **Melanie Cove**, note the drying ledge projecting from the south shore SW of **Melanie Point**. Mooring in Melanie Cove requires the use of stern lines affixed to eye bolts along the shore. Attaching mooring lines to trees is prohibited.

238 **Paige Islets** lie off the east end of Scobell Island, in the west approach to Laura Cove.

239 **Laura Cove**, entered between **Copplestone Island** and **Copplestone Point**, provides sheltered

SQUIRREL COVE (2005)



anchorage. The entrance channel, which leads east of a rock that dries 1 foot (0.3 m), has a least depth of 13 feet (4 m) in the fairway and a width of about 135 feet (41 m). The land at the head of the cove is an **Ecological Reserve** belonging to the *University of British Columbia*. Anchoring should be avoided in the shallow lagoon and channel between Laura Cove and Melanie Cove to protect the lagoon and channel eel grass beds.

240 **Roffey Island** lies in the NE approach to the cove.

Lewis Channel

Charts 3538, 3541, 3554

241 **Lewis Channel** leads about 7 miles NNW from **Junction Point** *(50°08'N, 124°54'W)*, joining Sutil Channel alongside Bullock Bluff.

242 **Tiber Bay** *(50°04'N, 124°53'W)* has a logging company ramp and dock in its south part.

243 **Seaford**, 1.2 miles NNW, is the site of a former settlement.

244 *Junction Point* **light** *(480)* is shown from a white tower with a green band at the top.

Chart 3554

245 **Squirrel Cove** *(50°08'N, 124°55'W)* is a popular small craft **anchorage**. **Boulder Point**, on the north side of the entrance, is low with a drying reef projecting south from it and a conspicuous above-water boulder lying on its south shore.

246 A **daybeacon**, with **two starboard hand daymarks**, is on the above-mentioned drying reef.

247 Sewage disposal in the waters of Squirrel Cove is prohibited under the *Canada Shipping Act, 2001 — Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*.

248 **Squirrel Cove settlement**, on the south shore, has a restaurant and laundromat. Fuel is available in small quantities at *Squirrel Cove General Store* (250-935-6327) but must be carried by hand to the wharf. A First Nations village is NW of the public wharf. The church **spire** is a conspicuous landmark.

249 The *Harbour Authority of Cortes Island* (250-935-0180) **public wharf** on the south shore of Squirrel Cove just within the entrance has a depth of 16 feet (4.9 m) at its outer end. A 3 tonne crane, garbage disposal facilities and power are on the wharf. Docks attached to the wharf provide about 400 feet (122 m) of berthing space.

250 **Marine farm** facilities are in several locations throughout Squirrel Cove.

251 **Anchorage** for small vessels is available off the wharf or in the inner part of the cove, entered SW of **Protection Island** through a channel with a least depth of 13 feet (3.9 m) in the fairway. A **wreck** (position approximate) is close north of Protection Island and a drying rock is close offshore in the NW part of the cove. There is risk of anchors being fouled by numerous sunken logs and logging cables on the bottom of the inner cove. Holding is good in mud.

252 **Refuge Cove** *(50°07'N, 124°51'W)*, in the SW part of West Redonda Island, is a popular supply centre for small craft. **Marine farm** facilities extend from the north side of the island in the central part of the cove. A barge for garbage drop-off moors near the mouth of Refuge Cove from mid-June.

253 *Refuge Cove* **light** *(479.8)*, on Hope Point, south entrance, is shown from a white cylindrical tower with a red band at the top.

254 **Refuge Cove settlement** has *Refuge Cove Store* (250-935-6659), a laundromat and post office. The store operates a fuel dock year-round; see www.refugecove.com for details. The **wharves** have 2000 feet (610 m) of berthing space, and depths alongside are 8 to 16 feet (2.4 to 4.9 m). Private docks with about 150 feet (46 m) are on the east side of Refuge Cove. Refuge Cove is a seaplane landing area.

255 **Marine farm** facilities are on West Redonda Island 1.2 miles and 2.1 miles NW of Refuge Cove.

256 **Cliff Peak** *(50°11'N, 124°57'W)*, on the west side of Lewis Channel, is conspicuous.

257 Booming grounds are on the west shore 2.8 miles NW of Joyce Point.

Chart 3541

258 *West Redonda Island* **light** *(527)*, on the east shore at the north entrance to Lewis Channel, is shown from a white tower with a red band at the top.

Teakerne Arm

Chart 3538

259 **Teakerne Arm**, entered north of **Joyce Point**, is not recommended for anchorage because it is exposed to the NW. Booming grounds and **marine farm** facilities are in several locations throughout the arm. **Talbot Cove** has **Talbot Islet**, a 3.7 m shoal and a drying reef in its west part. It is not recommended for anchorage because holding is reported to be poor.

260 *Teakerne Arm Provincial Park*, at the head of the inlet, is undeveloped except for a dinghy dock. A waterfall cascades down from the outlet of **Cassel Lake**.

Sail Plan

Adapted from Transport Canada Publication TP 511E.

Fill out a sail plan for every boating trip you take and file it with a responsible person. Upon arrival at your destination, be sure to close (or deactivate) the sail plan. Forgetting to do so can result in an unwarranted search for you.

Sail Plan

Owner Information

Name: _____

Address: _____

Telephone Number:_____ Emergency Contact Number: _____

Boat Information

Boat Name:_____ Licence or
Registration Number:_____

Sail:_____ Power:_____ Length:_____ Type: _____

Colour Hull:_____ Deck: _____ Cabin: _____

Engine Type:_____ Distinguishing Features: _____

Communications

Radio Channels Monitored: HF: ☐ VHF: ☐ MF: ☐

MMSI (Maritime Mobile Service Identity) Number: _____

Satellite or Cellular Telephone Number: _____

Safety Equipment on Board

Lifejackets and PFD's *(include number)*: _____

Liferafts (include type and colour): _____ Dinghy or Small Boat
(include colour): _____

Flares (include number and type): _____

Other Safety Equipment:_____

Trip Details — Update These Details Every Trip

Date of Departure: _____ Time of Departure:_____

Leaving From:_____ Heading To: _____

Proposed Route:_____ Estimated Date and

Stopover Points (include date and time):___ Time of Arrival:_____

_____ Number of People on Board: _____

Search and Rescue Telephone Number: _____

The responsible person should contact the nearest Joint Rescue Coordination Centre (JRCC) or Maritime Rescue Sub-Centre (MRSC) if the vessel becomes overdue.

Act smart and call early in case of emergency. The sooner you call, the sooner help will arrive.

JRCC Victoria (British Columbia and Yukon) 1-800-567-5111
+1-250-413-8933 (Satellite, Local or out of area)
727 (Cellular)
+1-250-413-8932 (fax)
jrccvictoria@sarnet.dnd.ca (Email)

JRCC Trenton (Great Lakes and Arctic) 1-800-267-7270
+1-613-965-3870 (Satellite, Local or Out of Area)
+1-613-965-7279 (fax)
jrcctrenton@sarnet.dnd.ca (Email)

MRSC Québec (Quebec Region) 1-800-463-4393
+1-418-648-3599 (Satellite, Local or out of area)
+1-418-648-3614 (fax)
mrscqbc@dfo-mpo.gc.ca (Email)

JRCC Halifax (Maritimes Region) 1-800-565-1582
+1-902-427-8200 (Satellite, Local or out of area)
+1-902-427-2114 (fax)
jrcchalifax@sarnet.dnd.ca (Email)

MRSC St. John's (Newfoundland and Labrador Region) 1-800-563-2444
+1-709-772-5151 (Satellite, Local or out of area)
+1-709-772-2224 (fax)
mrscsj@sarnet.dnd.ca (Email)

MCTS Sail Plan Service

Marine Communications and Traffic Services Centres provide a sail plan processing and alerting service. Mariners are encouraged to file Sail Plans with a responsible person. In circumstances where this is not possible, Sail Plans may be filed with any MCTS Centre by telephone or marine radio only. Should a vessel on a Sail Plan fail to arrive at its destination as expected, procedures will be initiated which may escalate to a full search and rescue effort. Participation in this program is voluntary. *See Canadian Radio Aids to Marine Navigation.*

DISTANCES: JUAN DE FUCA STRAIT, ADMIRALTY INLET, PUGET SOUND AND THE SE PART OF THE STRAIT OF GEORGIA

NOTES:

1. Distances from ports in Juan de Fuca Strait to New Westminster, Nanaimo and Vancouver are via Boundary Pass. For distances via Active Pass *deduct* 8 miles for Nanaimo and 7 miles for New Westminster and Vancouver.
2. Distances from ports in Admiralty Inlet and Puget Sound to ports in the SE part of the Strait of Georgia are via Rosario Strait and adjacent channels.
3. Distances from Everett to Anacortes, Bellingham and ports in the SE part of the Strait of Georgia are by way of Saratoga Passage and Deceptio Pass. For distances over route west of Whidbey Island and via Rosario Strait *add* 11 miles.

Cape Flattery, Wa. (Tatoosh Is. Lt.-140° 3.5 miles)

10	Neah Bay, Wa.																			
16	14	Port Renfrew																		
43	35	36	Sooke Harbour (entrance)																	
51	43	44	10	Race Rocks Lt.-000° 1.5 miles																
61	54	54	21	12	Port Angeles (Wa.)															
61	53	54	20	10	19	Victoria (Ogden Point)														
84	76	77	43	33	29	31	Point Wilson Lt.-225° 1 mile													
87	79	80	46	36	32	34	3	Port Townsend, Wa.												
100	92	93	59	49	45	47	16	16	Port Ludlow, Wa.											
105	97	98	64	54	50	52	21	21	10	Port Gamble, Wa.										
118	110	111	77	67	63	65	34	34	25	28	Everett, Wa.									
124	116	117	83	73	69	71	40	40	32	34	29	Eagle Harbor, Wa.								
124	116	117	83	73	69	71	40	40	32	34	29	8	Seattle, Wa.							
133	125	126	92	82	78	80	49	49	41	44	38	13	14	Bremerton, Wa.						
144	136	137	103	93	89	91	60	60	52	55	49	25	25	29	Tacoma, Wa.					
168	160	161	128	117	113	115	84	84	76	79	73	50	50	50	34	Olympia, Wa.				
92	84	85	51	41	42	35	26	29	42	47	49	66	66	75	86	110	Anacortes, Wa.			
106	98	99	65	55	55	49	40	43	56	61	63	80	80	89	100	124	16	Bellingham, Wa.		
111	103	104	70	60	65	53	55	58	71	76	78	95	95	104	115	139	35	37	Blaine, Wa.	
138	130	131	97	87	91	79	88	91	104	109	111	128	128	137	148	172	69	70	47	New Westminster
143	135	136	102	92	100	85	94	97	110	115	116	134	134	143	154	178	74	74	53	46	Nanaimo
138	130	131	97	87	92	80	89	92	105	110	111	129	129	138	149	173	68	70	47	40	34	Vancouver (Brockton Point)

The distances are approximate and expressed to the nearest even nautical mile.
They are based on the most frequently used tracks which may not be suitable for all vessels.

APPENDICES

DISTANCES: THE GULF ISLANDS AND SAN JUAN ARCHIPELAGO

References:

- * via Dodd Narrows
- • via Active Pass
- † via Houstoun Passage
- º via Trincomali Channel
- + via Porlier Pass
- ‡ outside Gulf Islands

Victoria (Ogden Point)

8	Cadboro Bay (entrance)																					
24	15	Sidney																				
24	17	2	Tsehum Harbour																			
32	23	9	9	Fulford Harbour																		
27	25	19	19	24	Friday Harbor (Wa.)																	
23	15	10	10	17	11	Roche Harbor (Wa.)																
23	16	10	10	14	11	3	Reid Harbor (Wa.)															
28	20	10	10	10	16	9	8	Bedwell Harbour														
35	27	17	18	14	20	16	14	9	Lyall Harbour													
39	30	16	16	12	28	20	18	14	13	Ganges												
39	31	16	17	13	28	20	18	14	11	10	Sturdies Bay											
39	31	17	17	13	28	20	19	15	11	7	7	Montague Harbour										
38	29	15	15	11	30	21	20	18	22	20	21	21	Cowichan Bay									
42	33	19	19	15	34	25	24	22	25	24	25	†18	8	Maple Bay								
46	37	22	23	19	38	29	27	26	†29	†20	†20	†15	12	5	Crofton							
51	42	28	28	24	43	34	33	29	†26	†22	†22	†17	17	11	6	Chemainus						
51	42	28	28	24	43	34	33	29	†25	†21	†21	†16	17	11	7	3	Telegraph Harbour					
56	47	33	33	29	48	39	37	35	†31	†27	†27	º21	22	15	11	6	7	Ladysmith				
50	41	27	27	º23	39	31	29	25	21	17	º17	11	20	13	9	11	10	14	Porlier Pass			
º60	º52	º38	º38	º34	º49	º42	º40	º36	32	28	º28	22	30	23	19	14	13	14	13	Dodd Narrows		
º58	º49	º35	º35	º32	º47	º39	º38	º33	30	26	‡23	20	29	22	18	14	14	14	9	7	Gabriola Passage	
º*65	º*57	º*43	º*43	*39	*54	*47	*45	*41	*37	*33	33	*30	*35	*28	*24	*19	*18	*19	‡24	5	‡16	Nanaimo
•72	•64	•50	•50	•46	•61	•53	•52	•47	•44	•43	34	•40	•54	+43	+40	+42	+41	+45	31	+44	35	46	New Westminster
•73	•64	•50	•50	•46	•61	•53	•52	•47	•44	•43	33	•40	•54	+41	+47	+39	+42	+42	28	36	27	34	40	Vancouver (Brockton Point)

The distances are approximate and expressed to the nearest even nautical mile.
They are based on the most frequently used tracks which may not be suitable for all vessels.

DISTANCES: INSIDE PASSAGE BETWEEN VANCOUVER ISLAND AND THE MAINLAND

NOTES:
1. Distances from Victoria are via Sidney Channel and Active Pass.
   Via Boundary Pass add 7 miles for New Westminster and Vancouver and 8 miles for remaining places.
2. For the head of Jervis Inlet and Porpoise Bay in Sechelt Inlet add 46 miles and 30 miles, respectively.
3. Distances westward from Stuart Island are via Cordero and Chancellor Channels.
4. For Port Harvey add 3 miles.

Victoria (Ogden Point) (see Note 1)																								
72	New Westminster																							
73	40	Vancouver (Brockton Point)																						
76	46	34	Nanaimo																					
81	53	40	13	Nanoose Bay (Richards Point)																				
88	59	46	20	12	Northwest Bay																			
85	54	35	21	18	18	Halfmoon Bay																		
95	65	48	30	25	21	11	Pender Harbour (settlement) (see Note 2)																	
117	87	70	52	46	37	35	25	Blubber Bay																
118	88	70	52	46	41	35	26	5	Powell River															
122	94	79	54	48	37	52	42	18	21	Comox														
143	114	99	75	69	58	62	53	29	31	33	Campbell River													
151	122	107	83	77	66	70	61	37	39	41	8	Seymour Narrows												
156	126	109	91	85	75	74	64	42	39	54	33	41	Stuart Island (settlement) (see Note 3)											
186	157	142	118	112	101	105	96	72	74	75	43	34	36	Kelsey Bay										
193	164	148	125	118	108	112	102	78	81	82	50	41	43	7	Port Neville (entrance)									
200	171	156	132	126	116	120	110	86	88	90	57	49	50	15	8	Broken Islands (see Note 4)								
219	190	175	151	145	134	138	129	105	107	109	76	68	69	34	27	19	Blinkhorn Peninsula							
234	205	190	166	160	150	154	144	120	123	124	91	83	85	49	42	34	15	Pulteney Point						
252	223	208	184	178	168	172	162	138	141	142	109	101	103	67	60	52	33	18	Blunden Harbour					
264	235	220	196	190	180	184	174	150	153	154	121	113	115	79	72	64	45	30	16	Alison Harbour				
251	222	207	183	177	167	171	161	137	140	141	108	100	102	66	59	51	33	17	14	21	Port Hardy			
269	240	225	201	194	184	188	179	154	157	158	126	117	119	84	77	69	50	34	29	21	22	Bull Harbour (entrance)		
265	236	221	197	191	180	184	174	151	153	155	122	114	115	80	73	65	46	31	20	9	20	11	Pine Island Lt.-050° 1 mile	
289	260	245	221	215	204	208	199	175	177	179	146	138	139	104	97	89	87	55	49	39	43	20	30	Cape Scott Lt.-150° 1.3 miles
277	248	232	208	202	192	196	186	162	165	167	133	125	127	91	85	76	58	42	27	16	32	22	12	32	Cape Caution Lt.-078° 2.2 miles

Blinkhorn Peninsula					
3	Beaver Cove				
7	5	Alert Bay			
12	10	6	Port McNeill		
12	10	6	5	Sointula	
15	14	9	8	5	Pulteney Point

The distances are approximate and expressed to the nearest even nautical mile.
They are based on the most frequently used tracks which may not be suitable for all vessels.

Meteorological Data

Comox Valley Airport 49°43'N 124°54'W
2009

Elevation 25.6 m (84 ft)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)													
Mean	2.0	3.0	4.3	8.6	11.8	17.4	19.8	18.2	14.8	9.5	6.4	2.3	9.9 Avg
Mean Maximum	4.2	6.4	7.7	13.0	16.2	22.2	25.1	22.9	18.9	12.8	9.0	4.6	13.6 Avg
Mean Minimum	-0.2	-0.4	0.8	4.2	7.3	12.7	14.4	13.4	10.7	6.1	3.7	0.0	6.1 Avg
Extreme Maximum	9.7	9.2	10.5	17.8	23.0	32.8	35.2	30.0	24.8	18.9	13.6	10.1	35.2 Xtrm
Extreme Minimum	-6.7	-3.7	-5.3	-0.6	3.2	9.2	10.7	9.7	2.4	2.9	-1.4	-6.6	-6.7 Xtrm
Precipitation													
Total Rain (mm)	43.8	26.8	87.6	26.2	51.3	29.4	51.2	2.8	49.4	139.4	371.2	111.4	990.5
Total Snow (cm)	11.4	7.2	4.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	14.4	38.8
Total Precipitation (mm)	55.2	34.0	92.2	27.2	51.3	29.4	51.2	2.8	49.4	139.4	371.4	125.8	1029.3
Wind													
Direction of max gust (10's Deg)	14	15	13	15	14	35	34	15	16	16	15	13	13 Xtrm
Speed of maximum gust (km/h)	83	61	74	63	61	61	41	57	56	69	98	65	98 Xtrm

Source: Environment Canada, National Climate Data and Information Archive
www.climate.weatheroffice.gc.ca/climateData/monthlydata_e.html?Prov=XX&timeframe=3&StationID=155&Month=1&Day=1&Year=2009&cmdB1=Go

Howe Sound — Pam Rocks 49°29'N 123°18'W
2006

Elevation 4.9 m (16 ft)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)													
Mean	6.1	5.6	6.8	-	13.6	16.7	19.0	18.2	16.1	11.5	5.8	5.4	-
Mean Maximum	7.8	7.8	9.2	-	16.8	20.0	22.1	21.3	18.9	13.7	8.1	7.0	-
Mean Minimum	4.3	3.3	4.3	7.3	10.2	13.4	15.9	15.0	13.3	9.3	3.5	3.7	8.6 Avg
Extreme Maximum	12.1	11.9	13.5	-	24.3	26.4	29.4	24.7	26.0	17.9	15.9	12.3	-
Extreme Minimum	2.4	-0.3	0.3	3.6	6.1	11.0	12.3	12.5	9.6	2.8	-7.3	0.7	-7.3 Xtrm
Precipitation													
Total Rain (mm)	-	-	-	-	76.2	91.8	-	0.0	-	-	-	-	-
Total Snow (cm)	-	-	-	-	0.0	0.0	-	0.0	-	-	-	-	-
Total Precipitation (mm)	297.2	68.0	111.4	73.2	76.2	91.8	-	7.6	59.0	96.2	421.0	163.4	-

Source: Environment Canada, National Climate Data and Information Archive
www.climate.weatheroffice.gc.ca/climateData/monthlydata_e.html?timeframe=3&Prov=CA&StationID=6817&Year=2006&Month=2&Day=16

Nanaimo Airport 49°03'N 123°52'W
2006

Elevation 28 m (92 ft)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)													
Mean	5.1	3.6	5.6	9.0	12.9	16.5	-	17.6	15.5	10.1	4.7	3.4	-
Mean Maximum	8.5	8.3	10.1	13.5	18.5	21.8	-	24.4	22.1	15.5	8.3	6.4	-
Mean Minimum	1.7	-1.1	1.1	4.4	7.3	11.1	-	10.8	8.8	4.7	1.0	0.2	-
Extreme Maximum	13.6	11.8	13.5	21.6	28.4	32.1	-	28.8	30.6	21.8	16.6	11.1	-
Extreme Minimum	-3.0	-6.6	-4.2	-0.9	0.6	7.4	-	9.1	3.3	-4.2	-9.1	-5.8	-
Precipitation													
Total Rain (mm)	365.2	74.4	119.8	57.6	70.4	45.8	-	4.4	35.4	30.2	306.9	203.4	-
Total Snow (cm)	0.0	2.8	0.2	0.0	0.0	0.0	-	0.0	0.0	0.0	98.9	4.0	-
Total Precipitation (mm)	365.2	77.2	120.0	57.6	70.4	45.8	-	4.4	35.4	30.2	405.8	207.4	-

Source: Environment Canada, National Climate Data and Information Archive
www.climate.weatheroffice.gc.ca/climateData/monthlydata_e.html?timeframe=3&Prov=CA&StationID=192&Year=2006&Month=2&Day=15

Pachena Point 48°43'N 125°06'W
2006

Elevation 37 m (121 ft)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)													
Mean	6.5	5.0	5.7	7.3	10.1	12.9	13.8	12.4	11.8	8.6	5.6	5.1	8.8 Avg
Mean Maximum	9.1	8.9	9.5	11.0	14.3	16.9	17.3	16.0	16.0	12.6	8.8	8.4	12.4 Avg
Mean Minimum	3.8	1.0	1.9	3.7	5.9	8.9	10.4	8.9	7.7	4.5	2.3	1.8	5.1 Avg
Extreme Maximum	11.0	16.0	13.0	18.0	22.5	21.5	27.0	18.0	22.0	18.0	13.0	13.0	27.0 Xtrm
Extreme Minimum	1.0	-4.5	-2.5	-1.0	-0.5	6.0	7.0	6.0	4.0	-3.5	-7.0	-3.0	-7.0 Xtrm
Precipitation													
Total Rain (mm)	650.0	152.4	364.5	235.3	105.5	76.1	52.3	22.3	182.6	141.4	614.8	475.0	3072.2
Total Snow (cm)	1.2	0.0	11.9	7.0	0.0	0.0	0.0	0.0	0.0	0.0	22.9	1.0	44.0
Total Precipitation (mm)	651.2	152.4	376.4	242.3	105.5	76.1	52.3	22.3	182.6	141.4	637.7	476.0	3116.2

Source: Environment Canada, National Climate Data and Information Archive
www.climate.weatheroffice.gc.ca/climateData/monthlydata_e.html?timeframe=3&Prov=CA&StationID=262&Year=2006&Month=2&Day=15

Powell River Airport 49°50'N 124°30'W
2006

Elevation 129.5 m (425 ft)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)													
Mean	5.3	2.9	4.9	8.1	12.1	15.8	-	16.2	14.4	8.8	4.5	3.7	-
Mean Maximum	7.6	6.8	8.5	12.2	17.6	20.9	-	22.3	19.9	12.9	7.1	6.0	-
Mean Minimum	3.0	-1.0	1.3	4.1	6.6	10.6	-	10.1	9.0	4.6	1.8	1.4	-
Extreme Maximum	11.3	9.7	12.6	19.9	27.9	28.9	-	27.1	27.3	17.7	14.8	10.0	-
Extreme Minimum	-1.1	-6.6	-3.7	-0.8	-0.6	6.4	-	5.3	4.5	-4.7	-9.0	-3.0	-
Precipitation													
Total Rain (mm)	237.2	100.4	112.6	63.8	45.2	46.8	-	12.8	54.2	46.4	256.8	183.8	-
Total Snow (cm)	Trace	5.6	15.4	0.0	0.0	0.0	-	0.0	0.0	0.0	31.0	14.6	-
Total Precipitation (mm)	237.2	106.0	128.0	63.8	45.2	46.8	-	12.8	54.2	46.4	286.0	197.8	-

Source: Environment Canada, National Climate Data and Information Archive
www.climate.weatheroffice.gc.ca/climateData/monthlydata_e.html?timeframe=3&Prov=CA&StationID=327&Year=2006&Month=2&Day=15

Victoria International Airport 48°39'N 123°26'W
2009

Elevation 19.5 m (64 ft)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)													
Mean	3.4	4.0	4.8	8.5	11.9	16.3	18.5	16.6	14.8	9.9	7.0	2.5	9.9 Avg
Mean Maximum	6.5	8.0	8.8	13.5	17.1	22.0	24.7	22.0	20.0	14.3	9.9	5.5	14.4 Avg
Mean Minimum	0.20.7	0.0	0.7	3.5	6.6	10.5	12.1	11.3	9.5	5.5	4.1	-0.5	5.3 Avg
Extreme Maximum	12.1	11.2	13.1	18.4	23.4	31.3	35.0	28.9	26.7	20.6	12.8	9.5	35.0 Xtrm
Extreme Minimum	-5.9	-3.0	-4.4	-1.4	2.5	6.6	7.2	8.4	4.0	-1.9	-1.6	-7.9	-5.9 Xtrm
Precipitation													
Total Rain (mm)	74.5	32.5	52.0	40.0	56.0	6.0	11.1	16.8	51.2	132.2	274.6	84.0	830.9
Total Snow (cm)	3.0	1.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	12.5
Total Precipitation (mm)	77.5	33.5	54.2	40.0	56.0	6.0	11.1	16.8	51.2	132.2	274.6	90.3	843.4
Wind													
Direction of max gust (10's Deg)	27E	24E	23E	23B	22B	27E	26E	27E	28E	21E	15E	5B	28 Xtrm
Speed of maximum gust (km/h)	61E	50E	76E	52B	63B	52E	52E	48E	50E	61E	76E	63E	76 Xtrm

Source: Environment Canada, National Climate Data and Information Archive
www.climate.weatheroffice.gc.ca/climateData/monthlydata_e.html?timeframe=3&Prov=CA&StationID=118&Year=2009&Month=&Day=15

Vancouver International Airport 49°11'N 123°10'W
2009

Elevation 19.5 m (64 ft)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)													
Mean	2.1	4.0	4.9	9.1	12.7	17.4	19.6	18.1	15.7	10.0	7.1	2.1	10.2
Mean Maximum	4.1	7.6	8.3	13.0	16.9	21.7	24.1	22.1	19.8	13.4	9.8	5.1	13.8
Mean Minimum	0.1	0.4	1.4	5.1	8.4	13.0	15.0	14.0	11.6	6.7	4.4	-0.8	6.6
Extreme Maximum	8.5	12.0	13.8	19.4	26.1	25.9	34.4	26.7	27.8	17.6	13.8	10.3	34.4
Extreme Minimum	-6.5	-3.5	-5.9	-0.6	4.3	9.3	10.6	10.4	5.0	0.4	-0.4	-6.3	1.5
Precipitation													
Total Rain (mm)	106.4	54.8	98.8	77.6	71.8	10.8	20.0	26.6	65.6	168.0	282.0	73.2	1055.6
Total Snow (cm)	17.0	1.6	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	26.4
Total Precipitation (mm)	129.4	56.8	104.6	77.6	71.8	10.8	20.0	26.6	65.6	168.0	282.0	77.4	1090.6
Wind (knots)													
Direction of max gust (10's Deg)	27E	9E	28E	29E	14B	30E	30B	13E	28E	28E	14	30E	30E
Speed of maximum gust (km/h)	63E	52E	82E	67E	54B	52E	48B	37E	63E	74E	82E	52E	82E

Source: Environment Canada, National Climate Data and Information Archive
www.climate.weatheroffice.gc.ca/climateData/monthlydata_e.html?timeframe=3&Prov=CA&StationID=889&Year=2009&Month=2&Day=15

Achilles Bank, C8/P6
Acland Islands, C6/P481
Acland Rock, C9/P114
Acorn Island, C7/P88
Active Cove, C3/P83
Active Pass, C6/P431
Active Point, C6/P757
Ada Islands, C8/P47
Addenbroke, Mount, C10/P198
Addington Point, C4/P201
Admiralty Inlet, C1/P7
Admiralty Point, C5/P122
Adze Head, C1/P146
Agamemnon Bay, C9/P155
Agamemnon Channel, C9/P145
Agnew Passage, C9/P157
Ahgykson Island, C9/P286
Ahlstrom Point, C9/P193
Airport (Sea Island) Connector Bridge, C4/P146
Aitken Point, C6/P417
Ajax Bank, C8/P6
Alan Bank, C9/P292
Alarm Rock, C6/P757
Alava, Cape, C1/P59
Alberta Bay, C5/P225
Albert Head, C1/P252
Albion, C4/P243
Albion Dyke No. 2, C4/P67
Albion Point, C9/P144
Alcala Point, C6/P590
Alden Bank, C3/P99
Alden Point, C3/P83
Alexander Point, C9/P136
Alexandra Island, C5/P332
Alex Fraser Bridge, C4/P80
Algerine Passage, C9/P287
All Bay, C6/P108
Alldridge Point, C1/P203
Allies Island, C10/P209
Alouette River, C4/P203
Alpha Bluff, C10/P172
Alpha Islet, C3/P40
Alpha Islet, C6/P31
Amelia Island, C8/P60
Amor Point, C10/P172
Amphitrite Bank, C1/P123
Anderson Bay, C9/P71
Anderson Cove, C1/P202
Anderson Point (Makah Bay), C1/P63
Andys Bay, C5/P346
Angeles, Port, C1/P99
Angeles Point, C1/P94
Angle Point, C7/P144
Angus Creek, C9/P266
Annacis Channel, C4/P170
Annacis Channel Bridge, C4/P176
Annacis Island, C4/P77
Annacis Island Pile Wall, C4/P84
Annette Inlet, C6/P489
Annieville Channel, C4/P83
Annieville Channel Pile Wall, C4/P84
Annieville Dyke, C4/P84
Annieville Rock Wall, C4/P84
Annis Bay, C9/P154
Anniversary Island, C6/P426
Antonio Point, C10/P43
Anvil Island, C5/P242
Anvil Island (settlement), C5/P246
Apodaca Provincial Park, C5/P229
Arachne Reef, C3/P54
Arbutus Cove, C6/P36
Arbutus Island, C6/P224
Arbutus Point, C6/P674
Arches, Point of, C1/P61
Armstrong Point, C6/P104
Arran Point, C10/P156
Arran Rapids, C10/P156
Arrowsmith, Mount, C8/P76
Artaban, Mount, C5/P326
Arthur Laing Bridge, C4/P133
Ash, Point, C1/P237
Ashe Head, C2/P30
Ashworth Point, C9/P357
Atkinson, Point, C5/P18
Atkins Reef, C6/P554
Atrevida Reef, C9/P330
Attwood Bay, C10/P202
Auchterlonie Point, C6/P388
Avalon Bay, C5/P339
Avery Reef, C8/P221

Baada (Baadah) Point, C1/P73
Bahokus Peak, C1/P64
Baker Bay, C9/P207
Baker Passage, C9/P361
Bald Cone, C6/P387
Ballenas Channel, C8/P70
Ballenas Islands, C8/P72
Ballet Bay, C9/P135
Ballingall Islets, C6/P553
Ballingall Islets Park, C6/P553
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