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# **FISHERIES RESEARCH BOARD OF CANADA**

## **MANUSCRIPT REPORT SERIES**

No. 989

### **Physical and Chemical Oceanographic Data from the East Coast of Vancouver Island, 1954-1966**

**Volume II, Northumberland Channel - Departure  
Bay, Stuart Channel - Osborn Bay,  
and Haro Strait - Juan de Fuca Strait**

by

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**Biological Station, Nanaimo, B.C.  
Pacific Oceanographic Group**

September 1968

**Programmed by The Canadian Committee on Oceanography**

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Physical and Chemical Oceanographic Data from the  
East Coast of Vancouver Island, 1954 - 1966

by

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INTRODUCTION

Channels and bays on the east coast of Vancouver Island have been studied since 1953, for an evaluation of the effects of pollution from industrial and/or domestic sources. Much of the emphasis has been on effects from pulp-mill effluent. In some areas, water characteristics were observed to determine potential change in the oceanography as a result of pollution arising from discharges of either industrial wastes or domestic sewage planned for the coastal waters.

The oceanography of Discovery Passage and Duncan Bay was examined to determine the effects of a pulp mill discharging wastes into the Passage at Duncan Bay. There was a need also to arrive at recommendations for a satisfactory system of disposal following production expansion at the Elk Falls Co. pulp mill (Waldichuk, MS, 1956). Subsequent surveys have shown little cause for concern in these swift-flowing and turbulent tidal waters.

Baynes Sound and the Cape Lazo area were first studied in early 1951 to determine the effects of bottom oceanographic conditions on the flatfish (lemon soles) in the area (Waldie, MS, 1951). The next survey was conducted in January-February 1958, at which time the objective was to determine the best location of an ocean outfall for sewage from the town of Comox (Waldichuk, MS, 1962). In addition to regular oceanographic observations, currents were measured at two anchor stations, and by float and drogue observations, for surface and subsurface currents. Subsequent surveys were carried out to determine the effects of the Comox sewage outfall, which was installed in northern Baynes Sound, on the basis of recommendations derived from the 1958 study. Also, there were plans at one time for a pulp mill to be built at Union Bay with discharge of wastes into Baynes Sound. It was desirable to examine oceanographic conditions in order to arrive at some predictions on the behaviour of pulp-mill effluents discharged into the Sound and the effects they might have on the oyster industry.

Nanaimo Harbour and Departure Bay were first investigated in May-June 1953, to determine surface currents, using floats under different tidal and wind conditions (Tully and Waldichuk, MS, 1953; Waldichuk and Tully, 1953; Waldichuk, 1954). The Nanaimo City Council accepted recommendations, arising out of this study, to eliminate inshore outfalls and discharge sewage via two submerged outfalls in more exposed waters: (1) into the Strait of Georgia off the northeast end of Newcastle Island; and (2) into Northumberland Channel, off "Canoe Pass", near Duke Point. The oceanographic

data from these areas, reported here, have been collected to monitor conditions near these new outfalls.

Surveys have been conducted in Northumberland Channel and in Stuart Channel since 1954, in studies of the effects of large kraft pulp mills at Harman and Crofton, respectively. There has never been serious concern about the waste disposal from the early production of pulp at the MacMillan Bloedel Ltd. pulp mill at Harman, because of comparatively rapid dilution and dispersal in Northumberland Channel. However, as the mill expanded to one of the largest kraft pulp mills in Canada, there was some evidence that the limit of safe assimilation by the channel was being approached (Waldichuk, 1965).

The early study in Stuart Channel and Ouborn Bay (Waldichuk, MS, 1954, 1955, 1958) was carried out preparatory for waste disposal from the pulp mill at Crofton. This mill went into operation in late 1967. Based on these early studies, a pipe-line with diffuser was installed from the B.C. Forest Products Ltd. pulp mill at Crofton into Stuart Channel, to a depth of 10 fathoms. Studies in this area were continued after the pulp mill went into operation, in order to determine the dispersal of pulp mill wastes from the submarine diffuser (Waldichuk, 1964). The main concern here was the commercial oyster farming carried out on the Shoal Islands and at Shearard Point (Quayle, MS, 1964). From the examination of the efficacy of the early diffuser in dispersion of the effluent, in cooperation with engineering staff of the Department of Fisheries, recommendations were made for a more efficient diffuser based on better engineering design (Sam, Et Al., 1960), following the pulp mill expansion in 1965. No tests have been made by us since expansion.

The survey conducted during 1966 in the Haro Strait - Juan de Fuca Strait area was designed to aid the study of sewage disposal from the greater Victoria area. The oceanographic surveys of May-June, 1966 in Cordova Bay, contiguous to Haro Strait, and in eastern Juan de Fuca Strait, were coordinated with aerial photography of various markers used to determine the surface currents in the areas. Studies of currents in Cordova Bay during June 1964 have been reported (Kawanin Et Al., MS, 1966; Waldichuk, 1967).

Data reported here have been collected by standard oceanographic techniques, with the same degree of care and precision normally used in inshore oceanographic surveys. A format, adopted early in the program for data processing and recording, has been maintained throughout for consistency. Because most of the work was conducted from the point of view of pollution research, other experiments with floats and dyes were conducted concurrently with the standard oceanographic surveys. The data from the latter are not reported here. Some concepts arising out of the survey work reported in this data record and from associated experiments, have been published in various other reports and publications (Waldichuk, 1967, 1960a, 1960b, 1960a, 1960b, 1960c, 1960d).

This report lists the data by area, from north to south sequentially, as given in the title, in the chronological order that they were collected. Because of the large amount of information collected in the series of surveys along the east coast of Vancouver Island, this data record is printed

in two volumes to facilitate binding.

#### SURVEY PLANS

Most of the surveys were conducted during the summer and early autumn, when effects of pollution could be expected to be at their worst. However, this was subject to the availability of research vessels, and occasional surveys had to be planned for "free" periods in the ship schedules.

Stations were selected in such a way as to provide a gradient of properties from either the existing outfall or from the proposed location of discharge of domestic sewage or industrial waste. An effort was made to extend the stations as far beyond the expected limit of the sewage or industrial waste field as practicable. While most of the waste from industry or sewage from domestic sources is confined to the surface layer, samples were taken to the bottom of the water column at all stations in order to identify any unfavourable conditions occurring in the deep water. Stations were always arranged so that suitable sections of property distributions could be obtained either longitudinally and/or transversally. Harbour stations were arranged in such a way as to provide at least one good section of property distributions along the main axis of the harbour, or in the direction that properties were expected to change most rapidly.

Because pollutants are transported by currents, as well as being diluted and dispersed by turbulence, an effort was made in all surveys to measure currents, both at the surface and in deeper water at selected anchor stations. Usually the current station location was chosen reasonably close to the existing or proposed outfall site. The ship was anchored there for at least a 24-hour period in order to provide current observations over a complete tidal cycle.

All station locations are given in the track charts (Fig. 1-26). Although the positions shown in these track charts are reasonably accurate, the exact positions are given in the station data tables.

#### STATION PROCEDURE

An effort was made by the ships' officers to position the survey vessel on prescribed station locations marked out on a hydrographic chart. Where it was possible, the ship was anchored and the samples were taken with the hydrographic wire as nearly vertical as possible. Otherwise, the ship drifted while the station was occupied, and the officer on watch manoeuvred the ship to keep the wire angle as small as possible. Except for surveys in 1964 to 1966, all samples were taken with Fjarlie water bottles (Fjarlie, 1953). In the later surveys, Nansen bottles were used. In all cases, however, at least five minutes was allowed for the temperature to reach equilibrium on the reversing thermometers, and for the water in the sample bottle to be as nearly representative as possible of the surrounding water at the particular depth.

Water samples from each depth sampled were drawn for salinity, dissolved oxygen, hydrogen-ion concentration (pH) and alkalinity determinations. In some cases, samples were also drawn for kraft-mill effluent (KME) determination. Paired reversing thermometers were used on each bottle whenever possible, and these temperature data were supplemented by a continuous trace of temperature with depth using a bathythermograph. Samples with water sampling bottles were usually taken at 2, 4, 6, 10, 15, 20, 30, 50, 70, 100, 150 and 200 metres, or to whatever depth the bottom would allow sampling. Surface samples were taken with a bucket, and temperatures were measured with a 0-30 C surface thermometer graduated in divisions of .1 C.

At each station, a Secchi disc was lowered to obtain a measure of the water transparency, and occasionally bottom samples were taken with a Dietz-La Fond, clamshell-type bottom sampler. In later surveys, water transparency was measured with an in situ turbidimeter, but these data are not reported here.

All water analyses, except for salinities and KME, were carried out on board the ship. Dissolved oxygen was determined by a modified Winkler method. Alkalinity and pH were measured with a Model G or GS Beckman pH meter. Procedures described by Strickland and Parsons (1965) were followed.

The samples for salinity determinations were put into 10- or 12-ounce medicine bottles and sealed with a cork and wax to prevent evaporation, or with a polyethylene-lined plastic cap. The salinities were determined with a University of Washington-type conductivity salinometer for the earlier surveys and with an Australian (CSIRO)-type inductive salinometer for the more recent surveys, at the base laboratory. Details of the other analyses are given in the section explaining the data headings, units, and methods of observations.

The survey periods, vessels used, and personnel participating in the surveys are given in Table I.

#### ACKNOWLEDGEMENTS

The cooperation and hard work of the officers and crew of CNAV ESKOLI, F.D. 201, A.P. KNIGHT, CNAV WHITETHROAT, CNAV OSHAWA and CNAV LAYMORE are gratefully acknowledged. Many personnel were involved in the survey work and in the processing of samples and data. In addition to those persons involved in the surveys, given in Table I, we wish to acknowledge the clerical and typing assistance of Miss C. Lee, Miss M. Ott, Mrs. J. Young, Mrs. L. Bourassa, Mrs. W. Wilson, and Mrs. E. Davis.

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TABLE I - SURVEYS

Period	Vessel	Observations <sup>a</sup> S T O P A C	Personnel
<u>Discovery Passage - Duncan Bay</u>			
3-5 July 1957	CNAV ESKOLI	X X X X X	M. Waldichuk and B.J. Burns
12 October 1961	CNAV WHITETHROAT	X X X X X	M. Waldichuk, A.E. Werner and M. Larsen
6 November 1962	CNAV OGIWAHA	X X X X X	M. Waldichuk, A.E. Werner and J.R. Markert
24-25 August 1966	CNAV LAYMORE	X X X X X	J.H. Weikle, J.A. Stickland, J. Wong and G.H. Hallett
<u>Baynes Sound - Comox Harbour</u>			
28 January - 1 February 1958	CNAV ESKOLI	X X X X X	M. Waldichuk and Z.L. Nagy
24-27 May 1961	A.P. KNIGHT	X X X X X	M. Waldichuk, J.R. Markert and S.Y.C. Mak
7-8 August 1962	A.P. KNIGHT	X X X X X	M. Waldichuk and J.R. Markert
<u>Northumberland Channel - Departure Bay</u>			
8-9 September 1955	CNAV ESKOLI	X X X	M. Waldichuk and B.J. Burns
6-9 July 1957	CNAV ESKOLI	X X X X X	M. Waldichuk and B.J. Burns
16 May 1961	A.P. KNIGHT	X X X X X	M. Waldichuk, J.R. Markert and S.Y.C. Mak
17 July 1962	A.P. KNIGHT	X X X X X	M. Waldichuk and J.R. Markert
9-10 July 1963	A.P. KNIGHT	X X X X X	M. Waldichuk and J.H. Weikle
11-12 May 1965	CSS <sup>b</sup> ESKOLI	X X X X X	J.H. Weikle, W.F. Hyslop and D.A. Healey
24 June 1965	MELIBE	X X X X X	M. Waldichuk, J.H. Weikle and D.A. Healey
<u>Stuart Channel - Osborn Bay</u>			
17-19 November 1954	CNAV ESKOLI	X X X	M. Waldichuk and A.J. Dodimead

<sup>a</sup> S = salinity; T = temperature; O = dissolved oxygen; P = pH; A = alkalinity;  
C = currents.

<sup>b</sup> ESKOLI was transferred from the Canadian Naval Auxiliary Vessels (RCN) to the Canadian Hydrographic Service in 1961, which explains the change in designation prefix.

TABLE I - SURVEYS (cont'd)

Period	Vessel	Observations <sup>a</sup>				Personnel
		S	T	O	PAC	
<u>Stuart Channel - Osborn Bay (cont'd)</u>						
6-8 September 1955	CNAV EHKOLI	X	X	X	X	M. Waldichuk and B.J. Burns
10-12 July 1957	CNAV EHKOLI	X	X	X	X	M. Waldichuk and B.J. Burns
7-8 August 1958	F.D. 201	X	X	X		M. Waldichuk and J.G. Varsanyi
8-11 April 1959	A.P. KNIGHT	X	X	X	X	M. Waldichuk and A.E. Werner
8-12 July 1959	A.P. KNIGHT	X	X	X	X	M. Waldichuk and H. Kessler
16 August 1959	A.P. KNIGHT	X	X	X	X	M. Waldichuk and H. Kessler
17-18 May 1961	A.P. KNIGHT	X	X	X	X	M. Waldichuk, J.R. Markert and S.Y.C. Mak
18-19 July 1962	A.P. KNIGHT	X	X	X	X	M. Waldichuk and J.R. Markert
11 July 1963	A.P. KNIGHT	X	X	X	X	M. Waldichuk and J.H. Meikle
13-14 May 1965	CSS EHKOLI	X	X	X	X	M. Waldichuk, J.H. Meikle and D.A. Hoesley
<u>Haro Strait - Juan de Fuca Strait</u>						
19-27 May 1965	CSS EHKOLI	X	X	X	X	M. Waldichuk, J.H. Meikle and D.A. Hoesley

<sup>a</sup> S = salinity; T = temperature; O = dissolved oxygen; P = pH; A = alkalinity;  
C = currents.

OBSERVATIONS AND METHODS, WITH EXPLANATIONS OF THE  
DATA RECORD HEADINGS, SYMBOLS AND UNITS

Station Designation: The stations are designated by number consecutively in the order they were usually taken. Prefix letters, D, N, S and V on the numbers designate stations in Discovery Passage, Northumberland Channel, Stuart Channel and in the Victoria area, respectively.

Time: Pacific Standard Time is used throughout. It usually signifies the instant that the messenger was dropped to close the sample bottles. If two casts were made, the time is either given for messengers on each cast or only for the first shallower cast. (S) denotes a shallow cast, ca 0-20 m; (D) denotes a deep cast, > 20 m.

Date: Figures signify: date/month/year.

Lat. and Long.: Position of the ship given as latitude and longitude in degrees and minutes, at the time the messenger was dropped to close the water sampling bottles and reverse the deep-sea thermometers.

Depth (of bottom): Sounding in feet, obtained from the echo sounder and/or from bottom sampler or lead weight and meter block.

B.T. Ser. No.: Bathythermograph slide number given consecutively in the order taken.

Weather: Given by word description.

Cloud Type: Given by standard symbol for the meteorological nomenclature for cloud description. Example: Ci = Cirrus; St = Stratus; Cu = Cumulus; Sc = Stratocumulus; Ns = Nimbostratus.

Ami.: Amount of cloud cover given in tenths of sky covered. Example: 0 = clear sky; 3 = 3/10 of sky covered; 10 = completely overcast.

Wind Dir.: Direction from which wind was blowing in degrees on the gyro compass (True).

Spd.: Estimated wind speed in miles per hour.

Sea: Given in the meteorological number code for height and in °T for direction from which sea comes. Example: 0 = calm sea; 1 = 1 to 2-foot waves; 2 = 3 to 4-foot waves.

Swell: Given in meteorological number code for height and °T for direction from which swell comes. Example: 0 = no swell; 1 = 1 to 3-foot swell; 2 = 4 to 6-foot swell.

Air Temp. - D: Air temperature on dry-bulb thermometer, as observed on ship's bridge in degrees Fahrenheit.

Air Temp. - W: Air temperature on wet-bulb thermometer, as observed on ship's bridge in degrees Fahrenheit.

Baro: Uncorrected reading of ship's aneroid barometer in millibars.

Secchi: Depth in feet at which a white, 30-cm (12-in) disc just disappears from sight.

Col.: Water colour as observed against the white Secchi disc. (Abbreviations: lt = light; dk = dark; sty = silty; mky = murky; wh = white; gy = grey; br = brown; yl = yellow; gn = green; dl = dull; pl = pale; clr = clear.)

Bottom: Composition and colour of the bottom sample taken by a Ditzel-La Fond, clamshell-type bottom sampler, and occasionally by anchor or other devices striking the bottom.

Tide: The curve gives the predicted tide for the specified location. The arrow marks the height and phase of the tide at the time samples were taken.

Depth (of sample): Distance in metres from the water surface to the sampling bottle, as measured on the meter block. (Sample depths for the early surveys are given in feet because a block calibrated in yards was used.) Corrections have been made for wire angle by the cosine formula.

T (C): Temperatures obtained from reversing thermometers are reported to the nearest 0.01 degree Celsius. Surface temperatures measured with an ordinary 0 to 30 C surface thermometer are accurate only to the nearest 0.1 C.

B.T. Data: A 450-ft (135 m), 200-ft (65 m) or 100-ft (30 m) bathythermograph, depending on the depth of water, was used for a continuous profile of temperature with depth. The traces were corrected for temperature from a reversing thermometer, when possible, and were drawn by hand in the final record from a projected image of the B.T. slide.

S (‰): Salinity expresses the total salt content of the water in parts per thousand (‰) and was usually determined on a salinometer at the base laboratory. These data have an accuracy of  $\pm 0.01$  ‰. Samples with very low salinities were titrated with an accuracy of  $\pm 0.05$  ‰.

$\sigma_t$ : Density term at atmospheric pressure and in situ temperature, as defined by: (Density - 1) x 1,000. It is a function of salinity and temperature and was determined from nomograms prepared by the U.S. Hydrographic Office.

Dissolved Oxygen (mg/l): Concentration of dissolved oxygen in milligrams per litre of water. For conversion to mg-at/l divide by 16 and to ml/l multiply by 0.7.

Dissolved Oxygen % Sat.: Percentage that the observed concentration bears to the total concentration when the water is saturated with dissolved oxygen at the in situ salinity and temperature. Defined by:

$$\frac{\text{Observed concentration}}{\text{Saturation concentration}} \times 100.$$

The saturation concentration, as a function of salinity and temperature, was obtained from a nomograph prepared by Tully (1949) from tables given by Whipple and Whipple (1911).

pH: Hydrogen-ion concentration in pH units (1-14) measured to the nearest 0.01 unit on a pH meter and corrected for the in situ temperature and salinity. A Beckman pH Meter (Model G-2 or G5) was generally used, with samples first brought to room temperature. The pH was measured within 12 hours whenever possible; but in case of delay, samples were held in a dark cooler.

Alkalinity - Total: The number of milliequivalents of hydrogen ion neutralized by 1 litre of sea water at 20 C. It was determined by measuring the pH in 100 ml of sea water treated with 25 ml of 0.01 N hydrochloric acid, using a Beckman pH Meter (Model G-2 or G5) in the laboratory, with samples first brought to room temperature, usually within 12 hours of collection.

- Calc.: The number of milliequivalents of hydrogen ion neutralized by 1 litre of sea water at 20 C in converting carbonate and bicarbonate ions to carbon dioxide. It was evaluated from the total alkalinity, using the tables given by Strickland and Parsons (1965).

Note: In general, the tables given by Strickland and Parsons (1965) were used for calculating total and carbonate alkalinities. However, in the extreme cases of low and high values, the equations given by Thompson and Anderson (1940) were used.

PO<sub>4</sub>: Inorganic phosphate in microgram-atoms phosphorus per litre. Samples were drawn into 125-ml Erlenmeyer flasks, scrupulously cleaned. Phosphate was determined by the method of Robinson and Thompson (1948), using a Klett-Summerson colorimeter with appropriate filter and 4-cm cell.

KME: Kraft mill effluent concentration in parts per million. Samples were drawn into clean 10-oz medicine bottles, usually as part of that used for salinity. KME was determined by a modified nitrocellulose test, first reported by Pearl and Benson (1940, using a Beckman DU Spectrophotometer at 410 mμ wavelength. Kraft black liquor of about 10% total solids was used for the standards.

Current measurements: Surface currents were measured with a CBI (Chesapeake Bay Institute) drag described by Pritchard and Burt (1951), or with a current pole and log line (U.S. Department of Commerce, 1950). Sub-surface

currents were measured with a standard current meter (Ekman, 1932). Wind direction and speed were estimated during the interval of current measurement.

Surface current observations at stations in Juan de Fuca Strait, near Victoria, during May-June 1965, were carried out with a Neyrpic (H. Dumas) speed indicator. Earphones were used to note the number of clicks per minute as indicative of speed; visual observation of the orientation of the vane gave direction.



NORTSMBERLAND CHANNEL - DEPARTURE BAY



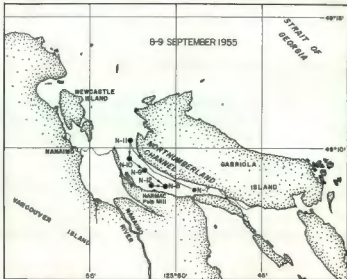
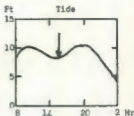


Fig. 8. Track chart of stations occupied in Northumberland Channel, 8-9 September 1955.



Station: H-7  
 Time: 1556  
 Date: 8/IX/55  
 Lat: 49° 08.40' N  
 Long: 123° 48.90' W  
 Depth: 144 ft  
 B.T. Ser. No. 7

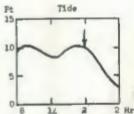
Weather: Overcast  
 Clouds Type Ac Amt. 10  
 Wind: Dir. 090 \*T Spd. 3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 \*F. W. - \*F.  
 Baro: 1016.6 mb.  
 Secchi: 31 ft Col: gn



Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.17	27.65	20.90	8.55	94.0			
6	11.78	27.80	21.10	8.15	88.9			
15	11.36	27.96	21.28	7.89	85.4			

Station: H-8  
 Time: 1953  
 Date: 8/IX/55  
 Lat: 49° 08.60' N  
 Long: 123° 50.60' W  
 Depth: 162 ft  
 B.T. Ser. No. 11

Weather: Overcast  
 Clouds Type Ac Amt. 10  
 Wind: Dir. 090 \*T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 59 \*F. W. - \*F.  
 Baro: 1018.0 mb.  
 Secchi: ft Col:

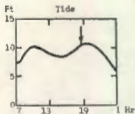


Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.31	25.25	18.45	8.18	94.3			
6	13.66	25.91	19.28	8.36	93.5			
15	11.51	27.97	21.27	7.57	82.1			
30	10.81	28.31	21.62	6.98	74.9			
45	11.0*	28.12	21.49	7.33	81.7			
60	11.15	28.62	21.81	6.72	73.0			
90	10.21	28.88	22.18	5.70	60.5			

\*Temperature taken from B.T. trace.

Stations: K-9  
 Time: 1828  
 Date: 8/13/55  
 Lat: 49° 09.15' N  
 Long: 123° 51.80' W  
 Depth: 378 ft  
 B.T. Ser. No. 10

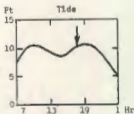
Weather: Overcast  
 Cloud: Type Ac Amt. 10  
 Wind: Dir. 090 °T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 61 °F. W. - °F.  
 Bar: 1018.0 mb.  
 Secchi: 25 ft Col: gm



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.57	26.54	19.78	8.44	94.6			
6	12.79	27.00	20.29	8.29	91.9			
15	12.34	27.31	20.61	8.12	89.4			
30	11.06	28.19	21.51	6.90	75.1			
45	10.43	28.52	21.86	6.42	68.4			
60	10.15	28.67	22.02	6.05	64.1			
90	9.58	28.97	22.34	5.71	59.8			
150	9.29	29.32	22.66	5.54	57.9			
240	8.53	30.25	23.50	5.05	52.2			

Stations: K-10  
 Time: 1741  
 Date: 8/13/55  
 Lat: 49° 09.60' N  
 Long: 123° 52.70' W  
 Depth: 408 ft  
 B.T. Ser. No. 9

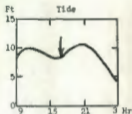
Weather: Overcast  
 Cloud: Type Ac Amt. 10  
 Wind: Dir. 090 °T Spd. 2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 °F. W. - °F.  
 Bar: 1017.7 mb.  
 Secchi: 27 ft Col: gm



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.13	25.68	18.66	8.43	97.0			
6	13.49	26.26	19.58	7.98	89.1			
15	11.90	27.65	21.02	7.59	82.3			
30	10.68	28.49	21.83	6.64	68.7			
45	10.34	28.55	21.90	6.30	67.1			
60	9.76	28.87	22.24	5.78	60.8			
90	9.43	29.13	22.50	5.69	59.6			
150	9.23	29.38	22.71	5.54	57.9			
240	8.56	30.25	23.50	5.12	53.0			

Station: H-11  
 Time: 1651  
 Date: 8/IX/55  
 Lat: 49° 10.30' N  
 Long: 123° 52.70' W  
 Depth: 384 ft  
 S.T. Ser. No. 8

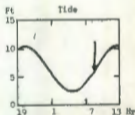
Weather: Overcast  
 Clouds Type Ac Amt. 10  
 Winds Dir. 090 \*T Spd. 3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 \*F. W. - \*F.  
 Baro: 1017.7 mb.  
 Secchi: 31 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.97	25.64	18.82	-	-			
6	12.35	26.86	20.26	-	-			
15	11.27	28.03	21.34	7.33	79.2			
30	10.74	28.40	21.71	6.73	72.0			
45	10.13	28.67	22.02	5.96	63.0			
60	9.72	28.88	22.25	5.76	60.6			
90	9.43	29.18	22.52	5.67	59.4			
150	9.39	29.51	22.82	5.81	60.6			
240	8.12	30.10	23.14	5.06	51.6			

Station: H-12  
 Time: 0822  
 Date: 9/IX/55  
 Lat: 49° 08.65' N  
 Long: 123° 51.45' W  
 Depth: 166 ft  
 S.T. Ser. No. 12

Weather: Overcast  
 Clouds Type Ac Amt. 10  
 Winds Dir. 00 \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 \*F. W. - \*F.  
 Baro: 1019.0 mb.  
 Secchi: 25 ft Col: br



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.76	24.69	18.13	7.72	88.8			
6	13.63	26.52	19.75	8.05	90.5			
15	12.31	27.37	20.67	7.86	90.4			
30	10.66	28.40	21.73	6.62	71.0			
45	10.61	28.43	21.76	6.48	69.4			
60	10.31	28.53	21.89	6.15	65.4			
90	9.69	28.93	22.30	5.70	60.0			
120	9.46	29.14	22.50	5.61	58.8			

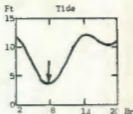




Fig. 9. Track chart of stations occupied in Northumberland Channel, 6-9 July 1957.

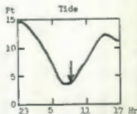


Stations: H-1      Weather: Cloudy  
 Time: 0737(8)-0748(11)      Clouds: Type Sc      Amt. 9  
 Date: 6/VII/57      Winds: Dir. Lt. air Spd. - mph.  
 Lat: 49°09.4' N      Sea: 0      Swell: 0  
 Long: 123°53.0' W      Air Temp: D. 61 °F. W. - °F.  
 Depth: 204 ft      Baro: 1022 mb.  
 B.T. Ser. No. 13      Secchi: 30 ft Col: br-gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.4	18.77	13.28	9.60	106.5	8.30		
6	16.01	19.35	13.80	9.50	107.0	8.39		
15	15.98	20.79	14.90	9.90	112.2	8.47		
30	14.70	22.99	16.84	10.28	115.2	8.38		
60	10.43	27.69	21.22	7.14	75.7	8.07		
90	9.91	28.50	21.93	6.90	72.8	7.94		
150	9.16	29.09	22.50	6.49	67.6	7.83		

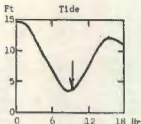
Stations: H-2      Weather: Cloudy  
 Time: 0823      Clouds: Type Sc      Amt. 9  
 Date: 6/VII/57      Winds: Dir. 340°T Spd. 5 mph.  
 Lat: 49°09.7' N      Sea: 0      Swell: 0  
 Long: 123°52.5' W      Air Temp: D. 62°F. W. - °F.  
 Depth: 372 ft      Baro: 1022 mb.  
 B.T. Ser. No. 14      Secchi: 23 ft Col: br-gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.5	19.84	14.07	9.26	105.7	8.33		
6	15.20	20.07	14.50	9.45	106.5	8.37		
15	15.85	21.10	15.16	9.55	108.6	8.41		
30	14.36	23.53	17.32	9.75	108.8	8.28		
60	10.48	27.84	21.33	9.76	103.7	8.13		
150	9.22	28.99	22.61	6.61	68.9	7.93		
300	7.90	30.03	23.50	5.98	61.0	7.84		

Station: N-3  
 Time: 0911  
 Date: 6/VII/57  
 Lat: 45° 09.2' N  
 Long: 123° 51.6' W  
 Depth: 360 ft  
 B.T. Ser. No. 15

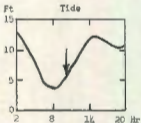
Weather: Cloudy  
 Cloud: Type Sc Amt. 9  
 Wind: Dir. 230 \*T Spd. 4 mph.  
 Sea: 1 Swell:  
 Air Temp: D. 62°F. W. - \*F.  
 Baro: 1019.5 mb.  
 Secchi: 17 ft Col: br-gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.3	20.24	14.41	9.28	105.7	8.32		
6	16.31	20.24	14.41	9.26	105.4	8.42		
15	15.92	20.96	15.04	9.45	107.2	8.43		
30	14.06	23.55	17.38	9.66	107.2	8.48		
60	10.53	26.66	20.01	7.35	77.5	8.30		
150	9.47	28.95	22.34	6.75	70.8	8.20		
300	7.93	30.05	23.43	5.92	60.3	8.10		

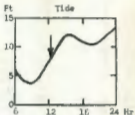
Station: F-4  
 Time: 1028  
 Date: 6/VII/57  
 Lat: 45° 08.7' N  
 Long: 123° 52.1' W  
 Depth: 160 ft  
 B.T. Ser. No. 16

Weather: Drizzle  
 Cloud: Type Sc Amt. 9  
 Wind: Dir. 315 \*T Spd. 5 mph.  
 Sea: 1 Swell:  
 Air Temp: D. 61 \*F. W. - \*F.  
 Baro: 1023 mb.  
 Secchi: 22 ft Col: br-gn



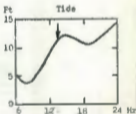
Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.24	19.35	13.75	9.55	106.0	8.11		
6	16.21	19.33	13.74	9.68	109.4	8.26		
15	16.19	19.74	14.06	9.60	108.8	8.30		
30	14.36	23.45	17.25	9.91	110.6	8.24		
60	10.80	27.57	21.07	7.50	80.1	8.05		
150	9.42	28.85	22.27	6.68	69.9	7.91		

Stations **N-5** Weather: Cool, clear  
 Time: 1206(S)-1215(D) Clouds: Type Sc Amt. 9  
 Date: 6/VII/57 Winds: Dir. 115 \*T Spd. 5 mph.  
 Lat: 49° 08.7'N Seas: 1 Swell:  
 Long: 123° 09.8'W Air Temp: D. 62 \*F. W. - \*F.  
 Depth: 168 ft Baro: 1023 mb.  
 B.T. Ser. No. 17 Secchi: 26 ft Col: 1t br-rn



Depth (ft.)	T (°C)	S (‰/oo)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.31	20.07	14.28	9.53	108.4	8.28		
6	16.23	20.03	14.27	9.48	107.8	8.34		
15	15.92	20.08	15.05	9.66	109.8	8.37		
30	14.84	22.33	16.31	5.82	110.0	8.36		
60	11.65	26.96	20.15	7.96	85.9	8.13		
140	8.97	28.18	22.60	6.52	67.6	7.99		

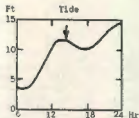
Stations **N-6** Weather: Partly cloudy  
 Time: 1306(S)-1316(D) Clouds: Type Sc-Ci Amt. 7  
 Date: 6/VII/57 Winds: Dir. 115 \*T Spd. 3 mph.  
 Lat: 49° 08.4'N Seas: 1 Swell:  
 Long: 123° 49.8'W Air Temp: D. 62 \*F. W. - \*F.  
 Depth: 234 ft Baro: 1023 mb.  
 B.T. Ser. No. 18 Secchi: 23 ft Col: gr-br



Depth (ft.)	T (°C)	S (‰/oo)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.38	19.95	14.18	10.03	114.2	8.35		
6	16.22	20.30	14.48	10.12	115.0	8.31		
15	15.84	21.14	15.19	10.18	115.5	8.37		
30	14.21	22.89	16.85	9.50	105.3	8.28		
60	10.08	28.19	21.66	6.99	73.7	8.04		
150	9.02	29.18	22.59	6.48	67.3	8.00		

Stations: N-7  
 Time: 1508  
 Date: 9/VII/57  
 Lat: 49°08.5' N  
 Long: 123°51.4' W  
 Depth: 72 ft  
 B.T. Ser. No. 19

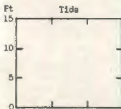
Weather: Clearing  
 Cloud: Type Cs-Ci Amt. 3  
 Wind: Dir. 090 \*T Spd. 1 mph.  
 Sea: 1 Swell:  
 Air Temp: D. \*F. W. - \*F.  
 Baro: mb.  
 Secchi: 16 ft Col: br



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.9	27.06	20.49	8.23	89.6	7.71		
3	11.13	27.56	21.01	8.48	91.1	7.91		
6	10.90	27.84	21.26	8.26	88.5	7.93		
9	10.87	27.72	21.17	8.00	85.5	7.98		
12	10.75	27.79	21.25	7.73	82.6	7.98		
15	10.69	27.79	21.25	7.50	80.0	7.90		
21	10.33	28.08	21.54	6.97	73.9	7.78		

Stations:  
 Time:  
 Date:  
 Lat: N  
 Long: W  
 Depth: ft  
 B.T. Ser. No.

Weather:  
 Cloud: Type Amt.  
 Wind: Dir. \*T Spd. mph.  
 Sea: Swell:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.



## NORTHUMBERLAND CHANNEL

## /Current Measurements

Station: M-5

Latitude: 49° 08.7' N

Date: 8/VII/57-

Longitude: 123° 50.7' W

9/VII/57

Sounding: 132 ft.

Location: In mid-channel,  
off south end of  
Harsac pulp mill

## Roman Current Meter Data

Time/Date	Depth (Feet)	Current			Wind	
		Speed		Direction • T	Direction • T	Speed M.P.H.
		Cm/sec	Knots			
0640/8/VII/57	15	25.6	0.497	156	90	8-10
0644/	45	-	-	-	90	8-10
0649/	75	-	-	-	90	8-10
0730/	15	20.0	0.406	149	90	8-10
0734/	45	-	-	-	90	8-10
0740/	30	18.8	0.365	084	100	8-10
0745/	30	6.8	0.132	344	100	8-10
0832/	15	23.1	0.449	234	100	8-10
0837/	45	17.8	0.346	174	115	8-10
0842/	30	5.5	0.107	064	115	8-10
0932/	15	23.8	0.462	237	115	10-12
0935/	45	10.8	0.210	-	115	10-12
0941/	30	16.4	0.318	212	115	10-12
1031/	15	25.5	0.495	314	115	12-15
1035/	45	29.5	0.573	346	115	12-15
1039/	30	28.6	0.555	184	115	12-15
1131/	15	42.5	0.808	352	115	8-10
1138/	45	41.7	0.810	298	115	8-10
1142/	30	18.5	0.359	087	115	8-10
1231/	15	14.6	0.284	204	115	8-10
1235/	45	26.5	0.515	264	115	8-10
1238/	30	18.0	0.350	084	115	8-10
1332/	15	10.0	0.194	019	115	8-12
1336/	45	18.9	0.363	341	115	8-12
1338/	90	18.4	0.354	084	115	8-12
1433/	15	17.5	0.340	281	115	6-8
1437/	45	15.6	0.303	064	115	6-8
1440/	30	18.1	0.352	134	115	6-8
1533/	15	10.2	0.198	349	135	2-3
1537/	45	28.2	0.548	164	135	2-3
1541/	30	17.5	0.340	137	135	2-3
1630/	15	15.5	0.301	024	135	3-5
1635/	45	13.6	0.264	159	135	3-5
1640/	30	20.1	0.390	074	135	3-5

## NORTHUMBERLAND CHANNEL

Ekman Current Meter Data

Station: N-5 (Continued)

Time/Date	Depth (Feet)	Current			Wind	
		Speed		Direction * T	Direction * T	Speed m.p.h.
		Cm/sec	Knots			
1730/8/VII/57	15	16.3	0.316	054	135	3-5
1734/	45	17.5	0.340	034	135	3-4
1739/	90	26.7	0.519	172	135	3-4
1829/	15	12.1	0.235	014	135	3-4
1838/	45	22.1	0.429	172	135	3-4
1838/	90	13.1	0.254	144	135	3-4
1930/	15	15.8	0.307	034	135	5-7
1933/	45	07.8	0.152	109	135	5-7
1937/	90	23.4	0.455	209	135	5-7
2031/	15	06.2	0.120	204	115	1-3
2035/	45	03.4	0.066	144	115	1-3
2042/	90	08.0	0.155	284	115	1-3
2132/	15	06.8	0.132	249	115	1-3
2137/	45	11.6	0.225	064	115	1-3
2142/	90	07.2	0.140	284	115	1-3
2232/	15	20.4	0.396	264	115	1-2
2235/	45	06.4	0.124	104	115	1-2
2240/	90	01.7	0.031	-	115	1-2
2333/	15	35.2	0.684	266	115	0-1
2336/	45	08.3	0.161	124	115	0-1
2341/	90	04.1	0.080	164	235	0-1
0031/9/VII/57	15	32.1	0.621	254	235	0-1
0035/	45	10.7	0.208	119	235	0-1
0039/	90	08.2	0.159	134	235	0-1
0135/	15	20.1	0.391	299	-	Calm
0140/	45	19.7	0.383	137	-	Calm
0144/	90	06.5	0.126	104	-	Calm
0150/	90	11.0	0.214	164	-	Calm
0230/	15	03.9	0.076	-	-	Calm
0234/	45	20.4	0.396	099	-	Calm
0239/	90	08.7	0.169	084	-	Calm
0243/	15	18.6	0.361	059	-	Calm
0332/	15	13.5	0.262	089	-	Calm
0337/	45	20.2	0.392	104	-	Calm
0341/	90	15.2	0.295	124	-	Calm
0434/	15	12.5	0.243	146	160	0-1
0440/	45	17.0	0.330	104	160	0-1
0444/	90	15.7	0.305	104	160	0-1
0530/	15	07.5	0.146	154	160	0-1
0534/	45	13.2	0.262	094	160	0-1
0538/	90	10.8	0.210	119	160	0-1
0629/	15	-	-	-	-	Calm

## NORTHUMBERLAND CHANNEL

Ekenan Current Meter Data

Station: H-5 (Continued)

Time/Date	Depth (Feet)	Current			Wind	
		Speed		Direction * T	Direction * T	Speed M.P.H.
		Cm/sec	Knots			
0633/9/VII/57	15	-	-	-	-	Calm
0637/	45	12.6	0.245	084	-	Calm
0641/	90	10.7	0.208	154	-	Calm
0645/	15	01.5	0.029	284	-	Calm
0732/	15	02.7	0.052	-	-	Calm
0737/	45	07.0	0.136	114	-	Calm
0742/	90	10.4	0.202	-	-	Calm
0833/	15	02.3	0.045	-	-	Calm
0838/	45	03.5	0.068	114	-	Calm
0843/	90	06.2	0.120	304	-	Calm
0931/	15	07.2	0.140	234	40	0-1
0936/	45	21.3	0.414	074	40	0-1
0941/	90	08.7	0.169	104	40	0-1
1031/	15	19.4	0.377	274	85	1-3
1035/	45	06.3	0.122	264	85	1-3
1040/	90	14.7	0.287	114	85	1-3
1135/	15	07.7	0.150	344	95	4-6
1139/	45	03.0	0.058	-	95	4-6
1143/	90	17.0	0.330	102	95	4-6
1232/	15	15.2	0.295	284	95	4-6
1236/	45	30.4	0.590	262	95	4-6
1240/	90	02.2	0.043	-	95	4-6
1341/	15	33.3	0.646	264	93	4-5
1344/	45	16.4	0.318	294	93	4-5
1348/	90	21.2	0.411	084	93	4-5
1425/	15	12.6	0.244	309	158	3-4
1428/	45	11.8	0.229	244	158	3-4
1432/9/VII/57	90	14.7	0.285	134	158	3-4

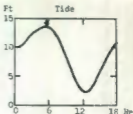


Fig. 10. Track chart of stations occupied in Departure Bay, Peninsula Harbour and Northumberland Channel, 16 May 1961.



Stations N-1  
 Time: 0552  
 Date: 16/7/61  
 Lat: 49° 12.5'N  
 Long: 123° 57.4'W  
 Depth: 48 ft  
 B.T. Ser. No. 1

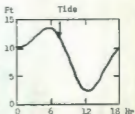
Weather: Clear  
 Clouds Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 50 \*F. W. \*F.  
 Baro: 1029 mb.  
 Secchi: 15 ft Col: lt-brown



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.8	21.57	15.91	10.11	139.3	8.08		
2	13.21	21.73	16.14	10.19	138.9	8.28		
4	13.21	22.76	16.93	10.52	144.2	8.36		
6	10.04	27.39	21.06	8.70	97.3	8.18		
10	8.92	28.40	22.00	7.89	81.2	8.00		
12	8.76	28.54	22.13	7.68	78.8	8.03		

Stations N-2  
 Time: 0718  
 Date: 16/7/61  
 Lat: 49° 12.8'N  
 Long: 123° 55.7'W  
 Depth: 132 ft  
 B.T. Ser. No. 2

Weather: Clear  
 Clouds Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 52 \*F. W. \*F.  
 Baro: 1029 mb.  
 Secchi: 14 ft Col: br-green

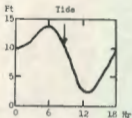


Bottom Sample: Col: brown

Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.2	20.86	15.48	10.10	108.5	8.31	1.63	1.36
2	12.95	21.31	15.87	10.44	111.7	8.38	0.87	0.78
4	12.28	24.31	18.30	5.53	59.7	8.46	1.45	1.35
6	10.75	26.34	20.13	9.51	100.5	8.38	1.63	1.55
10	9.20	28.19	21.79	8.39	86.7	8.10	1.68	1.63
15	8.77	28.52	22.12	7.85	80.5	8.12	1.66	1.61
20	8.62	28.65	22.24	7.52	77.2	8.10	1.68	1.63
30	8.45	28.92	22.48	7.08	72.4	8.11	1.77	1.72

Stations N-3  
 Times 0710  
 Dates 16/V/61  
 Lat: 49° 12.3'N  
 Long: 123° 56.6'W  
 Depths: 126 ft  
 B.T. Ser. No. 3

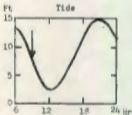
Weather: Clear  
 Clouds Type - Amt. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Seas - Swells -  
 Air Temp: D. 54 \*F. W. \*F.  
 Baro: 1029 mb.  
 Secchi: 16 ft Col: br-green (murky)



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.7	21.95	16.22	10.37	133.4	8.10	1.82	1.77
2	13.21	21.91	16.30	10.73	116.1	8.23	1.80	1.74
4	12.91	24.03	17.98	10.20	117.6	8.24	1.95	1.89
6	9.47	27.92	21.47	8.84	91.9	8.01	2.02	1.98
10	9.19	28.10	21.73	8.30	85.7	8.00	2.06	2.00
15	8.73	28.51	22.11	7.74	79.4	7.95	1.97	1.93
20	8.61	28.68	22.26	7.53	77.2	7.89	2.01	2.01
30	8.41	28.85	22.43	7.02	71.6	7.89	2.01	2.01

Stations N-4  
 Times 0759  
 Dates 16/V/61  
 Lat: 49° 12.3'N  
 Long: 123° 57.3'W  
 Depths: 144 ft  
 B.T. Ser. No. 4  
 Bottom Sample: Col: br-green  
 Des: mud

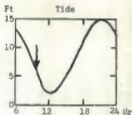
Weather: Clear  
 Clouds Type - Amt. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Seas - Swells -  
 Air Temp: D. 56 \*F. W. \*F.  
 Baro: 1029 mb.  
 Secchi: 18 ft Col: br-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.8	21.87	15.96	10.53	117.6	8.09	1.54	1.49
2	13.36	22.01	16.37	10.58	114.3	7.82	1.52	1.49
4	12.21	25.18	18.99	10.14	109.9	7.75	1.77	1.74
6	9.29	27.99	21.63	8.54	88.4	7.76	1.84	1.80
10	8.85	28.39	22.00	8.04	82.5	7.75	1.88	1.86
15	8.63	28.74	22.32	7.60	77.9	7.60	1.97	1.95
20	8.51	28.89	22.38	7.26	74.1	8.20	1.89	1.83
30	8.38	28.88	22.45	7.02	71.7	8.30	1.98	1.91

Stations N-5  
 Times 0943  
 Dates 16/V/61  
 Lat: 49° 12.2'N  
 Longs: 123° 57.0'W  
 Depths 82 ft  
 B.T. Ser. No. 5  
 Bottom Sample: Col: brown  
 Des: mud

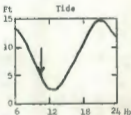
Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Seas - Swells -  
 Air Temp: D. 60 \*F. W. \*F.  
 Baro: 1020 mb.  
 Secchi: 18 ft Col: br-green



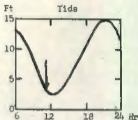
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.2	27.63	15.89	10.67	117.3	8.11	1.27	1.22
2	15.26	22.18	16.71	10.64	120.0	8.10	1.35	1.30
4	12.04	25.24	19.76	10.35	113.7	8.05	1.47	1.47
6	9.76	27.95	21.50	8.74	91.5	7.89	1.68	1.65
10	9.14	28.26	21.86	7.62	76.6	7.70	1.82	1.80
15	6.69	29.61	22.20	7.43	76.3	7.72	1.77	1.75
20	6.60	29.71	22.31	7.36	75.4	7.70	1.80	1.78

Stations N-6  
 Times 1019  
 Dates 16/V/61  
 Lat: 49° 11.5'N  
 Longs: 123° 56.9'W  
 Depths 96 ft  
 B.T. Ser. No. 6  
 Bottom Sample: Col: brown  
 Des: mud

Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Seas - Swells -  
 Air Temp: D. 60 \*F. W. \*F.  
 Baro: 1020 mb.  
 Secchi: 18 ft Col: br-green



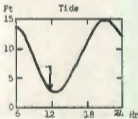
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.9	22.04	16.08	10.50	127.3	8.25	1.35	1.32
2	13.10	22.17	17.90	10.58	114.2	8.25	1.32	1.29
4	12.68	24.96	19.42	10.28	111.9	8.24	1.45	1.42
6	9.08	28.22	21.91	8.40	86.6	8.02	1.66	1.62
10	8.79	28.47	22.07	8.19	84.2	7.95	1.68	1.64
15	8.52	28.77	22.34	7.97	75.5	7.90	1.82	1.75
20	8.45	28.85	22.41	7.19	73.5	7.78	1.80	1.73
25	8.39			6.81		7.78	1.64	1.57



Stations N-7  
 Times 1109  
 Date: 16/V/61  
 Lat: 49° 11.1'N  
 Long: 123° 56.6'W  
 Depth: 24 ft  
 B.T. Ser. No. 7  
 Bottom Sample: Col: brown  
 Des: mud

Weather: Clear  
 Cloud: Type - Amt. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 60°F. W. \*F.  
 Baro: 1028 mb.  
 Secchi: 18 ft Col: br-green

Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.3	21.34	15.64	10.37	114.0	8.22	1.27	1.21
2	13.21	21.61	16.09	10.55	113.9	8.23	1.37	1.31
4	13.21	22.98	17.11	10.36	112.9	8.22	1.45	1.39
6	12.94	24.01	17.96	10.17	110.7	8.13	1.45	1.40



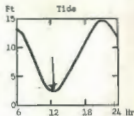
Stations N-8  
 Times 1138  
 Date: 16/V/61  
 Lat: 49° 10.5'N  
 Long: 123° 55.10'W  
 Depth: 24 ft  
 B.T. Ser. No. 8  
 Bottom Sample: Col: brown  
 Des: mud

Weather: Clear  
 Cloud: Type - Amt. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 60 °F. W. \*F.  
 Baro: 1028 mb.  
 Secchi: 17 ft Col: br-green

Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	14.3	21.13	15.49	10.34	113.9	8.22	1.18	1.12
2	13.27	21.45	15.92	10.49	113.2	8.21	1.35	1.29
4	13.19	23.18	17.26	10.34	112.9	8.18	1.45	1.39
6	12.57	24.59	18.47	10.02	109.8	8.15	1.47	1.41

Stations: M-9  
 Time: 1210  
 Date: 16/7/61  
 Lat: 49° 10.3'N  
 Long: 123° 55.5'W  
 Depth: 36 ft  
 B.T. Ser. No. 9  
 Bottom Sample: Col: brown des: mud

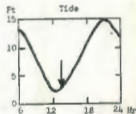
Weather: Clear  
 Clouds Type - Amt. 0  
 Wind Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 60 \*F. W. \*F.  
 Baro: 1028 mb.  
 Secchi: 15 ft Col: br-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.8	19.24	13.96	10.08	110.7	8.11	1.32	1.27
2	13.64	21.39	15.96	10.34	112.6	8.11	2.40	2.35
4	13.17	23.42	17.46	10.33	112.6	8.06	1.79	1.74
6	12.24	24.40	18.28	10.22	111.7	7.99	1.83	1.79
8	10.59	26.12	19.99	9.12	96.1	7.95	1.96	1.52

Stations: N-10  
 Time: 1326  
 Date: 16/7/61  
 Lat: 49° 10.1'N  
 Long: 123° 54.9'W  
 Depth: 48 ft  
 B.T. Ser. No. 10  
 Bottom Sample: Col: brown des: mud

Weather: Clear  
 Clouds Type - Amt. 0  
 Wind Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 60 \*F. W. \*F.  
 Baro: 1028 mb.  
 Secchi: 10 ft Col: br-green

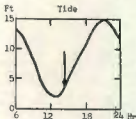


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.7	16.12	13.40	10.77	111.4	8.01	1.16	1.12
2	13.54	20.62	15.24	10.86	117.1	8.09	1.18	1.13
4	13.23	22.08	16.41	10.64	115.8	8.31	1.45	1.38
6	9.71	27.56	21.24	9.12	96.2	7.89	1.96	1.93
10	9.04	28.38	21.96	8.07	83.3	7.87	2.01	1.98
15	9.08	20.11	15.54	10.59	107.0	8.26	1.88	1.84

\* Temperature taken from B.T. trace.

Stations: N-11  
 Times: 1207  
 Date: 16/V/61  
 Lat: 49° 10.6' N  
 Long: 123° 54' W  
 Depth: 198 ft  
 S.T. Ser. No. 11

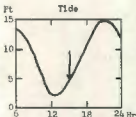
Weather: Clear  
 Cloud: Type - Amt. 0  
 Winds: Dir. - \*T Spd. 0 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 62 \*F. W. \*F.  
 Baro: 1028 mb.  
 Secchi: 12 ft Col: br-green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.5	21.46	15.51	10.54	119.1	8.21	1.45	1.39
2	13.82	21.49	15.86	10.71	117.0	8.22	1.70	1.64
4	13.66	21.85	16.16	10.69	116.5	8.22	1.92	1.86
6	11.19	26.13	19.90	9.75	103.7	8.10	1.92	1.87
10	9.18	28.20	21.80	8.54	98.2	7.87	2.13	2.10
15	8.89	28.47	22.06	8.08	83.2	7.87	1.97	1.94
30	8.56	28.83	22.39	7.57	77.4	7.83	2.16	2.14
50	8.41	29.00	22.54	7.28	74.3	7.81	2.17	2.15

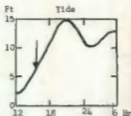
Stations: N-12  
 Times: 1452(S)-1504(D)  
 Date: 16/V/61  
 Lat: 49° 9.8' N  
 Long: 123° 53.3' W  
 Depth: 246 ft  
 S.T. Ser. No. 12

Weather: Clear  
 Cloud: Type - Amt. 0  
 Winds: Dir. 364 \*T Spd. 6 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 62 \*F. W. \*F.  
 Baro: 1028 mb.  
 Secchi: 12 ft Col: br-green

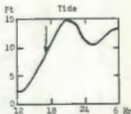


Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.9	21.41	15.60	10.35	115.1	8.18	1.45	1.39
2	14.00	21.88	16.11	10.71	117.6	8.24	1.64	1.60
4	13.62	22.23	16.46	10.68	116.9	8.21	1.79	1.73
6	13.25	23.06	17.16	10.71	116.7	8.15	1.82	1.76
10	12.42	25.41	19.12	10.33	112.5	8.14	1.95	1.90
15	9.39	27.97	21.60	8.38	86.9	7.88	1.86	1.83
20	8.72	28.63	22.21	7.94	81.5	7.74	1.83	1.81
30	8.43	28.97	22.51	7.28	74.3	7.77	1.97	1.95
65	8.34	29.10	22.63	6.90	70.4	7.73	1.92	1.90

Stations: N-13. Weather: Clear  
 Times: 1530(S)-1542(D) Clouds: Type - Amt. 0  
 Date: 7/6/61 Winds: Dir. 344 \*T Spd. 5 mph.  
 Lat: 49° 10.2' N Sea: 1 Swell: 0  
 Long: 123° 52.5' W Air Temp: D. 62 \*F. W. \*F.  
 Depth: 408 ft Baro: 1028 mb.  
 B.T. Ser. No. 13 Secchi: 18 ft Col: br-green



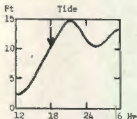
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	14.7	22.28	16.30	8.11	137	8.11	1.37	1.32
2	13.80	22.23	16.42	8.13	154	8.13	1.54	1.49
4	13.44	22.89	17.00	8.12	149	8.12	1.49	1.44
6	13.00	24.24	18.11	8.03	164	8.03	1.64	1.60
10	11.48	25.96	19.71	7.87	147	7.87	1.47	1.44
15	10.17	27.24	20.92	7.77	164	7.77	1.64	1.61
29	8.65	28.71	22.28	7.63	192	7.63	1.92	1.90
48	8.41	28.99	22.53	7.56	195	7.56	1.95	1.93
77	8.25	29.22	22.73	7.46	183	7.46	1.83	1.82
116	8.36	29.98	23.31	7.45	185	7.45	1.85	1.84



Stations: N-14. Weather: Clear  
 Times: 1700(S)-1712(D) Clouds: Type - Amt. 0  
 Date: 7/6/61 Winds: Dir. 344 \*T Spd. 4 mph.  
 Lat: 49° 9.5' N Sea: 1 Swell: 0  
 Long: 123° 52' W Air Temp: D. 65 \*F. W. \*F.  
 Depth: 360 ft Baro: 1027 mb.  
 B.T. Ser. No. 14 Secchi: 13 ft Col: br-green

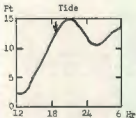
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	14.4	22.37	16.42	10.85	120.3	8.14	1.18	1.13
2	13.71	22.42	16.58	11.00	120.4	8.14	1.85	1.80
4	13.89	24.66	17.88	10.46	121.6	8.08	1.93	1.88
6	11.88	25.21	19.07	9.92	106.7	8.05	1.96	1.91
10	10.80	26.08	19.92	9.26	97.9	7.94	2.10	2.06
15	9.32	28.02	21.64	8.00	83.1	7.81	2.09	2.06
30	8.75	28.70	22.26	7.81	80.2	7.79	2.16	2.14
50	10.80	29.01	22.18	7.32	79.0	7.67	2.23	2.21
100	8.29	29.63	23.05	6.66	68.3	7.67	2.16	2.14

Stations: N-15      Weather: Clear  
 Times: 1755(S)-1807(D)      Clouds: Type -      Amt. 0  
 Date: 16/V/61      Winds Dir. 344 \*T Spd. 3 mph.  
 Lat: 49° 9.1' N      Sea: 1      Swell: 0  
 Long: 123° 52.5' W      Air Temp: D. 68 \*F. W. \*F.  
 Depth: 216 ft      Sero: 1027 mb.  
 B.T. Ser. No. 15      Secchi: 13 ft Col: br-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.7	21.90	16.01	10.81	120.2	8.23	1.5f	1.50
2	14.64	21.92	16.14	10.98	120.7	8.34	1.52	1.45
4	13.95	21.93	16.17	10.93	120.0	8.23	1.80	1.74
6	12.05	25.18	19.01	10.25	109.7	8.16	1.74	1.68
10	10.18	26.95	20.65	9.27	97.8	7.99	2.16	2.12
15	9.35	28.16	21.75	8.55	88.6	7.97	1.68	1.64
20	9.00	28.50	22.07	8.12	83.7	7.89	1.91	1.88
30	8.58	28.81	22.37	7.71	79.0	7.87	2.01	1.98
50	8.45	28.93	22.48	7.34	75.0	7.77	1.66	1.64
60	8.31	29.08	22.62	7.14	72.9	7.77	1.70	1.68

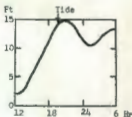
Stations: N-16      Weather: Clear  
 Times: 1844(S)-1859(D)      Clouds: Type -      Amt. 0  
 Date: 16/V/61      Winds Dir. 344 \*T Spd. 1 mph.  
 Lat: 49° 8.5' N      Sea: -      Swell: -  
 Long: 123° 51.3' W      Air Temp: D. 68 \*F. W. \*F.  
 Depth: 132 ft      Sero: 1027 mb.  
 B.T. Ser. No. 16      Secchi: 14 ft Col: br-yellow



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.7	21.58	15.76	10.60	117.9	8.24	1.66	1.60
2	14.03	22.78	16.34	10.94	120.5	8.23	1.68	1.62
4	13.68	22.51	16.66	10.89	119.3	8.23	1.79	1.73
6	12.41	24.19	18.19	10.92	118.0	8.22	2.03	1.97
10	10.15	26.98	20.72	8.94	93.7	8.08	1.91	1.86
15	9.25	28.24	21.82	8.26	85.6	7.99	2.03	1.99
20	9.00	28.50	22.07	8.13	83.8	7.98	2.03	1.99
30	8.57	28.77	22.34	7.76	79.5	7.89	2.03	2.00
45	8.43	28.91	22.47	7.36	75.3	7.84	2.04	2.00

Stations: N-17  
 Times: 1930 (08) 1942 (0)  
 Dates: 16/V/61  
 Lat: 49° 01' N  
 Longs: 123° 51.0' W  
 Depths: 216 ft  
 S.T. Ser. No. 17

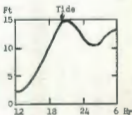
Weather: Clear  
 Clouds Type - Amt. 0  
 Wind: Dir. 344 °T Spd. 1 mph.  
 Sea: - Swell: -  
 Air Temp: D. 64°F. W. \*F.  
 Baro: 1027 mb.  
 Secchi: 12 ft Col: br-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	14.0	22.89	16.90	10.76	118.9	8.23	1.68	1.62
2	13.50	23.09	17.12	10.86	119.1	8.23	1.68	1.62
4	12.81	23.76	17.78	10.42	113.0	8.23	1.75	1.69
6	12.05	24.73	18.67	9.64	103.6	8.14	1.75	1.70
10	9.85	27.67	21.30	7.97	83.6	7.97	1.85	1.81
15	9.18	28.31	21.90	7.79	80.7	7.92	1.83	1.80
20	9.05	28.36	21.95	7.78	80.3	7.87	1.82	1.79
30	8.51	28.85	22.41	7.46	76.4	7.84	1.97	1.95
45	8.40	29.00	22.54	7.19	73.4	7.84	1.86	1.83
60	8.29	29.16	22.69	7.08	72.2	7.78	1.83	1.81

Stations: N-18  
 Times: 2017  
 Dates: 16/V/61  
 Lat: 49° 05.4' N  
 Longs: 123° 49.0' W  
 Depths: 120 ft  
 S.T. Ser. No. 18

Weather: Clear  
 Clouds Type - Amt. 0  
 Wind: Dir. 111 °T Spd. 1 mph.  
 Sea: - Swell: -  
 Air Temp: D. 60 °F. W. \*F.  
 Baro: 1027 mb.  
 Secchi: 12 ft Col: br-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	14.0	22.58	16.65	10.70	118.0	7.94	1.64	1.61
2	13.66	22.84	16.92	10.82	118.9	7.93	1.70	1.67
4	13.04	23.85	17.80	10.49	114.3	7.92	1.96	1.93
6	11.01	26.54	20.24	9.36	99.6	7.75	1.85	1.82
10	9.41	28.06	21.66	7.96	82.7	7.56	1.98	1.96
15	8.79	28.62	22.20	7.67	79.0	7.52	1.97	1.96
20	8.53	28.83	22.40	7.52	77.0	7.50	1.97	1.96
25	8.39	29.01	22.55	7.18	73.3	7.47	1.98	1.97



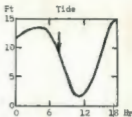


Fig. 11. Track chart of stations occupied in Departure Bay and Northumberland Channel, 17 July 1962.



Stations: B-1  
 Times: 0734  
 Dates: 17/VII/62  
 Lat: 49° 12.4' N  
 Longs: 123° 55.7' W  
 Depth: 108 ft  
 S.T. Ser. No. 1

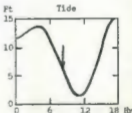
Weather: Overcast  
 Clouds: Type Bc-Sc Amt. 10  
 Winds: Dir. 248 \*T Spd. 8 mph.  
 Sea: 1 Swell: 1-2  
 Air Temp: D. 64 \*F. W. \*F.  
 Baro: 1018.6mb.  
 Secchi: 26 f% Col: green



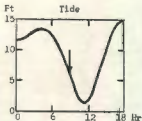
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.1	23.45	16.70	9.30	114.1	8.38	1.77	1.68
2	17.04	23.45	16.71	9.36	114.7	8.37	1.77	1.68
4	17.03	23.55	16.78	9.35	114.6	8.38	1.79	1.70
6	16.89	23.56	16.82	9.48	115.9	8.38	1.79	1.70
10	16.71	24.02	17.22	9.69	118.3	8.34	1.72	1.64
15	12.80	27.84	20.92	9.79	109.3	8.15	1.99	1.94
20	11.16	28.77	21.93	7.71	86.4	7.98	2.00	1.96
30	10.09	29.33	22.54	6.27	69.0	7.84	2.06	2.03

Stations: B-2  
 Times: 0810  
 Dates: 17/VII/62  
 Lat: 49° 12.4' N  
 Longs: 123° 56.7' W  
 Depth: 120 ft  
 S.T. Ser. No. 2

Weather: Overcast  
 Clouds: Type Bc-Sc Amt. 10  
 Winds: Dir. 248 \*T Spd. 4 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 64 \*F. W. \*F.  
 Baro: 1018.6 mb.  
 Secchi: 23 f% Col: green



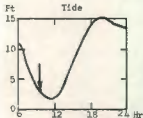
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.5	23.47	16.84	9.49	115.0	8.34	1.77	1.69
2	16.59	23.51	16.85	9.59	116.4	8.38	1.79	1.70
4	16.53	23.60	16.93	9.57	116.1	8.35	1.77	1.69
6	16.58	23.74	17.09	9.45	115.0	8.36	1.81	1.72
10	16.13	24.45	17.67	9.64	116.7	8.32	1.85	1.77
15	13.11	27.36	20.50	9.57	111.0	8.17	1.99	1.93
20	11.04	28.87	22.03	7.34	82.2	7.94	2.09	2.06
30	10.17	29.31	22.51	6.22	68.5	7.84	2.09	2.06



Stations: N-3  
 Time: 0850  
 Date: 17/VII/62  
 Lat: 49° 12.2' N  
 Long: 123° 57.8' W  
 Depth: 72 ft  
 B.T. Ser. No. 3

Weather: Overcast  
 Cloud: Type Ns-Sc Amt. 10  
 Wind: Dir. 248°T Spd. 2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 64°F. W. \*F.  
 Baro: 1018.6 mb.  
 Secchi: 23 ft Col: Green

Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.9	23.59	16.85	9.52	116.5	8.39	1.87	1.78
2	16.73	23.65	16.92	9.63	117.4	8.38	1.91	1.82
4	16.73	23.89	17.11	9.67	118.1	8.38	1.88	1.79
6	16.68	24.00	17.20	9.79	120.5	8.38	1.88	1.79
10	16.41	24.56	17.69	9.86	120.1	8.36	1.91	1.82
15	12.65	28.02	21.10	9.67	111.7	8.16	2.06	2.00
20	11.23	28.79	21.93	7.45	83.7	7.96	2.10	2.06



Stations: N-4  
 Time: 0948  
 Date: 17/VII/62  
 Lat: 49° 10.6' N  
 Long: 123° 54.0' W  
 Depth: 168 ft  
 B.T. Ser. No. 4

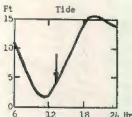
Weather: Overcast  
 Cloud: Type Ns-Sc Amt. 10  
 Wind: Dir. 248°T Spd. 5 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 65°F. W. \*F.  
 Baro: 1018.6 mb.  
 Secchi: 25 ft Col: Green

Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.4	23.63	16.77	9.48	117.0	8.36	1.90	1.81
2	16.89	23.66	16.90	9.58	117.3	8.38	1.91	1.82
4	16.80	23.71	16.95	9.63	117.7	8.36	1.87	1.78
6	15.75	23.78	17.21	9.52	113.9	8.39	1.87	1.78
10	15.47	23.96	17.42	9.28	110.3	8.33	1.90	1.82
15	12.27	28.04	21.19	8.46	96.8	8.04	2.07	2.03
20	10.81	28.90	22.09	7.07	78.8	7.95	2.06	2.03
30	9.69	29.62	22.84	6.20	67.8	7.81	2.08	2.05
50	8.97	30.03	23.26	5.67	61.1	7.78	2.08	2.05



Stations: N-7  
 Times: 1258(S)-1311(D)  
 Date: 17/VII/62  
 Lat: 49° 09.1' N  
 Long: 123° 52.6' W  
 Depth: 264 ft  
 B.T. Ser. No. 7

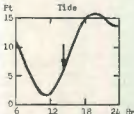
Weather: Overcast  
 Cloud: Type Ns-Sc Amt. 10  
 Wind: Dir. 114 \*T Spd. 2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 67 \*F. W. \*F.  
 Baro: 1018.6 mb.  
 Secchi: 23 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.9	23.94	17.11	9.49	116.3	8.35	1.82	1.73
2	16.80	23.92	17.12	9.57	117.0	8.38	1.81	1.72
4	16.65	23.95	17.18	9.50	115.9	8.35	1.81	1.73
6	16.54	23.94	17.19	9.43	114.7	8.35	1.77	1.69
10	15.68	24.44	17.75	9.35	112.1	8.31	1.84	1.75
15	11.72	27.83	21.1	7.63	86.1	8.00	2.00	1.96
20	10.57	29.12	22.30	6.84	75.9	7.90	2.02	1.99
30	10.01	29.45	22.65	6.42	70.6	7.86	2.10	2.07
50	9.22	29.91	23.14	5.76	62.5	7.78	2.07	2.04
70	8.59	30.25	23.49	5.67	60.6	7.76	2.09	2.06

Stations: N-8  
 Times: 1406  
 Date: 17/VII/62  
 Lat: 49° 08.5' N  
 Long: 123° 51.3' W  
 Depth: 150 ft  
 B.T. Ser. No. 8

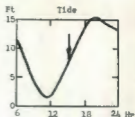
Weather: Overcast  
 Cloud: Type Ns-Sc Amt. 10  
 Wind: Dir. 114 \*T Spd. 3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 65 \*F. W. \*F.  
 Baro: 1018.6 mb.  
 Secchi: 13 ft Col: Brown



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.1	23.35	16.62	8.97	109.9	8.29	1.71	1.63
2	16.80	23.92	17.12	9.53	116.7	8.38	1.84	1.75
4	15.58	23.97	17.41	9.44	112.7	8.38	1.87	1.78
6	15.37	24.05	17.52	9.39	111.5	8.35	1.85	1.77
10	14.70	25.24	18.56	9.51	112.4	8.22	1.87	1.81
15	11.04	28.43	21.70	6.92	77.3	7.96	2.06	2.02
20	10.74	29.11	22.17	6.79	75.6	7.92	2.01	1.98
30	9.95	29.49	22.69	6.28	68.9	7.87	2.08	2.05
40	9.53	29.76	22.96	5.93	64.6	7.85	2.07	2.04

Stations: H-9  
 Time: 1459(8)-1515(D)  
 Date: 17/VII/62  
 Lat: 49° 09.0' N  
 Long: 123° 51.0' W  
 Depth: 288 ft  
 B.T. Ser. No. 9

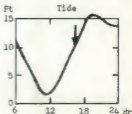
Weather: Overcast  
 Clouds: Type Sc-Bs Amt. 10  
 Wind: Dir. 114° T Spd. 6 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 61 °F. W. °F.  
 Baro: 1018.6 mb.  
 Secchi: 20 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.9	23.94	17.12	9.58	117.4	8.39	1.84	1.75
2	16.75	23.92	17.13	9.60	117.2	8.39	1.87	1.78
4	16.23	24.11	17.38	9.40	113.9	8.34	1.85	1.77
6	15.39	24.73	18.02	9.04	108.0	8.27	1.85	1.77
10	12.98	26.77	18.69	7.89	90.9	8.12	1.91	1.86
15	11.54	28.06	21.31	7.09	79.8	7.98	2.00	1.96
20	10.69	28.84	22.06	6.69	74.3	7.94	2.00	1.97
30	10.37	29.27	22.45	6.60	72.9	7.88	2.08	2.05
50	9.34	29.85	23.07	5.87	63.7	7.79	2.08	2.05
80	8.54	30.30	23.32	5.59	59.7	7.77	2.10	2.07

Stations: H-10  
 Time: 1629  
 Date: 17/VII/62  
 Lat: 49° 08.5' N  
 Long: 123° 49.0' W  
 Depth: 132 ft  
 B.T. Ser. No. 10

Weather: Overcast  
 Clouds: Type Bc-Bc Amt. 10  
 Wind: Dir. 114° T Spd. 4 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 64 °F. W. °F.  
 Baro: 1018.6 mb.  
 Secchi: 16 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.9	24.03	17.18	9.41	115.3	8.37	1.84	1.76
2	15.85	24.47	17.73	9.33	112.4	8.31	1.88	1.80
4	15.18	24.98	18.27	9.11	107.3	8.25	1.87	1.80
6	14.78	25.19	18.52	9.03	106.9	8.24	1.95	1.89
10	12.65	27.08	18.98	7.66	87.8	8.07	2.00	1.95
15	11.06	28.47	21.68	6.79	75.9	7.93	2.09	2.00
20	10.54	28.79	22.04	6.57	72.7	7.90	2.06	2.03
30	9.49	29.70	22.92	5.98	65.0	7.83	2.01	1.98
40	9.30	29.87	23.08	5.75	62.4	7.83	2.08	2.05





Fig. 17. Track chart of stations occupied in Departure Bay and Northumberland Channel, 9-10 July 1963.



Stations: N-1

Time: 0706

Date: 9/VII/63

Lat: 49° 12.40' N

Long: 123° 55.69' W

Depth: 132 ft

S.T. Ser. No. 1

Weather: Cloudy

Cloud: Type No-Sc Amt. 10

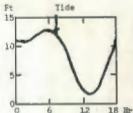
Wind: Dir. - \*T Spd. 0 mph.

Sea: 0 Swell: 0

Air Temp: D. 56°F. W. \*F.

Baro: 1016 mb.

Secchi: 25 ft Col: Dark green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.4	24.03	17.57	9.20	109.0	8.37	1.90	1.82
2	15.23	24.07	17.56	9.36	110.0	8.41	1.94	1.85
4	14.70	25.71	18.92	9.36	111.0	8.36	1.96	1.87
6	13.66	27.73	21.30	9.13	106.9	8.30	2.04	1.95
10	12.96	27.87	20.93	8.23	95.4	8.18	2.01	1.95
15	11.77	28.46	21.59	7.42	85.2	8.01	2.08	2.04
20	11.37	28.65	21.80	7.19	80.9	8.07	2.09	2.04
30	10.42	29.14	22.34	6.30	71.9	7.96	2.11	2.07

Stations: N-2

Time: 0925

Date: 9/VII/63

Lat: 49° 12.30' N

Long: 123° 56.75' W

Depth: 132 ft

S.T. Ser. No. 2

Weather: Partly cloudy

Cloud: Type Sc-Sc Amt. 7

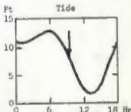
Wind: Dir. 114° T Spd. 2 mph.

Sea: 2 Swell: 0

Air Temp: D. 60°F. W. \*F.

Baro: 1030 mb.

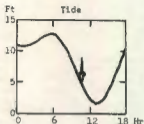
Secchi: 21 ft Col: Dark green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.5	24.02	17.26	8.72	106.1	8.38	1.93	1.84
2	15.04	24.69	18.07	8.16	96.8	8.36	1.99	1.90
4	14.16	26.43	19.59	7.24	85.4	8.27	2.01	1.94
6	13.67	27.10	20.19	8.27	85.3	8.24	2.07	2.03
10	12.72	28.26	21.34	7.47	95.6	8.14	2.10	2.05
15	11.86	28.45	21.56	5.38	61.2	8.08	2.10	2.05
20	11.42	28.66	21.80	6.20	70.6	8.04	1.98	1.94
30	10.50	30.72	23.56	6.20	69.5	7.93	2.14	2.11

Station: N-3  
 Time: 1052  
 Date: 9/VII/63  
 Lat: 49° 12.18' N  
 Long: 123° 57.80' W  
 Depth: 78 ft  
 B.T. Ser. No. 3

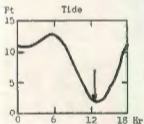
Weather: Partly cloudy  
 Cloud: Type Ac-Sc Amt. 6  
 Wind: Dir. 114 \*T Spd. 7 mph.  
 Sea: 2 Swell: 0  
 Air Temp: D. 60 \*F. W. \*F.  
 Baro: mb.  
 Secchi: 16.5 ft Col: Dull green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.7	25.35	18.45	8.91	107.7	8.35	1.99	1.91
2	15.33	25.67	18.77	8.83	105.9	8.36	1.95	1.87
4	14.09	27.47	20.40	8.56	101.2	8.28	1.94	1.87
6	13.68	28.63	21.37	8.34	98.6	8.24	2.08	2.02
10	13.15	29.12	21.84	8.05	95.0	8.18	2.05	1.99
15	12.19	29.83	22.57	7.39	86.4	8.09	2.10	2.05
20	11.17	30.36	23.17	6.76	76.7	8.00	2.10	2.06

Station: N-4  
 Time: 1249  
 Date: 9/VII/63  
 Lat: 49° 10.60' N  
 Long: 123° 54.00' W  
 Depth: 150 ft  
 B.T. Ser. No. 4

Weather: Partly cloudy  
 Cloud: Type Ac-Sc Amt. 7  
 Wind: Dir. 114 \*T Spd. 8 mph.  
 Sea: 2 Swell: 0  
 Air Temp: D. 62 \*F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 20 ft Col: Dull green

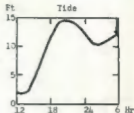


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.7	26.31	19.18	8.35	101.3	8.25	1.92	1.86
2	15.6*	27.48	20.10	8.39	102.4	8.26	1.95	1.88
4	15.5*	29.11	21.36	8.56	105.3	8.15	2.00	1.94
6	14.5*	28.26	21.68	8.38	101.3	8.16	2.01	1.95
10	13.5*	29.91	22.37	7.44	88.5	8.01	2.05	2.00
15	12.5*	30.19	22.79	7.16	83.5	7.98	2.07	2.02
20	12.0*	30.27	22.94	6.99	80.7	7.96	2.05	2.00
30	11.5*	30.74	23.41	6.44	73.8	7.89	2.09	2.05
40	10.5*	30.83	23.64	6.28	70.4	7.87	2.09	2.05

\* Temperature taken from B.T. trace.

Stations: M-4A  
 Time: 0543  
 Date: 10/VII/63  
 Lat: 49° 10.60' N  
 Long: 123° 54.00' W  
 Depth: 180 ft  
 S.T. Ser. No. 8  
 Bottom Sample: Col: Dk-green  
 des: mud, few stones

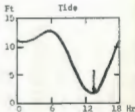
Weather: Partial clearing  
 Cloud: Type Ms-6c Amt. 6  
 Wind: Dir. 338° T Spd. 3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 57°F. W. °F.  
 Baro: 1030 mb.  
 Secchi: 26 ft Col: Dull green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.3	27.87	20.67	8.57	102.0	8.24	1.98	1.92
2	13.37	28.59	21.40	8.33	97.8	8.21	1.99	1.93
4	12.58	29.21	22.01	7.85	91.1	8.16	2.09	2.03
6	12.03	29.65	22.45	7.43	86.6	8.08	1.96	1.91
10	11.60	29.97	22.79	7.21	82.3	8.04	2.05	2.01
15	11.25	30.26	23.07	6.98	79.3	7.99	2.05	2.01
20	10.61	30.60	23.44	6.64	74.6	7.95	2.07	2.04
30	9.87	30.96	23.85	6.24	69.1	7.89	2.10	2.07
50	9.48	31.11	24.03	6.16	67.7	7.86	2.08	2.05

Stations: M-5  
 Time: 1334(S)-1340(D)  
 Date: 9/VII/63  
 Lat: 49° 10.00' N  
 Long: 123° 52.85' W  
 Depth: 330 ft  
 S.T. Ser. No. 5

Weather: Partly cloudy  
 Cloud: Type Ac-6c Amt. 7  
 Wind: Dir. 114° T Spd. 8 mph.  
 Sea: 2 Swell: 0  
 Air Temp: D. 62°F. W. °F.  
 Baro: 1030 mb.  
 Secchi: 18 ft Col: Dull green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.0	27.43	20.19	8.20	98.9	8.16	1.99	1.93
2	14.66	27.44	20.27	8.20	98.2	8.19	2.14	2.08
4	13.59	28.26	21.11	8.02	94.6	8.17	2.00	1.94
6	13.00	28.59	21.46	8.31	97.0	8.23	2.04	1.98
10	12.09	29.54	22.36	7.52	86.7	8.09	2.09	2.04
15	11.55	29.98	22.81	7.22	82.3	8.06	2.08	2.03
20	11.40	30.19	22.99	7.00	79.7	7.98	2.05	2.01
30	10.42	30.68	23.52	6.55	73.4	7.92	2.11	2.08
50	9.68	31.03	23.93	6.17	68.2	7.86	2.13	2.10
70	9.16	31.18	24.13	6.06	66.0	7.86	2.17	2.14
100	8.62	31.51	24.47	6.07	65.4	7.82	2.17	2.15

Stations: H-6

Time: 1519(S)-1530(D)

Date: 9/VII/63

Lat: 49° 09.47' N

Long: 123° 51.90' W

Depth: 342 ft

B.T. Ser. No. 6

Weather: Partly cloudy

Clouds: Type Ac-Sc Amt. 8

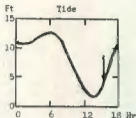
Winds: Dir. 110° T Spd. 7 mph.

Sea: 1 Swell: 0

Air Temp: D. 62°F. W. \*F.

Baro: 1030 mb.

Secchi: 15 ft Col: Br. green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.3	27.07	19.85	8.57	103.7	8.22	1.96	1.90
2	14.58	27.26	20.14	8.64	103.0	8.23	1.96	1.90
4	13.43	28.14	21.04	8.21	96.4	8.15	1.99	1.94
6	12.86	28.76	21.61	8.00	93.2	8.17	2.00	1.94
10	12.35	29.20	22.05	7.77	89.8	8.11	2.00	1.95
15	11.63	29.84	22.69	7.27	83.0	8.04	2.07	2.03
20	11.32	30.10	22.93	7.08	80.4	7.98	2.05	2.01
30	11.19	30.07	22.93	6.83	77.3	7.98	2.08	2.04
50	9.95	30.98	23.87	6.22	68.8	7.87	2.16	2.13
70	9.17	31.27	24.20	6.02	65.7	7.80	2.14	2.11
100	8.52	31.82	24.73	5.90	63.8	7.80	2.14	2.12

Stations: H-7

Time: 1704(S)-1718(D)

Date: 9/VII/63

Lat: 49° 09.18' N

Long: 123° 52.52' W

Depth: 228 ft

B.T. Ser. No. 7

Weather: Increasing clouds

Clouds: Type Ac-Sc Amt. 10

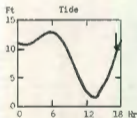
Winds: Dir. 114° T Spd. 6 mph.

Sea: 0 Swell: 0

Air Temp: D. 60°F. W. \*F.

Baro: 1030 mb.

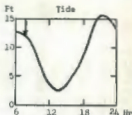
Secchi: 13 ft Col: Brown



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.5	27.32	20.01	8.47	103.0	8.19	1.99	1.93
2	13.51	28.29	21.14	8.10	95.3	8.18	2.01	1.95
4	13.36	28.84	21.59	8.28	97.4	8.17	2.01	1.95
6	12.60	29.06	21.90	7.85	91.1	8.15	2.04	1.99
10	12.61	29.36	22.12	7.73	89.8	8.13	2.05	2.00
15	12.12	29.77	22.53	7.47	86.2	8.07	2.08	2.03
20	11.43	29.94	22.79	7.17	81.6	8.03	2.07	2.03
30	10.67	30.59	23.43	6.65	74.8	7.93	2.09	2.06
50	9.68	31.04	23.94	6.13	67.6	7.85	2.10	2.07
65	8.97	31.32	24.27	6.03	65.5	7.81	2.15	2.13

Stations: N-8  
 Time: 0750  
 Date: 10/VII/63  
 Lat: 49° 08.55' N  
 Long: 123° 51.23' W  
 Depth: 120 ft  
 B.T. Ser. No. 9

Weather: Partly cloudy  
 Clouds Type An-Cc Amt. 6  
 Winds Dir. 338 °T Spd. 7 mph.  
 Seas: 2 Swell: 0  
 Air Temp D. 62°F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 18 ft Col: Brown

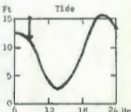


Bottom sample: Col: black  
des: chips, fibre, mud

Depth (m)	T (°C)	S (‰)	St	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.2	28.19	20.93	7.92	94.5	8.03	1.95	1.91
2	13.79	28.26	21.06	7.83	92.6	8.06	2.08	2.03
4	12.38	29.49	22.27	7.68	89.0	8.08	2.02	1.97
6	12.24	29.56	22.35	7.64	88.1	8.08	1.98	1.93
10	11.66	30.03	22.83	7.13	81.6	7.99	2.06	2.02
15	11.21	30.27	23.09	7.02	79.6	7.98	2.07	2.03
20	10.78	30.58	23.41	6.70	75.5	7.91	2.09	2.05
30	10.09	30.92	23.78	6.34	70.5	7.86	2.14	2.10

Stations: N-9  
 Time: 0836(S)-0852(D)  
 Date: 10/VII/63  
 Lat: 49° 09.95' N  
 Long: 123° 51.00' W  
 Depth: 240 ft  
 B.T. Ser. No. 10

Weather: Partly cloudy  
 Clouds Type An-Cc Amt. 6  
 Winds Dir. 338°T Spd. 8 mph.  
 Seas: 1 Swell: 0  
 Air Temp D. 64°F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 26 ft Col: Green



Bottom sample: Col: black  
des: mud, spong

Depth (m)	T (°C)	S (‰)	St	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.2	29.22	21.91	8.18	96.3	8.12	2.01	1.94
2	12.69	29.23	22.01	8.09	94.2	8.12	2.07	2.01
4	12.37	29.40	22.13	8.00	92.7	8.13	2.05	1.99
6	12.01	29.60	22.42	7.71	88.8	8.10	2.05	1.99
10	11.28	29.99	22.86	7.28	82.6	8.03	2.00	1.95
15	11.15	30.26	23.09	7.03	79.9	7.99	1.85	1.80
20	10.50	30.70	23.54	6.53	73.2	7.92	1.88	1.88
20	10.53	30.67	23.51	6.57	73.7	7.93	2.07	2.03
30	9.94	30.95	23.83	6.26	69.4	7.86	2.07	2.03
50	9.32	31.16	24.09	6.13	67.1	7.84	2.08	2.05

Stations: N-10

Time: 1145

Date: 10/VII/63

Lat: 49° 08.45' N

Long: 123° 49.10' W

Depth: 144 ft

B.T. Ser. No. 11

Bottom sample: Col: grey

Weather: Partly cloudy

Cloud: Type Ac-Sc Amt. 6

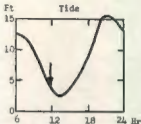
Wind: Dir. 338 °T Spd. 5 mph.

Sea: 1 Swell: 0

Air Temp: D. 66 °F. W. °F.

Baro: 1030 mb.

Secchi: 18 ft Col: Br. green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.1	27.24	19.81	7.53	92.8	7.77	1.90	1.87
2	13.40	28.75	21.51	8.07	94.9	8.12	1.99	1.94
4	13.12	28.98	21.75	7.94	93.1	8.11	2.01	1.96
6	12.97	29.13	21.89	7.88	92.2	8.11	2.01	1.95
10	11.78	29.78	22.61	7.58	86.8	8.07	2.10	2.04
15	11.20	30.17	23.01	7.16	81.1	8.00	2.10	2.05
20	10.72	30.47	23.33	6.79	76.4	7.98	2.41	2.36
30	10.32	30.79	23.64	6.44	71.9	7.91	2.07	2.03
40	9.89	30.97	23.85	6.26	69.4	7.86	2.10	2.06

Stations: N-11

Time: 1735

Date: 10/VII/63

Lat: 49° 07.65' N

Long: 123° 48.20' W

Depth: 108 ft

B.T. Ser. No. 12

Bottom sample: Col: grey

Weather: Increasing clouds

Cloud: Type Rc-Sc Amt. 8

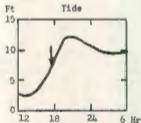
Wind: Dir. - °T Spd. 0 mph.

Sea: 0 Swell: 0

Air Temp: D. 66 °F. W. °F.

Baro: 1030 mb.

Secchi: 21 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.8	28.11	20.53	10.01	123.1	8.32	1.99	1.91
2	14.98	28.11	20.71	10.17	123.1	8.33	1.99	1.91
4	13.24	28.74	21.53	8.76	102.7	8.27	2.00	1.93
6	12.34	29.25	22.10	7.89	91.0	8.18	2.05	1.98
10	11.95	29.62	23.45	7.50	86.2	8.14	2.05	1.99
15	10.88	30.33	23.19	6.16	69.4	7.96	2.07	2.02
20	10.42	30.63	23.50	5.45	61.0	7.88	2.09	2.05
30	10.24	30.80	23.66	4.99	55.9	7.83	2.09	2.06



Fig. 13. Track chart of stations occupied in Departure Bay and Northumberland Channel, 11-12 May 1965.



Stations: N-1

Time: 1035

Date: 11/V/65

Lat: 49° 12.40' N

Long: 123° 55.70' W

Depth: 132 ft

B.T. Ser. No. 3

Weather: Fog, clearing

Cloud: Type St Amt. 8

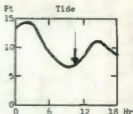
Wind: Dir. 105 °T Spd. 4-6 mph.

Sea: 1 Swell: 0

Air Temp: D. °F. W. °F.

Baro: 1018 mb.

Secchi: 20 ft Col: Green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.3	26.64	20.26	10.45	115.9	8.21	2.03	1.97
2	10.24	26.76	20.45	9.79	106.2	8.14	2.11	2.06
4	9.09	28.20	21.82	8.76	93.5	8.07	2.13	2.08
6	8.76	28.98	22.47	8.44	89.8	8.01	2.14	2.10
10	8.55	29.34	22.78	8.25	87.6	7.98	2.15	2.10
15	8.35	29.52	22.96	7.78	82.3	7.93	2.15	2.11
20	8.23	29.60	23.03	7.50	79.3	7.87	2.15	2.11
30	8.01	29.74	23.17	6.93	72.9	7.94	2.16	2.12
40	7.93	29.80	23.23	6.82	71.6	7.82	2.15	2.12

Stations: N-2

Time: 0850

Date: 11/V/65

Lat: 49° 12.30' N

Long: 123° 56.75' W

Depth: 120 ft

B.T. Ser. No. 2

Weather: Light fog patches

Cloud: Type St Amt. 9

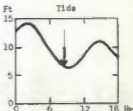
Wind: Dir. 090 °T Spd. 3 mph.

Sea: 0 Swell: 1

Air Temp: D. 58 °F. W. 54 °F.

Baro: 1018 mb.

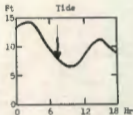
Secchi: 23 ft Col: Green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.7	25.98	16.69	10.65	118.7	8.06	1.97	1.92
2	9.20	28.13	21.75	8.72	93.3	8.05	2.06	2.01
4	8.88	28.70	22.24	8.41	89.7	7.98	2.09	2.05
6	8.64	29.06	22.55	8.07	85.8	7.93	2.10	2.06
10	8.52	29.33	22.79	7.98	84.7	7.98	2.10	2.05
15	8.34	29.49	22.93	7.55	79.9	7.95	2.15	2.10
20	8.24	29.55	23.00	7.39	78.0	7.83	2.13	2.10
30	7.95	29.71	23.16	6.64	69.7	8.12	2.14	2.08

Stations: N-3  
 Time: 0727  
 Date: 11/V/65  
 Lat: 49° 12.15' N  
 Long: 123° 57.78' W  
 Depth: 78 ft  
 S.T. Ser. No. 1

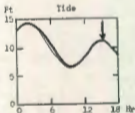
Weather: Light fog  
 Cloud: Type St Amt. 9  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 55 °F. W. 54 °F.  
 Baro: 1018 mb.  
 Secchi: 18 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.5	26.12	19.84	10.48	116.4	8.00	1.99	1.95
2	10.70	26.40	20.18	10.27	112.2	8.13	1.95	1.90
4	9.05	28.44	22.02	8.50	90.8	7.89	2.01	1.98
6	8.69	29.05	22.54	8.25	87.9	7.80	2.04	2.01
10	8.63	29.17	22.64	8.12	86.3	7.86	2.06	2.02
15	8.34	29.41	22.87	7.99	80.1	7.71	2.10	2.08
20	8.31	29.52	22.96	7.66	81.0	7.68	2.10	2.08

Stations: S-4  
 Time: 1508  
 Date: 11/V/65  
 Lat: 49° 10.60' N  
 Long: 123° 53.90' W  
 Depth: 168 ft  
 S.T. Ser. No. 4

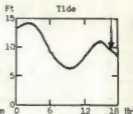
Weather: Smoke haze.  
 Cloud: Type St Amt. 8  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 °F. W. 60 °F.  
 Baro: 1016 mb.  
 Secchi: 21 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.0	27.03	20.62	9.14	101.1	7.84	1.98	1.95
2	9.28	28.55	22.06	8.09	86.9	7.83	2.06	2.03
4	8.79	28.86	22.38	7.78	82.7	7.78	2.04	2.02
6	8.65	29.03	22.53	7.78	82.7	7.72	2.01	1.99
10	8.49	29.21	22.69	7.78	82.4	7.85	2.13	2.09
15	8.42	29.44	22.88	7.94	84.2	7.90	2.10	2.06
20	8.26	29.57	23.01	7.38	79.1	7.78	2.10	2.07
30	8.06	29.68	23.12	7.06	74.3	7.78	2.15	2.12
50	7.87	29.82	23.25	6.60	69.3	7.67	2.15	2.13

Stations: N-5  
 Time: 1644  
 Date: 11/8/65  
 Lat: 49° 10.00'N  
 Long: 123° 52.80'W  
 Depth: 360 ft  
 B.T. Ser. No. 5

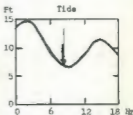
Weather: Smoke haze.  
 Cloud: Type St Amt. 8  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 \*F. W. 60 \*F.  
 Baro: 1016 mb.  
 Secchi: 13 ft Col: Brownish-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.8	26.94	20.42	9.04	101.6	7.92	1.99	1.96
2	9.69	28.78	22.17	8.22	89.3	7.96	2.06	2.02
4	9.06	28.96	22.42	7.78	83.5	7.90	2.10	2.07
6	8.93	29.05	22.50	7.69	82.2	7.88	2.10	2.06
10	8.69	29.20	22.65	7.55	80.3	7.89	2.10	2.06
15	8.34	29.41	22.87	7.62	80.5	7.91	2.10	2.06
20	8.28	29.53	22.97	7.51	79.4	7.88	2.11	2.07
30	8.00	29.74	23.17	6.70	70.4	7.86	2.15	2.11
50	7.77	29.88	23.31	6.50	67.9	7.77	2.17	2.14
70	7.72	29.96	23.38	6.27	65.4	7.81	2.15	2.15
100	7.65	30.17	23.56	6.06	63.3	7.79	2.20	2.17

Stations: N-6  
 Time: 0816  
 Date: 12/8/65  
 Lat: 49° 09.45'N  
 Long: 123° 52.00'W  
 Depth: 360 ft  
 B.T. Ser. No. 6

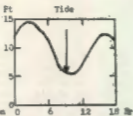
Weather: Clouds developing.  
 Cloud: Type St Amt. 8  
 Wind: Dir. 180 \*T Spd. 1-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 59 \*F. W. 57 \*F.  
 Baro: 1016 mb.  
 Secchi: 13 ft Col: Brownish



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.7	27.11	20.72	8.38	92.1	7.95	1.87	1.83
2	9.45	27.67	21.36	8.13	87.1	7.95	1.99	1.95
4	9.06	28.96	22.42	7.89	84.6	7.90	2.00	1.97
6	8.83	29.20	22.63	7.65	81.7	7.89	2.00	1.97
10	8.71	29.26	22.70	7.55	80.4	7.88	1.97	1.94
15	8.23	29.55	23.00	7.40	78.1	7.88	1.98	1.95
20	8.14	29.66	23.10	7.17	75.6	7.84	1.88	1.86
30	7.88	29.80	23.24	6.72	70.5	7.87	2.00	1.97
50	7.74	29.92	23.35	6.45	67.5	7.84	2.04	2.02
70	7.68	30.01	23.43	6.19	64.7	7.83	2.04	2.02
100	7.63	30.15	23.54	6.14	64.2	7.80	2.15	2.13

Station: H-7  
 Time: 0917  
 Date: 12/1/65  
 Lat: 49° 09.15' N  
 Long: 123° 52.50' W  
 Depth: 300 ft  
 B.T. Ser. No. 7

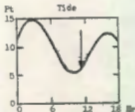
Weather: Clouds developing.  
 Cloud: Type St Aust. 8  
 Wind: Dir. 360° T Spd. 5 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 59 °F. W. 57 °F.  
 Baro: 1017 mb.  
 Secchi: 20 ft Col: Brownish-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.6	25.77	19.54	9.34	103.7	8.07	1.83	1.78
2	9.36	28.79	22.24	8.06	86.9	8.10	1.95	1.90
4	8.83	29.00	22.48	7.68	82.0	8.04	1.99	1.94
6	8.72	29.12	22.59	7.53	80.2	7.97	1.99	1.94
10	8.48	29.32	22.78	7.79	82.6	8.08	2.01	1.95
15	8.38	29.45	22.90	7.79	82.4	8.04	2.00	1.95
20	8.19	29.60	23.04	7.36	77.6	7.99	2.04	1.99
30	7.97	29.74	23.18	6.90	72.5	8.05	2.04	1.98
50	7.73	29.92	23.35	6.38	66.6	7.94	2.10	2.06
70	7.67	30.03	23.45	6.23	65.1	7.95	2.04	2.00
90	7.65	30.08	23.49	5.15	53.8	7.94	2.06	2.02

Station: H-8  
 Time: 1120  
 Date: 12/1/65  
 Lat: 49° 08.50' N  
 Long: 123° 51.30' W  
 Depth: 72 ft  
 B.T. Ser. No. 8

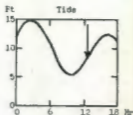
Weather: Clouds developing.  
 Cloud: Type St Aust. 8  
 Wind: Dir. 300 ° T Spd. 5-8 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 59 °F. W. 57 °F.  
 Baro: 1017.5 mb.  
 Secchi: 2 ft Col: Red-brown



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.5	23.42	17.40	6.84	77.9	6.96	1.57	1.57
2	10.75	27.09	20.70	7.23	79.5	7.64	1.87	1.85
4	9.64	28.25	21.77	7.26	78.5	7.85	2.02	1.99
6	8.89	28.89	22.39	7.34	78.3	7.93	2.04	2.01
10	8.64	29.13	22.61	7.61	80.0	7.93	2.13	2.09
15	8.35	29.42	22.88	7.52	79.6	7.96	2.10	2.05
20	8.33	29.48	22.93	7.58	80.1	7.90	2.12	2.08

Stations: 8-9  
 Time: 1235  
 Date: 12/V/65  
 Lat: 49° 08.90' N  
 Long: 123° 51.00' W  
 Depth: 260 ft  
 B.T. Ser. No. 9

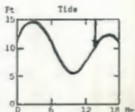
Weather: Partly cloudy.  
 Cloud: Type St Amt. 6  
 Wind: Dir. 300 \*T Spd. 5-8 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. \*F. W. \*F.  
 Baro: 1017 mb.  
 Secchi: 12 ft Col: Brown



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.5	27.96	20.95	8.09	90.7	7.76	1.92	1.89
2	9.99	28.12	21.61	7.94	86.4	7.82	2.00	1.97
4	9.17	28.98	22.41	7.75	83.2	7.78	2.06	2.03
6	8.89	29.17	22.61	7.70	82.4	7.77	2.04	2.01
10	8.81	29.21	22.65	7.61	81.2	7.73	2.06	2.04
15	8.76	29.24	22.66	7.56	80.6	7.79	2.10	2.07
20	8.61	29.34	22.78	7.43	79.0	7.83	2.13	2.10
30	8.11	29.66	23.10	7.22	76.0	7.76	2.15	2.12
50	7.77	29.88	23.32	7.16	74.9	7.73	2.15	2.13
70	7.68	30.02	23.44	6.23	65.1	7.75	2.15	2.12

Station: N-10  
 Time: 1330  
 Date: 12/V/65  
 Lat: 49° 08.40' N  
 Long: 123° 49.10' W  
 Depth: 150 ft  
 B.T. Ser. No. 10

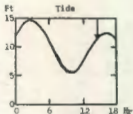
Weather: Partly cloudy.  
 Clouds: Type St Amt. 4  
 Wind: Dir. 300 \*T Spd. 4-7 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 60 \*F. W. 58 \*F.  
 Baro: 1017 mb.  
 Secchi: 23 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.5	28.96	22.34	8.01	86.8	7.78	2.03	2.00
2	9.08	28.99	22.43	7.91	85.0	7.87	2.07	2.04
4	9.04	29.01	22.45	7.91	84.8	7.85	2.03	1.99
6	9.00	29.02	22.47	7.82	83.7	7.78	2.06	2.03
10	8.89	29.09	22.54	7.83	83.7	7.77	2.09	2.06
15	8.74	29.20	22.65	7.91	84.2	7.87	2.09	2.05
20	8.66	29.27	22.72	7.52	80.0	7.87	2.07	2.03
30	8.18	29.54	23.00	7.08	74.7	7.84	2.14	2.11
40	8.02	29.73	23.17	6.79	71.5	7.80	2.11	2.08

Station: N-10A  
 Time: 1410  
 Date: 12/V/65  
 Lat: 49° 08.10'N  
 Long: 123° 49.00'W  
 Depth: \_\_\_\_\_ ft  
 S.T. Ser. No. \_\_\_\_\_

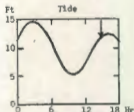
Weather: Partly cloudy.  
 Cloud: Type St Amt. 4  
 Wind: Dir. 300 °T Spd. 4-7 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 60 °F. W. 58 °F.  
 Baro: 1017 mb.  
 Secchi: \_\_\_\_\_ ft Col: \_\_\_\_\_



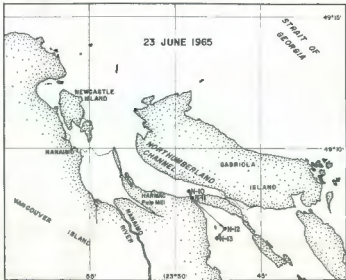
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.8	27.50	20.67	10.32	119.0	8.06	2.00	1.95

Station: N-11  
 Time: 1445  
 Date: 12/V/65  
 Lat: 49° 07.60'N  
 Long: 123° 48.30'W  
 Depth: 132 ft  
 S.T. Ser. No. 11

Weather: Partly cloudy.  
 Cloud: Type St Amt. 4  
 Wind: Dir. 110 °T Spd. 2-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 64 °F. W. 60 °F.  
 Baro: 1017 mb.  
 Secchi: 16 ft Col: Green



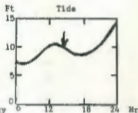
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.6	27.38	20.61	10.99	121.4	9.10	2.01	1.96
2	11.18	27.49	20.94	10.51	117.0	8.11	2.08	2.00
4	9.89	27.86	21.44	9.65	104.7	8.03	2.03	1.99
6	9.62	28.36	21.86	8.61	93.1	7.95	2.03	1.99
10	9.17	28.56	22.09	8.22	88.1	7.93	2.10	2.07
15	9.21	28.73	22.21	8.13	87.3	7.94	2.10	2.07
20	8.75	29.10	22.57	7.55	80.4	7.90	2.10	2.06
30	7.82	29.46	22.98	7.15	74.7	7.88	2.15	2.11
40	7.53	29.57	23.10	7.08	73.5	7.93	2.11	2.07



PL. 14. Track chart of stations occupied in Northumberland Channel - Squert Channel, 23 June 1965.

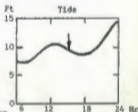


Station: N-10      Weather: Partly cloudy  
 Time: 1427(B)-1447(D)      Cloud: Type Cu Amt. 4  
 Date: 23/VI/65      Wind: Dir. 315 \*T Spd. 8-10mph.  
 Lat: 49°08.39' N      Sea: 1 Swell: 0  
 Long: 123°49.18' W      Air Temp: D. \*F. W. \*F.  
 Depth: 180 ft      Baro: mb.  
 S.T. Ser. No. 1      Secchi: 15 ft Col: Turbid; dirty green



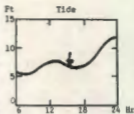
Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.8	26.45	19.38	10.57	126.1	8.17		
2	13.96	26.78	19.90	10.83	127.1	8.17		
4	12.11	27.41	20.73	9.18	104.2	8.07		
6	11.07	28.11	21.44	8.38	93.4	7.95		
10	10.33	28.76	22.06	7.51	82.7	7.90		
15	9.75	29.43	22.68	6.90	75.3	7.75		
20	9.23	29.63	22.92	6.48	70.1	7.75		
30	8.88	29.76	23.07	6.24	67.0	7.72		
40	8.73	29.80	23.12	6.18	66.0	7.73		

Station: N-11      Weather: Partly cloudy  
 Time: 1510      Clouds: Type Cu Amt. 3  
 Date: 23/VI/65      Wind: Dir. 315 \*T Spd. 8-10mph.  
 Lat: 49°08.12' N      Sea: Swell:  
 Long: 123°48.96' W      Air Temp: D. \*F. W. \*F.  
 Depth: 180 ft      Baro: mb.  
 S.T. Ser. No.      Secchi: 15 ft Col: Turbid; dirty green



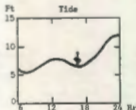
Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.3	28.39	21.62	8.48	95.2	7.92		

Stations: B-12      Weather: Partly cloudy; sunny  
 Time: 1526(6)-1544(10)      Cloud: Type Cc      Amt. 3  
 Date: 23/VI/65      Wind: Dir. 045 °T Spd. 6-8 mph.  
 Lat: 49°04.98' N      Sea:  $\frac{1}{2}$       Swell: 0  
 Long: 123°47.10' W      Air Temp: D. °F. W. °F.  
 Depth: 131 ft      Baro: mb.  
 B.T. Ser. No. 2      Secchi: 9 ft Col: dirty green



Depth (m)	T (°C)	S (‰/‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.2	25.39	28.73	13.45	160.9	8.45		
2	14.86	25.63	18.84	13.63	161.9	8.44		
4	14.65	25.65	18.89	13.63	161.3	8.48		
6	14.46	25.66	18.93	13.56	159.9	8.46		
10	13.15	26.19	19.60	11.33	130.5	8.33		
15	12.84	26.88	20.19	10.35	119.0	8.24		
20	11.44	27.90	21.21	8.65	97.0	8.03		
30	9.84	29.01	22.34	6.73	73.4	7.87		

Stations: B-13      Weather: Mostly clear and sunny  
 Time: 1619      Clouds: Type Cc      Amt. 2  
 Date: 23/VI/65      Wind: Dir. 045 °T Spd. 6-7 mph.  
 Lat: 49°06.80' N      Sea:  $\frac{1}{2}$       Swell: 0  
 Long: 123°47.57' W      Air Temp: D. °F. W. °F.  
 Depth: 62 ft      Baro: mb.  
 B.T. Ser. No. 3      Secchi: 14 ft Col: Green-brown



Depth (m)	T (°C)	S (‰/‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.4	25.73	18.80	13.21	158.8	8.46		
2	15.08	25.72	18.86	13.55	161.9	8.47		
4	14.77	25.74	18.93	13.70	162.5	8.45		
6	14.63	25.76	18.98	13.49	159.6	8.44		
10	14.21	25.80	19.09	12.90	151.4	8.39		
15	12.93	26.47	19.86	9.66	111.0	8.14		

STUART CHANNEL - OSBORNE BAY



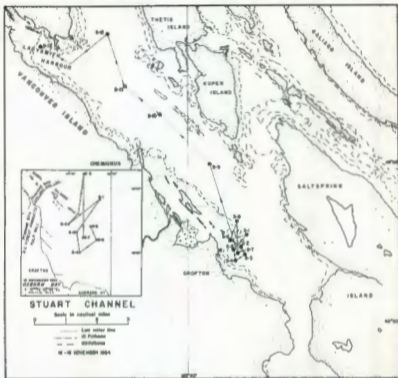
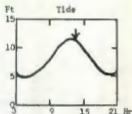


Fig. 15. Track chart of stations occupied in Osborn Bay - Stuart Channel, 18-19 November 1954. Insert shows enlargement of survey track chart for Osborn Bay.



Stations S-1  
 Time: 1305  
 Date: 18/XI/54  
 Lat: 48° 52.83' N  
 Long: 123° 37.25' W  
 Depth: 120 ft  
 B.T. Ser. No. 1 and 4

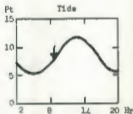
Weather: Heavy rain  
 Cloud: Type Ac Amt. 9  
 Wind: Dir. 110 \*T Spd. 2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 50 \*F. W. - \*F.  
 Baro: 1016.2 mb.  
 Secchi: 1 1/2ft Col: br



Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at./l
				(mg/l)	% sat.		Total	Carb.	
0	9.6	17.91	13.75	8.72	85.0			2.10	
6	9.78	28.57	22.00	5.39	56.6			1.05	
15	9.80	28.72	22.12	4.99	52.6			1.05	
30	9.80	28.83	22.20	4.80	50.6			1.25	
60	9.90	29.05	22.36	3.91	41.3			1.40	
105	9.94	29.35	22.59	3.10	32.8			1.25	

Station: S-2  
 Time: 0842  
 Date: 18/XI/54  
 Lat: 48° 52.42' N  
 Long: 123° 37.50' W  
 Depth: 250 ft  
 B.T. Ser. No. 2

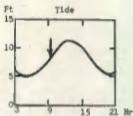
Weather: Overcast  
 Cloud: Type Ac-Nc Amt. 10  
 Wind: Dir. 330 \*T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 49 \*F. W. - \*F.  
 Baro: 1021.1 mb.  
 Secchi: 29 ft Col: gn



Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at./l
				(mg/l)	% sat.		Total	Carb.	
0	9.7	28.53	21.98	5.70	59.9			0.35	
6	9.65	28.53	21.98	5.57	58.5			0.05	
15	9.80	28.55	21.98	5.15	54.1			0.10	
30	9.86	28.67	22.50	4.67	49.3			0.0	
52.5	9.90	28.55	22.97	4.00	42.2			0.0	
180	9.90	28.92	22.26	5.48	57.9			0.35	

Stations: 8-3  
 Time: 0923  
 Date: 18/XI/54  
 Lat: 48° 52.20' N  
 Long: 123° 37.33' W  
 Depth: 258 ft  
 B.T. Ser. No. 3

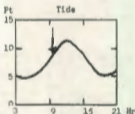
Weather: Overcast  
 Cloud: Type Ac-Ns Amt- 10  
 Wind: Dir. 330 °T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 49 °F. W. - °F.  
 Baro: 1021.1 mb.  
 Secchi: 34 ft Col: gn



Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at/l
				(mg/l)	% sat.		Total	Carb.	
0	9.7	28.59	22.03	5.90	62.0			0.25	
6	9.71	28.66	22.08	5.42	57.0			0.45	
15	9.80	28.76	22.15	5.02	52.8			0.25	
30	9.87	28.97	22.30	4.63	48.9			0.35	
60	9.90	29.20	22.48	4.01	42.4			0.55	
210	10.00	29.02	22.32	4.68	49.5			0.75	

Station: 8-4  
 Time: 0947  
 Date: 18/XI/54  
 Lat: 48° 52.00' N  
 Long: 123° 37.75' W  
 Depth: 60 ft  
 B.T. Ser. No. 4

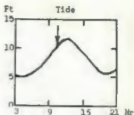
Weather: Overcast  
 Cloud: Type Ac-Ns Amt. 10  
 Wind: Dir. 330 °T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 49 °F. W. - °F.  
 Baro: 1021.1 mb.  
 Secchi: 33 ft Col: gn



Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at/l
				(mg/l)	% sat.		Total	Carb.	
0	9.8	28.71	22.11	5.42	57.1			0.25	
6	9.79	28.72	22.12	5.06	53.3			0.40	
15	9.8	-	-	4.72	49.7			-	
30	9.85	-	-	4.97	52.4			-	
33	9.8	28.93	22.27	4.09	43.1			0.80	
48	9.89	28.98	22.30	3.06	32.3			1.45	

Stations: 8-5  
 Time: 1013  
 Date: 18/XI/54  
 Lat: 48° 52.33' N  
 Long: 123° 37.83' W  
 Depth: 120 ft  
 B.T. Ser. No. 5

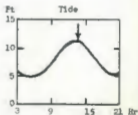
Weather: Overcast  
 Cloud: Type Ac-Ns Amt. 10  
 Wind: Dir. 090 \*T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 50 \*F. W. - \*F.  
 Baro: 1021.4 mb.  
 Secchi: 32 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at./l
				(mg/l)	% sat.		Total	Carb.	
0	9.7	28.62	22.05	3.65	38.3			0.45	
6	9.77	28.76	22.35	4.32	45.5			1.15	
15	9.8	28.83	22.20	2.84	30.0			1.10	
30	9.82	29.04	22.36	1.91	20.0			0.95	
60	9.8	29.18	22.67	1.31	13.8			2.10	
105	9.88	29.39	22.62	2.24	23.7			1.30	

Station: 8-6  
 Time: 1345  
 Date: 18/XI/54  
 Lat: 48° 52.67' N  
 Long: 123° 38.00' W  
 Depth: 48 ft  
 B.T. Ser. No. 7

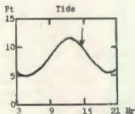
Weather: Drizzle  
 Cloud: Type Ac-Ns Amt. 10  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 54 \*F. W. - \*F.  
 Baro: 1018.4 mb.  
 Secchi: 1 ft Col: br



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at./l
				(mg/l)	% sat.		Total	Carb.	
0	9.61	26.58	20.48	5.93	61.2			1.15	
6	9.7	28.34	21.83	5.57	58.4			1.60	
15	9.73	28.83	21.82	5.50	57.9			0.40	
30	9.8	28.87	22.23	4.91	51.7			0.0	
45	9.86	28.92	22.26	4.73	49.9			2.8	

Stations 8-7  
 Time: 1448  
 Date: 18/XI/54  
 Lat: 48° 52.25' N  
 Long: 123° 37.67' W  
 Depth: 260 ft  
 B.T. Ser. No. 9

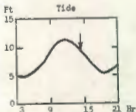
Weather: Heavy rain  
 Clouds: Type No-Ac Amt. 10  
 Winds: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 53 °F. W. - °F.  
 Baro: 1018.4 mb.  
 Secchi: ft Col: ft Col:



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at./l
				(mg/l)	% sat.		Total	Carb.	
0	9.2	7.69	5.86	10.12	91.6			1.08	
6	9.73	28.34	21.83	5.80	60.8			1.60	
15	9.7	28.67	22.09	5.62	59.1			2.40	
30	9.79	28.91	22.26	4.64	48.9			1.72	
60	9.8	29.05	22.39	4.54	47.9			2.27	
225	9.73	29.58	22.80	3.78	39.9			0.97	

Stations 8-8  
 Time: 1438  
 Date: 18/XI/54  
 Lat: 48° 53.25' N  
 Long: 123° 37.67' W  
 Depth: 216 ft  
 B.T. Ser. No. 8

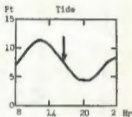
Weather: Heavy rain  
 Clouds: Type Ac-Sc Amt. 10  
 Winds: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 54 °F. W. - °F.  
 Baro: 1018.4 mb.  
 Secchi: 1 ft Col: lt-gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at./l
				(mg/l)	% sat.		Total	Carb.	
0	9.6	5.77	4.31	10.49	94.8			2.32	
6	9.76	28.32	21.81	5.39	56.5			3.06	
15	9.8	28.64	22.05	4.09	43.0			2.10	
30	9.8	28.81	22.19	4.80	50.6			1.34	
60	9.9	29.05	22.36	3.84	40.6			1.53	
120	10.0	29.30	22.54	3.02	32.0			3.29	

Stations: 8-9  
 Time: 1635  
 Date: 19/XI/54  
 Lat: 48° 55.03' N  
 Long: 123° 39.00' W  
 Depth: 420 ft  
 B.T. Ser. No. 10

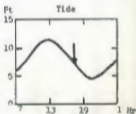
Weather: Squally  
 Cloud: Type As-Ac Amt. 10  
 Wind: Dir. 135 \*T Spd. 4 mph.  
 Sea: 1 Swell: 1  
 Air Temp: D. 55 \*F. W. - \*F.  
 Baro: 1021.8 mb.  
 Secchi: 4 ft Col: lt-br



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at./l
				(mg/l)	% sat.		Total	Carb.	
0	9.7	25.51	19.64	6.85	70.4			1.04	
15	9.79	28.53	22.96	5.91	62.2			1.30	
45	9.80	28.99	22.32	4.86	51.3			1.77	
90	9.90	29.37	22.61	2.70	28.6			3.49	
150	9.9	29.53	22.73	1.81	19.2			3.34	
300	9.77	29.72	22.90	3.29	34.8			2.78	

Stations: 8-10  
 Time: 1715  
 Date: 19/XI/54  
 Lat: 48° 56.67' N  
 Long: 123° 41.33' W  
 Depth: 348 ft  
 B.T. Ser. No. 11

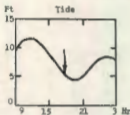
Weather: Squally  
 Cloud: Type As-Ac Amt. 10  
 Wind: Dir. 357 \*T Spd. 2 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 52 \*F. W. - \*F.  
 Baro: 1022.1 mb.  
 Secchi: 6 ft Col: lt-br



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at./l
				(mg/l)	% sat.		Total	Carb.	
0	9.7	26.51	20.42	7.12	73.6			2.52	
15	9.79	27.79	21.39	6.66	69.7			1.49	
45	9.7	28.99	22.03	5.39	56.6			1.77	
90	9.91	29.42	22.65	2.83	30.0			2.32	
150	9.9	29.54	22.74	2.16	22.9			1.82	
224	9.9	29.68	22.85	3.48	36.9			2.55	

Stations S-11  
 Time: 1739  
 Date: 19/XI/54  
 Lat: 48° 57.50' N  
 Long: 123° 43.00' W  
 Depth: 300 ft  
 B.T. Ser. No. 12

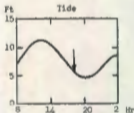
Weather: Squally  
 Cloud: Type No-Ac Amt. 10  
 Wind: Dir. 135 \*T Spd. 3 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 51 \*F. W. - \*F.  
 Baro: 1022.1 mb.  
 Secchi: ft Col:



Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at/l
				(mg/l)	% sat.		Total	Carb.	
0	9.7	22.47	17.28	7.09	71.5			1.62	
15	9.72	27.47	21.16	6.87	71.7			1.49	
45	9.7	28.43	21.90	6.70	70.3			2.03	
90	9.88	29.32	22.57	3.27	34.6			2.27	
150	10.0	29.54	22.72	2.11	22.4			2.47	
225	9.77	29.65	22.84	3.46	36.6			2.70	

Stations S-12  
 Time: 1809  
 Date: 19/XI/54  
 Lat: 48° 59.17' N  
 Long: 123° 43.75' W  
 Depth: 240 ft  
 B.T. Ser. No. 13

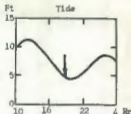
Weather: Overcast  
 Cloud: Type No-Ac Amt. 10  
 Wind: Dir. 135 \*T Spd. 3 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 50 \*F. W. - \*F.  
 Baro: 1022.8 mb.  
 Secchi: 8 Ft Col: br



Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-at/l
				(mg/l)	% sat.		Total	Carb.	
0	9.7	27.09	20.86	7.45	77.4			1.96	
15	9.71	27.09	20.86	7.35	76.4			2.01	
45	9.4	28.13	21.71	6.96	72.4			1.82	
90	9.79	29.27	22.55	3.60	38.0			2.51	
150	9.9	29.54	22.74	2.09	22.2			1.01	
195	9.91	29.63	22.81	2.46	26.1			3.20	

Stations: S-13  
 Time: 1845  
 Date: 19/11/54  
 Lat: 48° 58.75' N  
 Long: 123° 46.92' W  
 Depth: 84 ft  
 S.T. Ser. No. 14

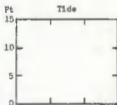
Weather: Overcast  
 Cloud: Type No-Ac Amt. 10  
 Wind: Dir. 135 \*T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 49 \*F. W. - \*F.  
 Baro: 1023.8 mb.  
 Secchi: 11 ft Cpl:



Depth (ft)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		PO <sub>4</sub> μ-mol/l
				(mg/l)	% sat.		Total	Carb.	
0	9.7	17.78	13.64	8.96	87.5			0.41	
6	9.70	24.86	19.13	7.50	76.6			1.63	
15	9.7	28.06	21.62	6.59	69.0			2.70	
30	9.69	28.38	21.86	6.10	64.0			1.97	
45	9.8	28.69	22.09	4.97	52.4			0.58	
60	9.90	28.97	22.30	4.32	45.6			3.02	

Stations:  
 Time:  
 Date:  
 Lat: N  
 Long: W  
 Depth: ft  
 S.T. Ser. No.

Weather:  
 Cloud: Type Amt.  
 Wind: Dir. \*T Spd. mph.  
 Sea: Swell:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Cpl:



Depth	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.



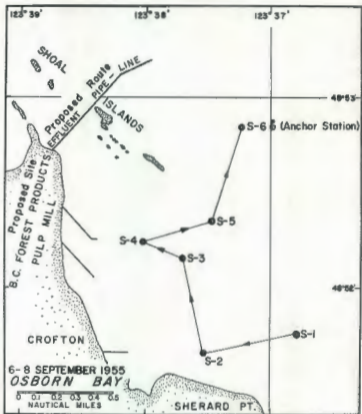
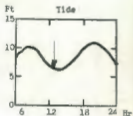


Fig. 16. Track chart of stations occupied in Osborn Bay - Stuart Channel, 6-8 September 1955.



Stations: B-1  
 Time: 1225  
 Date: 6/11/55  
 Lat: 45°51.75'N  
 Long: 123°36.75'W  
 Depth: 324 ft  
 B.T. Ser. No. 1

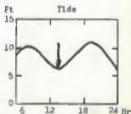
Weather: Partly cloudy  
 Cloud: Type Ci Amt. 1  
 Wind: Dir. 00 \*T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 76 \*F. W. - \*F.  
 Baro: 1019.0 mb.  
 Secchi: 25 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.2	25.64	16.11	9.45	116.8			
6	14.81	25.90	19.05	10.88	124.8			
15	13.89	26.25	19.50	10.03	113.0			
30	13.23	26.52	19.83	8.98	100.0			
45	12.67	27.63	20.60	6.78	75.1			
60	12.01	28.19	21.34	5.72	62.9			
90	11.23	28.66	21.83	5.15	55.8			
150	10.45	29.30	22.46	3.98	42.7			
270	9.90	29.50	22.70	2.30	24.4			

Stations: S-2  
 Time: 1342(8)-1405(D)  
 Date: 6/11/55  
 Lat: 45°51.65'N  
 Long: 123°37.52'W  
 Depth: 90 ft  
 B.T. Ser. No. 2

Weather: Partly cloudy  
 Cloud: Type Ci Amt. 1  
 Wind: Dir. 00 \*T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 76 \*F. W. - \*F.  
 Baro: 1019.0 mb.  
 Secchi: 25 ft Col: gn

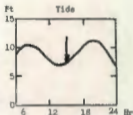


Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.6	25.55	17.95	8.13	100.0			
6	17.2*	25.58	18.30	8.80	109.6			
15	14.92	26.15	17.22	9.47	113.8			
30	13.33	26.62	19.09	8.50	95.0			
60	12.14	27.77	20.60	6.51	71.5			
75	11.6*	-	-	5.72	-			

Temperature taken from B.T. trace.

Stations: S-3  
 Time: 1503  
 Date: 6/11/55  
 Lat: 48°52.17' N  
 Long: 123°37.70' W  
 Depth: 276 ft  
 B.T. Ser. No. 3

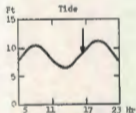
Weather: Partly cloudy  
 Cloud: Type 01 Amt. 1  
 Wind: Dir. 090 \*T Spd. 2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 75 \*F. W. - \*F.  
 Baro: 1018.0 mb.  
 Secchi: 27 ft Col: gn



Depth (ft.)	T (°C)	S (‰/sec)	$\sigma_t$	Dissolved oxygen (mg/l)	% sat.	pH	Alkalinity Total Carb.
0	18.1	25.62	18.12	9.36	114.0		
6	15.18	26.05	19.09	10.16	117.4		
15	14.27	26.21	19.40	10.27	116.8		
30	13.34	26.52	19.81	8.73	97.4		
45	12.67	27.21	20.48	7.30	80.7		
60	12.24	27.86	21.07	6.27	69.1		
90	11.51	28.53	21.66	5.29	57.7		
150	10.34	29.36	22.52	3.87	41.4		
239	9.86	29.34	22.59	2.15	22.7		

Stations: S-4  
 Time: 1647  
 Date: 6/11/55  
 Lat: 48°52.25' N  
 Long: 123°38.00' W  
 Depth: 162 ft  
 B.T. Ser. No. 4

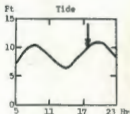
Weather: Cloudy  
 Cloud: Type 01 Amt. 3  
 Wind: Dir. 090 \*T Spd. 3 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 71 \*F. W. - \*F.  
 Baro: 1017.0 mb.  
 Secchi: 31 ft Col: gn



Depth (ft.)	T (°C)	S (‰/sec)	$\sigma_t$	Dissolved oxygen (mg/l)	% sat.	pH	Alkalinity Total Carb.
0	18.40	25.57	18.02	9.42	115.6		
6	15.94	25.87	18.80	10.31	120.8		
15	14.93	26.07	19.16	10.10	116.2		
30	13.60	26.49	19.74	10.18	114.2		
45	12.82	27.44	20.62	6.93	77.0		
60	12.14	28.19	21.31	5.80	69.9		
90	10.93	28.99	22.14	4.77	51.6		
150	10.13	29.40	22.59	3.34	35.6		

Stations: 8-5  
 Time: 1742(S)-1750(D)  
 Date: 6/IX/55  
 Lat: 46° 52.37' N  
 Long: 123° 37.45' W  
 Depth: 294 ft  
 S.T. Ser. No. 5

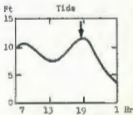
Weather: Cloudy  
 Cloud: Type C1 Amt. 3  
 Wind: Dir. 090 °T Spd. 2 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 69 °F. W. °F.  
 Baro: 1016.7 mb.  
 Secchi: 25 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.19	25.80	18.47	10.28	123.0			
6	17.10	25.82	18.51	10.41	124.6			
15	17.89	26.07	19.18	11.18	128.5			
30	13.37	26.56	19.84	-	-			
45	12.92	27.28	20.49	7.12	79.1			
60	12.13	27.94	21.13	6.12	67.3			
90	11.30	28.71	21.86	5.13	55.7			
150	10.11	29.40	22.99	3.57	37.0			
240	9.92	29.58	22.77	2.21	23.4			

Stations: 5-6  
 Time: 1835  
 Date: 6/IX/55  
 Lat: 46° 52.87' N  
 Long: 123° 37.20' W  
 Depth: 276 ft  
 S.T. Ser. No. 6

Weather: Partly cloudy  
 Cloud: Type C1 Amt. 2  
 Wind: Dir. °T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 54 °F. W. °F.  
 Baro: 1018.0 mb.  
 Secchi: 21 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.80	25.86	18.60	10.48	124.6			
6	16.40	25.86	18.69	10.61	125.2			
15	14.42	26.10	19.28	11.61	132.3			
30	13.04	26.81	20.09	8.42	93.6			
45	12.56	27.04	20.36	7.52	82.9			
60	12.18	28.22	21.33	6.24	68.8			
90	11.48	28.71	21.83	5.17	56.5			
150	10.18	29.39	22.58	3.73	39.7			
240	9.92	29.54	22.73	2.15	22.8			

## STUART CHANNEL

## Current Measurements

Station: 8-6

Latitude: 48°52.87'N

Remarks:

Date: 7-8/IX/55

Longitude: 123°37.20'W

Sounding: 276 ft.

Location: About 0.5 n. mi. east of southern tip of Shoal Islands, 800 yd. southeast of black can buoy.

## Known Current Meter Data

Time/Date	Depth (feet)	Current			Wind	
		Speed		Direction °T	Direction °T	Speed m.p.h.
		cm/sec	Knots			
0618/7/IX/55	15	11.9	0.236	273	-	0
0630/	90	12.9	0.256	163	-	0
0640/	240	0	0	-	-	0
0735/	15	5.4	0.105	293	-	0
0745/	90	12.2	0.242	008	-	0
0755/	240	-	-	-	090	1-3
0835/	15	2.0	0.040	-	090	1-3
0845/	90	8.2	0.159	343	090	1-3
0855/	240	16.3	0.323	148	090	1-3
0940/	15	1.7	0.034	-	090	1-3
0930/	90	7.8	0.152	308	090	1-3
1000/	240	10.8	0.214	165	090	1-3
1035/	15	-	-	-	090	1-3
1040/	90	17.6	0.348	330	090	1-3
1050/	240	7.8	0.152	170	090	1-3
1140/	15	9.8	0.190	188	090	1-3
1145/	90	4.1	0.081	313	090	1-3
1155/	240	5.1	0.099	148	090	1-3
1235/	15	8.8	0.171	238	090	1-3
1245/	90	8.8	0.171	335	090	1-3
1255/	240	7.4	0.144	117	090	1-3
1345/	15	12.9	0.256	181	090	1-3
1355/	90	13.3	0.264	356	090	1-3
1405/	240	9.5	0.185	143	-	0
1435/	15	23.4	0.464	149	-	0
1440/	90	6.8	0.132	048	-	0
1449/	240	-	-	-	-	0
1540/	15	13.3	0.264	163	090	1-3
1530/	90	8.2	0.159	346	090	2-4
1640/	15	6.8	0.132	298	090	2-4
1650/	90	9.8	0.190	261	090	2-4
1740/	15	13.3	0.264	018	090	2-4
1730/	90	16.3	0.323	265	090	2-4
1840/	15	9.8	0.190	011	090	2-4
1850/7/IX/55	90	15.3	0.303	313	090	2-3

## STUART CHANNEL

Known Current Meter Data

Station: 3-6 (continued)

Time/Data	Depth (feet)	Current			Wind	
		Speed		Direction °T	Direction °T	Speed a.p.h.
		Cm/sec	Knots			
1940/7/IX/55	15	4.1	0.081	343	090	2-3
1945/	90	10.8	0.214	206	090	2-3
2035/	15	4.8	0.095	213	090	3-5
2045/	90	10.5	0.208	271	090	3-5
2055/	90	13.6	0.270	303	090	3-3
2130/	15	7.1	0.138	123	090	3-7
2135/	90	12.9	0.256	328	090	3-3
2235/	15	5.7	0.073	093	090	1-2
2242/	90	7.1	0.138	043	090	1-2
2251/	150	15.9	0.315	153	090	1-2
2335/	15	12.2	0.242	123	-	0
2341/	90	8.5	0.165	216	-	0
2350/7/IX/55	150	3.0	0.059	153	-	0
0035/8/IX/55	15	18.0	0.356	172	-	0
0042/	90	0	0	133	-	0
0051/	150	7.1	0.138	118	-	0
0133/	15	16.0	0.317	160	-	0
0142/	90	0	0	-	-	0
0151/	150	5.4	0.105	133	-	0
0233/	15	15.0	0.297	153	-	0
0241/	90	8.2	0.159	313	-	0
0250/	150	3.0	0.059	093	-	0
0333/	15	6.7	0.130	156	-	0
0343/	90	4.1	0.081	323	-	0
0351/	150	2.0	0.040	-	-	0
0432/	15	0	0	-	-	0
0440/	90	11.9	0.236	337	-	0
0448/	150	4.5	0.089	333	-	0
0533/	15	4.1	0.081	133	-	0
0542/	90	10.1	0.200	320	-	0
0551/	150	7.1	0.138	303	-	0
0633/	15	8.5	0.165	133	-	0
0640/	90	10.2	0.202	345	-	0
0645/	150	3.1	0.061	013	-	0
0745/	15	8.3	0.161	136	-	0
0755/	90	8.8	0.171	351	-	0
0800/	150	2.7	0.054	-	-	0
0835/	15	1.3	0.026	-	-	0
0840/	90	6.8	0.132	330	-	0
0855/	150	2.7	0.054	003	-	0
0930/	15	5.1	0.099	153	-	0

## STUART CHANNEL

Eman Current Meter Data

Station: S-6 (continued)

Time/Date	Depth (feet)	Current			Wind	
		Speed		Direction *T	Direction *T	Speed m.p.h.
		cm/sec	Knots			
0940/8/IX/55	90	5.1	0.099	303	-	0
0950/	150	7.1	0.138	133	-	0
1045/	15	6.8	0.132	173	-	0
1050/	90	3.7	0.073	203	-	0
1055/	150	6.1	0.119	180	-	0
1135/	15	6.1	0.119	163	-	0
1145/	90	4.4	0.087	303	-	0
1150/	150	3.1	0.061	233	-	0
1230/	15	5.4	0.105	118	-	0
1235/	90	6.4	0.124	283	-	0
1245/8/IX/55	150	4.8	0.095	183	-	0

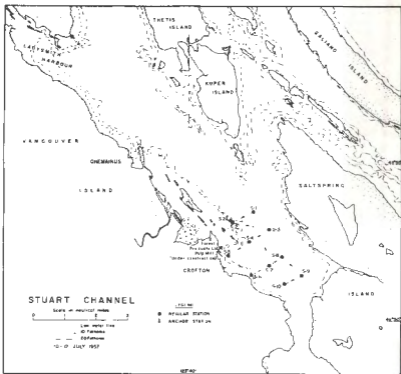
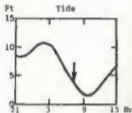


Fig. 17. Track chart of stations occupied in Osborn Bay - Stuart Channel, 10-12 July 1957.



Stations: B-1  
 Times: 0724  
 Date: 10/VII/57  
 Lat: 48°53.4' N  
 Long: 123°36.9' W  
 Depth: 552 ft  
 B.T. Ser. No. 20

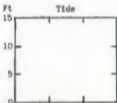
Weather: Cloudy  
 Cloud: Type As Amt. 10  
 Wind: Dir. 315 \*T Spd. 2 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 58 \*F. W. - \*F.  
 Baro: 1020 mb.  
 Secchi: 33 ft Col: gn



Depth (ft.)	T (°C)	S (‰/‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.5	25.20	18.37	11.27	130.3	8.20		
6	14.00	25.34	18.78	11.36	129.8	8.23		
15	13.86	25.48	18.91	11.30	128.8	8.23		
30	12.24	26.99	20.38	8.72	95.5	8.07		
60	11.00	28.41	21.69	6.99	74.5	7.97		
150	9.83	29.47	22.70	5.65	59.9	7.79		
300	9.17	29.58	22.88	4.33	45.3	7.70		

Stations:  
 Times:  
 Date:  
 Lat:  
 Long:  
 Depth:  
 B.T. Ser. No.

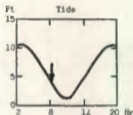
Weather:  
 Cloud: Type Amt.  
 Wind: Dir. \*T Spd. mph.  
 Sea: Swell:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth	T (°C)	S (‰/‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.

Stations: 8-2  
 Times: 0813  
 Dates: 10/VII/57  
 Lat: 48° 53.1' N  
 Long: 123° 37.9' W  
 Depth: 66 ft  
 B.T. Ser. No. 21

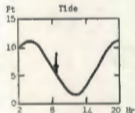
Weather: Dry haze  
 Cloud: Type As Amt. 10  
 Wind: Dir. 045 \*T Spd. 2 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 58 \*F. W. - \*F.  
 Baro: 1020 mb.  
 Secchi: 30 ft Col: lt-gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.69	24.11	17.70	10.81	122.2	8.28		
6	15.53	25.08	18.28	10.81	125.0	8.29		
14	15.06	25.32	18.56	10.46	120.2	8.27		
28	12.65	26.18	19.69	9.58	105.2	8.12		
43	12.66	26.28	19.76	8.75	96.2	8.09		
56	11.80	26.28	19.90	9.74	95.0	8.07		

Stations: 8-3  
 Time: 0841  
 Date: 10/VII/57  
 Lat: 48° 52.9' N  
 Long: 123° 36.3' W  
 Depth: 630 ft  
 B.T. Ser. No. 22

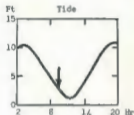
Weather: Dry haze  
 Cloud: Type St-As Amt. 10  
 Wind: Dir. 045 \*T Spd. 2 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 50 \*F. W. - \*F.  
 Baro: 1019.5 mb.  
 Secchi: 34 ft Col: lt-gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.8	25.20	18.31	10.88	126.5	8.27		
6	15.52	25.22	18.49	11.07	115.3	8.28		
15	15.30	25.46	18.61	10.93	126.3	8.30		
30	12.75	26.49	19.90	9.90	109.1	8.15		
60	11.43	28.38	21.59	7.45	81.0			
190	9.91	20.46	22.67	6.17	64.3	7.81		
300	9.14	29.54	22.86	4.21	44.0	7.60		

Stations: 8-4  
 Time: 0917  
 Date: 10/VII/57  
 Lat: 48° 52.5' N  
 Long: 123° 37.2' W  
 Depth: 324 ft  
 S.T. Ser. No. 23

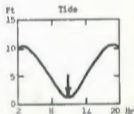
Weather: Dry haze  
 Cloud: Type St Amt. 10  
 Wind: Dir. 013 \*T Spd. 2 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D-62 \*F. W. - \*F.  
 Baro: 1019 mb.  
 Secchi: 36 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity Total Carb.
				(mg/l)	% sat.		
0	15.7	25.24	18.36	10.91	126.8	8.20	
6	14.78	25.31	18.61	10.81	123.5	8.28	
15	15.36	25.46	18.60	10.73	124.1	8.29	
30	13.00	26.35	19.74	10.24	113.3	8.15	
60	11.40	28.34	21.56	7.28	79.1	7.97	
150	9.76	29.46	22.70	5.50	58.1	7.83	
240	9.18	29.56	22.87	4.43	46.3	7.79	

Station: 8-5  
 Time: 1051  
 Date: 10/VII/57  
 Lat: 48° 52.1' N  
 Long: 123° 38.2' W  
 Depth: 190 ft  
 S.T. Ser. No. 24

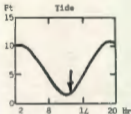
Weather: Drizzle  
 Cloud: Type St Amt. 10  
 Wind: Dir. 013 \*T Spd. mph.  
 Sea: 1 Swell: 0  
 Air Temp: D-64 \*F. W. - \*F.  
 Baro: 1018.6 mb.  
 Secchi: 21 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity Total Carb.
				(mg/l)	% sat.		
0	16.06	25.46	18.45	9.97	116.7	8.19	
6	15.74	25.50	18.55	10.04	117.0	8.30	
15	15.33	25.55	18.68	10.37	119.8	8.32	
30	13.62	26.21	19.82	10.74	120.2	8.30	
45	11.60	27.73	21.06	7.38	80.2	8.13	
60	11.20	28.22	21.91	6.46	69.8	8.10	

Stations S-6  
 Times 1158  
 Dates 10/VII/57  
 Lat: 48° 51.5' N  
 Long: 123° 37.0' W  
 Depth: 102 ft  
 S.T. Ser. No. 25

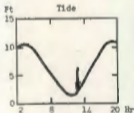
Weather: Drizzle  
 Cloud: Type St Amt. 10  
 Wind: Dir-013 \*T Spd. 2 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D-65 \*F. W. - \*F.  
 Baro: 1018 mb.  
 Secchi: 38 ft Col: lt-gn



Depth (ft.)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.98	25.27	18.32	11.01	128.5	8.10		
6	15.77	25.27	18.37	10.92	127.0	8.17		
15	14.65	25.64	18.88	11.58	132.0	8.13		
30	13.38	26.04	19.43	11.23	125.0	8.09		
45	11.44	28.12	21.39	10.03	109.0	7.91		
60	11.10	28.60	21.81	6.84	73.9	7.85		

Stations S-7  
 Times 1247  
 Dates 10/VII/57  
 Lat: 48° 51.8' N  
 Long: 123° 36.2' W  
 Depth: 510 ft  
 S.T. Ser. No. 26

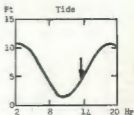
Weather: Moderate rain  
 Cloud: Type St Amt. 10  
 Wind: Dir-013 \*T Spd. 2 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D-63 \*F. W. - \*F.  
 Baro: 1018 mb.  
 Secchi: 34 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.1	25.25	18.29	11.02	128.7	8.20		
6	14.79	25.29	18.99	11.10	126.8	8.30		
15	15.19	25.48	18.65	10.90	125.5	8.28		
30	13.04	26.21	19.63	10.46	115.8	8.21		
60	11.88	28.48	21.59	7.36	80.9	8.03		
150	9.77	29.53	22.75	5.43	57.5	7.91		
300	9.14	29.63	22.93	4.19	43.7	7.78		

Stations: S-8  
 Times: 1320  
 Dates: 10/VII/57  
 Lat: 48° 52.1' N  
 Longs: 123° 35.5' W  
 Depth: 690 ft  
 S.T. Ser. No. 27

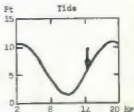
Weather: Moderate rain  
 Cloud: Type St Amt. 10  
 Wind: Dir. 315 \*T Spd. 0-2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 \*F. W. - \*F.  
 Baro: 1018 mb.  
 Secchi: 33 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.7	25.29	18.40	10.98	127.5	8.07		
6	14.72	25.29	18.60	11.24	129.2	8.19		
15	14.40	25.31	18.68	11.18	126.5	8.20		
30	12.42	26.79	20.19	9.04	95.2	8.10		
60	11.36	28.43	21.64	7.54	81.8	8.03		
150	9.82	29.49	22.71	5.85	61.9	7.92		
300	9.22	29.63	22.91	4.95	51.9	7.78		

Stations: S-9  
 Times: 1413  
 Dates: 10/VII/57  
 Lat: 48° 51.5' N  
 Longs: 123° 34.6' W  
 Depths: 594 ft  
 S.T. Ser. No. 28

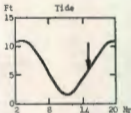
Weather: Drizzle  
 Cloud: Type St Amt. 10  
 Wind: Dir. 315 \*T Spd. 0-2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 59 \*F. W. - \*F.  
 Baro: 1017.5 mb.  
 Secchi: 34 ft Col: gn



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.1	25.41	18.41	10.00	117.0	8.13		
6	16.04	25.41	18.42	9.97	116.6	8.11		
15	15.59	25.44	18.54	10.47	121.5	8.20		
30	12.84	26.39	19.81	9.97	110.2	8.11		
60	11.54	28.17	21.41	7.54	82.1	7.97		
150	9.90	29.47	22.69	5.47	57.9	7.85		
300	9.23	29.63	22.91	4.75	49.7	7.73		

Stations: 9-10  
 Time: 1454  
 Date: 10/VII/57  
 Lat: 48° 51.1' N  
 Long: 123° 35.4' W  
 Depth: 630 ft  
 S.T. Ser. No. 29

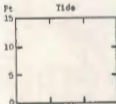
Weather: Moderate rain  
 Cloud: Type St Amt. 10  
 Wind: Dir. 270 \*T Spd. 5 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 60 \*F. W. - \*F.  
 Baro: 1017 mb.  
 Secchi: 31 ft Col: gm



Depth (ft.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen (mg/l)	% sat.	pH	Alkalinity Total Carb.
0	16.0	25.43	18.44	10.30	120.2	8.18	
6	16.19	25.39	18.37	10.10	118.0	8.25	
15	14.54	25.67	18.92	12.28	139.7	8.30	
30	12.53	26.85	20.22	9.04	99.5	8.16	
60	11.26	28.45	21.67	7.55	81.9	8.02	
150	10.90	29.49	22.53	5.76	62.4	7.91	
300	9.23	29.63	22.71	4.65	48.7	7.79	

Stations:  
 Time:  
 Date:  
 Lat:  
 Long:  
 Depth:  
 S.T. Ser. No.

Weather:  
 Cloud: Type Amt.  
 Wind: Dir. \*T Spd. mph.  
 Sea: Swell:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen (mg/l)	% sat.	pH	Alkalinity Total Carb.
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## STUART CHANNEL

## surface Current measurements

Station: 3-2 Latitude: 48° 53.2' N (48° 53.4' N) Remarks: At 1830/11/VII, the ship was moved to a new position given in brackets.

Date: 10-12/VII/57 Longitude: 123° 38.0' W (123° 38.0' W)

Sounding: 120 ft. Location: At the northern approach to Gibson Bay, 1.5 miles north of Crofton.

U. S. - Drag Data

Time/Date	Current			Wind	
	Speed		Direction * T	Direction * T	Speed m.p.h.
	Cm/sec	Knots			
1554/10/VII/57	03.0	0.000	146	237	1-3
1647/	17.6	0.342	113	237	1-3
1750/	00.0	0.000	-	213	1-3
1903/	09.2	0.179	348	000	1-3
1948/	05.3	0.103	344	000	1-3
2050/	11.8	0.229	306	083	1-3
2146/	20.0	0.388	290	283	0-1
2250/	16.0	0.311	313	283	0-1
2357/	09.2	0.179	298	-	Calm
0045/11/VII/57	13.0	0.253	306	-	Calm
0151/	07.5	0.146	333	-	Calm
0248/	07.5	0.146	333	-	Calm
0345/	08.4	0.163	323	-	Calm
0445/	08.4	0.163	353	-	Calm
0547/	08.4	0.163	258	-	Calm
0645/	07.5	0.146	103	158	3-4
0750/	20.1	0.390	158	113	5-7
0850/	31.7	0.616	156	115	5-7
1020/	55.4	1.080	158	140	10
1100/	17.4	0.342	158	140	10
1200/	20.3	0.394	193	210	15
1300/	*	-	-	240	12-15
1400/	*	-	-	210	10-12
1515/	17.5	0.343	203	210	10
1647/	27.0	0.524	203	103	10-12
1747/	24.9	0.484	158	093	7-8
1912/	15.0	0.311	238	248	3-5
1944/	18.9	0.367	192	198	3-5
2047/	19.0	0.369	208	208	5-7
2148/	16.0	0.311	193	173	3-5
2247/	19.0	0.369	233	233	5-6
2347/	18.9	0.367	222	243	5-7
0051/12/VII/57	18.9	0.367	308	103	1-2
0157/	14.3	0.278	308	255	3

\* Ship swinging rapidly.

## STUART CHANNEL

## C. B. I. Drag Data

Station: 8-2 (Continued)

Time/Date	Current			Wind	
	Speed		Direction	Direction * T	Speed M.P.H.
	Cp/sec	Knots	* T		
0248/12/VII/57	14.3	0.278	313	270	3
0347/	11.3	0.220	318	270	3
0447/	09.2	0.179	303	265	1-2
0504/	17.7	0.344	313	250	1-2
0550/	17.7	0.344	325	250	0-1
0646/	13.5	0.262	286	265	1-2
0755/	00.0	0.000	-	265	0-1
0855/	00.0	0.000	-	265	0-1
0955/	11.9	0.231	333	-	Calm
1055/	09.3	0.103	033	-	Calm
1137/	11.9	0.231	034	018	1-2
1157/12/VII/57	17.7	0.344	007	008	1-2

## STWARD CHANNEL

## Current Measurements

Station: S-1

Latitude: 49° 53.2 N

Remarks:

Date: 10/VII/57

Longitude: 123° 39.0 W

11/VII/57

Soundings: 120 ft.

Location: At the northern approach  
to Waburn Bay, 1.5 miles  
north of Crofton

## Mean Current Meter Data

Line, date	Depth (feet)	Current			Wind	
		Speed		Direction °	Direction °	Speed C.M.P.H.
		Stat	Obs			
1532/ 10/VII/57	15	18.1	0.351	243	277	1-3
1543/	45	12.1	0.275	160	277	1-3
1547/	75	15.6	0.231	128	277	1-3
1613/	15	10.7	0.208	328	277	1-3
1636/	45	17.2	0.140	153	277	1-3
1641/	75	09.8	0.170	168	277	1-3
1735/	15	-	-	-	013	1-3
1737/	45	02.8	0.054	225	013	1-3
1834/	15	13.5	0.262	218	013	1-3
1838/	30	07.5	0.146	353	013	1-3
1845/	60	10.2	0.198	103	000	1-3
1933/	15	03.0	0.058	-	000	1-3
1937/	30	04.3	0.084	-	000	1-3
1942/	60	05.2	0.090	163	000	1-3
2034/	15	10.7	0.210	240	277	1-3
2039/	30	12.8	0.154	173	277	1-3
2044/	60	16.3	0.122	270	277	1-3
2132/	15	15.1	0.29	293	277	1-3
2136/	30	07.7	0.112	273	277	1-3
2142/	60	08.0	0.116	313	277	1-3
2231/	15	11.2	0.15	151	277	1-3
2232/	30	17.2	0.140	223	277	1-3
2243/	60	10.2	0.120	193	-	Calm
2337/	15	08.2	0.159	346	-	Calm
2342/	30	-	-	-	-	Calm
2350/	60	12.5	0.143	221	-	Calm
2358/	30	13.1	0.154	7	-	Calm
0033/ 11/VII/57	15	05.7	0.111	000	-	Calm
0039/	30	07.8	0.130	343	-	Calm
0046/	60	05.7	0.111	328	-	Calm
0135/	15	04.7	0.123	153	-	Calm
0141/	30	02.3	0.045	-	-	Calm
0150/	60	05.3	0.103	336	-	Calm
0159/	30	-	-	-	-	Calm
0234/	15	13.0	0.058	183	-	Calm

## STUART CHANNEL

## Ekman Current Meter Data

Station: S-2 (Continued)

Time/Date	Depth (Feet)	Current			Wind	
		Speed		Direction * °	Direction * °	Speed M.P.H.
		Cm/sec	Knots			
0240/11/VII/57	45	06.3	0.122	298	-	Calm
0249/	60	05.4	0.105	293	-	Calm
0301/	30	04.4	0.085	060	-	Calm
0337/	15	06.9	0.095	-	-	Calm
0344/	30	07.4	0.144	143	-	Calm
0351/	60	04.7	0.091	013	-	Calm
0358/	15	04.5	0.087	123	-	Calm
0435/	15	11.2	0.217	093	-	Calm
0439/	30	09.8	0.190	140	-	Calm
0443/	60	03.7	0.072	293	-	Calm
0453/	15	07.2	0.140	153	-	Calm
0539/	30	09.5	0.184	150	-	Calm
0547/	60	04.0	0.078	293	-	Calm
0633/	15	09.1	0.177	043	158	3-4
0634/	30	17.7	0.344	167	158	3-4
0645/	60	09.2	0.179	255	158	3-4
0733/	15	09.5	0.184	328	113	5-7
0738/	30	21.7	0.421	180	113	5-7
0742/	45	12.3	0.239	-	113	5-7
0833/	15	21.8	0.423	345	113	5-7
0838/	30	08.4	0.163	128	113	5-7
0842/	60	13.6	0.264	213	113	5-7
0932/	15	05.3	0.103	203	113	5-7
0937/	30	08.7	0.169	068	113	5-7
0942/	60	18.7	0.363	203	113	5-7
1034/	15	15.0	0.291	268	140	10
1038/	30	16.7	0.324	293	140	10
1051/	60	17.8	0.347	-	140	10
1057/	60	07.9	0.154	053	140	10
1136/	15	17.7	0.344	283	200	10-12
1141	30	05.1	0.099	033	200	10-12
1151/	60	10.1	0.196	356	210	15
1235/	15	15.4	0.299	296	210	15
1239/	30	08.9	0.173	323	210	15
1249/	60	18.6	0.361	001	210	15
1332/	15	19.8	0.385	337	240	12-15
1336/	30	21.4	0.415	158	240	12-15
1339/	60	06.8	0.132	043	240	12-15
1435/	15	29.9	0.580	243	210	10-12
1437/	30	28.6	0.555	113	210	10-12
1442/	60	20.7	0.402	276	210	10-12
1531.7	15	18.1	0.351	293	210	10
1535/	30	14.7	0.285	146	210	10

- 10 -  
SHELF CHANNEL

Current Measurements

Station: S-2 (continued)

Latitude: 42° 53.2'N (42° 53.4'N)

Remarks: At 1830/11/VII, the ship was moved to a new position given in brackets.

Date: 11/VII/57  
-12/VII/57

Longitude: 123° 30.0'W (123° 29.0'W)

Sounding: 204 ft.

Location: At the northern approach to Ashcroft Bay, 1.5 miles north of Crofton.

Ekman Current Meter Data

Time/Date	Depth (Feet)	Current		Wind		
		Speed	Direction	Direction	Speed	
		Cal. sec	° T	° T	mi./hr.	
1538/11/VII/57	80	23.5	0.456	135	211	10
1635/	15	22.5	0.457	270	143	10-12
1639/	30	14.3	0.278	291	193	10-12
1643/	60	27.0	0.525	131	171	10-12
1731/	15	20.2	0.392	133	143	7-8
1735/	30	10.7	0.208	273	143	7-8
1739/	60	07.5	0.146	058	193	7-8
1858	15	19.6	0.380	135	248	3-5
1901/	30	22.7	0.441	153	248	3-5
1906/	60	07.2	0.140	223	248	3-5
1933/	15	15.5	0.107	053	198	3-5
1936/	30	07.3	0.142	203	198	3-5
1940/	60	09.0	0.175	293	198	3-5
2031/	15	11.8	0.220	138	111	5-7
2036/	30	10.1	0.174	298	111	5-7
2041/	60	13.2	0.268	078	111	5-7
2131/	15	06.6	0.119	143	171	3-5
2136/	30	08.4	0.123	103	171	3-5
2147/	60	07.2	0.140	088	171	3-5
2231/	15	13.7	0.251	093	153	5-6
2236/	30	15.1	0.274	153	153	5-6
2241/	60	15.9	0.115	113	153	5-6
2337/	15	05.2	0.100	060	143	5-7
2340/	30	04.6	0.089	113	143	5-7
2341/	60	14.6	0.245	353	243	5-7
0030/12/VII/57	15	03.4	0.123	113	193	1-2
0039/	30	07.1	0.136	143	193	1-2
0044/	60	03.2	0.062	033	193	1-2
0133/	15	04.3	0.074	333	171	3
0138/	30	13.7	0.188	143	171	3
0144/	60	15.6	0.209	-	233	3
0151/	60	07.0	0.176	043	233	3
0232/	15	17.8	0.346	111	171	3
0236/	30	12.2	0.237	133	171	3
0240/	60	07.1	0.138	113	271	3

## STUART CHANNEL

Eman Current Meter Data

Station: S-2 (Continued)

Time/Date	Depth (Feet)	Current			Wind	
		Speed		Direction ° T	Direction ° T	Speed m.p.h.
		Cx/sec	Knots			
0332/12/VII/57	15	14.2	0.276	128	270	3
0334/	30	14.7	0.287	136	270	3
0342/	60	02.4	0.047	223	270	3
0433/	15	15.7	0.305	138	265	1-2
0437/	30	29.3	0.570	138	265	1-2
0442/	60	07.2	0.140	168	250	1-2
0532/	15	18.6	0.361	129	250	1-2
0536/	30	23.1	0.448	135	250	1-2
0541/	60	08.9	0.173	143	250	1-2
0632/	15	17.4	0.338	161	265	1-2
0636/	30	20.7	0.402	148	265	1-2
0640/	60	07.5	0.146	148	265	1-2
0737/	15	13.3	0.258	150	265	1-2
0741/	30	15.6	0.303	153	265	1-2
0746/	60	06.2	0.121	133	265	1-2
0836/	15	07.3	0.142	138	265	0-1
0840/	30	15.8	0.307	138	265	0-1
0845/	60	03.9	0.076	123	265	0-1
0933/	15	08.7	0.169	123	-	Calm
0938/	30	10.2	0.198	133	-	Calm
0942/	60	08.2	0.159	128	-	Calm
1032/	15	11.7	0.227	138	-	Calm
1042/	30	01.8	0.035	100	-	Calm
1046/	60	02.4	0.047	-	-	Calm
1130/	15	08.0	0.155	108	-	Calm
1135/	30	10.7	0.208	313	018	1-2
1140/	60	01.7	0.033	-	018	1-2
1151/	60	16.4	0.318	305	008	1-2
1156/12/VII/57	sfc	15.5	0.301	176	008	1-2

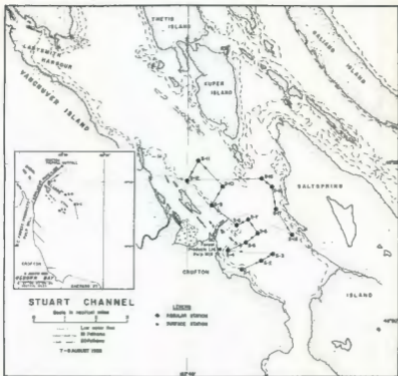
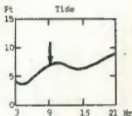


Fig. 18. Track chart of stations occupied in Stuart Channel, 7-8 August 1958. Insert shows locations of surface samples on an enlarged chart of Osborn Bay.



Stations: B-1  
 Time: 0902  
 Date: 7/VIII/58  
 Lat: 48° 51.68' N  
 Long: 123° 37.45' W  
 Depth: 69 ft.  
 B.T. Ser. No. 1

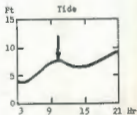
Weather: Overcast  
 Clouds: Type Sc Amt. 5  
 Winds: Dir. - \*T Spd. 1 mph.  
 Seas: 0 Swell: 0  
 Air Temp: D. 68 \*F. W. - \*F.  
 Baro: mb.  
 Secchi: 15 ft Col: gn



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		KME (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	18.4	26.38	18.64	8.45	104.0			8.5	
2	18.0*	26.45	18.78	8.41	102.8			11.7	
7	14.5*	27.65	20.45	6.18	71.2			10.0	
12	13.8*	28.01	20.87	5.85	66.7			6.8	
17	-	28.10	-	5.19	-			6.4	

Stations: B-2  
 Time: 1016  
 Date: 7/VIII/58  
 Lat: 48° 51.68' N  
 Long: 123° 36.52' W  
 Depth: >328 ft.  
 B.T. Ser. No. 2

Weather: Overcast  
 Clouds: Type Sc Amt. 6  
 Winds: Dir. - \*T Spd. 1 mph.  
 Seas: 0 Swell: 0  
 Air Temp: D. 68 \*F. W. - \*F.  
 Baro: mb.  
 Secchi: 16 ft Col: gn

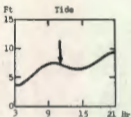


Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		KME (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	18.1	26.56	18.85	7.90	96.8			6.00	
2	17.5*	26.58	19.00	8.33	101.0			8.80	
5	15.0*	27.14	19.97	8.38	97.1			9.00	
10	13.5*	27.80	20.77	5.43	61.5			6.70	
20	12.6*	28.47	21.45	5.67	63.0			3.80	
30	11.75	29.04	22.02	4.97	54.6			4.50	

\* Temperatures taken from B.T. trace

Stations: 8-3  
 Time: 1102  
 Date: 7/VIII/58  
 Lat: 48° 52.16' N  
 Long: 123° 36.00' W  
 Depth: 7328 ft.  
 S.T. Ser. No. 3

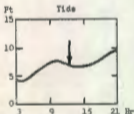
Weather: Overcast  
 Cloud: Type Sc Amt. 8  
 Wind: Dir. 300 \*T Spd. 1-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 70.9 \*F. W. - \*F.  
 Baro: mb.  
 Secchi: 17 ft Col: gm



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		KUE (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	18.7	26.54	18.69						6.3
2	17.5*	26.59	19.01						8.9
5	15.0*	26.95	19.82						7.0
10	13.4*	27.80	20.79						6.2
20	12.5*	28.68	21.64						5.8
30	11.76	28.92	21.96						4.5

Stations: 8-4  
 Time: 1224  
 Date: 7/VIII/58  
 Lat: 48° 52.27' N  
 Long: 123° 38.08' W  
 Depth: 190 ft.  
 S.T. Ser. No. 4

Weather: Overcast  
 Cloud: Type Sc Amt. 9  
 Wind: Dir. 270 \*T Spd. 8-12 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 65.1 \*F. W. - \*F.  
 Baro: mb.  
 Secchi: 15 ft Col: dk-br

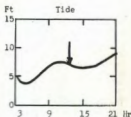


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		KUE (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	18.6*	26.56	18.72						7.5
2	17.3*	26.56	19.03						7.5
5	14.3*	26.88	19.90						8.9
10	13.4*	27.66	20.68						8.3
20	12.5*	28.60	21.60						4.8
30	11.88	28.81	21.84						4.0

\* Temperatures taken from S.T. trace

Stations S-5  
 Times 11:57  
 Dates 11/21/59  
 Lats 40° 55' N  
 Longs 117° 11' W  
 Depths 167 ft.  
 S.T. Ser. No. 5

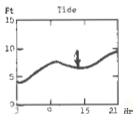
Weather: Overcast  
 Clouds: Type - Amt. 10  
 Winds: Dir. 270 \*T Spd. 1-3 mph.  
 Seas: 0 Swells: 0  
 Air Temp: D. 77 \*F. W. - \*F.  
 Baro: mb.  
 Secchi: 10 ft Col: 20



Depth (ft.)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity		NH <sub>3</sub> (ppm)
				(mg/l)	% sat.		Total	Carb.	
1	17.0	34.84	19.55	7.4	117.8			5.2	
2	17.2*	34.85	19.53	7.4	118.1			6.5	
3	17.2*	34.87	19.65	7.3	111.2			9.4	
10	17.2*	34.87	19.62	6.5	70.7			6.0	
20	17.2*	34.86	19.6	6.5	63.2			3.6	
30	17.25	34.89	19.7	6.1	56.5			4.2	

Stations S-6  
 Times 12:03  
 Dates 11/21/59  
 Lats 40° 56' N  
 Longs 117° 11' W  
 Depths >417 ft.  
 S.T. Ser. No. 6

Weather: Overcast  
 Clouds: Type - Amt. 10  
 Winds: Dir. 270 \*T Spd. 1-3 mph.  
 Seas: 0 Swells: 0  
 Air Temp: D. 77 \*F. W. - \*F.  
 Baro: mb.  
 Secchi: 10 ft Col: 20

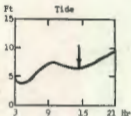


Depth (ft.)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity		NH <sub>3</sub> (ppm)
				(mg/l)	% sat.		Total	Carb.	
1	17.0	34.85	19.55	7.4	117.8			5.2	
2	17.2*	34.85	19.53	7.4	118.1			6.5	
3	17.2*	34.87	19.65	7.3	111.2			9.4	
10	17.2*	34.87	19.62	6.5	70.7			6.0	
20	17.2*	34.86	19.6	6.5	63.2			3.6	
30	17.25	34.89	19.7	6.1	56.5			4.2	

\* Temperatures taken from S.T. trace.

Stations: 8-7  
 Time: 1431  
 Date: 7/VIII/58  
 Lat: 48° 53.22' N  
 Long: 123° 37.07' W  
 Depth: >113 ft.  
 B.T. Ser. No. 7

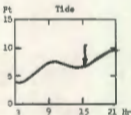
Weather: Overcast  
 Cloud: Type Sc Amt. 10  
 Wind: Dir. 0 \*T Spd. 9 mph.  
 Sea: C Swell: 0  
 Air Temp: D. 61.2°F. W. - \*F.  
 Baro: mb.  
 Secchi: 18 ft Col: dk-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		Chl (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	18.3	26.52	18.77	9.60	118.1			3.6	
2	18.0*	26.49	18.82	9.70	118.5			7.5	
5	15.0*	26.00	19.08	9.78	112.8			5.2	
10	13.4*	27.72	20.73	5.98	67.0			5.0	
20	12.4	28.69	21.65	5.58	62.0			4.0	
30	11.85	28.90	21.91	5.31	58.5			3.8	

Stations: 8-8  
 Time: 1516(S)-1521(D)  
 Date: 7/VIII/58  
 Lat: 48° 53.03' N  
 Long: 123° 37.69' W  
 Depth: 125 ft.  
 B.T. Ser. No. 8

Weather: Overcast  
 Cloud: Type Sc Amt. 10  
 Wind: Dir. 0 \*T Spd. 1-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 66.2°F. W. - \*F.  
 Baro: mb.  
 Secchi: 15 ft Col: lt-gr

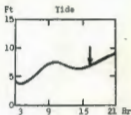


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		Chl (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	18.6	26.31	18.54	9.03	111.3			5.7	
2	18.3*	26.33	18.58	9.20	112.7			7.1	
5	14.5*	27.18	20.09	5.39	62.0			13.6	
10	13.4*	27.86	20.83	5.88	66.4			5.2	
20	12.4*	28.66	21.63	5.59	62.1			4.0	
30	11.66	28.99	22.02	4.93	54.1			2.8	

\* Temperatures taken from B.T. trace.

Stations: 8-9  
 Time: 1609  
 Date: 7/VIII/58  
 Lat: 48° 53.70' N  
 Long: 123° 38.85' W  
 Depth: 125 ft.  
 S.T. Ser. No. 9

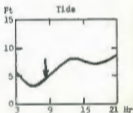
Weather: Overcast  
 Clouds: Type Sc Amt. 10  
 Winds: Dir. - \*T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. - \*F. W. - \*F.  
 Baro: mb.  
 Secchi: 17 ft Col: dk-gr



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		KME (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	19.4	26.26	18.30	8.92	111.6			7.5	
2	19.2*	26.26	18.36	9.08	112.3			8.2	
5	15.7*	26.97	19.69					13.0	
9	13.2*	27.93	20.92					3.6	
19	12.5*	28.33	21.37					3.4	
28	12.0*								

Stations: 8-10  
 Time: 0812  
 Date: 8/VIII/58  
 Lat: 48° 54.26' N  
 Long: 123° 38.23' W  
 Depth: >113 ft.  
 S.T. Ser. No. 10

Weather: Overcast  
 Clouds: Type Sc Amt. 8  
 Winds: Dir. 0 \*T Spd. 5-6 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 68.7°F. W. - \*F.  
 Baro: mb.  
 Secchi: 20 ft Col: gn

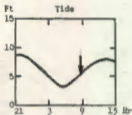


Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		KME (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	19.2	26.31	18.39					6.8	
2	18.7*	26.37	18.56					4.8	
5	15.7*	27.09	19.78					6.0	
10	13.5*	27.87	20.82					4.0	
20	12.48	28.71	21.65					3.1	
30	11.60	29.07	22.09					2.2	

\* Temperatures taken from S.T. trace.

Station: 8-11  
 Time: 0850  
 Date: 8/VIII/58  
 Lat: 18° 55.08' N  
 Long: 123° 39.43' W  
 Depth: 400 ft.  
 B.T. Ser. No. 11

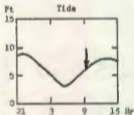
Weather: Mostly cloudy  
 Cloud: Type Sc Amt. 5  
 Wind: Dir. 0 \*T Spd. 5-6 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 67.5°F. W. - \*F.  
 Baro: mb.  
 Secchi: 20 ft Col: gm-bu



Depth (m)	T (°C)	S (‰/‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity		DOB (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	19.0	26.62	18.53	8.99	112.0			5.0	
2	18.5*	26.40	18.63	9.10	112.2			6.8	
5	15.0*	27.19	20.00	9.64	111.8			5.4	
10	13.5*	27.82	20.78	6.11	69.1			7.7	
20	12.38	28.73	21.68	5.60	62.2			4.5	
30	11.71	29.02	22.03	5.18	57.0			3.3	

Station: 8-12  
 Time: 0934  
 Date: 8/VIII/58  
 Lat: 18° 54.50' N  
 Long: 123° 40.05' W  
 Depth: 190 ft.  
 B.T. Ser. No. 12

Weather: Clearing with sunshine  
 Cloud: Type Sc Amt. 4  
 Wind: Dir. 0 \*T Spd. 5-6 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 71.2°F. W. - \*F.  
 Baro: mb.  
 Secchi: 21 ft Col: gm

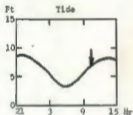


Depth (m)	T (°C)	S (‰/‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity		DOB (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	19.7	26.14	18.15	8.62	108.2			5.4	
2	19.2*	26.19	18.30	9.20	114.6			5.7	
5	15.0*	26.78	19.69	9.32	107.8			6.0	
10	13.3*	27.84	20.84	5.90	66.3			4.3	
20	12.49	28.43	21.44	5.40	60.1			5.0	
30	11.09	28.99	22.11	3.88	42.1			6.5	

\* Temperatures taken from B.T. trace.

Stations: 8-15  
 Time: 1105  
 Date: 8/VIII/58  
 Lat: 48° 54.57' N  
 Long: 12° 34.56' W  
 Depth: 200 ft.  
 S.T. Ser. No. 13

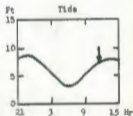
Weather: Mostly clear  
 Clouds: Type Cu Amt. 1  
 Wind: Dir. 0 WT Spd. 8-10 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 76.5°F. W. - °F.  
 Baro: mb.  
 Secchi: 21 ft Col: gn



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen (mg/l) % sat.	pH	Alkalinity Total Carb.	KME (ppm)
0	18.9	26.51	18.62				4.3
2	17.7 <sup>0</sup>	26.76	19.09				4.5
5	14.5 <sup>0</sup>	27.30	20.11				5.0
10	13.2 <sup>0</sup>	28.10	21.50				3.5
20	12.21	28.78	21.75				4.1
30	11.97	28.98	21.96				3.2

Stations: 8-16  
 Time: 1107  
 Date: 8/VIII/58  
 Lat: 48° 54.21' N  
 Long: 12° 36.00' W  
 Depth: 390 ft.  
 S.T. Ser. No. 14

Weather: Mostly clear and sunny  
 Clouds: Type Cu Amt. 3  
 Wind: Dir. 0 WT Spd. 5 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 61.7°F. W. - °F.  
 Baro: mb.  
 Secchi: 19 ft Col: nky-gn

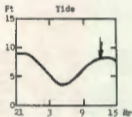


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen (mg/l) % sat.	pH	Alkalinity Total Carb.	KME (ppm)
0	19.1	26.49	18.55				4.5
2	18.0 <sup>0</sup>	26.58	18.89				4.3
5	15.5 <sup>0</sup>	27.13	19.86				3.7
10	13.5 <sup>0</sup>	28.12	21.01				3.2
20	12.36	28.78	21.72				3.0
30	11.74	28.99	22.00				3.2

\* Temperatures taken from S.T. trace.

Stations 8-17  
 Time: 1157  
 Date: 8/VIII/58  
 Lat: 48° 53.51' N  
 Long: 123° 35.84' W  
 Depth: 338 ft.  
 S.T. Ser. No.

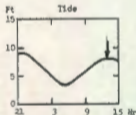
Weather: Clear and sunny  
 Cloud: Type Cu Amt. 2  
 Wind: Dir. 0 \*T Spd.]-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D-71.0°F. W. - \*F.  
 Surf: sb.  
 Secchi: 20 ft Col: sky-gn



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		chl (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	19.7	26.47	18.40						3.3
2	19.0*	26.62	18.67						4.1
5	15.2*	27.13	19.92						4.5
10	13.7*	27.87	20.78						4.5
20	12.50	28.66	21.60						3.0
30	11.87	29.04	22.02						2.5

Stations 8-18  
 Time: 1244  
 Date: 8/VIII/58  
 Lat: 48° 52.79' N  
 Long: 123° 35.04' W  
 Depth: >213 ft.  
 S.T. Ser. No. 16

Weather: Clear, sunny and warm  
 Cloud: Type Cu Amt. 2  
 Wind: Dir. 135° T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D-68.2°F. W. - \*F.  
 Surf: sb.  
 Secchi: 19 ft Col: gn

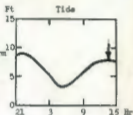


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		chl (ppm)
				(mg/l)	% sat.		Total	Carb.	
0	19.8	26.58	18.66						3.7
2	18.5*	26.78	18.92						4.0
5	15.4*	27.39	20.07						5.0
10	13.8*	28.05	20.90						3.0
20	12.52	28.74	21.66						2.3
30	12.13	29.06	21.98						5.5

\* Temperatures taken from S.T. traces.

Station: Crofton  
 Time: 1318  
 Date: 8/VIII/58  
 Lat: 48° 53.25' N  
 Long: 123° 38.05' W  
 Depth: 57 ft.  
 B.T. Ser. No.

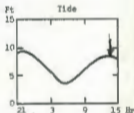
Weather: Mostly clear; sunny; warm  
 Clouds: Type Cu Amt. 1  
 Wind: Dir. 135 \*T Spd. 5-6 mph.  
 Sea: 1/135 Swell: C  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		KGE (ppm)
				(mg/l)	% sat.		Total	Carb.	
0		27.14							66.8

Station: S-A  
 Time: 1335  
 Date: 8/VIII/58  
 Lat: 48° 52.95' N  
 Long: 123° 38.37' W  
 Depth: 6 fathoms  
 B.T. Ser. No.

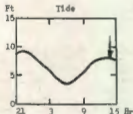
Weather: Mostly clear; sunny  
 Clouds: Type Cu Amt. 1  
 Wind: Dir. 135 \*T Spd. 5-10 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity		KGE (ppm)
				(mg/l)	% sat.		Total	Carb.	
0		26.35							8.8

Station: S-B  
 Time: 1345  
 Date: 8/VIII/58  
 Lat: 48° 52.76' N  
 Long: 123° 38.00' W  
 Depth: 6 ft.  
 S.T. Ser. No.

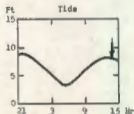
Weather: Mostly clear; sunny  
 Cloud: Type Cu Amt. 1  
 Wind: Dir. 135 \*T Spd. 8-10 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen (mg/l) % sat.	pH	Alkalinity Total Carb.	chl (ppm)
0		26.26					8.1

Station: S-C  
 Time: 1335  
 Date: 8/VIII/58  
 Lat: 48° 52.60' N  
 Long: 123° 37.73' W  
 Depth: 6 ft.  
 S.T. Ser. No.

Weather: Mostly clear; sunny  
 Cloud: Type Cu Amt. 1  
 Wind: Dir. 135 \*T Spd. 10-10 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen (mg/l) % sat.	pH	Alkalinity Total Carb.	chl (ppm)
0		26.30					10.0





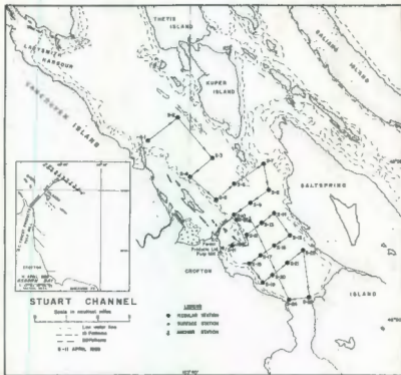
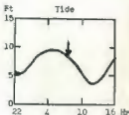


Fig. 19. Track chart of stations occupied in Stuart Channel, 8-11 April 1959. Insert shows on an enlarged chart of Osborn Bay locations of surface samples taken on a line across the pulp-mill outfall.



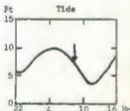
Stations S-1                      Weathers: Cloudless  
 Time: 1723(S)-0738(D)      Cloud: Type -      Amt. 0  
 Date: 8/14/59                      Winds Dir. 260      \*T Spd. 1-3 mph.  
 Lat: 49° 55.5' N                      Sea: 0      Swell: 0  
 Long: 123° 41.9' W                      Air Temp: D. 61      \*F. W. - \*F.  
 Depth: 276      ft                      Baro: 1040.2 mb.  
 B.T. Ser. No. 1                      Secchi: 12      ft Col: br



Depth (m.)	T (°C)	S (°/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.0	28.62	22.31	12.77	133.9	8.09	2.05	2.00
2	8.11	28.60	22.27	12.55	127.1	8.35	1.98	1.91
4	8.15	28.61	22.28	13.00	131.9	8.51	2.02	1.92
6	8.2*	28.59	22.26	13.00	136.1	8.11	2.11	2.06
10	8.21	28.72	22.36	11.85	120.5	8.44	2.11	2.03
15	8.2*	28.86	22.46	10.18	106.8	8.34	2.17	2.10
20	7.95	28.13	22.71	8.18	83.0	8.13	2.18	2.12
30	6.80	28.35	23.30	7.31	72.4	7.84	2.26	2.23
50	6.20	29.44	22.92	7.36	75.1	7.95	2.21	2.16

\*Temperature taken from B.T. trace.

Stations S-2                      Weathers: Cloudless  
 Time: 0855                              Cloud: Type -      Amt. 0  
 Date: 8/14/59                      Winds Dir. --      \*T Spd. 0 mph.  
 Lat: 48° 56.5' N                      Sea: 0      Swell: 0  
 Long: 123° 47.6' W                      Air Temp: D. 60      \*F. W. - \*F.  
 Depth: 162      ft                      Baro: 1047.2 mb.  
 B.T. Ser. No. 2                      Secchi: 14      ft Col: gn-br

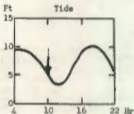


Depth (m.)	T (°C)	S (°/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.8	28.73	22.28	11.95	127.1	8.20	1.95	1.89
2	8.24	28.72	22.35	12.10	123.0	8.23	1.97	1.91
4	8.22	28.71	22.34	11.89	120.8	8.24	2.00	1.94
6	8.2*			10.78	113.1	8.12	2.03	1.98
10	8.05	28.92	22.53	9.57	97.2		1.93	1.88
15	7.8*	29.99	22.61	8.78	92.3	8.05	2.08	2.04
20	6.38	29.00	22.80	8.35	81.5	7.90	2.06	2.03
30	6.23	29.24	23.01	6.85	67.0	7.73	2.03	2.01
40	6.11	28.39	23.14	6.89	67.2	7.60	2.08	2.06

\*Temperature taken from B.T. trace.

Stations: 3-3  
 Time: 1011  
 Date: 8/IV/59  
 Lat: 48° 55.1' N  
 Long: 123° 38.8' W  
 Depth: 300 ft  
 S.T. Ser. No. 3

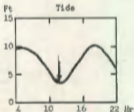
Weather: Cloudless  
 Clouds Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: 0.62 °F. W. - °F.  
 Baro: 1040.2 mb.  
 Secchi: 11 ft Col: br-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.47	27.43	21.04	14.57	159.4	8.49	2.00	1.90
2	8.43	28.48	22.14	13.95	140.2	8.38	2.06	1.98
4	8.31	28.43	22.19	13.30	135.2	8.37	2.02	1.94
6	8.27	28.65	22.29	12.29	125.0	8.31	2.04	1.97
10	8.12	28.73	22.37	11.37	115.5	8.31	2.06	1.99
15	8.05	28.81	22.44	10.77	107.5	8.13	2.10	2.05
20	8.01	28.97	22.57	9.06	91.8	8.01	2.13	2.09
30	7.77	29.19	22.78	7.59	76.7	7.89	2.10	2.06
50	7.65	29.30	22.95	7.23	72.9	7.89	2.08	2.04
70	7.70	29.46	23.00	7.50	75.8	7.82	2.11	2.08

Stations: 3-4  
 Time: 1136  
 Date: 8/IV/59  
 Lat: 48° 54.6' N  
 Long: 123° 40.0' W  
 Depth: 312 ft  
 S.T. Ser. No. 4

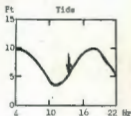
Weather: Cloudless  
 Clouds Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: 0.68 °F. W. °F.  
 Baro: 1040.2 mb.  
 Secchi: 12 ft Col: br-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.2	29.00	22.27	14.55	160.2	8.12	1.87	1.82
2	8.60	28.37	21.02	14.73	150.5	8.33	1.98	1.91
4	8.39	28.47	22.13	13.13	133.5	8.26	1.93	1.86
6	8.33	28.50	22.17	12.88	130.7	8.26	2.03	1.96
10	8.24	28.63	22.29	12.10	123.0	8.26	2.03	1.96
15	8.29	28.83	22.43	9.57	97.3	8.16	2.01	1.95
20	7.92	29.00	22.60	7.45	75.3	7.93	2.04	2.01
30	7.70	29.30	22.87	7.45	75.2	7.81	1.98	1.95
50	7.61	29.42	22.98	7.50	75.6	7.79	2.00	1.97
70	7.70	29.50	23.03			7.75		

Stations: B-5  
 Time: 1326  
 Date: 8/IV/59  
 Lat: 48° 53.9' N  
 Long: 123° 19.7' W  
 Depth: 360 ft  
 B.T. Ser. No. 5

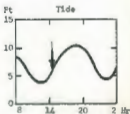
Weather: Cloudless  
 Clouds: Type - Amt. 0  
 Winds: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 53 °F. W. \*F.  
 Baro: 1040.1 mb.  
 Secchi: 13 ft Col: y1-br



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.2	26.99	20.40	13.48	146.1	8.21	1.98	1.92
2	8.70	28.29	21.94	14.79	151.5	8.18	2.08	2.02
4	8.41	28.40	22.07	14.51	147.5	8.19	2.08	2.02
6	8.36	28.54	22.19	13.03	132.5	8.05	2.15	2.10
10	8.20	28.68	22.32	11.40	115.5	7.95	2.17	2.13
15	7.98	28.87	22.35	10.12	102.5	7.87	2.11	2.08
20	7.88	29.14	22.72	8.10	81.8	7.67	2.14	2.12
30	7.70	29.33	22.90	7.53	76.1	7.53	2.05	2.03
50	7.65	29.45	23.00	7.72	78.0	7.56	0.35	0.33
100	7.73	29.61	23.11	7.90	80.0	7.68	2.01	1.99

Stations: B-6  
 Time: 1437  
 Date: 8/IV/59  
 Lat: 48° 54.6' N  
 Long: 123° 39.1' W  
 Depth: 486 ft  
 B.T. Ser. No. 6

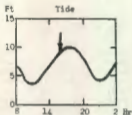
Weather: Cloudless  
 Clouds: Type - Amt. 0  
 Winds: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 64 °F. W. \*F.  
 Baro: 1040 mb.  
 Secchi: 12 ft Col: y1-gn-br



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.9	26.99	20.61	12.74	140.5	8.45	1.89	1.79
2	8.77	28.50	22.10	14.83	152.3	8.49	1.93	1.83
4	8.32	28.61	22.25	13.05	132.8	8.42	1.92	1.84
6	8.25	28.66	22.30	12.00	122.0	8.35	1.98	1.90
10	8.19	28.71	22.35	9.93	100.8	8.21	1.87	1.81
15	7.96	28.93	22.55	9.78	99.0	8.24	1.84	1.78
20	8.07	29.10	22.67	8.82	89.5	8.09	1.87	1.81
30	7.76	29.26	22.83	7.85	79.3	8.00	1.84	1.79
50	7.73	29.47	23.00	7.73	78.2	7.97	1.98	1.93
100	7.69	29.62	23.13	8.12	82.0	7.98	2.04	1.99

Stations S-7  
 Time: 1558  
 Date: 8/IV/59  
 Lat: 48° 55.0' N  
 Long: 123° 36.6' W  
 Depth: 210 ft  
 S.T. Ser. No. 7

Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 61 \*F. W. - \*F.  
 Baro: 1040 mb.  
 Secchi: 16 ft Col: gn-br

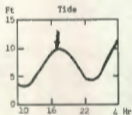


Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.9	28.62	22.02	13.49	147.1	8.06	1.95	1.90
2	8.95	28.71	22.23	13.19	136.0	8.38	2.35	2.33
4	8.57	28.72	22.31	12.62	129.0	8.34	1.95	1.88
6	8.3 *	28.73	22.36	12.27	128.8	8.26	1.71	1.65
10	8.16	28.79	22.41	10.98	111.5	8.30	1.84	1.77
15	8.15	28.89	22.50	10.38	105.2	8.23	1.94	1.88
20	8.10	28.99	22.58	9.65	97.8	8.22	1.86	1.80
30	7.97	29.15	22.72	8.91	90.3	8.04	1.92	1.89
50	7.72	29.39	22.94	8.70	88.0	7.93	1.94	1.95

\*Temperature taken from S.T. trace.

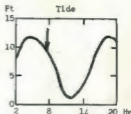
Stations S-8  
 Time: 1659  
 Date: 8/IV/59  
 Lat: 48° 54.2' N  
 Long: 123° 36.3' W  
 Depth: 402 ft  
 S.T. Ser. No. 8

Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 66 \*F. W. \*F.  
 Baro: 1030.8 mb.  
 Secchi: 15 ft Col: gn-br



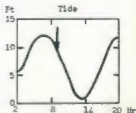
Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.6	28.40	21.90	14.98	162.0	8.38	2.11	2.03
2	9.09	28.42	21.97	14.93	154.2	8.38	1.89	1.81
4	8.62	28.53	22.17	14.45	147.0	8.37	1.98	1.90
6	8.23	28.68	22.32	12.57	127.5	8.32	2.00	1.92
10	8.17	28.77	22.39	11.10	112.5	8.24	1.98	1.92
15	8.03	28.84	22.47	10.67	108.0	8.14	2.00	1.95
20	8.11	29.06	22.62	9.64	97.8	8.08	1.98	1.92
30	7.93	29.21	22.77	8.89	90.0	8.06	1.98	1.92
50	7.69	29.31	22.81	7.95	80.2	7.94	1.99	1.95
100	7.72	29.59	23.09	8.20	83.8	7.98	2.00	1.95

Stations: 8-9      Weather: Cloudless  
 Time: 0732      Cloud: Type - Amt. 0  
 Date: 9/14/59      Wind: Dir. - \*T Spd. 0 mph.  
 Lat: 48° 53.7' N      Sea: 0 Swell: 0  
 Long: 123° 37.0' W      Air Temp: D. 52 \*F. W. \*F.  
 Depth: 308 ft      Baro: 1030.3 mb.  
 B.T. Ser. No. 9 and 9A      Secchi: 19 ft Col: dk-gn



Depth (m.)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	7.5	22.90	17.88	13.87	137.6	8.27	1.59	1.54
2	8.13	27.83	21.67	12.60	127.0	8.23	1.84	1.78
4	8.33	28.64	22.27	12.30	125.1	8.22	1.84	1.78
6	8.21	28.81	22.42	10.90	111.0	8.14	1.81	1.76
10	8.18	28.84	22.45	10.62	107.8	8.11	1.87	1.82
15	8.23	28.90	22.50	10.17	103.5	8.07	1.81	1.76
20	8.17	29.12	22.66	9.10	92.5	8.05	1.84	1.78
30	7.72	29.30	22.87	9.95	100.5	7.85	1.90	1.86
50	7.67	29.41	22.96	7.88	79.5	7.80	1.89	1.86
100	7.63	29.36	22.92			7.77	1.89	1.86
150	7.80	29.65	23.13			7.83	1.84	1.81

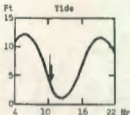
Stations: 8-10      Weather: Cloudless  
 Time: 0906      Cloud: Type - Amt. 0  
 Date: 9/14/59      Wind: Dir. - \*T Spd. 0 mph.  
 Lat: 48° 53.4' N      Sea: 0 Swell: 0  
 Long: 123° 38.0' W      Air Temp: D. 58 \*F. W. \*F.  
 Depth: 318 ft      Baro: 1030.3 mb.  
 B.T. Ser. No. 10 and 10A      Secchi: 14 ft Col: gn-br



Depth (m.)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	7.8	27.66	21.58	12.55	129.4	8.18	1.12	1.06
2	8.04	28.02	21.83	13.70	131.0	8.14	1.84	1.79
4	8.44	28.57	22.19	13.87	141.5	8.22	1.77	1.71
6	8.41	28.41	22.08	12.45	126.5	8.23	1.81	1.75
10	8.16	28.76	22.37	11.52	117.0	8.14	1.73	1.68
15	8.12	28.91	22.51	10.15	103.0	8.18	1.73	1.67
20	8.23	29.06	22.62	9.38	95.5	8.09	1.67	1.61
30	7.82	29.28	22.84	7.97	80.5	8.13	1.63	1.57
50	7.67	29.56	23.08	7.81	79.0	7.84	1.71	1.67
80	7.20	29.48	23.08	7.90	79.0	7.85	1.71	1.67

Station: 8-11  
 Time: 1025  
 Date: 9/19/99  
 Lat: 41° 52.4' N  
 Long: 123° 38.0' W  
 Depth: 138 ft  
 B.T. Ser. No. 11

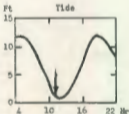
Weather: Cloudless  
 Clouds Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 64 \*F. W. \*F.  
 Baro: 1030.3 mb.  
 Secchi: 17 ft Col: gn-br



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.8	25.95	19.76	11.58	129.7	8.07	1.92	1.87
2	8.40	28.32	22.01	13.38	136.0	8.36	2.04	1.96
4	8.34	28.42	22.11	13.00	132.0	8.31	2.04	1.97
6	8.24	28.58	22.23	12.65	128.5	8.31	2.08	2.01
10	8.11	28.68	22.33	11.18	113.3	8.22	2.10	2.04
15	8.01	28.82	22.45	10.10	102.3	8.18	2.10	2.04
20	7.90	28.98	22.60	9.08	92.0	8.06	1.87	1.82
30	7.86	29.23	22.80	7.57	76.5	7.96	2.08	2.03
40	7.69	29.37	22.93	7.34	74.1	7.88	2.11	2.07

Station: 9-12  
 Time: 1117  
 Date: 9/19/99  
 Lat: 48° 52.8' N  
 Long: 123° 37.4' W  
 Depth: 324 ft  
 B.T. Ser. No. 12

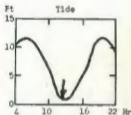
Weather: Cloudless  
 Clouds Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 \*F. W. \*F.  
 Baro: 1030.3 mb.  
 Secchi: 13 ft Col: yl-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.2	26.83	20.99	14.85	160.9	8.14	1.98	1.93
2	8.40	28.99	22.22	13.43	136.7	8.20	2.04	1.98
4	8.28	28.74	22.35	12.68	128.0	8.20	2.08	2.02
6	8.27	28.72	22.34	12.55	127.7	8.12	2.11	2.06
10	8.21	28.79	22.41	11.40	116.0	8.10	2.08	2.03
15	8.12	28.91	22.51	10.15	103.0	8.02	2.06	2.02
20	7.92	29.15	22.72	8.95	90.6	7.88	2.06	2.02
30	7.95	29.35	22.88	7.95	80.8	7.81	2.04	2.01
50	7.95	29.41	23.00	7.75	77.8	7.84	2.04	2.01
90	7.71	29.54	23.06	8.08	81.6	7.74	2.00	1.98

Stations: B-13  
 Time: 1237  
 Date: 9/IV/59  
 Lat: 48° 53.1' N  
 Long: 123° 36.6' W  
 Depths: 630 ft  
 B.T. Ser. No. 13

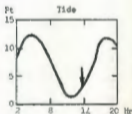
Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D-61 \*F. W. \*F.  
 Baro: 1030.2 mb.  
 Secchi: 16 ft Col: gm-br



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.8	27.40	20.95	14.66	161.8	8.11	2.07	2.02
2	8.85	28.49	22.12	13.90	142.0	8.21	1.98	1.92
4	8.39	28.65	22.27	13.11	133.6	8.20	1.92	1.86
6	8.32	28.67	22.29	12.54	127.5	8.08	2.03	1.98
10	8.20	28.71	22.34	11.43	116.0	8.07	1.98	1.93
15	8.17	28.77	22.47	10.92	111.0	8.01	2.00	1.96
20	7.94	28.09	22.68	9.38	93.0	7.81	2.04	2.01
30	7.85	28.31	22.86	7.95	80.5	7.70	2.06	2.04
50	7.69	28.43	22.98	7.81	78.9	7.65	2.15	2.13
100	7.77	29.60	23.10	8.03	81.2	7.63	2.03	2.01
180	7.88	29.69	23.16	8.16	82.8	7.67	2.01	1.99

Stations: B-14  
 Time: 1342  
 Date: 9/IV/59  
 Lat: 48° 53.4' N  
 Long: 123° 36.0' W  
 Depths: 558 ft  
 B.T. Ser. No. 14

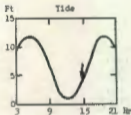
Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D-68 \*F. W. \*F.  
 Baro: 1030.1 mb.  
 Secchi: 21 ft Col: gm-br



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.4	27.50	20.09	13.73	150.2	8.24	1.89	1.83
2	8.97	28.15	21.80	14.21	164.0	8.42	1.98	1.90
4	8.59	28.49	22.20	14.50	169.4	8.47	2.01	1.91
6	8.51	28.63	22.24	13.63	139.3	8.38	2.05	1.97
10	8.29	28.74	22.36	11.71	119.0	8.24	1.98	1.93
15	8.02	28.98	22.50	10.28	104.1	8.17	1.97	1.91
20	7.71	29.23	22.82	7.85	79.3	8.04	1.98	1.93
30	7.74	28.34	22.90	7.49	75.7	7.91	2.05	2.01
50	7.69	28.44	22.98	7.97	79.5	7.83	2.00	1.97
100	7.74	29.59	23.05	8.19	82.8	7.93	2.03	1.95
140	7.80	29.65	23.14	8.12	82.2	7.51	2.13	2.09

Stations 9-15  
 Time: 1442  
 Date: 9/14/59  
 Lat: 48° 42.7' N  
 Long: 123° 35.3' W  
 Depth: 660 ft.  
 S.T. Ser. No. 15

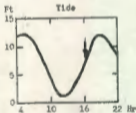
Weather: Cloudless  
 Cloud Type - Amt. 0  
 Wind: Dir. 310 \*T Spd. 1-3 mph.  
 Seas: 0 Swells: 0  
 Air Temp: D-68 \*F. W. - \*F.  
 Baro: 1030.1 mb.  
 Secchi: 28 ft Col: y1-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.6	27.87	21.35	14.40	158.8	8.24	1.92	1.86
2	8.98	28.31	21.92	14.74	151.8	-	2.09	-
4	8.70	28.50	22.11	14.99	153.5	8.51	1.93	1.83
6	8.46	28.77	22.21	14.80	151.0	8.60	1.81	1.73
10	8.13	28.73	22.37	12.05	122.3	8.25	1.87	1.80
15	7.90	28.97	22.58	9.14	92.5	8.14	1.98	1.93
20	8.01	29.08	22.66	8.40	85.1	8.03	2.00	1.95
30	7.76	29.30	22.87	8.06	81.5	7.95	2.04	1.99
50	7.85	29.45	22.97	8.45	85.5	7.91	2.06	2.02
100	7.66	29.40	22.95	7.90	79.8	7.89	2.08	2.04
180	7.82	29.64	23.13	8.30	84.2	7.86	1.98	1.94

Stations 8-16  
 Time: 1609  
 Date: 9/14/59  
 Lat: 48° 42.4' N  
 Long: 123° 36.0' W  
 Depth: 690 ft.  
 S.T. Ser. No. 16

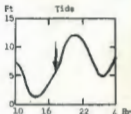
Weather: Cloudless  
 Cloud Type - Amt. 0  
 Wind: Dir. 310 \*T Spd. 1-3 mph.  
 Seas: 0 Swells: 0  
 Air Temp: D-68 \*F. W. - \*F.  
 Baro: 1030.1 mb.  
 Secchi: 26 ft Col: dk-gn



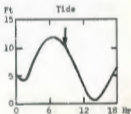
Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.6	27.75	21.25	14.07	165.0	8.34	1.84	1.77
2	9.07	28.44	22.01	15.41	199.3	8.37	1.93	1.85
4	8.68	28.53	22.17	14.30	145.8	8.19	1.98	1.92
6	8.25	28.66	22.29	13.30	135.0	8.24	1.98	1.92
10	8.08	28.75	22.39	11.70	118.7	8.22	1.81	1.75
15	7.89	28.97	22.59	9.15	92.5	8.08	1.84	1.79
20	7.72	29.16	22.76	8.03	81.1	7.94	1.84	1.80
30	7.78	29.30	22.87	7.98	76.6	7.90	1.84	1.80
50	7.72	29.41	22.95	7.80	78.8	7.84	1.93	1.93
100	7.71	29.58	23.09	8.15	82.5	7.88	1.87	1.83
180	7.85	29.71	23.18	8.14	92.7	7.90	1.87	1.83

Stations: 8-17  
 Time: 1704  
 Date: 9/IV/99  
 Lat: 40° 52.1' N  
 Long: 123° 36.7' W  
 Depth: 516 ft  
 S.T. Ser. No. 17

Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. 330 °T Spd. 1-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 64 °F. W. - °F.  
 Baro: 1030 mb.  
 Secchi: 14 ft Col: y1-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.0	27.64	22.27	14.68	199.2	8.11	1.67	1.62
2	9.43	28.18	21.75	15.20	158.2	8.26	1.73	1.66
4	8.90	28.37	22.02	14.03	142.8	8.35	1.84	1.76
6	8.47	28.59	22.21	14.10	143.8	8.35	1.84	1.78
10	8.19	28.70	22.34	12.10	123.0	8.14	1.93	1.88
15	7.96	28.87	22.51	10.70	108.2	8.02	1.94	1.90
20	7.74	28.14	22.74	8.08	81.7	7.88	1.98	1.94
30	7.77	29.32	22.88	8.05	81.4	7.77	1.99	1.96
50	7.71	29.44	22.98	8.03	81.2	7.75	1.97	1.94
100	7.71	29.61	23.11	8.13	82.2	7.71	2.01	1.99
140	7.79	29.67	23.15	8.22	83.3	7.69	2.00	1.98



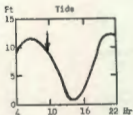
Stations: 5-18  
 Time: 0840  
 Date: 10/IV/50  
 Lat: 49° 51.8' N  
 Long: 123° 17.2' W  
 Depth: 234 ft  
 S.T. Ser. No. 18

Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. - °T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 50 °F. W. - °F.  
 Baro: 1030.3 mb.  
 Secchi: 17 ft Col: gn-br

Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.2	27.46	21.09	18.43	200.5	8.39	2.01	1.93
2	9.06	28.24	21.86	18.61	191.8	8.32	2.15	2.08
4	8.70	28.40	22.03	17.78	182.5	8.32	2.04	1.97
6	8.47	28.53	22.17	17.00	173.5	8.32	2.08	2.01
10	8.14	28.70	22.35	11.27	114.4	8.24	2.04	1.98
15	8.11	28.83	22.45	10.18	103.2	8.08	2.06	2.01
20	7.87	28.99	22.61	8.88	89.7	8.01	2.13	2.09
30	7.90	29.29	22.83	7.43	75.4	7.93	2.10	2.06
50	7.72	29.45	22.99	7.77	76.5	7.87	2.01	2.06

Stations 8-19  
 Time: 0936  
 Date: 10/14/59  
 Lat: 48° 51.2' N  
 Long: 123° 36.6' W  
 Depth: 390 ft  
 S.T. Ser. No. 19

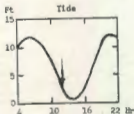
Weather: Cloudless  
 Clouds Type - Amt. -  
 Winds Dir. - \*T Spd. - mph.  
 Sea: 0 Swells: 0  
 Air Temp: D. 52 °F. W. - °F.  
 Baro: 1030.3 mb.  
 Secchi: 24 ft Col: yl-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.2	27.65	21.24	14.50	158.1	8.35	2.00	1.92
2	9.13	28.32	21.93	15.41	159.5	8.41	2.06	1.98
4	8.57	28.45	22.09	13.90	141.8	8.35	2.11	1.93
6	8.29	28.65	22.28	12.48	127.3	8.27	2.06	1.93
10	8.10	28.75	22.39	10.83	110.0	8.18	2.08	2.02
15	8.05	28.91	22.52	9.05	91.8	8.00	2.12	2.08
20	7.92	29.02	22.62	8.65	87.5	7.93	2.08	2.04
30	8.05	29.33	22.85	8.74	88.9	7.90	2.08	2.04
50	7.71	29.42	22.97	8.04	81.2	7.84	2.13	2.10
100	7.70	29.58	23.09	7.97	80.6	7.80	2.13	2.10

Stations 8-20  
 Time: 1156  
 Date: 10/14/59  
 Lat: 48° 51.5' N  
 Long: 123° 36.1' W  
 Depth: 504 ft  
 S.T. Ser. No. 20

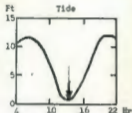
Weather: Cloudless  
 Clouds Type - Amt. -  
 Winds Dir. - \*T Spd. - mph.  
 Sea: 0 Swells: 0  
 Air Temp: D. 64 °F. W. - °F.  
 Baro: 1030.3 mb.  
 Secchi: 18 ft Col: yl-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.9	27.67	21.14	14.30	158.4	8.55	1.84	1.73
2	10.47	27.74	21.26	14.94	157.3	8.51	1.84	1.74
4	9.54	28.16	21.67	14.75	145.0	8.50	1.81	1.71
6	8.99	28.46	22.06	13.98	144.0	8.36	1.92	1.84
10	8.80	28.64	22.27	13.22	135.0	8.38	1.84	1.76
15	8.23	28.77	22.39	10.88	110.8	8.26	1.79	1.73
20	7.87	28.97	22.60	9.04	91.4	8.10	1.89	1.84
30	8.14	29.28	22.81	9.10	92.6	8.01	1.79	1.74
50	7.72	29.43	22.97	8.10	81.0	7.93	1.77	1.73
100	7.68	29.56	23.08	7.96	80.5	7.86	1.69	1.65
140	7.79	29.62	23.11	7.94	80.3	7.83	1.71	1.68

Stations: S-21  
 Time: 1306  
 Date: 10/IV/59  
 Lat: 48° 51.8' N  
 Long: 123° 35.4' W  
 Depth: 708 ft  
 S.T. Ser. No. 21

Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. 70 \*T Spd. 1-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 64 \*F. W. - \*F.  
 Baro: 1030.4 mb.  
 Secchi: 23 ft Col: gm

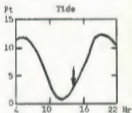


Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.6	28.21	21.61	14.85	164.1	8.53	1.43	1.33
2	9.91	28.10	21.61	14.90	165.2	8.56	1.57	1.45
4	9.81	28.39	21.85	15.05	158.3	8.47	1.67	1.55
6	9.11	28.64	22.16	14.43	149.7	8.46	1.71	1.67
10	8.9*	28.77	22.34	14.17	149.6	8.19	1.57	1.51
14	8.0*	28.87	22.49	10.17	103.0	8.12	1.55	1.50
20	7.80	29.11	22.71	8.29	83.8	8.02	1.69	1.64
30	8.02	29.32	22.84	9.04	91.8	7.95	1.65	1.60
50	7.71	29.41	22.96	7.70	77.8	7.83	1.57	1.54
100	7.74	29.57	23.07	8.03	81.2	7.82	1.61	1.48
200	7.81	29.73	23.18	7.94	80.5	7.84	1.71	1.68

\*Temperature taken from S.T. trace.

Station: S-22  
 Time: 1416  
 Date: 10/IV/59  
 Lat: 48° 52.3' N  
 Long: 123° 34.7' W  
 Depth: 504 ft  
 S.T. Ser. No. 22

Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. 100 \*T Spd. 1-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 66 \*F. W. - \*F.  
 Baro: 1030.4 mb.  
 Secchi: 34 ft Col: gm

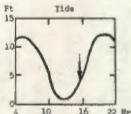


Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.8	27.93	21.36	14.12	156.4	8.26	1.98	1.91
2	9.74	28.10	21.71	14.73	154.2	8.32	2.05	1.95
4	8.78	28.43	22.12	14.30	145.5	8.35	2.01	1.93
6	8.44	28.63	22.25	13.45	137.0	8.34	2.01	1.94
10	8.2*	28.73	22.35	12.25	128.5	8.19	2.00	1.96
15	8.08	28.88	22.49	11.57	117.3	8.25	1.99	1.92
20	7.81	29.07	22.68	8.90	85.9	8.00	2.05	2.00
30	7.85	29.30	22.86	8.12	82.1	8.02	1.98	1.93
50	7.89	29.44	22.96	8.44	85.7	7.90	1.98	1.95
100	7.81	29.59	23.07	8.47	86.0	7.98	2.05	2.01
150	7.8*	29.64	23.13	8.07	81.9	7.89	2.06	2.03

\*Temperature taken from S.T. trace.

Stations: 5-23  
 Times: 1422  
 Date: 10/IV/99  
 Lat: 48° 50.8' N  
 Long: 123° 34.4' W  
 Depth: 510 ft  
 S.T. Ser. No. 23

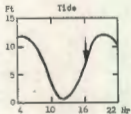
Weather: Cloudless  
 Cloud: Type - Amt. 0  
 Wind: Dir. 100 \*T Spd. 1-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 66 \*F. W. - \*F.  
 Baro: 1030.4 mb.  
 Secchi: 22 ft Col: yl-rn



Depth (m.)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.4	27.99	20.84	13.90	155.3	8.46	1.81	1.71
2	10.74	27.47	21.00	14.35	152.8	8.41	1.92	1.84
4	9.68	28.16	21.69	14.90	156.0	8.36	1.98	1.90
6	8.32	28.65	22.28	13.22	134.5	8.27	1.97	1.90
10	8.06	28.80	22.43	10.83	109.8	8.13	1.97	1.92
15	7.90	29.03	22.63	8.79	89.0	8.03	1.92	1.87
20	7.87	29.07	22.67	8.80	89.0	7.98	1.98	1.93
30	8.14	29.41	22.90	9.18	93.5	7.96	2.00	1.95
50	8.04	29.44	22.93	8.97	91.2	7.96	1.97	1.92
100	7.88	29.57	23.07	8.55	86.8	8.03	1.92	1.87
150	7.84	29.66	23.14	8.10	82.3	7.85	2.01	1.97

Stations: 3-24  
 Times: 1609  
 Date: 10/IV/99  
 Lat: 48° 50.7' N  
 Long: 123° 34.4' W  
 Depth: 570 ft  
 S.T. Ser. No. 24

Weather: Partly cloudy  
 Cloud: Type C1 Amt. 1  
 Wind: Dir. 120 \*T Spd. 1-3 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 61 \*F. W. \*F.  
 Baro: 1030.4 mb.  
 Secchi: 23 ft Col: gn

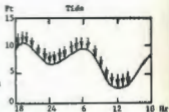


Depth (m.)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.7	28.06	21.54	14.40	177.4	8.22	2.08	2.03
2	9.39	28.21	21.78	14.48	150.7	8.42	2.08	2.00
4	8.94	28.32	21.94	14.26	146.7	8.43	2.05	1.97
6	8.40	28.56	22.21	13.35	136.1	8.32	2.04	1.97
10	8.30	28.70	22.33	12.20	124.2	8.29	2.04	1.97
15	8.02	28.83	22.46	10.31	104.7	8.22	2.04	1.99
20	7.88	29.05	22.65	9.05	91.5	7.98	2.01	1.96
30	8.11	29.40	22.90	9.14	93.2	7.98	1.99	1.94
50	7.95	29.45	22.95	8.70	88.3	7.91	2.05	2.01
100	7.72	29.62	23.12	8.14	82.5	7.89	2.11	2.07
150	7.81	29.63	23.11	8.14	82.5	7.94	2.15	2.11

## STUART CHANNEL

## SURFACE SAMPLES

Station: S-25 Latitude: 48° 53.20' N  
 Date: 10-11/IV/59 Longitude: 123° 37.80' W  
 Sounding: 126 ft. Location: 200 yd southeast of  
 outfall from Crofton  
 pulpmill effluent  
 pipeline.



No.	Time/Date	T °C	S ‰	σ <sub>t</sub>	chl µm	Secchi Disc Ft Colour	Surface Set Ct	Current Spd.	Wind Dir. Ct	Spd.
1	1800/10/IV/59	9.9	26.02	21.55	65.9					
2	1913/	9.6	26.36	21.86	142.5					
3	2002/	9.7	28.11	21.65	49.0					
4	2101/	10.3	27.77	21.31	48.4		90	0.2-0.5	270	0-3
5	2200/	10.4	27.11	20.79	36.8		90	0.2-0.5	270	0-3
6	2303/	10.2	27.19	20.88	36.6		90	0.2-0.5	270	0-3
7	2400/	9.9	27.69	21.31	50.3		90	0.1-0.2	270	0-3
8	0053/11/IV/59	10.3	27.01	20.73	38.1		90	0.1-0.2	C a l m	
9	0159/	10.0	27.92	21.48	59.2		135	0.1-0.2	225	0-3
10	0259/	10.0	28.17	21.65	42.8		135	0.1-0.2	225	0-3
11	0359/	9.5	28.33	21.85	53.7		135	0.1-0.2	225	0-3
12	0459/	9.5	28.34	21.86	57.7		135	0.1-0.2	C a l m	
13	0559/	9.7	28.43	21.91	23.0		135	0.1-0.2	270	0-3
14	0659/	9.7	28.04	21.60	30.0	17	90	0.1	270	0-2
15	0804/	9.7	28.27	21.78	42.7	14	8 t 1 1 1	270	0-2	
16	0903/	9.8	27.43	21.12	74.5	10	180	0.2-0.3	135	3-5
17	1003/	10.8	26.66	20.37	43.5	12	180	0.2-0.3	-	0
18	1102/	11.0	26.56	20.27	25.0	3	270	0.3-0.5	-	0
19	1201/	11.0	27.09	20.68	21.2	11	270	0.2-0.3	-	0
20	1302/	11.1	27.62	21.06	18.7	16	8 t 1 1 1	045	3-5	
21	1400/11/IV/59	11.8	27.79	21.08	36.1	14	8 t 1 1 1	045	3-5	

\* Plankton

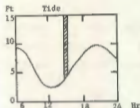
## STUART CHANNEL

## SURFACE SAMPLES

Date: 11/14/59

Location: On line from point 400 yd southeast of black can buoy ( $48^{\circ} 52.92' N$ ;  $123^{\circ} 37.47' W$ ) across outfall ( $48^{\circ} 53.25' N$ ;  $123^{\circ} 38.00' W$ ) to point 800 yd northwest of can buoy ( $48^{\circ} 53.48' N$ ;  $123^{\circ} 38.52' W$ ), at approximately 200 yd intervals.

Wind: NE 2-5 mph.



Sample No.	Time	Position		T °C	S °/∞	$\sigma_t$	SSE ppm
		Latitude	Longitude				
1	1445	$48^{\circ} 52.93'$	$123^{\circ} 37.47'$	11.5	27.81	21.14	9.6
2	1451	$48^{\circ} 52.97'$	$123^{\circ} 37.60'$	11.3	27.39	20.85	7.1
3	1452	$48^{\circ} 53.03'$	$123^{\circ} 37.70'$	11.0	27.78	21.20	4.9
4	1454	$48^{\circ} 53.09'$	$123^{\circ} 37.80'$	11.4	27.78	21.13	5.9
5	1497	$48^{\circ} 53.14'$	$123^{\circ} 37.90'$	11.0	27.79	21.21	4.9
6	1502	$48^{\circ} 53.20'$ (outfall)	$123^{\circ} 38.00'$	9.8	27.36	21.07	37.2
7	1505	$48^{\circ} 53.25'$	$123^{\circ} 38.10'$	10.2	27.32	20.98	41.5
8	1507	$48^{\circ} 53.31'$	$123^{\circ} 38.20'$	10.7	27.77	21.25	11.5
9	1510	$48^{\circ} 53.37'$	$123^{\circ} 38.30'$	10.9	27.87	21.29	6.4
10	1512	$48^{\circ} 53.42'$	$123^{\circ} 38.39'$	10.9	27.81	21.24	7.3
11	1513	$48^{\circ} 53.48'$	$123^{\circ} 38.52'$	10.9	27.78	21.22	12.2



## STUART COUNSEL

Ekman Current Meter Data

Station: S-25 (continued)

Time/Date	Depth (metres)	Current			Wind	
		Speed		Direction * T	Direction Speed	
		cm/sec	Knots		* T	m.p.h.
0132/11/IV/59	30	5.2	0.101	305	270	1-3
0207/	5	14.6	0.284	331	270	1-3
0216/	10	0	0	-	270	1-3
0225/	20	2.3	0.045	-	090	1-3
0234/	30	2.3	0.045	293	090	1-3
0305/	5	2.2	0.043	-	090	1-3
0313/	10	3.7	0.072	343	090	1-3
0322/	20	2.0	0.039	318	090	1-3
0331/	30	4.7	0.091	233	090	1-3
0407/	5	4.3	0.084	-	090	1-3
0413/	10	1.5	0.029	-	090	1-3
0420/	20	1.7	0.033	140	090	1-3
0429/	30	2.4	0.047	033	090	1-3
0506/	5	0	0	-	-	0
0513/	10	1.6	0.031	-	-	0
0526/	20	3.5	0.068	253	-	0
0530/	30	10.1	0.196	246	-	0
0606/	5	1.8	0.035	-	-	0
0614/	10	7.7	0.150	243	-	0
0622/	20	2.0	0.039	-	-	0
0631/	30	1.8	0.035	243	-	0
0708/	5	1.3	0.025	-	-	0
0715/	10	5.8	0.113	143	-	0
0725/	20	1.6	0.031	103	270	1-2
0735/	30	5.3	0.103	003	270	1-2
0807/	5	1.2	0.023	-	270	1-2
0818/	10	6.0	0.117	250	270	1-2
0827/	20	1.5	0.029	-	270	1-2
0837/	30	1.5	0.029	-	270	1-2
0909/	5	3.1	0.060	230	180	3-5
0922/	10	1.2	0.023	-	180	3-5
0932/	20	4.6	0.089	128	180	3-5
0943/	30	6.3	0.122	146	090	3-5
1006/	5	1.3	0.025	-	090	3-5

## STUART CHANNEL

Kman Current Meter Data

Station: S-25 (continued)

Time/Date	Depth (metres)	Current			Wind	
		Speed		Direction * T	Direction Speed	
		Cm/sec	Knots		* T	M.P.H.
1018/11/IV/59	10	1.1	0.021	-	090	3-5
1029/	20	3.4	0.066	153	090	3-5
1046/	30	1.6	0.031	133	090	3-5
1107/	5	13.8	0.268	150	090	3-5
1117/	10	6.6	0.128	106	090	3-5
1124/	20	2.0	0.039	-	090	3-5
1136/	30	1.7	0.033	123	090	3-5
1206/	5	7.2	0.140	331	-	0
1216/	10	3.0	0.058	133	-	0
1226/	20	5.0	0.097	290	-	0
1304/	5	1.4	0.027	183	-	0
1314/	10	1.4	0.027	238	-	0
1321/	20	62.0	1.204	319	-	0
1339/	24	5.5	0.107	276	-	0
1405/	5	2.7	0.052	323	-	0
1416/	10	8.1	0.157	302	-	0
1429/	15	7.1	0.138	133	-	0
1504/	5	6.3	0.122	243	-	0
1515/	10	1.2	0.023	-	-	0
1528/11/IV/59	20	1.2	0.023	263	-	0



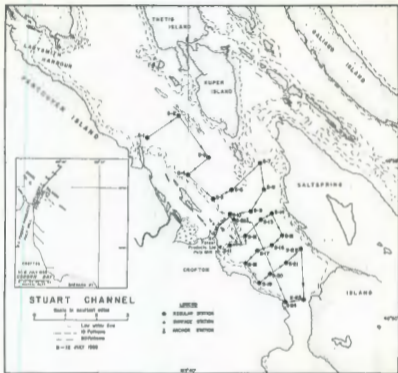
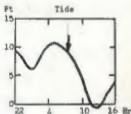


Fig. 20. Track chart of stations occupied in Stuart Channel, 8-12 July 1959. Insert shows on an enlarged chart of Osborn Bay locations of surface samples taken above experimental oyster trays.



Station: S-1  
 Time: 1732(S)-0802(D)  
 Date: 8/VII/59  
 Lat: 48° 54.8' N  
 Long: 123° 41.9' W  
 Depth: 228 ft  
 S.T. Ser. No. 1

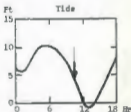
Weather: Bms  
 Clouds: Type Ci-Co Amt. 1  
 Wind: Dir. 270 \*T Spd. 3-5mph.  
 Sea: - Swell: -  
 Air Temp: D-70 \*F. W. - \*F.  
 Baro: 1030.8 mb.  
 Secchi: 25 ft Col: 10-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.0	26.44	18.46	10.15	118.6	8.24	1.95	1.89
2	14.72	25.42	18.49	9.98	116.1	8.27	1.94	1.86
4	13.87	26.15	19.43	10.94	123.1	8.18	1.96	1.90
6	13.32	26.52	19.81	10.14	113.0	8.09	1.94	1.89
10	11.52	27.77	21.11	7.31	79.2	7.91	1.98	1.95
15	10.19	28.21	21.56	7.11	75.1	7.91	2.01	1.98
20	10.81	28.58	21.84	6.73	72.4	7.82	2.00	1.97
30	10.44	28.98	22.21	6.36	68.0	7.82	2.15	2.12
50	9.67	29.33	22.48	4.99	52.6	7.71	2.10	2.08
70	9.60	29.38	22.66	4.23	44.5	7.72	2.16	2.14

Station: S-2  
 Time: 1012  
 Date: 8/VII/59  
 Lat: 48° 56.5' N  
 Long: 123° 40.5' W  
 Depth: 234 ft  
 S.T. Ser. No. 2

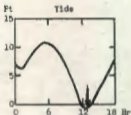
Weather: Mostly clear  
 Clouds: Type Ci Amt. 1  
 Wind: Dir. calm \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D-70 \*F. W. - \*F.  
 Baro: 1030.8 mb.  
 Secchi: 30 ft Col: br-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.2	24.37	17.92	9.93	121.0	8.35	2.06	1.97
2	15.81	25.38	18.44	10.39	121.0	8.45	2.06	1.95
4	13.47	26.42	19.60	10.51	117.4	8.33	2.08	2.01
6	13.05	26.79	20.06	9.88	109.8	8.23	2.06	2.00
10	11.80	27.50	20.85	7.42	89.8	8.00	2.07	2.03
15	11.42	28.07	21.34	7.35	79.8	7.99	2.09	2.05
20	11.05	28.47	21.72	7.03	76.1	7.93	2.09	2.06
30	10.46	29.08	22.29	6.27	67.2	7.88	2.11	2.08
50	9.75	29.31	22.58	1.26	13.3	7.75	2.18	2.15
70	9.59	29.37	22.65	4.48	47.2	7.93	2.25	2.22

Stations: S-3  
 Times: 1245  
 Date: 8/VII/59  
 Lat: 48° 54.2' N  
 Long: 123° 30.0' W  
 Depth: 270 ft  
 S.T. Ser. No. 3

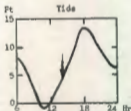
Weather: Clear; few clouds  
 Cloud: Type Cu Amt. 1  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 80 \*F. W. - \*F.  
 Baro: 1030.8 mb.  
 Secchi: 34 ft Col: br-gn



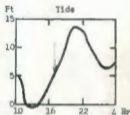
Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.7	25.50	18.35	10.50	124.3	8.29	2.00	1.92
2	16.05	25.45	18.45	10.48	124.9	8.29	2.06	1.98
4	15.80	25.53	18.56	10.53	122.6	8.29	2.06	1.98
6	14.55	26.03	19.20	11.04	125.9	8.27	2.07	2.00
10	12.08	27.60	20.88	7.58	83.1	8.02	2.00	1.96
15	11.54	28.01	21.28	7.51	81.6	8.01	2.04	2.00
20	11.27	28.49	21.77	7.14	77.4	7.99	2.01	1.97
30	10.68	28.90	22.12	6.43	69.2	7.89	2.01	1.98
50	9.01	29.33	22.57	5.44	57.6	7.79	1.96	1.93
75	9.54	29.38	22.67	4.23	44.5	7.69	1.96	1.94

Stations: S-4  
 Times: 1405  
 Date: 8/VII/59  
 Lat: 48° 54.7' N  
 Long: 123° 40.0' W  
 Depth: 276 ft  
 S.T. Ser. No. 4

Weather: Clear; few clouds  
 Cloud: Type Cu Amt. 2  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 70 \*F. W. - \*F.  
 Baro: 1030.7 mb.  
 Secchi: 28 ft Col: br-gn



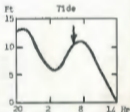
Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	21.0	24.52	16.58	9.05	115.3	8.09	1.99	1.93
2	19.25	25.20	17.68	9.81	121.7	8.24	1.94	1.87
4	16.19	25.38	18.36	10.13	118.5	8.34	1.94	1.86
6	13.10	26.44	19.79	10.68	118.4	8.26	1.96	1.89
10	12.02	27.37	20.71	6.93	75.7	8.02	2.00	1.96
15	11.39	28.07	21.35	7.51	79.0	8.00	2.22	2.18
20	11.08	28.39	21.64	6.84	77.8	7.99	2.06	2.02
30	10.70	-	-	6.51	-	7.94	2.10	2.07
50	9.74	29.34	22.61	4.81	50.8	7.80	2.09	2.06
80	9.55	29.40	22.68	3.62	38.1	7.68	2.20	2.18



Stations: 8-5  
 Time: 1636  
 Date: 8/VII/59  
 Lat: 48° 53.9' N  
 Long: 123° 38.8' W  
 Depth: 348 ft  
 S.T. Ser. No. 5

Weather: Clear; few clouds  
 Cloud: Type Cu Amt. 2  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 70 °F. W. - \*F.  
 Baro: 1030.7 mb.  
 Secchi: 22 ft Col: br-gn

Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.8	24.29	17.71	9.72	119.7	8.34	2.06	1.98
2	17.03	25.32	18.14	10.01	119.2	8.38	1.87	1.78
4	16.54	25.33	18.26	9.75	115.3	8.37	1.94	1.85
6	13.00	26.85	20.12	8.44	93.7	8.13	2.00	1.95
10	11.76	27.69	21.00	7.60	82.8	8.09	2.07	2.02
15	11.36	28.14	21.41	7.19	77.9	8.02	2.15	2.11
20	11.04	28.55	21.78	6.95	75.1	8.03	2.15	2.11
30	10.58	28.59	22.20	6.32	67.7	7.99	2.18	2.14
50	9.63	29.36	22.64	4.61	48.6	7.82	2.11	2.08
90	9.29	29.46	22.77	3.30	34.6	7.70	2.08	2.05



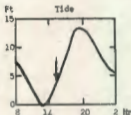
Stations: 8-6  
 Time: 0605  
 Date: 9/VII/59  
 Lat: 48° 54.2' N  
 Long: 123° 37.9' W  
 Depth: 492 ft  
 S.T. Ser. No. 6

Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 60 °F. W. - \*F.  
 Baro: 1030.6 mb.  
 Secchi: 22 ft Col: br-gn

Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.0	24.95	17.87	9.36	111.0	8.29	1.63	1.55
2	16.71	24.03	17.99	9.24	108.7	8.43	1.65	1.56
4	15.16	25.87	18.96	8.51	98.2	8.31	1.69	1.61
6	13.66	26.85	20.00	8.82	99.3	8.21	1.72	1.66
10	12.23	27.47	20.76	8.04	88.4	8.09	1.79	1.74
15	11.21	28.42	21.66	7.04	76.3	8.01	1.88	1.84
20	11.00	28.58	21.81	6.89	74.4	7.97	1.90	1.86
30	10.47	29.08	22.29	6.09	65.3	7.92	2.06	2.03
50	9.82	29.37	22.62	5.18	44.8	7.82	1.88	1.85
100	9.20	29.47	22.80	3.49	36.5	7.66	1.92	1.89
140	9.14	29.64	22.94	2.21	23.1	7.74	1.27	1.29

Stations B-7  
 Time: 1513  
 Date: 9/VII/59  
 Lat: 48° 54.0' N  
 Long: 123° 36.6' W  
 Depth: 198 ft  
 S.T. Ser. No. 7

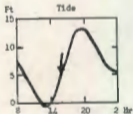
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 7° \*F. W. \*F.  
 Baro: 1030.6 mb.  
 Secchi: 19 ft Col: br-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.4	25.66	18.09	10.24	125.5	8.28	1.91	1.83
2	14.07	26.55	19.70	10.24	123.1	8.25	2.05	1.98
4	13.25	26.90	20.12	10.02	111.8	8.24	2.05	1.99
6	12.35	27.22	20.44	8.15	89.7	8.13	2.05	2.00
10	11.96	27.66	20.95	7.93	86.8	8.13	1.95	1.90
15	11.62	28.07	21.30	7.34	80.0	8.12	2.08	2.00
20	11.20	28.48	21.70	6.83	73.9	8.10	1.96	1.91
30	10.58	29.09	22.28	6.05	65.1	8.04	2.05	2.01
50	13.15	28.94	21.70	6.27	70.9	8.02	2.16	2.12

Stations B-8  
 Time: 1554  
 Date: 9/VII/59  
 Lat: 48° 54.2' N  
 Long: 123° 36.3' W  
 Depth: 444 ft  
 S.T. Ser. No. 8

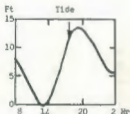
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. 355 \*T Spd. 3 mph.  
 Sea: - Swell: -  
 Air Temp: D. 75 \*F. W. \*F.  
 Baro: 1030.6 mb.  
 Secchi: 24 ft Col: dk-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.1	24.67	18.17	9.0	120.7	8.34	1.85	1.77
2	16.82	25.65	18.44	10.16	120.7	8.35	1.84	1.75
4	14.90	26.28	19.32	10.08	116.1	8.31	1.85	1.78
6	13.16	26.83	20.08	9.12	101.5	8.23	1.99	1.93
10	11.91	27.54	20.99	7.78	85.0	8.03	2.06	2.02
15	11.19	27.91	21.27	6.92	74.6	7.94	2.03	2.00
20	11.02	28.44	21.78	6.75	72.9	7.96	2.10	2.06
30	13.45	29.09	21.76	6.03	68.8	7.92	2.10	2.07
50	9.93	29.37	22.60	5.69	60.2	7.91	2.15	2.12
100	9.20	29.58	22.88	3.39	35.5	7.80	-	-
130	9.09	29.42	22.85	4.07	42.4	7.80	2.07	2.04

Stations: 8-9  
 Time: 1733  
 Date: 9/VII/59  
 Lat: 48° 53.5' N  
 Long: 123° 37.0' W  
 Depth: 576 ft  
 B.T. Ser. No. 9

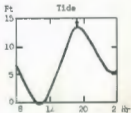
Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. 355 \*T Spd. 3 mph.  
 Sea: - Swell: -  
 Air Temp: D. 73 \*F. W. - \*F.  
 Baro: 1030.5 mb.  
 Secchi: 20 ft Col: br-gn



Depth (m.)	T (°C)	S (‰/‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.5	25.83	18.43	10.26	123.8	8.33	1.88	1.80
2	17.00	25.81	18.52	10.38	123.7	8.45	1.65	1.55
4	16.32	25.90	18.74	10.31	121.3	8.35	1.65	1.56
6	13.83	26.63	19.80	9.42	106.4	8.38	1.72	1.63
10	11.98	27.65	20.94	7.87	86.3	8.23	1.79	1.73
15	11.39	28.31	21.90	7.20	78.1	8.12	1.79	1.74
20	11.17	28.54	21.76	7.01	74.9	8.13	1.74	1.69
30	10.57	29.03	22.23	6.19	66.6	7.95	1.82	1.78
50	10.00	29.46	22.66	5.63	59.7	7.92	1.85	1.82
100	9.29	29.53	22.83	3.09	32.4	7.72	1.78	1.76
150	9.16	29.70	22.98	4.74	49.6	7.80	1.79	1.76
175	-	29.80	-	4.81	-	7.83	1.78	1.75

Stations: 8-10  
 Time: 1844  
 Date: 9/VII/59  
 Lat: 48° 53.4' N  
 Long: 123° 38.0' W  
 Depth: 144 ft  
 B.T. Ser. No. 10

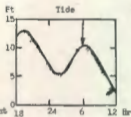
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 70 \*F. W. - \*F.  
 Baro: 1030.5 mb.  
 Secchi: 16 ft Col: br-gn



Depth (m.)	T (°C)	S (‰/‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.1	25.58	18.12	10.69	130.1	8.37	1.50	1.41
2	16.95	25.66	18.42	10.75	128.1	8.39	1.45	1.36
4	16.91	25.72	18.47	10.76	127.9	8.65	1.48	1.34
6	13.11	26.86	20.11	7.96	88.5	8.38	1.71	1.62
10	11.81	27.73	21.03	7.50	82.0	8.32	1.67	1.60
15	11.30	28.28	21.52	7.13	77.3	8.04	1.67	1.63
20	11.12	28.46	21.78	6.96	75.2	8.04	1.69	1.65
30	10.58	29.21	22.37	6.26	67.3	8.00	1.71	1.67
45	9.85	29.44	22.66	5.21	55.1	7.85	1.79	1.76

Stations: 8-11  
 Time: 0555  
 Date: 10/VII/59  
 Lat: 48° 52.4' N  
 Long: 123° 36.0' W  
 Depth: 144 ft  
 S.T. Ser. No. 12

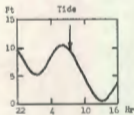
Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 61 \*F. W. \*F.  
 Baro: 1030.6 mb.  
 Secchi: 22 ft Col: gn, with faint brown



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.1	26.69	18.18	9.23	112.6	8.38	1.90	1.81
2	16.22	25.90	18.76	9.79	115.0	8.44	1.88	1.79
4	15.70	26.09	19.01	10.00	116.7	8.42	1.87	1.78
6	14.11	26.55	19.69	9.14	103.6	8.34	1.94	1.87
10	12.15	27.60	20.86	7.91	86.8	8.20	2.00	1.94
15	11.63	28.20	21.40	7.40	80.7	8.18	2.07	2.01
20	11.20	28.93	21.74	7.01	76.0	8.16	2.06	2.00
30	10.64	29.15	22.31	6.36	68.5	7.79	2.10	2.07
40	10.22	29.39	22.57	5.83	62.2	8.10	2.15	2.10

Stations: 8-12  
 Time: 0724  
 Date: 10/VII/59  
 Lat: 48° 52.7' N  
 Long: 123° 37.3' W  
 Depth: 306 ft  
 S.T. Ser. No. 13

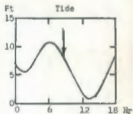
Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 62 \*F. W. - \*F.  
 Baro: 1030.6 mb.  
 Secchi: 23 ft Col: br-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.5	29.32	16.72	9.95	116.0	8.13	1.65	1.65
2	16.41	24.20	17.42	10.16	118.6	8.17	1.65	1.65
4	16.29	25.85	18.70	9.97	117.3	8.20	1.75	1.75
6	13.46	26.84	20.02	9.11	102.4	8.06	1.79	1.79
10	11.86	27.77	21.06	7.27	79.5	7.89	1.85	1.85
15	11.43	28.14	21.40	7.00	75.9	7.87	1.89	1.89
20	11.16	28.42	21.68	6.83	73.6	7.86	1.91	1.91
30	10.79	29.03	22.20	6.29	67.8	7.79	1.91	1.91
50	9.68	29.36	22.63	4.76	40.2	7.61	1.94	1.94
90	9.44	29.42	22.71	3.55	37.3	7.52	1.99	1.99

Stations 8-13  
 Time: 0829  
 Date: 10/VII/59  
 Lat: 49° 53.2' N  
 Long: 123° 36.5' W  
 Depth: 642 ft  
 B.T. Ser. No. 14

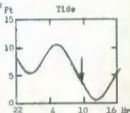
Weather: Clear  
 Clouds: Type - Amt. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 74 °F. W. \*F.  
 Baro: 1030.6 mb.  
 Secchi: 17 ft Col: br-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.7	23.39	16.94	10.41	119.7	8.34	1.71	1.63
2	16.20	25.74	18.64	9.90	116.2	8.32	1.87	1.79
4	14.61	26.20	19.32	8.20	94.9	8.28	1.85	1.78
6	12.86	26.98	20.20	7.83	86.7	8.20	1.90	1.84
10	11.73	27.70	21.01	7.47	81.3	8.09	1.87	1.82
15	11.33	28.12	21.40	6.76	75.3	8.04	2.01	1.97
20	11.14	28.41	21.66	6.96	75.1	8.07	1.81	1.76
30	10.74	29.13**	22.31	6.13	64.8	7.99	1.98	1.94
50	10.0*	28.76**	22.11	11.87	129.7	8.02	1.98	1.98
100	10.23	29.38	22.56	4.43	47.2	7.81	2.04	2.01
140	9.29	29.71	22.81	3.68	38.5	7.72	1.98	1.96
190	-	29.61	-	4.58	-	7.81	2.00	1.97

\* Temperature taken from B.T. trace.

\*\* Data were checked against original records and found to be correct. A pre-trip on bottle at 50 m could have occurred.



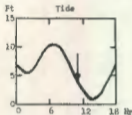
Stations 8-14  
 Time: 0947  
 Date: 10/VII/59  
 Lat: 48° 53.4' N  
 Long: 123° 36.0' W  
 Depth: 480 ft  
 B.T. Ser. No. 15

Weather: Clear  
 Clouds: Type - Amt. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 75 °F. W. \*F.  
 Baro: 1030.6 mb.  
 Secchi: 20 ft Col: br-gn

Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.0	23.32	16.82	10.91	125.8	8.34	1.79	1.71
2	16.26	25.77	18.65	9.72	114.2	8.37	1.87	1.78
4	14.74	26.17	19.31	9.61	109.7	8.32	1.87	1.80
6	12.91	26.94	20.23	8.94	99.1	8.21	1.91	1.85
10	11.73	27.70	21.01	7.19	78.2	8.05	1.90	1.88
15	11.37	28.17	21.43	7.09	76.7	8.08	1.98	1.93
20	11.06	28.52	21.75	6.83	73.8	8.07	1.95	1.90
30	10.11	29.01	22.29	6.29	66.7	8.03	1.99	1.95
50	9.31	29.36	22.69	5.60	58.6	7.94	2.05	2.02
100	9.13	29.47	22.80	3.07	32.0	7.64	2.02	2.00
140	-	29.49	-	4.41	-	7.77	2.01	1.98

Stations 8-15  
 Time: 1048  
 Date: 10/VII/59  
 Lat: 48° 52.7' N  
 Long: 123° 35.5' W  
 Depth: 642 ft  
 S.T. Ser. No. 16

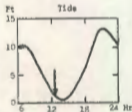
Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 75 \*F. W. - \*F.  
 Baro: 1030.7 mb.  
 Secchi: 24 ft Col: Green



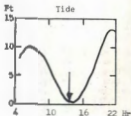
Depth (m.)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.9	24.37	17.44	10.53	124.2	8.32	2.15	2.07
2	16.63	26.00	19.74	9.74	115.5	8.32	1.82	1.74
4	14.28	26.25	19.42	9.86	112.1	8.27	1.85	1.78
6	12.91	27.00	20.27	9.09	100.9	8.20	1.88	1.82
10	11.86	27.86	21.12	7.48	81.8	8.09	1.98	1.93
15	11.57	28.28	21.48	7.22	78.6	8.02	1.95	1.91
20	11.29	28.64	21.81	6.83	74.2	8.05	1.94	1.89
30	10.70	29.06	22.24	6.25	67.3	8.01	1.95	1.91
50	10.07	29.38	22.59	5.48	58.2	7.92	2.00	1.97
100	9.33	29.45	22.76	3.16	33.1	7.70	-	-
150	9.09	29.57	22.89	4.17	43.5	7.76	2.01	1.98
200	-	29.76	-	3.60	-	7.75	2.16	2.13

Stations 8-16  
 Time: 1231  
 Date: 10/VII/59  
 Lat: 48° 52.4' N  
 Long: 123° 36.0' W  
 Depth: 672 ft  
 S.T. Ser. No. 17

Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 74 \*F. W. \*F.  
 Baro: 1030.7 mb.  
 Secchi: 17 ft Col: br-gn



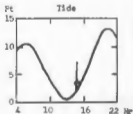
Depth (m.)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	19.2	23.85	16.53	10.77	132.3	8.29	1.79	1.71
2	17.29	24.29	18.06	10.04	120.1	8.34	1.85	1.77
4	14.79	26.28	19.35	9.90	113.8	8.31	1.88	1.81
6	12.37	27.19	20.41	8.14	89.5	8.13	1.94	1.89
10	11.65	27.74	21.07	7.23	78.6	8.02	2.01	1.97
15	11.40	28.16	21.42	7.14	77.4	8.06	2.02	1.97
20	11.27	28.44	21.81	6.90	74.9	8.00	2.05	2.01
30	10.69	29.04	22.22	6.37	64.6	8.23	2.02	1.96
50	10.08	29.36	22.57	5.58	59.3	7.89	2.15	2.12
100	9.37	29.45	22.75	3.19	33.6	7.72	1.99	1.97
150	9.13	29.59	22.90	4.44	46.3	7.90	2.05	2.02
200	-	29.75	-	4.58	-	7.83	2.06	2.03



Stations 8-17  
 Times 1332  
 Dates 10/VII/59  
 Lat: 48° 52.2' N  
 Long: 123° 36.7' W  
 Depths 528 ft  
 B.T. Ser. No. 18

Weather: Clear  
 Cloud: Type - Ast. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Seas - Swells -  
 Air Temp: D.75 °F. W. °F.  
 Baro: 1030.6 mb.  
 Secchi: 15 ft Col: br-gn

Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	20.1	24.43	16.74	9.90	124.2	8.31	1.81	1.73
2	19.25	24.57	17.06	10.12	125.1	8.37	1.74	1.64
4	15.93	25.86	18.79	10.04	117.4	8.37	1.85	1.76
6	14.62	26.20	19.32	9.86	112.8	8.35	1.87	1.78
10	11.70	27.79	21.09	7.21	78.4	8.11	1.95	1.90
15	11.38	28.09	21.36	7.04	76.3	8.10	1.90	1.85
20	11.17	28.43	21.66	6.85	74.3	8.09	1.95	1.90
30	10.78	29.00	22.17	6.33	68.2	8.04	2.04	2.00
50	9.90	29.34	22.58	5.40	57.1	7.95	2.05	2.01
100	9.32	29.46	22.76	3.23	33.8	7.84	2.02	1.99
160	9.16	29.85	23.10	4.66	46.6	7.86	2.07	2.04



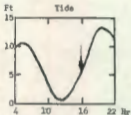
Stations 8-18  
 Times 1442  
 Dates 10/VII/59  
 Lat: 48° 51.8' N  
 Long: 123° 37.3' W  
 Depths 222 ft  
 B.T. Ser. No. 19

Weather: Clear  
 Cloud: Type - Ast. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Seas - Swells -  
 Air Temp: D.74 °F. W. °F.  
 Baro: 1030.7 mb.  
 Secchi: 14 ft Col: br-gn

Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	20.4	24.73	16.89	9.76	123.1	8.31	1.79	1.71
2	18.21	25.19	17.77	10.37	126.2	8.34	1.87	1.79
4	16.47	24.70	18.55	10.33	122.0	8.35	1.85	1.76
6	13.19	26.92	20.14	9.19	102.5	8.22	1.99	1.93
10	12.00	27.60	20.89	7.49	82.0	8.10	2.00	1.95
15	11.50	28.03	21.30	7.25	78.8	8.04	1.96	1.92
20	11.30	28.25	21.49	7.15	77.6	8.07	1.92	1.87
30	10.67	29.03	22.21	6.38	68.7	8.12	2.09	2.04
50	9.86	29.35	22.60	5.31	56.2	8.22	2.02	1.96
60	9.64	29.38	22.65	4.75	50.1	7.93	2.08	2.05

Stations: 8-19  
 Times: 1552  
 Date: 10/VII/99  
 Lat: 48° 51.2' N  
 Long: 123° 36.6' W  
 Depth: 264 ft  
 S.T. Ser. No. 20

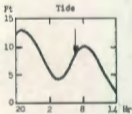
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 78 °F. W. \*F.  
 Baro: 1030.6 mb.  
 Secchi: 15 ft Col: br-gn



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	21.5	24.24	16.24	10.77	138.3	8.34	2.31	2.23
2	20.30	24.26	16.56	11.48	144.2	8.43	1.87	1.77
4	15.96	25.88	18.80	10.25	119.9	8.39	1.71	1.62
6	14.64	26.34	19.42	9.99	114.4	8.31	1.69	1.62
10	11.99	27.46	20.87	7.73	84.5	8.13	1.74	1.69
15	11.47	28.13	21.39	7.30	79.4	8.22	-	-
20	11.24	28.40	21.62	7.01	76.0	8.09	1.74	1.69
30	10.90	28.89	22.07	6.55	70.8	8.11	1.87	1.82
50	9.88	29.36	22.60	5.50	58.2	7.93	1.84	1.81
90	9.34	29.44	22.74	3.62	38.0	8.06	1.88	1.83

Stations: 8-20  
 Times: 0653  
 Date: 11/VII/99  
 Lat: 48° 51.5' N  
 Long: 123° 36.1' W  
 Depth: 450 ft  
 S.T. Ser. No. 21

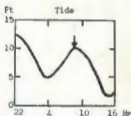
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 70 °F. W. \*F.  
 Baro: 1030.4 mb.  
 Secchi: 22 ft Col: Green  
 (water clear)



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.6	24.65	17.50	10.60	127.1	8.22	1.87	1.80
2	17.43	24.73	17.60	10.61	126.8	8.28	1.81	1.73
4	16.75	24.81	17.81	10.93	128.9	8.36	1.85	1.76
6	14.68	26.20	19.32	8.84	101.0	8.13	1.90	1.85
10	11.94	27.92	21.15	7.68	84.0	8.08	1.95	1.90
15	11.40	28.06	21.34	7.04	76.3	8.02	2.04	2.00
20	11.14	28.56	21.77	6.78	73.4	8.02	2.01	1.97
30	10.69	29.03	22.22	6.29	67.7	7.98	1.98	1.94
50	9.92	29.39	22.62	5.44	57.6	7.88	-	-
100	9.21	29.68	22.80	3.46	34.2	7.70	-	-
135	9.23	29.57	22.87	4.36	49.7	7.74	2.05	2.03

Station: S-21  
 Time: 0806  
 Date: 11/VII/59  
 Lat: 48° 51.8' N  
 Long: 123° 35.3' W  
 Depth: 690 ft  
 S.T. Ser. No. 22

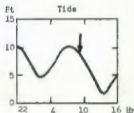
Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 74 °F. W. - °F.  
 Baro: 1030.4 mb.  
 Secchi: 34 ft Col: Green



Depth (m.)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.4	24.64	17.31	10.31	125.6	8.35	1.72	1.63
2	18.21	24.83	17.50	10.21	123.9	8.38	1.61	1.52
4	15.98	25.77	18.71	10.47	122.5	8.38	1.91	1.82
6	14.89	26.13	19.22	10.76	123.8	8.35	1.94	1.85
10	12.19	27.47	20.77	7.73	85.0	8.12	2.00	1.95
15	11.48	27.98	21.28	7.10	78.2	8.04	2.01	1.97
20	11.48	28.38	21.58	7.13	77.6	8.08	2.01	1.96
30	10.75	28.11	22.27	6.20	66.8	8.00	2.07	2.03
50	9.87	29.37	22.60	5.47	59.0	7.90	2.06	2.03
100	9.26	29.46	22.78	3.53	36.9	7.71	2.00	1.98
150	9.40	29.65	22.91	4.54	48.7	7.79	2.07	2.04
200	-	29.71	-	4.69	-	7.80	2.11	2.08

Station: S-22  
 Time: 0906  
 Date: 11/VII/59  
 Lat: 48° 52.3' N  
 Long: 123° 34.6' W  
 Depth: 426 ft  
 S.T. Ser. No. 23

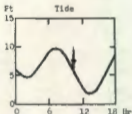
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 78 °F. W. °F.  
 Baro: 1030.4 mb.  
 Secchi: 31 ft Col: Green



Depth (m.)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	18.5	24.99	18.01	9.47	116.2	8.33	1.94	1.86
2	18.37	24.66	18.10	9.59	117.4	8.33	1.94	1.86
4	16.55	24.92	18.62	9.89	117.9	8.34	1.87	1.79
6	15.48	26.11	19.08	9.94	115.6	8.34	1.87	1.79
10	12.06	27.59	20.88	7.75	85.0	8.13	1.95	1.90
15	11.62	28.04	21.29	7.21	78.5	8.06	1.99	1.94
20	11.44	28.46	21.64	7.04	76.5	8.01	1.99	1.95
30	10.71	28.94	22.11	6.37	68.9	8.00	1.98	1.94
50	10.19	29.36	22.55	5.53	58.9	7.92	1.98	1.95
100	9.24	29.47	22.79	3.68	38.5	7.74	1.99	1.97
124	9.11	29.54	22.86	4.01	41.9	7.71	1.94	1.92

Stations: 8-23  
 Times: 1014  
 Date: 11/VII/59  
 Lat: 48° 50.7' N  
 Long: 123° 34.4' W  
 Depth: 660 ft  
 S.T. Ser. No. 24

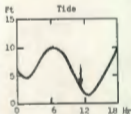
Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 78 °F. W. - °F.  
 Baro: 1030.4 mb.  
 Secchi: 27 ft Col: Green



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	19.0	24.43	17.01	10.53	128.6	8.28	1.94	1.86
2	17.81	24.47	17.32	10.65	128.0	8.31	1.92	1.84
4	18.36	24.43	17.17	10.66	129.4	8.34	1.84	1.76
6	16.77	25.01	18.11	10.65	124.3	8.35	1.85	1.78
10	14.37	26.19	19.36	9.72	110.6	8.27	1.88	1.81
15	11.71	27.80	21.10	7.24	78.8	8.05	1.98	1.93
20	11.28	28.33	21.57	6.86	74.3	7.96	2.03	1.99
30	10.88	28.95	22.12	6.33	68.4	7.94	2.05	2.02
50	10.21	29.41	22.58	4.41	57.6	7.81	2.03	2.00
100	9.29	29.46	22.77	3.75	39.3	7.64	2.01	1.99
150	9.44	29.64	22.89	4.60	48.4	7.66	2.04	2.02
210	-	29.70	-	4.81	-	7.65	1.87	1.85

Stations: 8-24  
 Times: 1104  
 Date: 11/VII/59  
 Lat: 48° 50.6' N  
 Long: 123° 34.4' W  
 Depth: 240 ft  
 S.T. Ser. No. 25

Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 75 °F. W. - °F.  
 Baro: 1030.4 mb.  
 Secchi: 20 ft Col: br-gn (in shade)



Depth (m.)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	19.0	24.55	17.30	10.39	127.8	8.38	1.79	1.69
2	17.42	24.75	17.52	10.21	122.9	8.24	1.81	1.74
4	16.18	24.86	17.74	9.96	116.9	8.22	1.85	1.79
6	14.50	26.46	18.54	9.80	112.0	8.19	1.95	1.89
10	11.77	27.83	21.11	7.43	81.1	7.98	1.79	1.75
15	11.49	28.12	21.37	7.05	76.6	8.01	2.00	1.96
20	11.29	28.49	21.70	6.86	74.5	7.92	2.02	1.99
30	10.47	29.25	22.42	5.86	62.9	7.87	2.00	1.97
50	9.86	29.40	22.63	5.18	54.8	7.81	2.01	1.98
80	9.47	29.42	22.71	3.97	41.7	7.75	1.95	1.92

STUART CHANNEL  
SURFACE SAMPLES

Station A. (over experimental oyster tray)

Lat: 48° 53.20' N, Long: 123° 38.13' W.

Station B. (over experimental oyster tray)

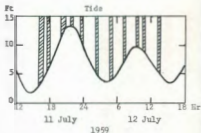
Lat: 48° 53.10' N, Long: 123° 38.30' W.

Station C. (over experimental oyster tray)

Lat: 48° 53.00' N, Long: 123° 38.45' W.

Station O. (pulp-mill outfall)

Lat: 48° 53.29' N, Long: 123° 38.05' W.



Station	Time/Date	T °C	S ‰	σ <sub>t</sub>	DOE ppm	Wind	
						Dir.	Spd. mph
A	1544/11/VII/59	21.5	25.17	16.94	15.0	-	0
B	1559/	24.0	25.11	16.22	14.8	-	0
C	1610/	25.4	25.04	15.75	13.1	-	0
O	1732/	13.8	26.14	19.43	158.3	-	0
A	1734/	21.3	25.23	17.04	9.6	-	0
B	1740/	21.9	25.21	16.87	10.3	-	0
C	1746/	22.2	25.18	16.77	12.2	-	0
O	1956/	14.2	26.16	19.37	116.0	315	0-1
A	2000/	20.5	25.23	17.25	6.2	315	0-1
B	2005/	20.6	25.24	17.23	8.0	315	0-1
C	2013/	22.6	25.04	16.55	14.7	315	0-1
O	2044/	13.8	26.08	19.38	98.6	315	0-1
A	2154/	20.2	25.26	17.34	13.1	315	0-1
B	2203/	21.5	25.04	16.85	12.2	315	0-1
C	2210/	21.1	24.91	16.86	11.2	315	0-1
O	2335/	14.5	25.89	19.11	7.5	300	1-3
A	2346/	17.2	25.10	17.94	11.7	300	1-3
B	2353/	21.2	25.13	16.99		300	1-3
C	2399/	18.1	25.11	17.74	13.0	300	1-3
O	0206/12/VII/59	16.5	24.91	17.94	45.0	280	3-5
A	0220/	19.2	25.00	17.39	11.3	280	3-5
B	0218/	20.2	25.25	17.33	12.7	280	3-5
C	0226/	21.4	25.07	16.89	15.0	280	3-5
O	0445/	17.4	25.10	17.89	126.9	270	12-15
A	0450/	18.5	23.84	16.68	20.3	270	12-15
B	0456/	20.8	23.95	16.20	15.0	270	12-15
C	0505/	21.5	25.03	16.84	18.4	270	12-15
O	0711/	13.6	26.20	19.51	115.4	183	13

STUART CHANNEL  
SURFACE SAMPLES (CONT'D)

Station	Time/Date	T °C	S ‰	$\sigma_t$	DOH ppm	Wind	
						Dir.	Spd. mph
A	0714/12/VII/99	19.3	25.07	17.43	12.2	183	13
B	0719/	19.8	25.21	17.41	9.9	183	13
C	0720/	20.9	25.11	17.06	14.1	183	13
O	0930/	13.6	25.25	19.55	132.3	103	10
A	0932/	19.4	25.19	17.49	8.9	103	10
B	0936/	19.6	25.17	17.43	9.4	103	10
C	0939/	20.9	25.12	17.06	9.4	103	10
O	1043/	14.0	25.91	19.22	95.2	360	10
A	1045/	19.6	25.19	17.44	14.7	360	10
B	1048/	20.3	25.17	17.25	66.0	360	10
C	1052/	22.3	25.05	16.64	20.3	360	10
O	1307/	14.6	25.68	18.92	117.8	315	6-8
A	1310/	21.2	25.10	16.97	11.8	315	6-8
B	1313/	22.9	25.09	16.51	12.2	315	6-8
C	1317/12/VII/99	24.4	25.01	16.03	13.9	315	6-8



## STUART CHANNEL

Eken Current Meter Data

Station: 5-25 (continued)

Time/Date	Depth (meters)	Current		Wind	
		Speed		Direction * T	Direction Speed * T K.P.H.
		Cm/sec	Knots		
0021/12/VII/59	20	2.5	0.049	213	- 0
0033/	15	4.4	0.085	173	- 0
0043/	10	5.4	0.105	143	- 0
0103/	5	28.9	0.561	124	- 0
0118/	20	2.6	0.051	-	- 0
0128/	15	2.3	0.045	009	- 0
0137/	10	1.3	0.025	-	- 0
0145/	5	24.0	0.466	139	315 2
0254/	20	7.1	0.138	310	315 2
0306/	15	9.1	0.177	345	315 2
0315/	10	9.7	0.188	139	315 2
0324/	5	14.2	0.276	147	315 2
0357/	20	6.0	0.117	328	315 2
0410/	15	4.2	0.082	268	315 2
0419/	10	2.7	0.052	325	315 2
0427/	5	3.7	0.072	043	315 2
0530/	20	8.1	0.157	308	045 2
0543/	15	4.3	0.084	298	045 2
0551/	10	7.5	0.146	318	045 2
0559/	5	5.3	0.103	283	045 2
0630/	20	6.2	0.120	207	045 2
0637/	15	9.5	0.185	308	045 2
0647/	10	13.3	0.258	258	045 2
0657/	5	8.4	0.163	273	045 2
0747/	20	5.8	0.113	199	045 2
0759/	15	9.5	0.185	312	183 13
0847/	10	7.9	0.153	263	183 13
0820/	5	11.0	0.214	325	183 13
0836/	20	0	0	-	183 13
0847/	20	3.9	0.076	348	183 13
0858/	15	0	0	-	183 13
0906/	15	4.1	0.080	243	183 13
0914/	10	2.5	0.049	213	183 13
0921/	5	0	0	-	183 13
0951/	5	1.7	0.033	203	183 13

## STUART CHANNEL

Ekman Current Meter Data

Station: S-25 (Continued)

Time/Date	Depth (Meters)	Current			Wind	
		Speed		Direction * T	Direction Speed	
		Cm/sec	Knots		* T	M.P.H.
1000/12/VII/59	20	4.5	0.097	113	293	13
1015/	15	2.9	0.056	763	103	10
1030/	10	6.0	0.127	230	103	10
1045/	5	6.1	0.119	176	103	10
1100/	20	3.9	0.076	203	103	10
1115/	15	0	0	-	103	10
1130/	10	0	0	-	103	10
1145/	5	12.0	0.233	115	103	10
1200/	20	2.8	0.054	-	108	10-12
1215/	15	1.4	0.027	293	108	10-12
1230/	10	10.2	0.198	328	108	10-12
1245/12/VII/59	5	10.7	0.198	123	108	10-12



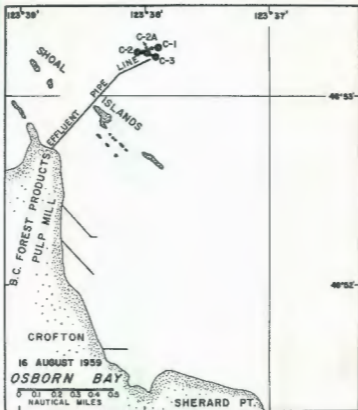
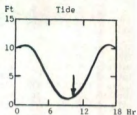


Fig. 21. Station occupied (C-3) and surface samples and B.T.'s taken (C-1, C-2 and C-2A) in Stuart Channel on 16 August 1959.



Stations C-1  
 Time: 1005  
 Date: 16/VIII/59  
 Lat: 48°53.28' N  
 Long: 123°37.92' W  
 Depth: 156 ft  
 B.T. Ser. No. 20

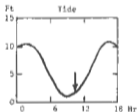
Weather: Mostly cloudy  
 Cloud: Type Ac Amt. 9  
 Wind: Dir. 270 \*T Spd. 5-6 mph.  
 Sea: 1 Swells:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity		KME ppm
				(mg/l)	% sat.		Total	Carb.	
0	14.6	27.07	20.00	6.44	76.8	7.39		57.4	

Stations C-2  
 Time: 1023  
 Date: 16/VIII/59  
 Lat: 48°53.25' N  
 Long: 123°38.05' W  
 Depth: 72 ft  
 B.T. Ser. No. 21

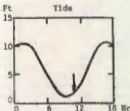
Weather: Mostly cloudy  
 Cloud: Type Ac Amt. 9  
 Wind: Dir. 270 \*T Spd. 5-6 mph.  
 Sea: 1 Swells:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity		KME ppm
				(mg/l)	% sat.		Total	Carb.	
0	14.7	25.89	19.07	5.05	59.9	8.14		188	

Stations: C-2A  
 Times: 1037  
 Date: 16/VIII/59  
 Lat: 48°53.25' N  
 Long: 123°38.00' W  
 Depth: 90 ft  
 B.T. Ser. No. 22-24

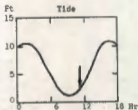
Weathers: Mostly cloudy  
 Cloud: Type Ac Amt. 9  
 Winds: Dir. 170 \*T Spd. 5-6 mph.  
 Sea: 1 Swell:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen (mg/l)	% sat.	pH	Alkalinity Total Carb.
0	14.9	25.89	19.03	4.90	58.4	7.68	

Stations: C-3  
 Time: 1106  
 Date: 16/VIII/59  
 Lat: 48°53.25' N  
 Long: 123°37.93' W  
 Depth: 136 ft  
 B.T. Ser. No. 25

Weathers: Mostly cloudy  
 Cloud: Type Ac Amt. 9  
 Winds: Dir. 170 \*T Spd. 5-6 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: 11 ft Col: yl-br



Bottom sample: Col: grey

Sea: medium sand

Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen (mg/l)	% sat.	pH	Alkalinity Total Carb.	chl ppm	
0	14.50	27.07	20.01	6.83	78.51	7.87	2.21	2.17	45.8
2	14.21	27.06	20.06	7.00	79.82	7.92	2.06	2.02	39.9
4	14.17	27.07	20.08	6.99	79.61	7.93	1.98	1.94	42.0
6	14.19	27.07	20.07	7.06	80.41	7.94	1.97	1.93	36.2
8	13.71	27.23	20.28	6.99	78.98	7.96	1.97	1.92	16.2
10	13.54	27.36	20.42	6.42	72.30	7.93	1.95	1.91	16.1
15	13.08	27.79	20.83	5.79	64.84	7.91	1.95	1.91	14.6
20	12.22	28.39	21.54	5.68	60.43	7.90	1.97	1.93	12.6
30	11.49	28.98	22.04	4.94	53.99	7.97	2.01	1.96	14.9
40	10.3	29.11	22.54	3.71	-	7.75	1.98	1.95	15.1

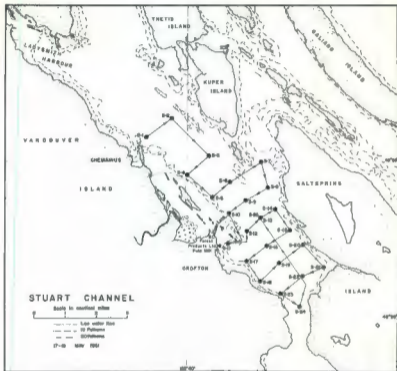
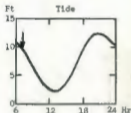


Fig. 22. Track chart of stations occupied in Stuart Channel, 17-18 May 1961.



Stations B-1  
 Time: 0650(0)-0713(D)  
 Date: 17/9/61  
 Lat: 48° 55.8'N  
 Long: 123° 42.0'W  
 Depth: 240 ft  
 S.T. Ser. No. 19

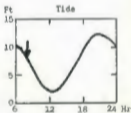
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 50 \*F. W. \*F.  
 Baro: 1029 mb.  
 Secchi: 22 ft Col: br-gr



Depth (m)	T (°C)	S (*‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.7	27.33	20.57	13.09	144.5	8.62	1.97	1.85
2	12.45	27.36	20.63	13.38	147.5	8.38	2.06	1.97
4	11.73	27.64	21.04	14.13	152.8	8.38	2.06	1.97
6	10.95	27.72	21.17	14.50	155.1	8.39	1.95	1.87
10	9.78	28.13	21.64	11.20	117.9	8.23	1.95	1.89
15	9.25	28.30	21.87	9.26	96.0	8.02	1.93	1.97
20	8.78	28.55	22.14	7.44	76.0	7.89	2.01	1.98
30	8.50	28.89	22.43	7.07	72.5	7.80	1.97	1.95
50	8.50	29.17	22.66	6.85	70.3	7.87	2.07	2.04
70	8.49	29.23	22.71	6.83	70.0	7.79	2.11	2.09

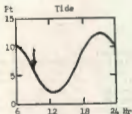
Stations S-2  
 Time: 0752(A)-0805(D)  
 Date: 17/9/61  
 Lat: 48° 56.4'N  
 Long: 123° 40.8'W  
 Depth: 144 ft  
 S.T. Ser. No. 20

Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 60 \*F. W. \*F.  
 Baro: 1029 mb.  
 Secchi: 22 ft Col: br-gr



Depth (m)	T (°C)	S (*‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.8	27.06	19.95	12.81	148.1	8.41	1.86	1.47
2	12.99	27.53	20.74	13.83	153.1	8.47	1.66	1.97
4	11.08	27.71	21.14	14.32	154.1	8.45	1.66	1.96
6	10.03	27.91	21.46	14.45	152.0	8.39	1.66	1.98
10	9.12	28.39	21.96	7.30	75.5	7.98	1.68	1.64
15	8.81	28.51	22.10	7.49	76.9	7.85	1.66	1.63
20	8.76	28.67	22.23	7.13	73.2	7.88	1.79	1.76
30	8.52	28.98	22.51	7.20	73.9	7.79	1.80	1.78
45	8.48	29.13	22.63	6.92	71.0	7.79	1.83	1.81

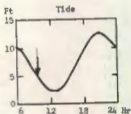
Stations 8-3      Weather: Clear  
 Times: 0941(G)-0955(D)      Clouds: Type -      Amt. 0  
 Dates: 17/8/61      Winds: Dir. -      \*T Spd. 0 mph.  
 Lat: 48° 55.2' N      Seas: -      Swells: -  
 Longs: 123° 39.0' W      Air Temp: D. 65°F. W. \*F.  
 Depths: 396 ft      Baro: 1030 mb.  
 S.T. Ser. No. 21      Secchi: 26 ft      Col: br-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.8	24.34	18.04	12.50	138.9	8.54	1.86	1.76
2	12.44	27.49	20.72	14.71	158.0	8.57	2.08	1.96
4	11.3 *	27.63	21.06	14.74	164.6	8.47	2.08	1.99
6	10.4	27.73	21.24	14.51	154.2	8.39	2.08	1.98
10	9.69	28.10	21.65	11.72	122.9	8.19	2.08	2.02
15	9.17	28.31	21.90	9.02	93.3	8.09	2.07	2.03
20	8.96	28.64	22.19	8.30	85.6	7.96	2.07	2.03
30	8.72	29.17	22.63	7.62	78.6	7.90	2.08	2.05
50	8.65	29.17	22.64	7.20	74.1	7.87	2.09	2.07
100	8.58	29.30	22.75	7.29	74.8	7.86	2.11	2.08

\*Temperature taken from S.T. trace.

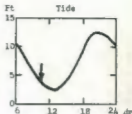
Stations 8-4      Weather: Clear  
 Times: 0931      Clouds: Type -      Amt. 0  
 Dates: 17/8/61      Winds: Dir. -      \*T Spd. 0 mph.  
 Lat: 48° 34.6' N      Seas: -      Swells: -  
 Longs: 123° 40.0' W      Air Temp: D. 65 \*F. W. \*F.  
 Depths: 144 ft      Baro: 1030 mb.  
 S.T. Ser. No. 22      Secchi: 21 ft      Col: lt-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.9	18.20	13.32	11.08	118.4	8.22	1.82	1.76
2	13.06	27.37	15.81	13.88	154.8	8.27	2.17	2.10
4	12.24	27.53	20.80	14.56	160.0	8.31	2.16	2.09
6	10.94	27.77	21.20	14.03	150.6	8.27	2.16	2.09
10	9.53	28.21	21.76	10.25	107.0	8.00	2.12	2.08
15	9.24	28.78	21.86	9.08	94.0	7.89	2.17	2.14
20	8.88	28.49	22.08	7.74	97.7	7.78	2.16	2.14
35	8.46	29.08	22.60	7.04	72.2	7.67	2.16	2.14

Stations: S-5  
 Times: 1015  
 Date: 17/V/61  
 Lat: 48° 53.9' N  
 Long: 123° 38.8' W  
 Depth: 120 ft  
 B.T. Ser. No. 23

Weather: Clear  
 Clouds Type - Amt. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 65 \*F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 22 ft Col: lt-gr

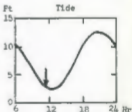


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.1	23.48	17.33	12.36	137.0	8.44	1.64	1.55
2	13.15	27.08	20.28	13.13	146.5	8.45	1.96	1.86
4	11.4*	27.65	21.07	13.24	147.8	8.46	1.98	1.89
6	10.55	27.86	21.34	13.56	144.1	8.44	2.14	2.06
10	9.73	28.00	21.63	12.03	126.0	8.19	1.07	1.91
15	9.33	28.29	21.85	9.37	97.2	8.02	2.01	1.97
20	9.27	28.54	22.06	9.47	98.4	7.89	1.98	1.95
30	8.59	29.93	22.62	7.36	75.5	7.81	2.04	2.02

\*Temperature taken from B.T. trace.

Stations: S-6  
 Times: 1122(S)-1135(D)  
 Date: 17/V/61  
 Lat: 48° 54.4' N  
 Long: 123° 38.0' W  
 Depth: 132 ft  
 B.T. Ser. No. 24

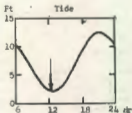
Weather: Clear  
 Clouds Type - Amt. 0  
 Winds Dir. - \*T Spd. 0 mph.  
 Sea: - Swell: -  
 Air Temp: D. 68 \*F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 18 ft Col: br-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.2	23.58	17.20	12.51	141.4	8.22	1.83	1.77
2	12.08	27.57	19.86	14.58	159.9	8.26	2.08	2.01
4	11.31	27.70	21.09	14.20	151.8	8.24	2.09	2.03
6	10.21	27.96	21.47	12.91	136.5	8.09	2.21	2.16
10	8.53	28.23	21.77	10.16	106.0	7.88	2.14	2.11
15	9.13	28.52	22.06	8.59	88.9	7.77	2.12	2.09
20	9.01	28.67	22.20	8.21	85.0	7.69	2.14	2.12
30	8.66	28.90	22.43	7.24	74.3	7.63	2.14	2.12
50	8.52	29.14	22.63	7.07	72.5	7.59	2.14	2.12
100	8.60	29.32	22.76	7.32	75.1	7.63	2.13	2.11
170	8.60	29.35	22.79	7.28	74.9	7.62	2.16	2.14

Stations 8-7  
 Times: 1207(8)-1217(0)  
 Dates: 17/9/61  
 Lst: 48° 54.0' N  
 Long: 123° 36.5' W  
 Depth: 168 ft  
 B.T. Ser. No. 25

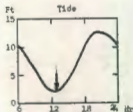
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. 344 \*T Spd. 1 mph.  
 Seas: - Swell: -  
 Air Temp: D. 65 \*F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 17 ft Col: br-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.3	27.78	20.99	12.81	161.4	8.04	2.06	2.02
2	10.45	27.88	21.37	12.98	137.8	8.09	2.04	2.00
4	9.72	28.17	21.70	11.73	123.0	7.96	2.08	2.04
6	9.53	28.26	21.80	10.40	108.8	7.85	2.08	2.05
10	9.24	28.41	21.96	8.73	90.5	7.69	2.09	2.07
15	8.67	28.90	22.42	7.37	75.8	7.56	2.09	2.07
20	8.56	29.01	22.53	7.10	73.8	7.56	2.10	2.08
30	8.52	29.09	22.60	7.06	72.3	7.54	2.09	2.08
50	8.54	29.20	22.68	7.02	72.0	7.54	2.16	2.15

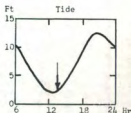
Stations: 8-8  
 Time: 1248(8)-1300(D)  
 Date: 17/9/61  
 Lst: 48° 54.2' N  
 Long: 123° 36.2' W  
 Depth: 372 ft  
 B.T. Ser. No. 26

Weather: Clear  
 Cloud: Type - Amt. 0  
 Wind: Dir. 344 \*T Spd. 1 mph.  
 Seas: - Swell: -  
 Air Temp: D. 64 \*F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 18 ft Col: y-l-gr



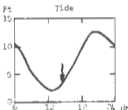
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.8	27.18	20.04	13.27	153.3	8.52	1.99	1.89
2	13.16	27.36	20.49	14.91	160.0	8.52	2.03	1.93
4	11.79	27.67	21.08	14.98	161.5	8.54	2.08	1.98
6	10.12	28.01	21.51	12.95	136.5	8.40	2.10	2.02
10	9.26	28.45	21.99	9.18	95.3	8.13	2.10	2.05
15	9.04	28.56	22.11	8.53	88.2	8.08	2.10	2.05
20	8.91	28.73	22.26	8.04	82.9	8.03	2.37	2.09
30	8.54	28.92	22.46	7.31	75.0	7.95	2.37	2.09
50	8.56	29.18	22.66	7.22	74.0	7.86	2.13	2.10
100	8.65	29.33	22.77	7.39	76.1	7.88	2.16	2.13

Station: S-0      Weather: Clear  
 Time: 1337(S)-1354(D) Clouds Type Cu Amt. 1  
 Date: 17/V/61      Winds Dir. 344 \*T Spd. 1 mph.  
 Lat: 48° 53.0' N      Seas - Swells -  
 Long: 123° 37.2' W      Air Temp: D. 62 \*F. W. \*F.  
 Depths 52P ft      Baro: 1030 mb.  
 B.T. Ser. No. 27      Secchi: 27 ft Col: br-gr



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.7	27.48	20.56	14.07	157.4	8.41	1.92	1.83
2	13.48	27.41	20.60	14.14	157.5	8.40	1.97	1.88
4	13.60	27.5	20.73	14.60	161.5	8.39	2.08	1.99
6	13.67	27.82	21.09	14.73	157.9	8.40	1.91	1.83
10	9.83	28.26	21.75	13.77	157.7	8.16	2.11	2.08
15	9.74	28.44	21.99	9.05	93.8	8.01	2.03	1.99
20	9.07	28.72	22.15	8.36	86.6	7.96	2.03	1.97
30	8.53	28.94	22.48	7.77	75.5	7.83	2.07	2.04
50	8.58	29.98	22.66	7.30	75.0	7.83	2.07	2.00
100	8.73	29.34	22.77	7.47	76.5	7.80	1.91	1.89
140	8.60	29.37	22.80	7.30	75.3	7.90	2.08	2.05

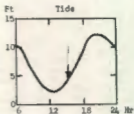
Station: S-10      Weather: Clear  
 Time: 1430(S)-1447(D) Clouds Type - Amt. 0  
 Date: 17/V/61      Winds Dir. 344 \*T Spd. 1 mph.  
 Lat: 48° 41.4' N      Seas - Swells -  
 Long: 123° 38.0' W      Air Temp: D. 64 \*F. W. \*F.  
 Depths 2P ft      Baro: 1030 mb.  
 B.T. Ser. No. 28      Secchi: 14 ft Col: gr



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.0	27.15	20.13	11.80	134.5	8.37	1.87	1.76
2	13.17	26.95	20.18	12.35	137.5	8.37	1.88	1.74
4	13.00	27.66	20.11	12.28	131.4	8.26	1.86	1.70
6	13.09	27.78	21.21	14.26	157.5	8.40	1.83	1.75
10	9.80	28.10	21.77	11.00	116.0	8.17	1.90	1.88
15	9.33	28.62	21.90	9.14	94.1	8.04	1.91	1.89
20	8.91	28.90	22.23	8.76	83.0	7.93	1.96	1.90
30	8.50	29.00	22.59	7.33	75.0	7.87	1.90	1.81
50	8.43	29.30	22.67	7.12	73.0	7.80	1.80	1.84
70	8.44	29.24	22.71	7.17	73.0	7.80	1.90	1.81

Stations 8-11  
 Time: 1525  
 Date: 17/V/61  
 Lat: 48° 52.4' N  
 Long: 123° 38.0' W  
 Depth: 144 ft  
 B.T. Ser. No. 29

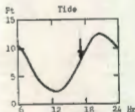
Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Seas - Swell: -  
 Air Temp: D. 66 °F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 16 ft Col: y-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	17.0	26.88	19.34	11.42	137.4	8.60	1.86	1.73
2	13.09	27.45	20.59	13.45	150.1	8.64	1.96	1.84
4	11.85	27.65	20.96	13.53	148.0	8.65	1.93	1.79
6	11.15	27.84	21.22	13.32	143.7	8.60	1.96	1.84
10	9.53	28.26	21.80	10.27	107.0	8.35	1.97	1.89
15	9.32	28.38	21.92	9.36	97.2	8.30	1.93	1.86
20	9.12	28.52	22.06	8.47	87.8	8.20	1.96	1.90
30	8.53	28.88	22.43	7.19	73.6	7.99	1.97	1.93
40	8.52	29.12	22.62	6.98	71.6	8.09	1.97	1.92

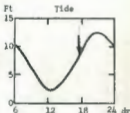
Stations S-12  
 Time: 1648(5)-1701(5)  
 Date: 17/V/61  
 Lat: 48° 52.8' N  
 Long: 123° 37.2' W  
 Depth: 300 ft  
 B.T. Ser. No. 30

Weather: Clear  
 Clouds: Type - Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Seas - Swell: -  
 Air Temp: D. 67 °F. W. \*F.  
 Baro: 1030 mb.  
 Secchi: 18 ft Col: yel-gr



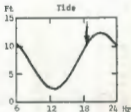
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	15.1	27.01	19.85	12.61	146.4	8.62	1.68	1.54
2	14.61	27.04	19.97	12.65	145.6	8.61	1.66	1.52
4	12.12	27.46	20.78	13.44	148.0	8.47	1.70	1.61
6	11.39	27.78	21.14	13.72	148.6	8.37	1.70	1.61
10	9.83	28.24	21.74	10.17	108.7	8.10	1.72	1.67
15	9.45	28.29	21.83	10.07	105.0	8.08	1.77	1.72
20	8.90	28.73	22.26	7.96	82.2	7.90	1.77	1.74
30	8.49	28.91	22.46	7.23	74.0	7.86	1.83	1.80
50	8.64	29.22	22.68	7.25	74.8	7.88	1.85	1.82
85	8.55	29.29	22.74	7.27	74.7	7.88	1.85	1.82

Stations: S-13      Weathers: Clear  
 Times: 1730(S)-1753(D)      Clouds: Type -      Amt. 0  
 Date: 17/V/51      Winds Dir. -      \*T Spd. 0 mph.  
 Lat: 48° 53.2'N      Sea: -      Swells: -  
 Long: 123° 36.5'W      Air Temp: D. 66 °F. W. 57.  
 Depth: 564 ft      Baro: 1030 mb.  
 S.T. Ser. No. 31      Secchi: 24 ft Col: y1-gr



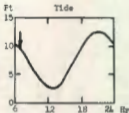
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	14.9	27.25	20.08	13.29	154.8	8.56	2.07	1.95
2	13.27	27.43	20.52	14.65	164.2	8.56	2.07	1.95
4	12.07	27.63	20.91	15.16	166.2	8.61	2.07	1.95
6	10.93	27.81	21.24	14.69	157.1	8.58	2.07	1.95
10	9.87	28.18	21.68	11.49	120.7	8.72	2.10	2.03
15	9.49	28.30	21.89	9.84	102.7	8.22	2.07	2.01
20	9.08	28.64	22.17	8.47	87.8	8.12	2.03	1.98
30	8.58	28.91	22.46	7.37	75.5	7.73	2.08	2.06
50	8.45	29.18	22.65			7.72	2.08	2.06
100	8.67	29.33	22.76	8.33	85.9	7.71	2.15	2.13
160	8.64	29.40	22.82	7.40	76.3	7.73	2.15	2.13

Stations: S-14      Weathers: Clear  
 Times: 1833(S)-1847(D)      Clouds: Type -      Amt. 0  
 Date: 17/V/51      Winds Dir. -      \*T Spd. 0 mph.  
 Lat: 48° 53.5'N      Sea: -      Swells: -  
 Long: 123° 35.8'W      Air Temp: D. 72 °F. W. 57.  
 Depth: 288 ft      Baro: 1030 mb.  
 S.T. Ser. No. 32      Secchi: 19 ft Col: 11-gr



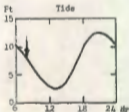
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0.	16.4	26.99	19.56	12.20	145.0	8.21	1.80	1.74
2	15.73	27.51	20.25	13.69	159.1	8.22	1.97	1.91
4	11.28	27.79	21.16	14.27	154.1	8.27	1.92	1.85
6	11.12	27.92	21.29	13.61	146.7	8.25	1.92	1.85
10	10.23	28.18	21.62	11.28	119.4	8.09	1.95	1.90
15	9.27	28.45	21.99	9.10	94.5	7.80	1.96	1.93
20	8.81	28.66	22.22	7.80	80.2	7.77	1.97	1.95
30	8.49	28.98	22.52	7.15	73.2	7.69	1.95	1.93
50	8.57	29.16	22.64	7.16	73.5	7.66	1.95	1.93
80	8.58	29.25	22.71			7.71	1.97	1.95

Stations: S-15      Weather: Clear, slight haze  
 Time: 0648(0)-0700(D) Clouds: Type - Amt. 0  
 Date: 18/7/61      Winds: Dir. - \*T Spd. 0 mph.  
 Lat: 48° 52.9'N      Sea: - Swell: -  
 Long: 123° 35.1'W      Air Temp: D. 60 \*F. W. \*F.  
 Depth: 972 ft      Baro: 1031 mb.  
 S.T. Ser. No. 31      Secchi: 26 ft Col: br-gr



Depth (m)	T (°C)	S (*/*)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.3	27.27	20.21	12.19	139.5	8.40	1.91	1.82
2	14.14	27.30	20.26	12.41	141.4	8.30	1.97	1.90
4	12.88	27.48	20.65	13.89	154.1	8.41	1.99	1.90
6	11.33	27.76	21.14	13.60	144.9	8.39	2.06	1.97
10	10.70	28.18	21.66	11.40	120.0	8.25	1.99	1.92
15	9.21	28.43	21.98	8.76	90.9	7.99	2.16	2.12
20	8.62	28.68	22.23	7.66	79.0	7.90	2.03	2.00
30	8.14	29.98	22.50	7.62	78.2	8.10	2.07	2.02
50	8.80	29.18	22.62	7.61	78.6	8.10	2.10	2.05
100	8.74	29.35	22.77	7.45	76.8	7.89	2.10	2.07

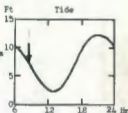
Stations: S-16      Weather: Clear, warm  
 Time: 0740(S)-0757(D) Clouds: Type - Amt. 0  
 Date: 18/7/61      Winds: Dir. - \*T Spd. 0 mph.  
 Lat: 48° 52.3'N      Sea: - Swell: -  
 Long: 123° 36.2'W      Air Temp: D. 60 \*F. W. \*F.  
 Depth: 624 ft      Baro: 1031 mb.  
 S.T. Ser. No. 34      Secchi: 23 ft Col: y1-gr



Depth (m)	T (°C)	S (*/*)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.4	27.23	20.16	13.22	131.7	8.05	1.92	1.87
2	13.61	27.34	20.39	13.69	154.7	8.12	1.83	1.78
4	12.09	27.67	20.94	14.39	158.0	8.14	1.66	1.61
6	11.02	27.94	21.31	13.88	149.2	8.09	1.83	1.78
10	10.58	28.16	21.58	12.12	133.6	8.04	1.83	1.79
15	9.47	28.37	21.98	9.89	103.3	7.79	1.85	1.82
20	8.79	28.82	22.35	8.51	87.8	7.64	1.92	1.90
30	8.87	29.02	22.49	8.13	84.0	7.65	2.11	2.09
50	8.81	29.23	22.66	7.88	81.5	7.63	1.86	1.84
100	8.73	29.37	22.74	7.62	78.6	7.59	1.95	1.93
150	8.66	29.39	22.81	7.48	77.2	7.57	2.06	2.04
190	8.64	29.41	22.83	7.38	76.1	7.56	2.07	2.05

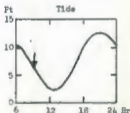
\*Temperature taken from S.T. trace.

Stations: S-17      Weather: Clear, light haze, warm  
 Times: 0841(S)-0856(D)      Clouds: Type - Amt. 0  
 Date: 18/V/61      Winds Dir. - \*T Spd. 0 mph.  
 Lat: 48° 51.8' N      Sea: - Swells: -  
 Long: 123° 37.2' W      Air Temp: D. 62 °F. W. \*F.  
 Depth: 216 ft      Baro: 1031 mb.  
 S.T. Ser. No. 35      Secchi: 21 ft Col: gr-br



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.2	26.92	19.76	12.24	142.2	8.10	1.83	1.78
2	13.62	27.15	20.25	12.69	143.0	8.12	1.91	1.86
4	12.54	27.55	20.77	14.19	157.0	8.16	1.97	1.91
6	11.20	27.77	21.09	14.15	152.9	8.17	1.97	1.91
10	10.15	28.12	21.59	11.92	126.0	7.98	1.96	1.92
15	9.76	28.27	21.77	10.58	111.0	7.92	2.01	1.98
20	9.47	28.41	21.93	9.60	100.1	7.87	1.97	1.94
30	8.63	28.87	22.40	7.66	78.7	7.64	2.03	2.01
50	8.63	29.21	22.67	7.41	76.4	7.65	2.08	2.06
60	8.62	29.24	22.70	7.58	78.2	7.60	2.11	2.09

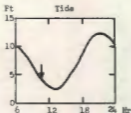
Stations: S-18      Weather: Clear, warm  
 Times: 0936(S)-0947(D)      Clouds: Type - Amt. 0  
 Date: 18/V/61      Winds Dir. - \*T Spd. 0 mph.  
 Lat: 48° 51.2' N      Sea: - Swells: -  
 Long: 123° 36.5' W      Air Temp: D. 64 °F. W. \*F.  
 Depth: 132 ft      Baro: 1031 mb.  
 S.T. Ser. No. 36      Secchi: 24 ft Col: yl-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.3	26.86	19.69	12.67	147.3	8.25	1.97	1.89
2	13.26	27.47	20.53	13.71	156.2	8.35	1.96	1.87
4	12.07	27.61	20.89	15.20	164.7	8.31	1.97	1.90
6	11.47	27.75	21.11	14.95	155.5	8.22	2.04	1.98
10	10.49	28.01	21.45	13.13	140.0	8.17	1.97	1.91
15	9.86	28.34	21.87	9.87	100.9	8.01	1.98	1.94
20	9.20	28.50	22.04	8.88	92.1	7.93	1.99	1.96
30	8.65	28.91	22.44	7.52	77.3	7.73	2.09	2.07
40	8.78	29.14	22.60	7.74	79.9	7.85	1.99	1.97

Stations: B-19  
 Times: 1039(S)-1044(D)  
 Date: 18/4/61  
 Lat: 48° 52.4'N  
 Long: 123° 34.5'W  
 Depth: 654 ft  
 B.T. Ser. No. 37

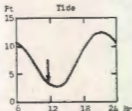
Weather: Clear, warm  
 Clouds Type: - Amt. 0  
 Winds Dir.: - \*T Spd. 0 mph.  
 Seas: - Swell: -  
 Air Temp D. 66 \*F. W. \*F.  
 Baro: 1032 mb.  
 Secchi: 21 ft Col: yl-gr



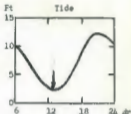
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.4	27.05	19.82	12.93	151.0	8.37	1.83	1.75
2	12.3*	27.77	20.98	14.43	158.3	8.35	1.83	1.74
4	11.9*	27.72	21.01	14.45	158.0	8.36	1.82	1.73
6	11.5*	27.62	21.1*	14.2*	154.7	8.36	1.82	1.73
10	10.37	28.09	21.53	12.9*	137.2	8.28	1.98	1.91
15	9.46	28.39	21.91	9.79	101.1	8.06	1.83	1.78
20	9.0*	28.62	22.16	8.41	86.9	7.92	2.0*	2.01
30	9.0*	29.05	22.49	8.35	85.7	7.91	2.03	2.00
50	8.96	29.22	22.63	8.12	84.2	7.93	2.05	2.02
99	8.69	29.35	22.7*	7.72	79.6	7.89	2.2*	2.19
149	8.64	29.3*	22.81	7.57	78.0	7.87	1.96	1.93
189	8.68	29.47	22.87	7.11	73.3	7.78	1.97	1.95

Station: B-20  
 Time: 1140(S)-1153(D)  
 Date: 18/4/61  
 Lat: 48° 52.4'N  
 Long: 123° 34.5'W  
 Depth: 524 ft  
 B.T. Ser. No. 38

Weather: Clear, few clouds  
 Clouds Type: Cu Amt. 0  
 Winds Dir.: 286 \*T Spd. 1-2mph.  
 Seas: - Swell: -  
 Air Temp D. 66 \*F. W. \*F.  
 Baro: 1032 mb.  
 Secchi: 22 ft Col: yl-gr



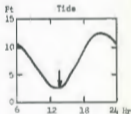
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.3	27.34	19.85	12.62	150.0	8.45	1.74	1.63
2	13.47	27.49	20.53	13.25	149.5	8.58	1.86	1.74
4	12.76	27.64	20.79	13.92	155.0	8.59	2.08	1.9*
6	11.36	27.86	21.20	13.84	149.7	8.60	1.86	1.74
10	10.11	28.12	21.60	13.22	139.8	8.51	1.83	1.73
15	9.51	28.34	21.8*	10.10	105.6	8.32	1.83	1.7*
20	9.38	28.39	21.9*	9.49	98.9	8.27	1.83	1.7*
30	8.77	28.96	22.4*	7.79	80.3	8.10	1.8*	1.61
50	8.7*	29.23	22.67	7.80	80.4	7.89	1.83	1.60
90	8.7*	29.31	22.73	7.7*	80.3	7.90	1.85	1.62



Stations S-21  
 Times 1251  
 Dates 18/V/61  
 Lat: 48° 51.7' N  
 Longs 123° 39.5' W  
 Depth: 144 ft  
 S.T. Ser. No. 39 & 40

Weather: Clear, few clouds  
 Clouds: Type Fc Amt. 0  
 Wind: Dir. - \*T Spd. 0 mph.  
 Seas - Swells -  
 Air Temp: D. 70°F. S. \*F.  
 Baro: 1032 mb.  
 Secchi: 26 ft Col: yl-gr

Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.7	27.30	19.77	12.66	151.7	8.43	1.91	1.82
2	13.85	27.43	20.42	13.20	150.0	8.36	1.86	1.77
4	11.99	27.63	20.93	14.31	156.7	8.38	1.85	1.76
6	11.59	27.67	21.03	15.29	165.9	8.38	1.95	1.86
10	10.44	27.97	21.45	13.83	147.0	8.34	1.88	1.81
15	9.77	28.24	21.74	11.54	121.7	8.17	2.08	2.02
20	9.20	28.49	22.03	9.00	93.3	7.98	2.08	2.04
30	8.81	28.83	22.35	7.97	82.2	7.88	1.92	1.89
40	8.84	29.12	22.58	7.85	81.1	7.89	1.92	1.89



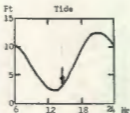
Stations S-22  
 Times 1320(S)-1347(D)  
 Dates 18/V/61  
 Lat: 48° 51.3' N  
 Longs 123° 34.5' W  
 Depth: 57 ft  
 S.T. Ser. No. 41

Weather: Clear, few clouds  
 Clouds: Type Fc Amt. 0  
 Wind: Dir. 299 \*T Spd. 1 mph.  
 Seas - Swells -  
 Air Temp: D. 68 \*F. W. \*F.  
 Baro: 1032 mb.  
 Secchi: 22 ft Col: yl-gr

Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.4	27.27	19.98	13.36	156.0	8.28	1.05	0.97
2	14.38	27.28	20.20	13.50	154.8	8.25	1.82	1.75
4	12.48	27.60	20.83	14.21	157.3	8.24	1.85	1.79
6	11.10	27.87	21.26	13.89	149.4	8.21	1.95	1.86
10	10.4 *	28.16	21.60	12.23	134.2	8.13	2.01	1.97
15	9.73	28.26	21.76	10.60	111.0	7.94	1.91	1.88
20	9.29	28.44	21.98	9.35	97.2	7.85	1.91	1.82
30	8.73	28.87	22.39	8.15	83.8	8.69	1.93	1.91
40	9.04	29.23	22.62	8.00	83.4	7.64	2.08	2.06
99	8.76	29.32	22.74	7.81	80.5	7.70	2.07	2.05
149	8.69	29.39	22.81	7.60	78.4	7.79	1.90	1.97
149	8.68	29.41	22.82	7.46	76.8	7.80	1.97	1.95

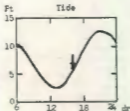
\*Temperature taken from S.F. trace.

Stations S-23      Weathers: Clear, sunny  
 Times: 1427(S)-1443(D) Clouds: Type - Amt. 0  
 Date: 18/IV/61      Winds Dir. 304 \*T Spd. 2 mph.  
 Lat: 48° 50.8'S      Seas: - Swells: -  
 Long: 123° 35.5'W      Air Temp: D. 72 \*F. W. \*F.  
 Depth: 564 ft      Baro: 1031 mb.  
 B.T. Ser. No. 42      Secchi: 22 ft Col: y1-gr



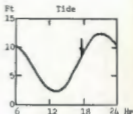
Depth (m)	T (°C)	S (%/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.2	27.26	20.02	13.72	159.9	8.37	1.95	1.86
2	13.99	27.43	20.46	14.27	161.0	8.45	2.10	2.00
4	12.09	27.71	20.97	14.46	158.6	8.37	1.96	1.87
6	11.15	27.85	21.24	13.59	146.0	8.37	1.97	1.88
10	10.20	28.10	21.57	12.10	128.0	8.28	1.96	1.89
15	9.59	28.27	21.80	10.28	118.0	8.15	2.12	2.06
20	9.10	28.36	22.10	8.58	88.8	8.01	2.03	1.99
30	9.05	28.88	22.36	8.37	86.7	8.00	2.03	1.99
50	8.97	29.24	22.64	7.98	82.8	7.96	1.98	1.94
100	8.74	29.33	22.75	7.77	80.2	7.95	2.03	1.99
149	8.66	29.37	22.80	7.57	78.0	7.90	1.98	1.95
179	8.66	29.41	22.82	7.34	75.7	7.89	2.18	2.15

Stations S-24      Weathers: Clear, sunny  
 Times: 1550(S)-1618(D) Clouds: Type - Amt. 0  
 Date: 18/IV/61      Winds Dir. 304 \*T Spd. 1 mph.  
 Lat: 48° 50.3'N      Seas: - Swells: -  
 Long: 123° 34.6'W      Air Temp: D. 72 \*F. W. \*F.  
 Depth: 852 ft      Baro: 1031 mb.  
 B.T. Ser. No. 43      Secchi: 21 ft Col: y1-gr



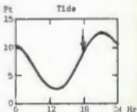
Depth (m)	T (°C)	S (%/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.0	27.09	19.72	13.22	156.0	8.43	2.16	2.07
2	14.71	27.35	20.04	13.32	156.1	8.43	1.98	1.89
4	13.70	27.38	20.81	13.93	157.8	8.44	1.98	1.89
6	12.25	27.64	20.80	14.41	159.5	8.42	1.98	1.89
10	10.51	28.03	21.46	13.00	138.3	8.32	1.99	1.92
15	9.88	28.21	21.71	11.25	118.0	8.19	2.03	1.97
20	9.21	28.34	22.06	8.90	92.7	7.99	2.03	1.99
30	9.05	28.83	22.30	8.17	87.7	8.00	2.06	2.02
49	9.03	29.26	22.65	8.12	84.3	7.95	2.08	2.04
98	8.77	29.34	22.76	7.84	80.8	7.96	2.08	2.04
148	8.71	29.37	22.79	7.64	78.7	7.91	2.16	2.13
198		29.37		7.67		7.91	2.11	2.08

Stations: S-25      Weather: Clear, sunny  
 Time: 1715(5)-1729(D) Cloud: Type - Amt. 0  
 Date: 18/V/61      Wind: Dir. 304 \*T Spd. 1 mph.  
 Lat: 48° 53.2' N      Sea: - Swell: -  
 Long: 123° 36.5' W      Air Temp: D. \*F. W. \*F.  
 Depth: 576 ft      Baro: 1030 mb.  
 B.T. Ser. No. 44      Secchi: 20 ft Col: y1-gr



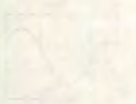
Depth (m)	T (°C)	S (°/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	17.2	26.71	19.17	13.49	162.4	8.13	1.85	1.80
10	10.25	28.10	21.56	11.74	124.3	7.83	1.86	1.83
20	9.76	28.55	22.07	9.00	93.8	7.59	1.96	1.94
30	8.66	29.08	22.54	7.93	82.0	7.57	1.99	1.97
40	8.73	29.11	22.58	7.54	78.2	7.50	1.97	1.96
50	8.77	29.22	22.66	7.81	80.6	7.57	1.96	1.94
60	8.69	29.23	22.68	7.58	78.2	7.49	1.92	1.91
70	8.66	29.26	22.71	7.61	78.4	7.47	1.86	1.85
80	8.69	29.29	22.72	7.66	79.0	7.47	1.86	1.85
90	8.67	29.37	22.80	7.65	79.0	7.47	1.96	1.85
100	8.69	29.33	22.76	7.69	79.3	7.51	1.86	1.85
110	8.66			7.66				

Outfall from  
 Stations: Crofton Pulp-mill      Weather: Clear, sunny  
 Time: 1747(1)-1750(2)      Cloud: Type - Amt. 0  
 Date: 18/V/61      Wind: Dir. 304 \*T Spd. 1 mph.  
 Lat: 48° 53.30' N      Sea: - Swell: -  
 Long: 123° 36.05' W      Air Temp: D. \*F. W. \*F.  
 Depth: 101 ft      Baro: 1030 mb.  
 B.T. Ser. No. 45 & 46      Secchi: ft Col:



Depth	T (°C)	S (°/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.

(1)	0	11.8						
(2)	0	12.0						



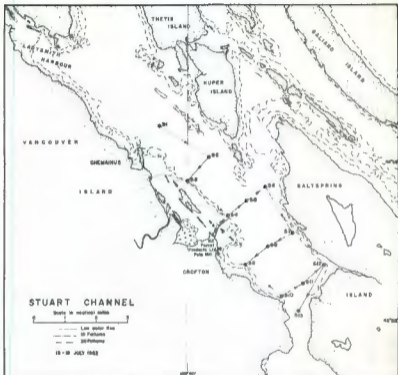
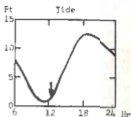


Fig. 23. Track chart of stations occupied in Stuart Channel, 18-19 July 1962.

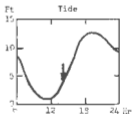


Station: S-1 Weather: Overcast  
 Times: 1735(S)-1254(D) Clouds: Type No-Se Amt. 10  
 Dates: 18 VII/62 Winds Dir. - \*T Spd. 0 mph.  
 Lat: 48° 56.2' N Seas: 0 Swells: 0  
 Longs: 123° 41.3' W Air Temp: D. 67 \*F. W. \*F.  
 Depths: 276 ft Baro: 1018 mb.  
 S.T. Ser. No. 17 Secchi: 10 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.5	24.78	19.04	12.51	149.8	8.47	1.84	1.73
2	14.84	24.94	19.01	12.77	150.4	8.44	1.87	1.78
4	14.58	25.17	19.50	12.56	147.9	8.41	1.87	1.78
6	13.83	26.27	19.52	11.10	139.7	8.30	1.88	1.81
10	12.68	27.92	19.83	9.76	119.2	8.17	1.99	1.94
15	11.27	28.79	20.52	7.10	79.3	7.97	2.05	2.02
20	11.08	28.93	22.07	6.94	77.9	7.97	2.05	2.02
30	10.47	29.57	22.66	6.20	68.8	7.85	2.05	2.02
50	9.70	29.79	22.96	4.61	50.4	7.66	2.05	2.03
80	9.44	29.94	23.17	2.75	29.9	7.57	2.09	2.06

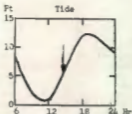
Station: S-2 Weather: Overcast  
 Times: 1738(S)-1348(D) Clouds: Type No-Se Amt. 10  
 Dates: 18 VII/62 Winds Dir. - \*T Spd. 0 mph.  
 Lat: 48° 55.2' N Seas: 0 Swells: 0  
 Longs: 123° 39.0' W Air Temp: D. 68 \*F. W. \*F.  
 Depths: 272 ft Baro: 1018 mb.  
 S.T. Ser. No. 17 Secchi: 10 ft Col: Br-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.3	24.70	19.07	12.81	153.3	8.48	1.81	1.70
2	15.00	24.84	19.47	12.02	153.4	8.48	1.87	1.71
4	15.14	25.57	19.77	12.28	146.7	8.44	1.84	1.75
6	14.34	26.03	19.74	11.23	131.8	8.33	1.91	1.84
10	13.76	27.28	20.37	10.39	121.9	8.24	1.91	1.85
15	11.50	28.46	21.63	7.70	81.8	8.00	1.96	1.92
20	10.85	28.88	22.30	6.62	74.0	7.89	2.00	1.97
30	9.90	29.59	22.77	6.08	66.8	7.84	2.00	2.04
50	9.77	29.84	23.00	5.08	51.6	7.72	2.02	2.01
100	9.18	29.97	23.18	2.72	29.4	7.51	2.06	2.05

Stations: S-3  
 Times: 1445  
 Date: 18/VII/62  
 Lat: 48° 54.4' N  
 Long: 123° 40.0' W  
 Depth: 168 ft  
 B.T. Ser. No. 13

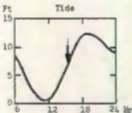
Weather: Overcast  
 Clouds: Type No-Sc Amt. 10  
 Winds: Dir. - \*T Spd. 0 mph.  
 Seas: 0 Swells: 0  
 Air Temp: D. 68 °F. W. °F.  
 Baro: 1018 mb.  
 Secchi: 11 ft Coils: Br-gr



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.3	24.78	18.09	12.90	153.8	8.50	1.82	1.71
2	14.99	24.85	18.21	12.61	149.6	8.46	1.85	1.74
4	14.80	25.42	18.68	12.11	143.5	8.39	1.85	1.76
6	13.97	26.55	19.72	10.92	128.2	8.28	1.90	1.83
10	13.09	27.62	20.71	9.66	112.2	8.15	1.94	1.89
15	11.40	28.68	21.82	7.23	81.5	7.97	2.00	1.96
20	11.05	28.99	22.12	6.76	75.8	7.91	2.03	2.00
30	10.43	29.58	22.69	6.16	68.4	7.85	2.06	2.09
50	9.58	29.86	23.04	4.15	45.3	7.64	2.08	2.06

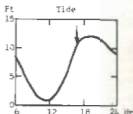
Stations: S-4  
 Times: 1525  
 Date: 18/VII/62  
 Lat: 48° 53.4' N  
 Long: 123° 38.1' W  
 Depth: 180 ft  
 B.T. Ser. No. 14

Weather: Overcast  
 Clouds: Type No-Sc Amt. 10  
 Winds: Dir. - \*T Spd. 0 mph.  
 Seas: 0 Swells: 0  
 Air Temp: D. 66 °F. W. °F.  
 Baro: 1018 mb.  
 Secchi: 13 ft Coils: dk-gr



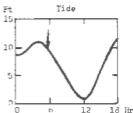
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.7	24.91	18.11	12.15	146.2	8.43	1.85	1.76
2	15.22	24.85	18.16	12.64	150.5	8.45	1.82	1.72
4	15.08	25.53	18.70	11.66	139.1	8.35	1.84	1.75
6	14.96	25.97	19.07	10.64	126.8	8.28	1.84	1.77
10	13.82	27.07	20.13	9.58	112.6	8.17	1.93	1.87
15	11.44	28.62	21.76	7.37	83.1	7.97	1.99	1.95
20	10.91	29.05	22.19	6.77	75.7	7.89	2.05	2.02
30	10.32	29.79	22.86	5.82	64.5	7.83	2.08	2.05
50	9.47	29.87	23.06	3.86	42.0	7.63	2.08	2.06

Station: S-5 Weather: Overcast  
 Time: 1646(S)-1705(D) Cloud: Type Ns-Cc Amt. 10  
 Date: 19 VII/62 Winds Dir. - \*T Spd. 0 mph.  
 Lat: 48° 53.8' N Seas: 0 Swells: 0  
 Long: 123° 37.2' W Air Temp: D. 64 \*F. W. \*F.  
 Depth: 442 ft Baro: 1018 mb.  
 B.T. Ser. No. 15 Secchi: 11 ft Col: Br-gr



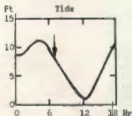
Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.5	24.76	18.00	12.96	155.2	8.51	1.81	1.70
2	14.50	25.07	18.46	13.79	157.4	8.49	1.84	1.73
4	14.27	25.21	18.97	11.31	134.6	7.36	1.85	1.74
6	14.71	26.32	19.39	11.04	131.3	8.34	1.94	1.87
10	12.45	28.04	21.14	8.70	100.0	8.08	2.01	1.96
15	11.45	28.46	21.61	7.64	80.4	8.02	2.00	2.02
20	11.31	28.76	21.90	7.23	81.1	7.96	2.05	2.01
30	10.63	29.40	22.51	6.42	71.6	7.87	2.04	2.01
50	9.83	29.85	23.10	5.57	60.6	7.78	2.06	2.03
100	9.25	29.95	23.19	3.29	35.6	7.57	2.08	2.06
150	8.90	30.03	23.27	4.51	48.6	7.45	2.09	2.07

Station: S-6 Weather: Overcast  
 Time: 0438(S)-0555(D) Cloud: Type Ns-Cc Amt. 10  
 Date: 19 VII/62 Winds Dir. - \*T Spd. 0 mph.  
 Lat: 48° 44.3' N Seas: 0 Swells: 0  
 Long: 123° 36.3' W Air Temp: D. 56 \*F. W. \*F.  
 Depth: 337 ft Baro: 1017.6 mb.  
 B.T. Ser. No. 16 Secchi: 18 ft Col: Green



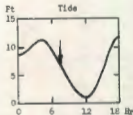
Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.1	25.01	18.70	17.04	143.3	8.46	1.81	1.71
2	14.78	25.55	18.78	11.75	139.2	8.40	1.88	1.70
4	14.49	26.00	19.19	11.07	130.9	8.45	1.88	1.70
6	13.96	26.48	19.64	10.29	120.6	8.25	1.96	1.69
10	12.57	27.42	20.66	6.86	101.5	8.15	1.96	1.91
15	11.27	28.72	21.88	7.06	70.3	7.96	2.00	1.96
20	10.84	29.16	22.29	6.51	72.7	7.92	2.09	1.99
30	10.55	29.47	22.53	6.17	68.6	7.87	2.09	2.06
50	10.03	29.87	22.90	5.13	58.8	7.77	2.06	2.03
100	9.38	29.93	23.12	3.69	40.1	7.57	2.06	2.04

Stations S-7 Weather: Clearing  
 Time: 0638(8)-0651(D) Clouds: Type As-do Amt. 8  
 Date: 19/VII/62 Winds: Dir. - \*T Spd. 0 mph.  
 Lat: 48° 52.8' N Seas: 0 Swell: 0  
 Long: 123° 35.0' W Air Temp: D. 61 \*F. W. \*F.  
 Depth: 492 ft Baro: 1017.6 mb.  
 S.T. Ser. No. 17 Secchi: 16 ft Col: Br-gr



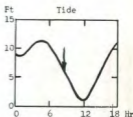
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.3	24.99	18.25	12.05	144.0	8.43	1.87	1.78
2	15.11	24.95	18.26	12.07	143.5	8.43	1.82	1.73
4	14.82	25.62	18.83	11.81	140.3	8.38	1.84	1.75
6	14.62	25.84	19.05	11.53	136.4	8.34	1.85	1.77
10	12.92	27.72	20.81	9.09	105.2	8.11	1.90	1.85
15	11.76	28.57	21.68	7.39	83.9	7.95	2.00	1.96
20	11.25	28.93	22.08	6.83	76.8	7.90	2.05	2.01
30	10.77	29.53	22.59	6.27	70.1	7.84	2.09	2.06
50	9.94	29.88	22.99	5.17	56.9	7.73	2.05	2.03
100	9.31	29.93	23.13	3.43	37.2	7.55	2.06	2.05
150	9.06	30.03	23.24	4.49	48.5	7.65	2.00	1.98

Stations S-8 Weather: Mostly cloudy  
 Time: 0725(8)-0739(D) Clouds: Type As-do Amt. 8  
 Date: 19/VII/62 Winds: Dir. 114 \*T Spd. 1 mph.  
 Lat: 48° 52.4' N Seas: 0 Swell: 0  
 Long: 123° 36.2' W Air Temp: D. 65 \*F. W. \*F.  
 Depth: 630 ft Baro: 1017.6 mb.  
 S.T. Ser. No. 18 Secchi: 20 ft Col: Br-gr



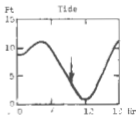
Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.6	25.00	18.20	11.91	143.1	8.41	1.85	1.76
2	15.07	25.26	18.51	12.22	145.5	8.40	1.91	1.82
4	15.21	25.60	18.73	10.93	130.9	8.33	1.94	1.86
6	14.62	25.91	19.10	11.50	136.3	8.34	1.95	1.87
10	13.55	27.13	20.24	9.45	110.4	8.17	1.95	1.89
15	11.63	28.52	21.66	7.36	83.3	7.95	2.05	2.01
20	11.11	28.92	22.06	6.86	77.0	7.89	2.05	2.02
30	10.89	29.45	22.50	6.34	71.1	7.86	2.06	2.03
50	9.98	29.86	22.97	5.36	59.0	7.75	2.09	2.07
100	9.30	29.95	23.18	3.30	35.8	7.54	2.07	2.06
150	8.94	30.01	23.24	4.33	46.7	7.60	2.09	2.07
180	8.86	30.05	23.29	4.51	48.8	7.66	2.09	2.07

Station: S-9      Weather: Mostly cloudy  
 Time: 0925      Clouds Type An-Ac Amt. 8  
 Date: 10/11/62      Winds Dir. - \*T Spd. 0 mph.  
 Lat: 48° 51.1'N      Sea: 0 Swell: 0  
 Long: 121° 17.2'W      Air Temp D. 65 °F. W. °F.  
 Depth: 278 ft      Baro: 1017.6 mb.  
 B.T. Ser. No. 19      Secchi: 21 ft Col: Green



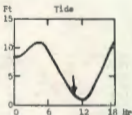
Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.8	25.09	19.21	11.48	138.6	8.40	1.88	1.79
2	15.48	25.37	19.50	11.75	134.0	8.36	1.91	1.82
4	15.27	25.99	19.94	11.57	126.5	8.32	1.88	1.80
6	14.83	26.46	20.51	10.70	120.1	8.26	1.85	1.78
10	13.32	27.60	20.69	9.84	102.7	8.10	1.99	1.94
15	11.90	28.31	21.44	7.72	87.7	8.01	2.06	2.01
20	10.90	28.74	21.96	7.08	79.1	7.98	2.09	2.05
30	10.59	29.53	22.62	6.14	68.4	7.89	2.07	2.04
50	9.63	29.89	23.04	4.53	49.5	7.74	2.11	2.09

Station: S-10      Weather: Mostly cloudy  
 Time: 0910(1)-0924(2)      Clouds Type An-Ac Amt. 8  
 Date: 10/11/62      Winds Dir. 114 \*T Spd. 1 mph.  
 Lat: 48° 50.9'N      Sea: 0 Swell: 0  
 Long: 121° 34.5'W      Air Temp D. 65 °F. W. °F.  
 Depth: 5-2 ft      Baro: 1017.6 mb.  
 B.T. Ser. No. 20      Secchi: 31 ft Col: Green  
 Bottom Sample: Col: br-gr      Best: mud



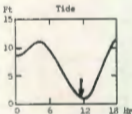
Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.3	25.03	19.07	11.31	137.9	8.44	1.88	1.79
2	15.48	25.09	19.24	11.38	136.5	8.44	1.88	1.79
4	15.27	25.72	19.47	11.53	137.9	8.43	1.99	1.90
6	14.94	25.94	19.95	10.82	129.0	8.33	1.96	1.90
10	13.54	27.24	20.37	9.39	109.8	8.19	2.00	1.94
15	11.95	28.30	21.42	7.67	87.1	8.06	2.06	2.09
20	11.33	28.94	22.04	6.87	77.5	7.92	2.07	2.04
30	10.75	29.67	22.66	6.13	68.4	7.87	2.08	2.05
50	9.90	29.86	22.99	5.37	58.6	7.77	2.06	2.04
100	9.11	29.83	23.17	3.50	38.7	7.59	2.04	2.02
150	8.06	29.96	23.70	2.45	28.1	7.70	2.07	2.05

Stations: S-11      Weather: Sunny periods  
 Time: 1006(5)-1024(0)      Clouds: Type As-Ac Amt. 6  
 Date: 19/VII/62      Winds: Dir. - \*T Spd. 0 mph.  
 Lat: 48° 51.3'N      Sea: 0      Swell: 0  
 Long: 123° 34.5'W      Air Temp: D. 65 \*F. W. \*F.  
 Depth: 540 ft      Baro: 1017.6 mb.  
 S.T. Ser. No. 21      Secchi: 25 ft      Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.2	25.01	18.08	11.86	144.5	8.42	1.85	1.76
2	15.30	25.37	18.54	11.64	139.4	8.41	1.87	1.78
4	15.13	25.57	18.73	11.24	134.3	8.37	1.82	1.79
6	14.93	26.01	19.11	10.57	125.9	8.32	1.94	1.87
10	13.65	27.14	20.22	9.49	111.1	8.18	1.98	1.91
15	11.31	28.80	21.92	6.89	77.6	7.95	2.05	2.01
20	11.28	29.11	22.17	6.70	75.5	7.93	2.05	2.02
30	10.92	29.40	22.46	6.39	71.6	7.91	2.06	2.03
50	9.97	29.84	22.96	5.49	60.5	7.80	2.10	2.07
100	9.22	29.98	23.16	4.18	45.3	7.71	2.09	2.07
150	9.10	30.04	23.24	4.52	48.9	7.71	2.08	2.06

Stations: S-12      Weather: Sunny periods  
 Time: 1125      Clouds: Type As-Ac Amt. 6  
 Date: 19/VII/62      Winds: Dir. 114 \*T Spd. 4 mph.  
 Lat: 48° 51.8'N      Sea: 0      Swell: 0  
 Long: 123° 33.5'W      Air Temp: D. 65 \*F. W. \*F.  
 Depth: 180 ft      Baro: 1027.6 mb.  
 S.T. Ser. No. 22      Secchi: 30 ft      Col: Green

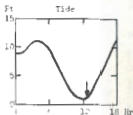


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.7	25.61	18.43	10.29	127.0	8.36	1.85	1.76
2	16.12	25.67	18.60	10.33	126.0	8.36	1.87	1.78
4	16.16	25.71	18.63	10.28	125.7	8.36	1.91	1.82
6	16.26	25.79	18.66	10.16	124.5	8.36	1.93	1.84
10	15.99	26.17	19.01	9.90	120.9	8.33	1.94	1.86
15	12.53	28.14	21.20	8.40	96.8	8.07	2.03	1.98
20	11.76	28.69	21.77	7.35	83.5	7.99	2.06	2.02
30	10.87	29.44	22.51	6.32	70.9	7.95	2.05	2.01
50	9.94	29.87	22.99	5.30	58.4	7.79	2.08	2.05

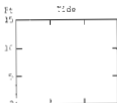
Stations: 5-13  
 Times: 1224(S)-1238(O)  
 Dates: 19/VII/60  
 Lat: 48° 50.3'N  
 Long: 122° 34.2'W  
 Depths: 4-0 ft  
 B.T. Ser. No.: 23  
 Bottom Sample: Col: bk-brown  
 Sed: mud

Mostly cloudy,

Weather: Sunny periods  
 Cloud: Type As-Ac Amt. 8  
 Wind: Dir. 114 \*T Spd. 4 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 68 \*F. W. \*F.  
 Baro: 1017.6mb.  
 Secchi: 25 ft Col: Green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.4	25.09	19.08	11.27	177.5	8.41	1.85	1.77
2	15.77	25.13	19.06	11.40	178.1	8.47	1.85	1.77
4	15.51	25.53	19.62	11.19	176.7	8.34	1.84	1.84
6	15.11	26.24	19.94	10.25	171.2	8.20	1.80	1.80
10	13.21	27.52	20.62	8.31	158.8	8.08	2.00	1.75
15	10.14	29.11	21.24	6.22	90.3	7.86	2.03	1.39
20	11.45	28.74	21.84	7.31	90.4	7.97	2.07	1.03
30	10.84	29.64	21.51	6.27	90.1	7.94	2.09	1.03
40	10.10	29.80	21.90	5.63	82.1	7.89	2.04	1.13
400	3.18	29.90	21.71	4.47	65.4	7.65	2.09	1.04
440	0.18	30.01	21.92	4.09	66.2	7.69	2.09	1.07
470	0.06	30.09	21.94	4.51	68.8	7.68	2.09	1.07



Stations:  
 Time:  
 Date:  
 Lat: N  
 Long: W  
 Depths: ft  
 B.T. Ser. No.:

Weather:  
 Clouds: Type Amt.  
 Wind: Dir. \*T Spd. mph.  
 Sea: Swell:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:

Depth	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.



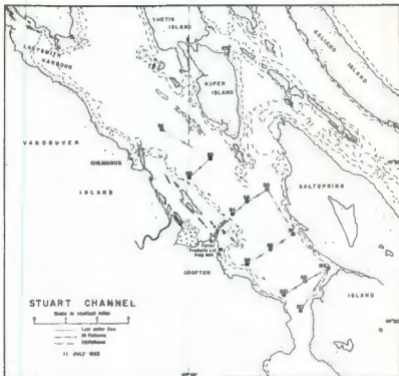


Fig. 24. Track chart of stations occupied in Stuart Channel, 11 July 1963.



## Station: S-1

Time: 0529(S)-0539(D)

Date: 11/VII/63

Lat: 48° 56.10' N

Long: 123° 41.28' W

Depth: 264 ft

B.T. Ser. No. 13

Bottom Sample: Col: dk-green

Des: mud

Weather: Mostly cloudy

Clouds Type No-60 Amt. 8

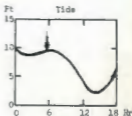
Winds Dir. 248° T Spd. 2 mph.

Sea: 0 Swell: 0

Air Temp: D. 55°F. W. °F.

Baro: 1033 mb.

Secchi: 30 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.5	28.23	20.69	10.36	126.8	8.84	2.00	1.91
2	15.51	28.23	20.69	10.54	129.2	8.44	1.99	1.90
4	15.15	28.27	20.79	10.59	128.8	8.43	2.00	1.91
6	13.36	28.77	21.53	9.34	109.9	8.30	2.00	1.93
10	12.12	29.51	22.33	7.82	90.1	8.12	2.01	1.95
15	11.65	29.87	22.70	7.04	80.5	8.04	2.06	2.01
20	11.24	30.16	23.00	6.58	74.7	7.95	2.06	2.02
30	10.64	30.74	23.55	5.95	66.9	7.88	2.07	2.04
50	9.76	30.96	23.87	5.15	56.9	7.78	2.09	2.06
70	9.49	31.02	23.96	4.10	45.9	7.69	2.11	2.08

## Station: S-2

Time: 0657(S)-0708(D)

Date: 11/VII/63

Lat: 48° 55.17' N

Long: 123° 38.97' W

Depth: 324 ft

B.T. Ser. No. 14

Weather: Mostly cloudy

Clouds Type No-60 Amt. 8

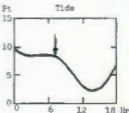
Winds Dir. 248° T Spd. 3 mph.

Sea: 0 Swell: 0

Air Temp: D. 55°F. W. °F.

Baro: 1033 mb.

Secchi: 30 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.7	28.00	20.48	10.22	125.4	8.49	1.96	1.85
2	15.71	28.03	20.49	10.39	127.4	8.49	1.98	1.87
4	15.58	28.19	20.65	10.43	127.8	8.48	1.99	1.88
6	13.26	28.58	21.40	9.72	114.0	8.34	1.99	1.92
10	11.88	29.62	22.17	7.50	86.1	8.08	2.06	2.00
15	11.84	29.91	22.70	7.57	87.0	8.07	2.04	1.98
20	11.04	30.37	23.20	6.84	77.5	8.02	2.03	1.98
30	10.76	30.92	23.66	6.16	72.9	7.97	2.10	2.05
50	9.72	30.97	23.88	5.16	56.8	7.78	2.07	2.04
70	9.64	31.08	23.98	4.25	45.8	7.73	2.08	2.05
90	9.86	31.21	24.05	3.96	43.9	7.78	2.08	2.05

## Stations S-3

Time: 0747

Date: 11/VII/63

Lat: 48° 54.60' N

Long: 123° 40.00' W

Depth: 156 ft

B.T. Ser. No. 15

Weather: Partial clearing

Cloud: Type Ac-Sc Amt. 7

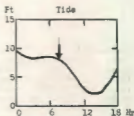
Wind: Dir. 248 °T Spd. 3 mph.

Sea: 0 Swell: 0

Air Temp: D. 58 °F. W. °F.

Baro: 1033 mb.

Secchi: 25 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.8	28.06	20.49	10.26	125.5	8.40	1.99	1.90
2	15.75	28.23	20.65	10.40	127.8	8.39	1.99	1.90
4	14.68	28.41	21.00	10.20	123.1	8.37	1.99	1.90
6	13.63	28.80	21.50	9.51	112.5	8.29	1.99	1.92
10	12.20	29.42	22.25	8.04	92.8	8.08	2.00	1.94
15	12.07	29.62	22.43	7.69	88.6	8.07	2.01	1.95
20	11.12	30.32	23.14	6.66	75.4	7.94	2.08	2.04
30	10.45	30.78	23.63	5.74	64.3	7.81	2.08	2.05
40	9.93	30.94	23.82	5.28	58.4	7.79	2.09	2.06

## Stations S-4

Time: 0835

Date: 11/VII/63

Lat: 48° 53.42' N

Long: 123° 37.95' W

Depth: 216 ft

B.T. Ser. No. 17

Weather: Partly cloudy

Cloud: Type Ac-Sc Amt. 7

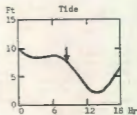
Wind: Dir. - °T Spd. 0 mph.

Sea: 0 Swell: 0

Air Temp: D. 62 °F. W. °F.

Baro: 1034 mb.

Secchi: 20 ft Col: Dull green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.1	28.24	20.57	10.09	125.1	8.41	1.96	1.87
2	15.34	28.37	20.83	10.40	127.0	8.40	1.96	1.87
4	14.68	28.55	21.11	10.44	126.0	8.35	1.96	1.88
6	14.58	28.59	21.15	9.66	116.1	8.25	1.96	1.89
10	13.23	29.26	21.93	9.03	106.2	8.17	1.99	1.92
15	11.86	29.89	22.68	7.48	86.0	8.05	2.03	1.98
20	11.46	30.21	23.00	7.18	81.9	7.98	2.03	1.96
30	10.99	30.95	23.65	6.71	76.1	7.97	2.04	1.99
50	9.67	31.00	23.91	5.06	55.7	7.73	2.08	2.05
8	13.88	28.85	21.50	8.93	106.1	8.22	2.01	1.94

Stations S-5

Time: 1103(S)-1117(D)

Date: 11/27/63

Lat: 49° 53.83' N

Long: 123° 37.25' W

Depth: 468 ft

B.T. Ser. No. 19

Weather: Partly cloudy

Cloud: Type Lo-Sc Amt. 6

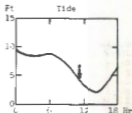
Winds Dir. - \*T Spd. 0 mph.

Sea: 0 Swell: 0

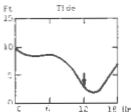
Air Temp: D. 64°F. W. \*F.

Baro: 1034 mb.

Secchi: 70 ft Col: Green



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.0	28.26	20.60	10.25	126.8	7.35	2.00	1.43
2	16.45	28.30	20.77	10.78	131.7	7.36	2.00	1.51
4	16.52	28.61	21.19	11.82	136.5	7.32	2.00	1.50
6	16.12	28.78	21.30	12.42	137.3	7.28	2.00	1.54
10	15.94	29.31	22.05	13.03	138.9	7.19	2.01	1.54
15	15.68	29.28	22.29	13.29	139.1	7.08	2.05	1.60
20	15.76	30.24	23.08	13.20	141.7	7.00	2.08	1.63
30	15.89	30.82	23.62	13.50	134.4	7.09	2.10	1.66
50	15.73	30.88	23.80	13.73	137.7	7.24	2.08	1.65
70	15.62	31.14	24.00	14.14	146.8	7.70	2.10	1.67
100	15.80	31.25	24.09	14.18	146.3	7.66	2.14	2.11
135	15.18	31.50	24.21	14.08	146.6	7.67	2.07	2.03



Stations S-6

Time: 1100

Date: 11/27/63

Lat: 49° 54.11' N

Long: 123° 37.30' W

Depth: 171 ft

B.T. Ser. No. 20

Weather: Clear

Cloud: Type Lo-Sc Amt. 6

Winds Dir. 140° T Spd. 0 mph.

Sea: 0 Swell: 0

Air Temp: D. 66°F. W. \*F.

Baro: 1034 mb.

Secchi: 71 ft Col: Green

Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.4	28.17	20.44	10.23	129.4	7.47	2.01	1.57
2	16.00	28.17	20.53	10.62	134.0	7.43	2.00	1.53
4	16.61	28.37	20.94	10.64	126.0	7.40	2.02	1.53
6	16.43	28.02	21.21	11.41	117.0	7.36	2.00	1.51
10	16.65	28.43	21.17	12.72	129.3	7.12	2.08	1.51
15	17.22	29.17	21.87	13.04	131.7	7.00	2.08	1.53
20	17.24	29.35	23.14	13.23	138.0	7.00	2.05	1.52
30	16.62	29.01	23.68	13.30	131.0	7.03	2.10	1.54
50	15.73	29.08	23.88	13.23	146.4	7.69	2.11	1.67

Stations: S-7

Time: 1239 (S)-1249 (D)

Date: 11/VII/63

Lat: 48° 52.90' N

Long: 123° 35.07' W

Depth: 252 ft

S.T. Ser. No. 21

Weather: Partly clear

Cloud: Type Ac-Sc Amt. 5

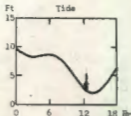
Winds: Dir. 159 \*T Spd. 2 mph.

Sea: 0 Swell: 0

Air Temp: D. 68 \*F. W. \*F.

Baro: 1034 mb.

Secchi: 21 ft Col: Green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.8	28.70	20.92	10.07	124.3	8.34	2.05	1.96
2	15.25	28.68	21.09	10.17	124.2	8.40	2.08	1.99
4	14.52	28.84	21.36	10.07	121.2	8.37	2.05	1.96
6	14.23	28.13	21.64	9.68	116.1	8.35	2.06	1.96
10	12.77	29.62	22.31	8.75	102.4	8.20	2.09	2.02
15	11.84	30.01	22.78	7.97	87.1	8.08	2.10	2.04
20	11.46	30.36	23.11	7.08	81.3	8.02	2.11	2.06
30	11.02	30.94	23.64	6.73	76.4	8.02	2.11	2.06
50	9.83	31.04	23.92	5.62	62.2	7.88	2.10	2.06
70	9.58	31.08	23.92	5.15	56.6	7.85	2.15	2.12

Stations: S-8

Time: 1340 (S)-1353 (D)

Date: 11/VII/63

Lat: 48° 52.30' N

Long: 123° 36.15' W

Depth: 618 ft

S.T. Ser. No. 22

Weather: Partly clear

Cloud: Type Ac-Sc Amt. 5

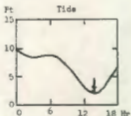
Winds: Dir. 113 \*T Spd. 5 mph.

Sea: 0 Swell: 0

Air Temp: D. 66 \*F. W. \*F.

Baro: 1034 mb.

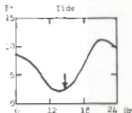
Secchi: 20 ft Col: Green



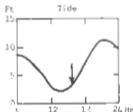
Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.7	27.22	19.88	10.09	123.2	8.35	2.05	1.96
2	15.58	27.22	19.90	10.17	123.9	8.38	2.07	1.98
4	15.24	27.21	19.97	10.39	125.7	8.39	2.05	1.96
6	14.90	27.47	20.32	10.06	120.0	8.31	2.06	1.99
10	13.02	27.74	20.82	9.42	109.4	8.25	2.07	2.01
15	11.55	28.57	21.72	7.34	82.9	8.03	2.10	2.06
20	11.34	28.88	21.98	7.20	81.0	8.02	2.09	2.05
28	11.3*	28.21	22.26	6.87	77.5	7.97	2.11	2.08
47	9.78	29.37	22.62	5.73	62.6	7.81	2.13	2.10
66	9.64	29.47	22.72	5.43	59.2	7.80	2.11	2.08
94	9.55	29.57	22.82	5.03	54.8	7.79	2.14	2.11
141	10.16	29.87	22.95	6.16	68.1	7.92	2.14	2.10
169	10.36	29.91	22.96	6.16	68.4	7.93	2.16	2.12

\*Temperature taken from S.T. trace.

Station: S-0                      Weather: Clear  
 Time: 1453                      Cloud: Type Sc-Sc Amt. 4  
 Date: 11/21/63                  Wind: Dir. 113°T Spd. 4 mph.  
 Lat: 40° 42.3'N                  Sea:   Swell: 0  
 Long: 109° 37.0'W                Air Temp: D. 69°F. W. \*F.  
 Depth: 168 ft                    Baro: 1025 mb.  
 B.T. Ser. No. 23                  Secchi: 17 ft Col: Green



Depth (-)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.1	27.8	20.88	6.61	100.6	7.33	2.01	1.73
2	14.63	27.75	20.90	6.67	100.0	7.36	2.00	1.71
4	15.2	27.65	20.92	6.71	100.0	7.37	2.00	1.74
6	14.95	27.65	20.92	6.71	100.0	7.31	2.00	1.70
10	17.89	27.74	20.98	6.70	100.0	7.30	2.00	1.70
20	17.35	27.64	20.96	6.70	99.2	7.27	2.00	1.71
30	17.17	27.61	20.96	6.70	99.2	7.01	2.00	1.70
30	16.35	27.31	20.85	6.69	66.1	7.01	2.00	1.70
40	6.66	26.37	20.60	6.49	60.0	7.80	2.10	1.70



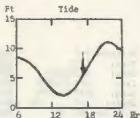
Station: S-10                      Weather: Increasing clouds  
 Time: 1542(C)-1556(D)            Cloud: Type Sc-Sc Amt. 6  
 Date: 11/21/63                    Wind: Dir. 113°T Spd. 7 mph.  
 Lat: 40° 40.0'N                    Sea:   Swell: 0  
 Long: 109° 36.0'W                Air Temp: D. 69°F. W. \*F.  
 Depth: 168 ft                    Baro: 1035 mb.  
 B.T. Ser. No. 24                  Secchi: 23 ft Col: Green

Bottom Sample: Col: dk-green  
 Des: sandy mud

Depth (-)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	16.3	27.33	20.83	6.66	100.0	6.37	2.01	1.70
2	16.34	27.35	20.85	6.65	100.0	7.36	2.00	1.70
4	16.14	27.36	20.87	6.65	100.0	7.36	2.00	1.74
6	14.17	27.61	20.80	6.66	100.0	7.31	2.00	1.76
10	17.81	27.83	20.93	6.60	100.0	7.20	2.00	1.70
15	17.04	27.83	20.86	6.60	99.0	7.27	2.00	1.70
20	17.31	27.64	20.86	6.60	98.0	7.27	2.00	1.73
30	10.06	27.23	20.60	6.58	78.0	7.21	2.00	1.70
50	6.04	26.42	20.60	6.58	61.0	7.27	2.13	1.70
70	6.02	26.40	20.60	6.58	60.0	7.20	2.10	1.70
100	6.00	26.51	20.84	6.50	60.0	7.20	2.10	1.70
150	13.16	27.38	20.84	6.50	66.0	7.20	2.20	2.06

Stations: S-11  
 Time: 1658(S)-1710(D)  
 Date: 11/VII/63  
 Lat: 48° 51.30' N  
 Long: 123° 34.50' W  
 Depth: 574 ft  
 B.T. Ser. No. 25

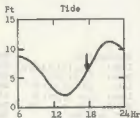
Weather: Partly cloudy  
 Cloud: Type Ws-Sc Amt. 6  
 Wind: Dir. 113° T Spd. 2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 66°F. W. °F.  
 Baro: 1034 mb.  
 Secchi: 28 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.9	27.40	19.97	9.90	121.4	8.38	2.05	1.96
2	14.56	27.52	20.35	9.82	117.3	8.34	2.01	1.93
4	13.20	27.64	20.70	9.31	108.2	8.26	2.07	2.00
6	12.74	27.76	20.89	8.74	101.0	8.20	2.06	2.00
10	12.06	28.27	21.40	7.95	87.7	8.09	2.05	2.00
15	11.40	28.70	21.84	7.05	79.5	8.01	2.07	2.03
20	11.42	28.79	21.90	7.12	80.4	8.01	2.07	2.03
30	11.00	29.40	22.45	6.84	76.9	8.06	2.08	2.02
50	10.66	29.61	22.67	6.48	72.4	8.00	2.11	2.06
70	9.61	29.49	22.74	5.42	59.1	7.85	2.09	2.05
100	9.70	29.65	22.86	5.61	61.3	7.89	2.09	2.05
145	10.18	29.87	22.95	6.06	67.0	7.93	2.10	2.06

Stations: S-12  
 Time: 1745  
 Date: 11/VII/63  
 Lat: 48° 51.70' N  
 Long: 123° 33.40' W  
 Depth: 180 ft  
 B.T. Ser. No. 26

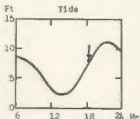
Weather: Mostly cloudy  
 Cloud: Type Ws-Sc Amt. 8  
 Wind: Dir. 113° T Spd. 2 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 66°F. W. °F.  
 Baro: 1034 mb.  
 Secchi: 21 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	15.6	27.52	20.13	9.87	119.1	8.37	2.03	1.94
2	15.53	27.52	20.15	9.95	121.3	8.38	2.03	1.94
4	15.21	27.53	20.24	10.10	122.4	8.37	2.02	1.93
6	14.35	27.62	20.48	10.00	119.0	8.34	2.05	1.98
10	13.01	27.97	20.97	9.02	104.9	8.22	2.07	2.01
15	11.72	28.48	21.61	7.52	86.3	8.08	2.08	2.03
20	11.28	28.88	22.00	6.98	78.6	8.02	2.09	2.05
30	11.03	29.41	22.45	6.90	78.5	8.05	2.13	2.08
50	11.02	29.52	22.54	6.55	73.7	8.00	2.13	2.08

Station: S-13  
 Time: 1818(S)-1831(D)  
 Date: 11/VII/63  
 Lat: 48° 50.34' N  
 Long: 123° 34.70' W  
 Depth: 672 ft  
 B.T. Ser. No. 27

Weather: Mostly cloudy  
 Cloud: Type No-Sc Amt. 8  
 Wind: Dir. 113 \*T Spd. 1 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 63 \*F. W. \*F.  
 Baro: 1034 mb.  
 Secchi: 20 Ft Col: Green

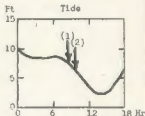


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	14.8	27.41	20.21	9.90	118.9	8.36	2.05	1.97
2	14.64	27.40	20.24	10.00	121.1	8.37	2.01	1.93
4	14.46	27.41	20.28	10.10	120.3	8.36	2.05	1.97
6	13.65			9.82	115.3	8.35	2.05	1.97
10	12.46	28.06	21.17	8.48	97.5	8.19	2.05	1.99
15	11.55	28.76	21.85	7.44	84.1	8.07	2.07	2.02
20	11.32	29.13	22.18	7.08	79.9	8.05	2.07	2.02
30	11.03	29.38	22.43	6.89	77.5	8.06	2.10	2.04
50	10.64	29.57	22.64	6.45	72.0	8.00	2.10	2.05
70	10.53	29.65	22.72	6.46	71.9	7.99	2.10	2.05
100	10.09	29.70	22.83	6.03	66.4	7.92	2.09	2.05
150	10.09	29.79	22.90	5.94	65.6	7.92	2.11	2.07
200	10.38	29.92	22.96	6.03	67.0	7.98	2.10	2.06

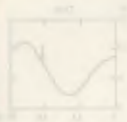
Outfall from

Station: Crofton Pulp-mill  
 Time: 0818(1)-0935(2)  
 Date: 11/VII/63  
 Lat: 48° 53.30' N  
 Long: 123° 38.05' W  
 Depth: 84(1)-60(2) ft  
 B.T. Ser. No. 16 & 18

Weather: Partly cloudy  
 Cloud: Type Ac-Sc Amt. 7  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 62 \*F. W. \*F.  
 Baro: 1034 mb.  
 Secchi: ft Col:



	Depth	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
					(mg/l)	% sat.		Total	Carb.
1)	0	15.4							
2)	0	14.9	28.06		8.47	102.3	8.01	1.94	1.90



$f(x) = x^2 - 5x + 6$   
 $f'(x) = 2x - 5$   
 $f''(x) = 2$   
 Critical points:  $x = 2.5$   
 $f(2.5) = 1.25$   
 $f(0) = 6$   
 $f(4) = 6$

1.  $f(x) = x^2 - 5x + 6$   
 2.  $f'(x) = 2x - 5$   
 3.  $f''(x) = 2$   
 4. Critical points:  $x = 2.5$   
 5.  $f(2.5) = 1.25$   
 6.  $f(0) = 6$   
 7.  $f(4) = 6$

8.  $f(x) = x^2 - 5x + 6$   
 9.  $f'(x) = 2x - 5$   
 10.  $f''(x) = 2$   
 11. Critical points:  $x = 2.5$   
 12.  $f(2.5) = 1.25$   
 13.  $f(0) = 6$   
 14.  $f(4) = 6$



$f(x) = x^2 - 5x + 6$   
 $f'(x) = 2x - 5$   
 $f''(x) = 2$   
 Critical points:  $x = 2.5$   
 $f(2.5) = 1.25$   
 $f(0) = 6$   
 $f(4) = 6$

1.  $f(x) = x^2 - 5x + 6$   
 2.  $f'(x) = 2x - 5$   
 3.  $f''(x) = 2$   
 4. Critical points:  $x = 2.5$   
 5.  $f(2.5) = 1.25$   
 6.  $f(0) = 6$   
 7.  $f(4) = 6$

8.  $f(x) = x^2 - 5x + 6$   
 9.  $f'(x) = 2x - 5$   
 10.  $f''(x) = 2$   
 11. Critical points:  $x = 2.5$   
 12.  $f(2.5) = 1.25$   
 13.  $f(0) = 6$   
 14.  $f(4) = 6$

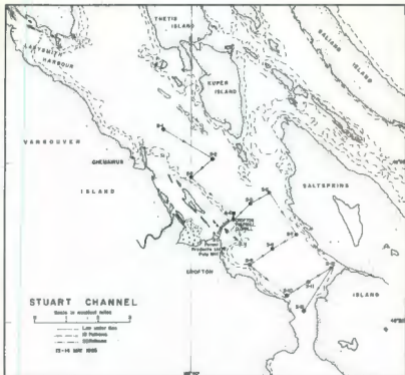
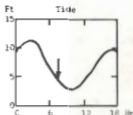


Fig. 25. Track chart of stations occupied in Stuart Channel, 13-16 May 1965.



Station: S-1  
 Times: 0706  
 Date: 13/2/65  
 Lat: 48° 56.10' N  
 Long: 123° 41.30' W  
 Depth: 300 ft  
 B.T. Ser. No. 12

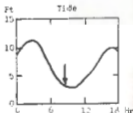
Weather: Dry haze.  
 Clouds Type As Amt. 1  
 Winds Dir. 040 \*T Spd. 4-8 mph.  
 Seas: 0 Swell: C  
 Air Temp: D. °F. W. °F.  
 Baro: 1017 mb.  
 Secchi: 16 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.9	27.60	20.91	10.67	120.7	8.04	2.07	2.22
2	11.86	27.60	20.93	10.60	119.9	8.07	2.04	1.99
4	11.55	27.67	21.02	11.58	118.9	8.07	2.09	2.24
6	9.95	28.04	21.56	9.70	116.5	8.04	2.05	2.21
10	9.85	28.54	21.96	9.43	102.6	8.00	2.02	2.24
15	9.09	29.82	22.34	8.48	90.9	7.96	2.07	2.23
20	8.29	29.11	22.61	8.05	85.3	7.85	2.09	2.05
30	8.24	29.28	22.94	7.65	80.8	7.91	2.11	2.07
50	7.76	29.70	23.18	7.34	74.5	7.85	2.11	2.07
70	7.54	29.70	23.22	7.17	74.5	7.81	2.11	2.08
90	7.28	29.75	23.25	7.34	76.2	7.77	2.10	2.07

Station: S-2  
 Times: 0834  
 Date: 13/2/65  
 Lat: 48° 55.10' N  
 Long: 123° 39.00' W  
 Depth: 304 ft  
 B.T. Ser. No. 13

Weather: Dry haze.  
 Clouds Type As Amt. 1  
 Winds Dir. 040 \*T Spd. 5-10 mph.  
 Seas: C Swell: C  
 Air Temp: D. 50 °F. W. 55 °F.  
 Baro: 1017 mb.  
 Secchi: 16 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	11.0	27.64	20.92	10.95	124.1	8.07	2.06	2.01
2	11.10	27.70	21.11	10.57	119.4	8.04	2.06	2.01
4	9.84	28.05	21.59	9.93	107.7	7.99	2.08	2.04
6	8.57	28.39	21.81	9.90	112.0	7.99	2.13	2.09
10	9.28	28.75	22.17	9.18	99.0	7.91	2.10	2.05
15	9.17	29.86	22.37	8.75	95.2	7.91	2.09	2.05
20	8.52	29.21	22.69	7.79	83.7	7.82	2.08	2.04
30	8.55	29.51	22.92	7.77	82.7	7.84	2.10	2.07
50	8.19	29.74	23.15	7.55	79.7	7.86	2.12	2.07
70	8.93	29.76	23.20	7.34	77.5	7.79	2.10	2.05
100	8.56	29.76	23.25	6.91	71.8	7.80	2.10	2.07

\* Temperature taken from 1 m. layer.

Stations S-3

Time: 0928

Date: 13/V/65

Lat: 48° 54.60' N

Long: 123° 40.00' W

Depth: 180 ft

S.T. Ser. No. 14

Weather: Clear

Cloud: Type As Amt. 1

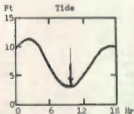
Wind: Dir. - \*T Spd. 0 mph.

Sea: 0 Swell: 0

Air Temp: D. 60 °F. W. 54 °F.

Baro: 1017 mb.

Secchi: 15 ft Col: Dirty-green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.8	23.48	17.22	10.15	116.4	8.04	1.74	1.70
2	12.06	27.60	20.88	10.78	122.4	8.10	2.06	2.01
4	11.98	27.66	21.01	10.57	118.8	8.08	2.07	2.02
6	9.89	28.43	21.87	9.47	102.9	7.99	2.06	2.02
10	9.50	28.60	22.13	9.06	97.9	7.93	2.08	2.05
15	9.03	28.87	22.35	8.52	91.2	7.90	2.11	2.08
20	8.57	29.08	22.58	7.93	84.1	7.86	2.05	2.01
30	8.23	29.53	22.98	7.58	80.0	7.84	2.10	2.07
50	7.65	29.68	23.18	7.07	73.6	7.82	2.10	2.07

Stations S-4

Time: 1147

Date: 13/V/65

Lat: 48° 53.42' N

Long: 123° 38.00' W

Depth: 300 ft

S.T. Ser. No. 15

Weather: Clear

Cloud: Type As Amt. 1

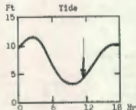
Wind: Dir. - \*T Spd. 0 mph.

Sea: 0 Swell: 0

Air Temp: D. 54 °F. W. 52 °F.

Baro: 1017 mb.

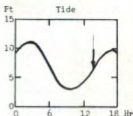
Secchi: 12 ft Col: Brown



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.8	26.97	20.26	10.68	122.8	8.08	2.01	1.96
2	12.36	27.48	20.74	11.43	130.5	8.14	2.04	1.99
4	10.85	27.75	21.20	10.71	118.6	8.09	2.04	1.99
6	10.46	28.04	21.48	9.49	104.4	7.99	2.04	2.00
10	9.69	28.56	22.00	9.20	99.5	7.97	2.04	2.00
15	9.10	28.82	22.30	8.53	91.4	7.93	2.04	2.01
20	8.92	29.25	22.66	8.07	86.4	7.89	1.99	1.95
30	8.62	29.54	22.84	7.81	83.3	7.88	2.10	2.06
50	8.22	29.78	23.17	7.44	78.6	7.87	2.02	1.94
70	7.62	29.74	23.22	7.16	74.6	7.83	2.05	2.02
100	7.52	29.75	23.24	6.88	71.5	7.73	2.03	2.01

Stations: J-5  
 Time: 1331  
 Date: 13/V/65  
 Lat: 48° 53.82'N  
 Long: 123° 37.28'W  
 Depth: 432 ft  
 B.T. Ser. No. 17

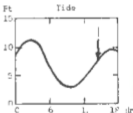
Weather: Clear.  
 Clouds: Type As Amt. 1  
 Winds: Dir. 340 \*T Spd. 16 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 58 \*F. W. 54 \*F.  
 Baro: 1017 mb.  
 Secchi: 15 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.9	27.00	20.32	11.14	128.3	8.07	1.92	1.87
2	12.65	27.30	20.53	11.56	132.7	8.11	2.04	1.99
4	11.68	27.62	20.96	10.36	116.7	8.00	2.05	2.01
6	10.37	28.08	21.52	9.88	108.3	7.96	2.07	2.05
10	9.51	28.66	22.11	8.82	95.4	7.90	2.09	2.07
15	9.41	28.91	22.32	8.60	92.9	7.82	2.10	2.07
20	8.81	29.16	22.61	8.18	85.3	7.84	2.08	2.05
30	8.59	29.57	22.95	7.74	80.3	7.81	2.06	2.03
50	8.18	29.79	23.18	7.46	78.8	7.75	2.08	2.05
70	7.72	29.75	23.22	7.26	75.8	7.72	2.06	2.04
100	7.53	29.76	22.25	7.02	72.9	7.74	2.05	2.03

Stations: S-6  
 Time: 1434  
 Date: 13/4/65  
 Lat: 48° 54.12'N  
 Long: 123° 36.35'W  
 Depth: 398 ft  
 B.T. Ser. No. 18

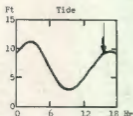
Weather: Clear.  
 Clouds: Type As Amt. 1  
 Winds: Dir. 340 \*T Spd 16-18 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 57 \*F. W. 54 \*F.  
 Baro: 1017 mb.  
 Secchi: 13 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.0	27.65	20.76	11.03	129.5	8.09	2.05	2.00
2	12.77	27.71	20.97	11.08	129.9	8.05	2.00	1.95
4	10.96	27.92	21.26	10.83	127.2	8.00	2.04	2.00
6	10.68	28.01	21.42	10.30	113.8	7.97	1.97	1.93
10	9.98	28.58	21.99	9.20	100.2	7.91	2.04	2.01
15	8.96	28.91	22.89	8.31	87.9	7.85	2.00	2.03
20	8.93	29.32	22.72	7.96	85.3	7.82	2.09	2.07
30	8.62	29.57	22.94	7.65	81.6	7.80	2.10	2.07
50	8.20	29.73	23.12	7.42	78.6	7.79	2.07	2.02
70	8.04	29.75	23.12	7.31	77.4	7.77	2.10	2.07
100	7.87	29.81	23.24	7.01	75.7	7.77	2.10	2.07

Station: S-7  
 Time: 1546  
 Date: 13/IV/65  
 Lat: 48° 52.78' N  
 Long: 123° 35.09' W  
 Depth: 510 ft  
 B.T. Ser. No. 19

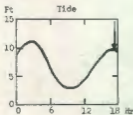
Weather: Clear.  
 Clouds: Type As Amt. 1  
 Wind: Dir. 340° T Spd. 10-mph.  
 Sea: 0 Swell: 0 12  
 Air Temp: D. 61 °F. W. 58 °F.  
 Baro: 1017 mb.  
 Secchi: 15 ft Col: Dirty-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.6	27.70	20.67	11.00	129.1	8.01	2.07	2.03
2	11.97	27.82	21.13	10.97	123.3	8.03	2.07	2.03
4	10.55	28.29	21.66	9.71	107.2	7.93	2.08	2.05
6	10.31	28.38	21.77	9.67	106.1	7.88	2.04	2.06
10	9.29	28.77	22.23	8.86	95.5	7.86	2.06	2.03
15	9.09	29.12	22.53	8.42	90.4	7.84	2.10	2.07
20	8.86	29.40	22.79	7.92	84.7	7.84	2.07	2.04
30	8.53	29.60	22.99	7.68	81.7	7.84	2.10	2.07
50	8.35	29.72	23.11	7.52	79.7	7.82	2.06	2.03
70	8.13	29.77	23.18	7.48	78.9	7.81	2.12	2.09
100	7.98	29.85	23.26	7.23	75.9	7.77	2.10	2.07
150	7.65	29.86	23.31	7.00	73.0	7.72	2.12	2.10

Station: S-8  
 Time: 1731  
 Date: 13/IV/65  
 Lat: 48° 52.30' N  
 Long: 123° 36.20' W  
 Depth: 540 ft  
 B.T. Ser. No. 20

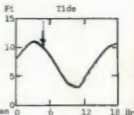
Weather: Clear.  
 Clouds: Type As Amt. 1  
 Wind: Dir. 110° T Spd. 13-mph.  
 Sea: 0 Swell: 0 13  
 Air Temp: D. 61 °F. W. 58 °F.  
 Baro: 1016 mb.  
 Secchi: 10 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.7	27.34	20.37	11.23	131.8	8.04	2.04	2.00
2	12.86	27.41	20.59	10.71	123.7	8.07	2.04	2.00
4	12.26	27.60	20.84	10.20	116.3	7.97	2.06	2.02
6	10.67	28.03	21.44	10.20	112.7	7.97	2.09	2.05
10	9.75	28.45	21.91	9.21	99.9	7.94	2.10	2.07
15	9.12	28.88	22.35	8.62	92.4	7.88	2.15	2.12
20	8.94	29.09	22.53	8.23	86.0	7.88	2.14	2.10
30	8.74	29.39	22.79	7.95	84.8	7.84	2.14	2.11
50	8.17	29.77	23.17	7.50	79.1	7.85	2.15	2.11
70	7.90	29.79	23.22	7.41	77.8	7.84	2.15	2.12
100	7.53	29.76	23.25	6.94	72.1	7.81	2.15	2.12
150	7.66	29.89	23.34	6.99	73.0	7.71	2.15	2.13

Stations S-9  
 Time: 0450  
 Date: 14/V/65  
 Lat: 48° 51.83' N  
 Long: 123° 37.25' W  
 Depth: 150 ft  
 B.T. Ser. No. 21

Weather: Partly cloudy.  
 Clouds: Type Cu Amt. 3  
 Wind: Dir. 270 \*T Spd. 5 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 44 \*F. W. 42 \*F.  
 Baro: 1021 mb.  
 Secchi: 10 ft Col: Brownish-green

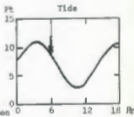


Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.5*	27.54	20.77	10.53	120.6	7.90	1.99	1.96
2	12.48	27.47	20.71	10.46	119.8	8.09	2.00	1.95
4	12.52	27.59	20.79	10.75	123.3	8.07	2.04	1.99
6	11.00	28.08	21.43	9.51	105.9	8.00	2.06	2.02
10	9.78	28.52	21.96	8.96	97.3	7.98	2.09	2.05
15	9.26	28.75	22.22	8.59	92.4	7.92	2.06	2.03
20	8.86	29.09	22.54	8.13	86.9	7.90	2.08	2.04
30	8.53	29.50	22.91	7.63	81.1	7.91	2.10	2.06
40	8.20	29.73	23.14	7.34	77.6	7.81	2.12	2.09

\*Temperature taken from B.T. trace.

Stations S-10  
 Time: 0600  
 Date: 14/V/65  
 Lat: 48° 50.85' N  
 Long: 123° 35.50' W  
 Depth: 468 ft  
 B.T. Ser. No. 22

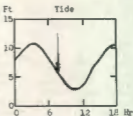
Weather: Clear.  
 Clouds: Type An Amt. 1  
 Wind: Dir. - \*T Spd. 0 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 45 \*F. W. 43 \*F.  
 Baro: 1022 mb.  
 Secchi: 8 ft Col: Brownish-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.6	27.13	20.42	10.66	122.1	8.11	2.04	1.99
2	12.96	27.51	20.72	10.64	122.0	8.09	2.03	1.98
4	10.56	28.22	21.60	9.39	103.5	7.93	2.06	2.03
6	9.92	28.44	21.88	9.05	98.6	7.95	2.06	2.02
10	9.72	28.60	22.04	9.03	97.9	7.94	1.94	1.91
15	9.36	28.77	22.22	8.68	93.5	7.92	2.03	2.00
20	9.03	29.00	22.45	8.34	89.4	7.91	2.00	1.96
30	8.63	29.39	22.81	7.81	83.1	7.91	2.10	2.06
50	8.15	29.76	23.17	7.36	77.6	7.87	2.08	2.04
70	7.96	29.79	23.22	7.25	76.1	7.83	2.08	2.05
100	7.68	29.77	23.24	7.07	73.7	7.81	2.10	2.07
130	7.56	29.76	23.25	6.92	71.9	7.75	2.06	2.03

Stations: B-11  
 Time: 0747  
 Date: 14/V/65  
 Lat: 48° 51.30' N  
 Long: 123° 34.50' W  
 Depth: 528 ft  
 B.T. Ser. No. 23

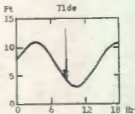
Weather: Clear.  
 Clouds: Type As Amt. 1  
 Winds: Dir. 180 °T Spd. 3-5 mph.  
 Sea: 0 Swells: 0  
 Air Temp: D. 48 °F. W. 44 °F.  
 Baro: 1022 mb.  
 Secchi: 10 ft Col: Dirty-green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	12.8	27.30	20.50	10.60	122.1	8.08	2.06	2.01
2	12.70	27.44	20.65	10.64	122.4	8.12	2.05	2.00
4	12.52	27.75	20.92	10.80	124.0	8.10	2.06	2.01
6	12.38	27.79	20.98	10.75	123.1	8.09	2.09	2.04
10	9.77	28.59	22.02	9.10	98.8	7.98	2.09	2.05
15	9.15	28.90	22.36	8.46	90.9	7.92	2.06	2.03
20	9.13	29.19	22.58	8.14	87.5	7.82	2.07	2.04
30	8.60	29.46	22.87	7.73	82.2	7.87	2.11	2.07
50	8.23	29.72	23.12	7.41	78.4	7.85	2.11	2.07
70	8.08	29.77	23.19	7.30	76.9	7.73	2.12	2.10
100	7.95	29.83	23.25	7.27	76.4	7.85	2.12	2.08
150	7.78	29.86	23.30	7.13	74.6	7.78	2.11	2.08

Stations: S-12  
 Time: 0845  
 Date: 14/V/65  
 Lat: 48° 31.73' N  
 Long: 123° 33.45' W  
 Depth: 90 ft  
 B.T. Ser. No. 24

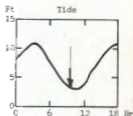
Weather: Clear.  
 Clouds: Type As Amt. 1  
 Winds: Dir. - °T Spd. 0 mph.  
 Sea: 0 Swells: 0  
 Air Temp: D. 56 °F. W. 50 °F.  
 Baro: 1023 mb.  
 Secchi: 12 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.0	27.41	20.56	11.03	127.9	8.14	2.10	2.05
2	12.69	27.48	20.68	10.75	123.7	8.15	2.09	2.03
4	12.29	27.92	21.09	10.73	122.8	8.14	2.11	2.06
6	11.12	28.17	21.48	10.01	111.8	8.07	2.11	2.06
10	9.82	28.60	22.02	9.21	100.1	8.00	2.10	2.06
15	9.18	28.96	22.40	8.63	92.7	7.94	2.14	2.11
20	9.00	29.19	22.60	8.12	87.0	7.88	2.21	2.17

Stations: 1-13  
 Times: 0948  
 Dates: 11/2/65  
 Lat: 48° 50.35' N  
 Long: 123° 34.75' W  
 Depth: 030 ft  
 B.T. Ser. No. 25

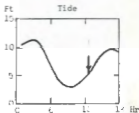
Weather: Clear.  
 Clouds: Type 's' Amt. 1  
 Winds: Dir. - \*T Spd. 0 mph.  
 Seas: 0 Swells: 0  
 Air Temp: D. 50°F. W. 50°F.  
 Baro: 1022 mb.  
 Secchi: 12 ft Cois: Green



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	13.1	27.37	20.51	10.9	177.1	8.11	2.04	1.99
2	11.92	27.42	20.67	10.5	171.1	8.12	2.06	2.01
4	11.87	27.68	20.98	10.34	167.0	7.91	2.08	2.05
6	10.55	28.09	21.50	9.90	169.0	8.00	2.10	2.06
10	9.69	28.54	21.99	9.11	94.7	7.97	2.11	2.07
15	8.99	29.01	22.44	8.29	84.5	7.84	2.11	2.07
20	9.11	29.27	22.64	8.01	86.4	7.93	2.13	2.09
30	8.63	29.48	22.88	7.73	82.3	7.96	2.15	2.10
50	7.31	29.50	23.10	7.38	78.1	7.86	2.15	2.11
70	8.06	29.81	23.22	7.40	77.9	7.89	2.15	2.11
100	7.54	29.77	23.26	6.86	70.9	7.82	2.16	2.13
150	7.73	29.91	23.34	7.06	73.8	7.85	2.15	2.11

Station: 1-14  
 Times: 11:05  
 Dates: 11/2/65  
 Lat: 48° 53.30' N  
 Long: 123° 31.65' W  
 Depth: 031 ft  
 B.T. Ser. No. 27

Weather: Mostly clear, sunny  
 Clouds: Type 's' Amt. 1  
 Winds: Dir. 's' \*T Spd. 7 mph.  
 Seas: 3/235' Swells: 0  
 Air Temp: D. 50°F. W. 50°F.  
 Baro: 1017 mb.  
 Secchi: ft Cois: Brown

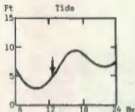


Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.8	27.36	20.94	8.08	91.0	7.51	1.87	1.84

Outfall from

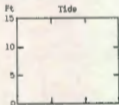
Stations: Crofton pulp mill  
 Time: 1230  
 Date: 13/V/65  
 Lat: 48°53.30' N  
 Long: 123°38.05' W  
 Depth: 60 ft  
 B.T. Ser. No. 16

Weather: Mostly clear; sunny  
 Clouds: Type As Amt. 1  
 Wind: Dir. 003 \*T Spd. 9 mph.  
 Sea: 2/325 Swell:  
 Air Temp: D. 58 °F. W. 54 °F.  
 Baro: 1017 mb.  
 Secchi: ft Col:



Depth (m)	T <sub>e</sub> (°C)	S <sup>o</sup> (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.94	26.69	10.52					
2	10.36	27.37	20.99					
4	9.78	27.48	21.16					
6	9.75	27.27	21.00					
8	9.65	27.58	21.25					
10	9.53	27.69	21.36					
12	9.21	28.18	21.79					
14	8.93	28.24	21.87					
16	8.93	28.24	21.87					

\* Data obtained with an Industrial Instruments (Beckman Instruments, Inc.)  
in situ salinometer.



Stations  
 Time:  
 Date:  
 Lat: N  
 Long: W  
 Depth: ft  
 B.T. Ser. No.

Weather:  
 Clouds: Type Amt.  
 Wind: Dir. \*T Spd. mph.  
 Sea: Swell:  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:

Depth	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.

HARD STRAIT - JUAN DE FUCA STRAIT



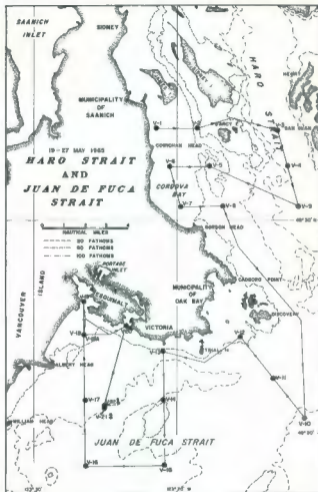
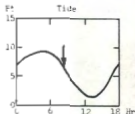


Fig. 26. Track chart of stations occupied in Haro Strait - Juan de Fuca Strait, 19-27 May 1965.



Station: 4-1  
 Time: 0830  
 Date: 19/ V/65  
 Lat: 48° 34.35' N  
 Long: 123° 21.45' W  
 Depth: 108 ft  
 B.T. Ser. No. 26

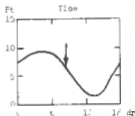
Weather: Rain, dull.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 360 \*T Spd. 3 mph.  
 Sea: C Swell: C  
 Air Temp: D. 50 \*F. W. 50 \*F.  
 Baro: 1010 mb.  
 Secchi: 20 ft Col: Green



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.1	30.09	23.29	7.94	85.8	7.91	2.06	2.02
2	9.09	30.14	23.33	7.73	83.6	7.91	2.13	2.09
4	9.08	30.15	23.34	7.75	83.8	7.91	2.18	2.12
5.9	9.07	30.15	23.34	7.75	83.9	7.90	2.15	2.11
9.0	9.08	30.16	23.35	7.72	84.5	7.95	2.13	2.09
14.4	9.07	30.15	23.34	7.76	83.9	7.97	2.06	2.07
19.8	9.07	30.16	23.35	7.77	84.4	7.91	2.10	2.06
29.6	9.08	30.16	23.35	7.75	83.8	7.93	2.10	2.06

Station: V-1  
 Time: 0830  
 Date: 19/ V/65  
 Lat: 48° 34.35' N  
 Long: 123° 18.45' W  
 Depth: 118 ft  
 B.T. Ser. No. 27

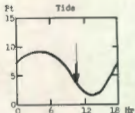
Weather: rain, dull.  
 Clouds: Type St Amt. 10  
 Wind: Dir. 360 \*T Spd. 10 mph.  
 Sea: C Swell: C  
 Air Temp: D. 50 \*F. W. 50 \*F.  
 Baro: 1010 mb.  
 Secchi: 23 ft Col: Green



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.0	30.01	23.24	7.85	84.7	7.84	2.13	2.10
1.8	8.98	30.03	23.26	7.71	83.7	7.84	2.13	2.10
3.4	8.95	30.05	23.28	7.69	82.9	7.83	2.15	2.10
5.4	8.94	30.09	23.43	7.61	82.0	7.81	2.15	2.10
9.1	8.91	30.13	23.35	7.56	81.5	7.80	2.10	2.10
13.4	8.89	30.10	23.40	7.57	81.0	7.80	2.11	2.10
19.2	8.86	30.08	23.46	7.44	81.1	7.79	2.14	2.11
27.2	8.84	30.38	23.55	7.38	79.4	7.85	2.14	2.10
31.3	8.75	30.20	23.20	7.11	78.0	7.82	2.10	2.10

Station: V-3  
 Time: 1040  
 Date: 19/V/65  
 Lat: 48° 34.21' N  
 Long: 123° 12.90' W  
 Depth: 948 ft  
 S.T. Ser. No. 28

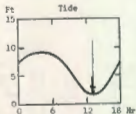
Weather: Rain, Dull.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 350° T Spd. 10 mph.  
 Sea: 0 Swell: 0  
 Air Temp: D. 50 °F. W. 48 °F.  
 Baro: 1010 mb.  
 Secchi: 23 ft Col: Green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.7	30.44	23.62	7.47	80.2	7.84	2.09	2.06
1.9	8.69	30.47	23.64	7.38	79.2	7.86	2.11	2.07
3.7	8.67	30.51	23.68	7.28	78.3	7.86	2.11	2.07
5.6	8.60	30.61	23.77	7.20	77.3	7.84	2.09	2.06
9.3	8.58	30.70	23.84	7.21	77.3	7.83	2.11	2.08
14.0	8.54	30.80	23.92	7.07	75.8	7.79	2.15	2.12
18.7	8.54	30.84	23.96	7.03	75.3	7.80	2.15	2.12
28.0	8.54	30.85	23.97	7.03	75.3	7.87	2.18	2.14
46.7	8.53	31.01	24.09	6.92	74.3	7.82	2.20	2.17
65.4	8.44	31.22	24.27	6.72	72.1	7.80	2.24	2.21
93.4	8.32	31.54	24.54	6.45	69.2	7.76	2.24	2.21
140.0	8.21	31.82	24.78	6.15	65.9	7.73	2.25	2.23
186.7	8.07	32.00	24.94	5.98	64.0	7.75	2.25	2.22

Station: V-4  
 Time: 1302  
 Date: 19/V/65  
 Lat: 48° 32.52' N  
 Long: 123° 12.20' W  
 Depth: 840 ft  
 S.T. Ser. No. 29

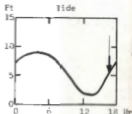
Weather: Overcast, inter. rain.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 320° T Spd. 8 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 50 °F. W. 47 °F.  
 Baro: 1009 mb.  
 Secchi: ft Col: Current too strong.



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.0	30.26	23.44	7.67	82.8	7.85	2.06	2.02
1.5	8.62	30.57	23.64	7.27	78.0	7.85	2.12	2.08
3.1	8.60	30.61	23.77	7.22	77.5	7.85	2.15	2.11
4.6	8.60	30.62	23.78	7.18	77.0	7.84	2.15	2.12
7.7	8.58	30.65	23.80	7.17	76.9	7.84	2.16	2.13
11.5	8.56	30.70	23.84	7.21	77.3	7.84	2.16	2.13
15.3	8.55	30.75	23.89	7.07	75.9	7.81	2.15	2.12
23.0	8.55	30.80	23.92	7.04	75.5	7.88	2.18	2.14
38.3	8.54	30.93	24.03	7.02	75.3	7.89	2.18	2.14
53.6	8.47	31.13	24.20	6.80	73.0	7.88	2.19	2.15
76.6	8.34	31.48	24.49	6.52	70.0	7.82	2.22	2.19
114.9	8.26	31.68	24.66	6.27	67.3	7.82	2.23	2.20
153.2	8.13	31.99	24.92	5.96	63.8	7.79	2.25	2.22

Stations V-5  
 Time: 16<sup>38</sup>  
 Date: 17/ V/65  
 Lat: 48° 32.52'N  
 Long: 123° 17.70'W  
 Depth: 118 ft  
 B.T. Ser. No. 31

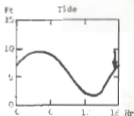
Weather: Overcast, lt. drizzle.  
 Clouds: Type lt Amt. 10  
 Wind: Dir. 320 \*T Spd. 6 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 51 \*F. W. 51 \*F.  
 Baro: 1004 mb.  
 Secchi: 16 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.9	30.07	23.30	7.75	83.4	7.88	2.13	2.09
2	8.93	30.08	23.31	7.74	82.9	7.88	2.13	2.09
4	8.93	30.07	23.30	7.67	82.6	7.89	2.10	2.06
6	8.91	30.09	23.32	7.65	82.3	7.85	2.06	2.02
10	8.91	30.14	23.36	7.63	82.2	7.85	2.18	2.14
15	8.89	30.17	23.38	7.61	82.0	7.86	2.15	2.11
20	8.83	30.37	23.54	7.56	80.4	7.86	2.18	2.14
30	8.71	30.61	23.75	7.25	78.0	7.86	2.20	2.16

Stations V-6  
 Time: 17.3  
 Date: 19/ V/65  
 Lat: 48° 32.52'N  
 Long: 123° 20.50'W  
 Depth: 48 ft  
 B.T. Ser. No. 32

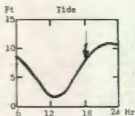
Weather: Overcast, inter. rain.  
 Clouds: Type lt Amt. 10  
 Wind: Dir. 330 \*T Spd. 6 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 52 \*F. W. 50 \*F.  
 Baro: 1004 mb.  
 Secchi: 18 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.1	30.14	23.33	7.97	86.3	7.89	2.14	2.11
2	9.29	30.11	23.27	8.15	88.5	7.90	2.15	2.11
4	9.17	30.13	23.31	7.91	86.3	7.90	2.14	2.11
6	9.12	30.14	23.32	7.89	85.3	7.89	2.19	2.15
10	9.09	30.15	23.34	7.85	84.9	7.89	2.18	2.14
15	9.07	30.15	23.34	7.84	84.1	7.85	2.18	2.14

Stations: V-7  
 Time: 1814  
 Date: 19/IV/65  
 Lat: 48° 30.68' N  
 Long: 123° 19.80' W  
 Depth: 42 ft  
 S.T. Ser. No. 33

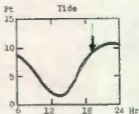
Weather: Overcast, inter. rain.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 360 \*T Spd. 3 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 52 \*F. W. 50 \*F.  
 Baro: 1008 mb.  
 Secchi: 21 ft Col: Green



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.5	30.16	23.28	8.11	88.4	7.95	2.15	2.10
2	9.19	30.16	23.33	8.04	87.1	7.92	2.18	2.14
4	9.07	30.19	23.37	7.97	86.2	7.93	2.15	2.11
6	9.05	30.20	23.38	7.79	84.2	7.93	2.19	2.15
10	8.94	30.37	23.53	7.60	82.1	7.90	2.18	2.14

Stations: V-8  
 Time: 1910  
 Date: 19/IV/65  
 Lat: 48° 30.69' N  
 Long: 123° 16.80' W  
 Depth: 192 ft  
 S.T. Ser. No. 34

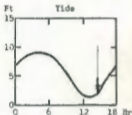
Weather: Overcast.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 360 \*T Spd. 3 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 50 \*F. W. 48 \*F.  
 Baro: 1007 mb.  
 Secchi: 28 ft Col: Green



Depth (m)	T (°C)	S (‰)	$\sigma_t$	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.8	30.63	23.76	7.47	80.5	7.87	2.15	2.11
2	8.76	30.67	23.79	7.38	79.4	7.88	2.13	2.09
4	8.74	30.68	23.80	7.34	79.0	7.84	2.13	2.10
6	8.73	30.68	23.80	7.34	79.0	7.82	2.15	2.12
10	8.69	30.74	23.86	7.30	78.5	7.82	2.07	2.04
15	8.65	30.84	23.94	7.19	77.3	7.82	2.19	2.16
20	8.58	30.95	24.04	7.10	76.3	7.82	2.19	2.16
30	8.59	30.98	24.06	7.06	75.8	7.83	2.21	2.18
50	8.48	31.27	24.30	6.86	73.7	7.81	2.21	2.18

Station: V-9  
 Time: 1433  
 Date: 19/V/65  
 Lat: 48° 30.70'N  
 Long: 123° 11.45'W  
 Depth: 810 ft  
 B.T. Ser. No. 30

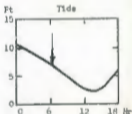
Weather: Overcast, lt. rain.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 320 \*T Spd. 8 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 50 \*F. W. 47 \*F.  
 Baro: 1018 mb.  
 Secchi: 23 ft Col: Green



Depth (m)	T (°C)	S (*/**)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.9	30.99	23.71	7.32	79.0	7.87	2.15	2.11
2	8.62	30.99	23.75	7.30	77.3	7.75	2.15	2.12
4	8.57	30.64	23.80	7.15	76.6	7.85	2.14	2.10
6	8.54	30.68	23.84	7.10	76.0	7.83	2.15	2.12
10	8.54	30.70	23.85	7.11	76.1	7.84	2.12	2.12
15	8.53	30.74	23.88	7.13	76.3	7.83	2.14	2.11
20	8.53	30.78	23.92	7.08	75.8	7.80	2.18	2.15
30	8.52	30.84	23.96	7.00	75.0	7.85	2.21	2.17
50	8.48	31.01	24.10	6.88	73.7	7.83	2.27	2.24
70	8.45	31.16	24.22	6.76	72.5	7.80	2.26	2.23
100	8.35	31.44	24.46	6.51	69.8	7.80	2.28	2.25
149	8.10	32.01	24.94	5.96	63.7	7.79	2.30	2.27
199	8.01	32.26	25.14	5.68	60.7	7.74	2.30	2.28

Station: V-10  
 Time: 0618  
 Date: 20/V/65  
 Lat: 48° 20.70'N  
 Long: 123° 11.00'W  
 Depth: 336 ft  
 B.T. Ser. No. 35

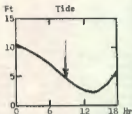
Weather: Overcast.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 150 \*T Spd. 5 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 54 \*F. W. 50 \*F.  
 Baro: 1012 mb.  
 Secchi: 26 ft Col: Blue-green



Depth (m)	T (°C)	S (*/**)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.9	31.00	24.03	7.66	83.0	7.87	2.10	2.06
2	8.82	31.01	24.05	7.55	81.6	7.93	2.17	2.13
4	8.78	31.04	24.08	7.51	81.2	7.91	2.21	2.17
6	8.72	31.07	24.12	7.45	80.5	7.87	2.22	2.18
10	8.64	31.13	24.18	7.21	77.7	7.88	2.22	2.18
14.9	8.56	31.20	24.24	7.03	75.6	7.88	2.27	2.23
19.9	8.53	31.25	24.28	6.89	74.1	7.89	2.25	2.21
29.9	8.51	31.31	24.33	6.87	73.9	7.94	2.25	2.21
49.8	8.41	31.52	24.51	6.57	70.6	7.88	2.26	2.22
69.7	8.31	31.70	24.66	6.39	68.6	7.87	2.27	2.23
99.6	8.02	32.15	25.06	5.70	61.0	7.88	2.29	2.25

Stations: V-11  
 Times: 0852  
 Date: 20/V/65  
 Lat: 48° 22.60' N  
 Long: 123° 13.20' W  
 Depth: 276 ft  
 B.T. Ser. No. 36

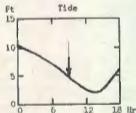
Weather: Overcast.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 230 \*T Spd. 9 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 54 \*F. W. 50 \*F.  
 Baro: 1013 mb.  
 Secchi: 28 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.6	31.29	24.30	7.23	77.9	7.86	2.18	2.14
2	8.52	31.32	24.34	6.83	73.4	7.88	2.17	2.13
4	8.50	31.33	24.35	6.83	73.4	7.86	2.20	2.16
6	8.49	31.34	24.36	6.81	73.2	7.84	2.18	2.15
10	8.49	31.35	24.37	6.86	73.8	7.79	2.19	2.16
15	8.48	31.34	24.36	6.83	73.4	7.85	2.19	2.15
20	8.48	31.35	24.37	6.78	72.9	7.36	2.19	2.15
30	8.41	31.49	24.49	6.68	71.8	7.86	2.19	2.15
50	8.27	31.81	24.76	6.32	67.8	7.86	2.27	2.23
70	7.86	32.53	25.38	5.37	57.4	7.79	2.27	2.23

Stations: V-12  
 Time: 0900  
 Date: 20/V/65  
 Lat: 48° 24.60' N  
 Long: 123° 15.55' W  
 Depth: 108 ft  
 B.T. Ser. No. 37

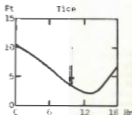
Weather: Overcast.  
 Cloud: Type St Amt. 10  
 Wind: Dir. 160 \*T Spd. 8 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 52 \*F. W. 49 \*F.  
 Baro: 1014 mb.  
 Secchi: 23 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.1	30.65	23.72	7.47	81.0	7.89	2.17	2.13
2	8.81	30.65	23.77	7.36	79.3	7.92	2.16	2.12
4	8.75	30.66	23.78	7.52	80.9	7.93	2.14	2.10
6	8.78	30.67	23.79	7.31	78.8	7.88	2.15	2.11
10	8.70	30.84	23.93	7.25	78.0	7.94	2.21	2.17
15	8.61	31.08	24.10	7.06	76.0	7.90	2.21	2.17
20	8.58	31.12	24.17	6.95	74.7	7.90	2.21	2.17
30	8.47	31.36	24.38	6.76	72.7	7.93	2.25	2.21

Stations V-15  
 Times 1000  
 Date: 26/4/65  
 Lat: 4° 23.85'N  
 Long: 123° 20.95'W  
 Depth: 150 ft  
 B.T. Ser. No. 38

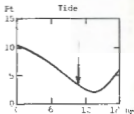
Weather: Clearing.  
 Cloud: Type 01 Amt. 6  
 Wind: Dir. 110 \*T Spd. 11 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 54 \*F. W. 50 \*F.  
 Baro: 1015 mb.  
 Secchi: 2d ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
1	8.0	31.72	24.19	7.47	71.2	7.91	2.15	2.11
2	8.93	31.17	24.16	7.50	61.3	7.91	2.18	2.14
4	8.86	31.19	24.18	7.44	60.6	7.88	2.16	2.12
6	8.62	31.29	24.30	7.14	70.8	7.82	2.15	2.12
10	8.57	31.32	24.33	7.60	75.6	7.71	2.21	2.19
15	8.55	31.34	24.34	6.93	74.6	7.80	2.21	2.18
20	8.51	31.37	24.38	6.85	73.7	7.85	2.21	2.17
30	8.45	31.44	24.44	6.70	70.0	7.80	2.23	2.19
40	8.42	31.52	24.51	6.64	71.4	7.85	2.21	2.17

Stations V-14  
 Times 1045  
 Date: 20/4/65  
 Lat: 4° 07.60'N  
 Long: 123° 20.95'W  
 Depth: 210 ft  
 B.T. Ser. No. 39

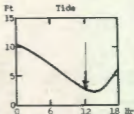
Weather: Sunny and clear.  
 Cloud: Type 00 Amt. 0  
 Wind: Dir. 200 \*T Spd. 17 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. \*F. W. \*F.  
 Baro: 1015 mb.  
 Secchi: 31 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
1	8.0	31.20	24.17	7.14	77.6	7.85	2.15	2.11
1.5	8.70	31.17	24.19	6.99	75.5	7.83	2.16	2.13
3.4	8.67	31.20	24.20	6.90	75.3	7.80	2.16	2.12
5.1	8.63	31.19	24.22	6.96	75.0	7.84	2.14	2.11
8.1	8.61	31.21	24.24	6.94	74.8	7.86	2.14	2.10
12.7	8.58	31.22	24.25	7.00	75.4	7.80	2.18	2.14
16.9	8.58	31.22	24.25	6.94	74.7	7.83	2.20	2.17
25.3	8.58	31.25	24.27	6.93	74.6	7.89	2.20	2.14
42.7	8.48	31.42	24.42	6.74	70.5	7.90	2.18	2.14

Stations V-15  
 Time: 1210  
 Date: 20/V/65  
 Lat: 48° 18.50' N  
 Long: 123° 20.90' W  
 Depth: 330 ft  
 S.T. Ser. No. 40

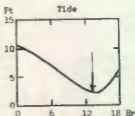
Weather: Clearing.  
 Cloud: Type Pc Amt. 5  
 Wind: Dir. 160° T Spd. 11 mph.  
 Sea: 1 Swell: 0  
 Air Temp D. 54 °F. W. 51 °F.  
 Baro: 1016 mb.  
 Secchi: 33 ft Col: Green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.4	31.06	24.00	7.39	80.9	7.86	2.15	2.11
2	8.94	31.06	24.07	7.26	78.7	7.89	2.18	2.14
4	8.69	31.11	24.15	7.15	77.0	7.86	2.21	2.17
6	8.63	31.15	24.19	7.07	76.2	7.86	2.23	2.19
10	8.54	31.28	24.30	6.96	74.8	7.86	2.20	2.16
15	8.44	31.45	24.45	6.72	72.3	7.86	2.15	2.11
20	8.43	31.47	24.46	6.74	72.5	7.84	2.18	2.15
30	8.42	31.50	24.49	6.66	71.5	7.84	2.25	2.22
50	8.40	31.54	24.53	6.64	71.3	7.85	2.21	2.17
70	8.32	31.71	24.67	6.39	68.6	7.80	2.24	2.21
90	8.14	31.96	24.89	6.04	64.7	7.77	2.26	2.23

Stations V-16  
 Time: 1311  
 Date: 20/V/65  
 Lat: 48° 18.45' N  
 Long: 123° 26.40' W  
 Depth: 384 ft  
 S.T. Ser. No. 41

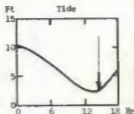
Weather: Clear.  
 Cloud: Type Pc Amt. 4  
 Wind: Dir. 240° T Spd. 11 mph.  
 Sea: 1 Swell: 0  
 Air Temp D. 55 °F. W. 51 °F.  
 Baro: 1016 mb.  
 Secchi: ft Col: Current too strong.



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.6	31.04	23.95	7.48	82.4	7.89	2.15	2.11
1.8	8.81	31.06	24.09	7.22	78.1	7.75	2.08	2.05
3.5	8.76	31.08	24.11	7.21	77.9	7.76	2.15	2.12
5.3	8.71	31.08	24.12	7.20	77.7	7.86	2.15	2.11
8.8	8.68	31.13	24.16	7.14	77.0	7.88	2.18	2.14
13.2	8.63	31.17	24.20	7.07	76.2	7.89	2.21	2.17
17.7	8.61	31.20	24.23	7.04	75.9	7.89	2.18	2.14
26.5	8.57	31.28	24.30	6.92	74.5	7.86	2.19	2.15
34.2	8.50	31.34	24.36	6.82	73.3	7.86	2.18	2.14
42.8	8.40	31.53	24.52	6.60	71.0	7.90	2.23	2.19
88.3	8.24	31.86	24.80	6.20	66.5	7.89	2.24	2.20

Stations V-17  
 Time: 1424  
 Date: 20/V/65  
 Lat: 48° 21.60' N  
 Long: 123° 26.40' W  
 Depth: 192 ft  
 S.T. Ser. No. 42

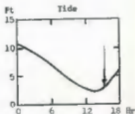
Weather: Clearing.  
 Cloud: Type Po Amt. 3  
 Wind: Dir. WT Spd. 11 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 54 °F. W. 50 °F.  
 Baro: 1017 mb.  
 Secchi: 26 ft Col: Green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	8.9	31.23	24.21	7.04	76.4	7.83	2.18	2.15
2	8.68	31.23	24.24	6.95	75.0	7.85	2.15	2.11
4	8.67	31.23	24.24	7.02	75.7	7.91	2.18	2.14
6	8.66	31.23	24.25	6.94	74.9	7.89	2.19	2.15
10	8.67	31.24	24.25	7.02	75.7	7.79	2.18	2.15
15	8.64	31.24	24.26	6.99	75.4	7.90	2.18	2.14
20	8.63	31.24	24.26	6.94	74.9	7.90	2.17	2.13
30	8.63	31.25	24.27	6.94	74.9	7.94	2.21	2.17
50	8.61	31.26	24.28	6.93	74.7	7.90	2.21	2.17

Stations V-18  
 Time: 1523  
 Date: 20/V/65  
 Lat: 48° 24.70' N  
 Long: 123° 26.45' W  
 Depth: 30 ft  
 S.T. Ser. No. 43

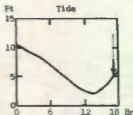
Weather: Clear.  
 Cloud: Type Po Amt. 3  
 Wind: Dir. 190 WT Spd. 10 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 54 °F. W. 50 °F.  
 Baro: 1017 mb.  
 Secchi: 28 ft Col: Green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	9.7	31.33	24.16	7.78	86.0	7.85	2.15	2.11

Station: V-18-A  
 Time: 1658  
 Date: 20/V/65  
 Lat: 48° 24.70' N  
 Long: 123° 26.45' W  
 Depth: 70 ft  
 B.T. Ser. No. -

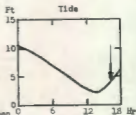
Weather: Clear.  
 Cloud: Type Pc Amt. 3  
 Wind: Dir. 190 \*T Spd. 10 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 54 \*F. W. 50 \*F.  
 Baro: 1017 mb.  
 Secchi: - ft Col: -



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
2	8.73	31.32	24.31	7.72	83.5	7.85	2.10	2.06
4	8.99	31.31	24.32	7.69	82.9	7.89	2.17	2.13
6	8.58	31.32	24.33	7.33	78.9	7.89	2.17	2.13
10	8.56	31.42	24.41	6.95	74.9	7.88	2.15	2.11
15	8.55	31.42	24.41	6.95	74.9	7.87	2.18	2.14
20	8.57	31.43	24.42	6.94	74.8	7.86	2.26	2.22

Station: V-19  
 Time: 1605  
 Date: 20/V/65  
 Lat: 48° 26.25' N  
 Long: 123° 26.50' W  
 Depth: 36 ft  
 B.T. Ser. No. 44

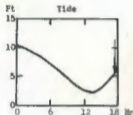
Weather: Mostly clear & sunny.  
 Cloud: Type Pc Amt. 3  
 Wind: Dir. 190 \*T Spd. 11 mph.  
 Sea: 1 Swell: 0  
 Air Temp: D. 55 \*F. W. 50 \*F.  
 Baro: 1017 mb.  
 Secchi: 15 ft Col: Brownish-green



Depth (m)	T (°C)	S (‰/‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.9	31.16	23.84	8.74	99.1	7.93	2.18	2.14
2	9.53	31.23	24.11	8.40	92.5	7.97	2.12	2.07
4	9.43	31.24	24.14	8.38	92.1	7.95	2.15	2.10
6	9.35	31.25	24.16	8.30	91.0	7.95	2.16	2.11
10	8.82	31.31	24.28	7.44	80.6	7.87	2.18	2.14

Stations V-20  
 Times 1732  
 Date 20/V/65  
 Lat 48° 25.10' N  
 Long 123° 23.50' W  
 Depth 52 ft  
 B.T. Ser. No. 45

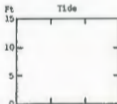
Weather: Clear.  
 Clouds Type Pc Amt. 4  
 Winds Dir. 270 \*T Spd. 5 mph.  
 Seas 0 Swells 0  
 Air Temp: D. 58 \*F. W. 54 \*F.  
 Baro: 1017 mb.  
 Secchi: 21 ft Col: Green



Depth (m)	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.
0	10.0	31.26	24.06	7.75	86.2	7.88	2.12	2.08
2	9.33	31.23	24.14	7.70	84.3	7.89	2.21	2.17
4	9.27	31.25	24.17	7.69	84.1	7.87	2.15	2.11
6	9.24	31.24	24.17	7.67	83.9	7.87	2.14	2.10
10	9.18	31.25	24.18	7.61	83.0	7.87	2.14	2.10
12	9.14	31.25	24.19	7.59	82.9	7.85	2.12	2.08

Stations  
 Times  
 Date  
 Lat  
 Long  
 Depth  
 B.T. Ser. No.

Weather:  
 Clouds Type Amt.  
 Winds Dir. \*T Spd. mph.  
 Seas Swells  
 Air Temp: D. \*F. W. \*F.  
 Baro: mb.  
 Secchi: ft Col:



Depth	T (°C)	S (‰)	σ <sub>t</sub>	Dissolved oxygen		pH	Alkalinity	
				(mg/l)	% sat.		Total	Carb.

## JUAN DE FUCA STRAIT

## Surface Current Measurements

Station: V-21 Latitude: 48° 21.24' N  
 Date: 24-27/V/65 Longitude: 123° 25.00' W  
 Soundings: 250 ft. Location: 7 n. mi. south of  
 Victoria.

Remarks: Ship anchored.  
 Break in observations  
 on 25/V/65 was due to  
 adverse weather.

## Seydric Current Data

Time/Date	Current		Wind	
	Speed		Direction °	Speed m.p.h.
	Cm/sec	Knots		
2002/24/V/65	41.7	0.81	065	
2105/	41.7	0.81	065	
2133/	46.8	0.91	079	
2154/	41.7	0.81	072	
2228/	20.6	0.40	313	
2304/	20.6	0.40	068	
2336/	13.9	0.27	094	
2353/24/V/65	8.2	0.16	078	
0030/25/V/65	6.2	0.12	033	240 16
0100/	18.0	0.35	343	
0142/	18.0	0.35	013	
0206/	53.0	1.03	229	
0245/	47.4	0.92	243	
0310/	59.7	1.16	277	
0347/	64.9	1.26	285	
0359/	63.3	1.23	281	240 15
0449/	76.7	1.49	310	
0517/	89.1	1.73	296	
0547/	49.4	0.96	313	
0602/	36.0	0.70	323	
0633/	31.9	0.62	343	
0704/	28.3	0.55	001	
0733/	41.7	0.81	358	
0755/	54.6	1.06	003	205 15-20
0836/	104.0	2.02	006	
0855/	125.1	2.43	010	
0926/	111.7	2.17	013	
0957/	106.6	2.07	013	
1028/	125.1	2.43	013	
1055/	140.5	2.73	007	
1136/	138.0	2.68	356	
1201/	130.2	2.53	357	210 8
1225/	122.5	2.38	002	
1256/	52.0	1.01	009	

JUAN DE PUCA STRAIT  
 Neapric Current Data  
 Station V-21 (continued)

Time/Date	Current		Wind	
	Speed		Direction ° T	Speed m.p.h.
	Cm/sec	Knots		
1300/25/V/65	37.6	0.73	025	
1330/	28.3	0.55	333	
1403/	12.9	0.25	338	
1432/	24.2	0.47	025	
1458/	15.4	0.30	118	
1533/	22.1	0.43	193	
1602/	13.9	0.27	193	180 16
1637/	10.3	0.20	243	
1658/	17.0	0.33	333	
1730/	10.3	0.20	083	
1758/	15.4	0.30	088	
1832/	6.7	0.13	043	
1856/25/V/65	15.4	0.30	047	
1158/26/V/65	62.3	1.21	017	180 5
1300/	49.4	0.96	035	
1342/	39.1	0.76	031	
1400/	39.1	0.76	033	
1429/	18.0	0.35	035	
1453/	8.8	0.17	043	
1535/	5.1	0.10	060	
1555/	2.6	0.05	118	180 10
1632/	5.1	0.10	093	
1704/	13.9	0.27	094	
1740/	15.4	0.30	103	
1800/	13.9	0.27	103	
1830/	20.6	0.40	013	
1840/	-	-	-	
1900/	-	-	-	
1925/	18.0	0.35	193	
1958/	20.6	0.40	193	200 15-20
2027/	18.0	0.35	193	
2100/	12.9	0.25	353	
2138/	23.2	0.45	063	
2158/	25.7	0.50	083	
2228/	44.3	0.86	048	
2300/	36.0	0.70	058	
2331/	36.0	0.70	063	
2358/26/V/65	23.2	0.45	065	
0028/27/V/65	15.4	0.30	065	175 5
0103/	10.3	0.20	033	
0130/	7.7	0.15	063	
0200/	7.7	0.15	333	

## JUAN DE FUCA STRAIT

## Keaypic Current Data

Station V-21 (continued)

Time/Date	Current			Wind	
	Speed		Direction ° T	Direction ° T	Speed M.P.H.
	Cm/sec	Knots			
0230/27/V/65	10.3	0.20	188		
0300/	46.8	0.91	268		
0334/	33.5	0.65	208		
0400/	49.4	0.96	248	200	12
0430/	64.9	1.26	236		
0502/	72.6	1.41	263		
0530/	99.4	1.93	263		
0600/	99.4	1.93	283		
0629/	72.6	1.41	313		
0704/	70.0	1.36	313		
0733/	67.4	1.31	318		
0800/	78.2	1.52	341	250	7-12
0830/	96.8	1.88	008		
0859/	75.2	1.46	023		
0943/	67.4	1.31	005		
0956/	72.6	1.41	010		
1030/	83.4	1.62	019		
1058/	72.6	1.41	032		
1120/	78.2	1.52	033		
1157/	70.0	1.36	039	180	15
1220/	59.7	1.16	043		
1259/	44.3	0.86	047		
1324/	36.0	0.70	063		
1347/27/V/65	25.7	0.50	051		



## JUAN DE FUCA STRAIT

Ekman Current Meter Data

Station V-21 (continued)

Time/Date	Depth (Metres)	Current			Wind	
		Speed		Direction ° T	Direction ° T	Speed m.p.h.
		Cm/sec	Knots			
0332/25/7/65	20	61.6	1.197	277		
0339/	50	32.5	0.632	341		
0407/	5	86.4	1.678	262	240	15
0412/	10	62.0	1.204	275		
0417/	20	37.4	0.726	322		
0422/	30	31.7	0.616	340		
0429/	50	12.0	0.233	068		
0523/	5	72.2	1.402	015		
0527/	10	45.4	0.882	285		
0807/	5	59.4	1.154	002	205	15-20
0812/	10	44.8	0.870	003		
0818/	20	38.8	0.754	019		
0833/	30	27.1	0.526	039		
0841/	50	30.3	0.589	085		
0901/	5	52.0	1.010	357		
0908/	10	49.2	0.956	001		
0913/	20	37.9	0.736	045		
0917/	30	29.4	0.571	063		
0921/	50	22.1	0.429	038		
1004/	5	42.6	0.828	360		
1008/	10	35.7	0.693	003		
1011/	15	23.7	0.460	018		
1014/	20	25.6	0.497	018		
1017/	30	20.8	0.404	058		
1022/	50	25.8	0.501	100		
1116/	5	54.2	1.053	355		
1122/	10	45.4	0.882	353		
1124/	15	44.5	0.864	023		
1127/	20	34.1	0.662	013		
1131/	30	23.9	0.464	040		
1135/	50	23.3	0.453	100		
1208/	5	56.4	1.096	355	210	8
1211/	10	44.2	0.859	008		
1214/	15	39.1	0.760	023		
1216/	20	32.5	0.632	026		
1219/	30	13.9	0.270	043		
1222/	50	8.2	0.159	083		
1309/	5	22.4	0.435	043		
1312/	10	21.5	0.418	048		
1314/	15	9.8	0.190	068		
1318/	20	18.8	0.365	080		
1322/	30	5.9	0.115	153		

## JUAN DE FUCA STRAIT

## Ekman Current Meter Data

Station V-21 (continued)

Time/Date	Depth (Metres)	Current			Wind	
		Speed		Direction ° T	Direction ° T	Speed M.P.H.
		Cm/sec	Knots			
1326/25/7/65	90	35.2	0.684	246		
1412/	5	21.9	0.425	110		
1415/	10	13.6	0.264	263		
1419/	15	28.1	0.566	123		
1424/	20	18.8	0.365	250		
1433/	30	30.3	0.589	255		
1438/	90	37.9	0.736	223		
1506/	5	7.6	0.148	133		
1509/	10	24.9	0.484	255		
1514/	15	33.3	0.647	181		
1517/	20	19.3	0.375	210		
1522/	30	47.3	0.919	236		
1527/	90	48.4	0.940	230		
1607/	5	34.7	0.674	189	180	16
1611/	10	36.4	0.707	213		
1616/	15	34.4	0.668	240		
1621/	20	23.7	0.460	215		
1626/	30	40.8	0.793	249		
1630/	90	32.0	0.622	253		
1704/	5	15.6	0.303	133		
1709/	10	19.1	0.371	250		
1713/	15	19.6	0.381	203		
1716/	20	26.0	0.505	161		
1720/	30	31.7	0.616	276		
1725/	90	25.7	0.499	240		
1806/	5	15.6	0.303	328		
1810/	10	25.1	0.488	113		
1813/	15	3.2	0.062	-		
1817/	20	6.0	0.117	-		
1823/	30	13.3	0.258	270		
1826/	90	27.5	0.534	293		
1903/	5	11.9	0.231	123		
1907/	10	10.5	0.204	058		
1911/	15	12.8	0.249	108		
1915/	20	9.8	0.190	058		
1952/25/7/65	30	-	-	-	180	16
1152/26/7/65	5	62.1	1.206	045		
1155/	10	50.1	0.973	051		
1158/	15	48.9	0.950	065		
1200/	20	22.1	0.429	103	180	5
1203/	30	33.3	0.647	108		
1212/	90	0	0	-		

## JUAN DE FUCA STRAIT

## Ekman Current Meter Data

Station V-21 (continued)

Time/Date	Depth (Metres)	Current			Wind	
		Speed		Direction ° T	Direction ° T	Speed m.p.h.
		Cm/sec	Knots			
1316/26/V/65	5	42.6	0.828	041		
1322/	10	27.5	0.534	047		
1334/	15	17.1	0.332	123		
1337/	20	14.9	0.289	-		
1339/	20	18.3	0.355	133		
1342/	30	29.0	0.563	143		
1346/	50	9.3	0.181	198		
1412/	5	18.3	0.355	053		
1414/	10	15.2	0.295	023		
1417/	15	18.3	0.355	148		
1421/	20	22.4	0.435	163		
1424/	30	20.7	0.402	193		
1429/	50	7.3	0.142	228		
1504/	5	13.3	0.258	183		
1510/	10	7.6	0.148	228		
1515/	15	0	0	-		
1518/	15	27.5	0.534	201		
1522/	20	11.4	0.221	217		
1527/	30	56.3	1.094	272		
1530/	50	10.5	0.204	133		
1613/	5	29.8	0.579	173	180	10
1616/	10	32.8	0.637	186		
1619/	15	32.2	0.625	223		
1622/	20	42.6	0.828	250		
1624/	30	49.5	0.962	257		
1628/	50	17.7	0.344	153		
1717/	0	39.1	0.760	183		
1721/	5	31.6	0.614	238		
1725/	15	42.3	0.822	248		
1728/	20	32.8	0.637	236		
1731/	30	36.0	0.699	273		
1734/	50	12.3	0.239	213		
1738/	10	38.5	0.748	240		
1809/	5	28.4	0.552	233		
1811/	10	41.3	0.802	255		
1814/	15	22.5	0.438	243		
1816/	20	35.0	0.680	258		
1819/	30	43.5	0.845	283		
1825/	50	12.0	0.233	143		
1905/	5	29.7	0.577	253		
1908/	10	33.8	0.657	253		
1911/	15	28.4	0.552	243		

JUAN DE FUCA STRAIT

Ekman Current Meter Data

Station V-21 (continued)

Time/Date	Depth (Metres)	Current			Wind	
		Speed		Direction ° T	Direction ° T	Speed M.P.H.
		Cm/sec	Knots			
1914/26/7/65	20	13.6	0.264	213		
1917/	30	18.6	0.361	293		
1921/	50	21.0	0.408	246		
2003/	5	37.5	0.728	215	200	15-20
2005/	10	34.1	0.662	213		
2008/	15	28.7	0.557	203		
2011/	20	29.4	0.571	193		
2014/	30	21.8	0.423	248		
2018/	50	22.9	0.445	193		
2108/	5	17.2	0.334	063		
2115/	10	24.8	0.482	099		
2119/	15	16.8	0.326	043		
2123/	20	25.6	0.497	053		
2127/	30	29.4	0.571	038		
2131/	50	41.6	0.808	109		
2202/	5	31.2	0.606	043		
2206/	10	33.9	0.659	093		
2210/	15	28.4	0.552	048		
2214/	20	30.9	0.600	063		
2217/	30	37.2	0.723	058		
2222/	50	34.7	0.674	046		
2310/	5	29.4	0.571	053		
2314/	10	27.1	0.526	103		
2317/	15	34.1	0.662	073		
2320/	20	42.3	0.822	060		
2324/	30	39.7	0.771	073		
2328/26/7/65	50	21.8	0.423	083		
0006/27/7/65	5	23.4	0.455	103	175	5
0009/	10	25.9	0.503	088		
0012/	15	34.4	0.668	083		
0015/	20	35.3	0.686	088		
0016/	30	28.7	0.557	073		
0022/	50	33.1	0.643	043		
0114/	5	9.0	0.175	323		
0118/	10	25.4	0.493	123		
0122/	15	19.0	0.369	090		
0126/	20	9.0	0.175	353		
0130/	30	13.4	0.260	113		
0136/	50	25.4	0.493	027		
0208/	5	20.4	0.396	236		
0212/	10	20.4	0.396	221		
0216/	15	23.1	0.449	158		

## JUAN DE FUCA STRAIT

## Ekman Current Meter Data

## Station V-21 (continued)

Time/Data	Depth (Metres)	Current		Wind		
		Speed		Direction ° T	Direction ° T	Speed M.P.H.
		Cm/sec	Knots			
0221/27/65	20	10.9	0.212	273		
0225/	30	18.0	0.350	203		
0230/	50	29.4	0.571	023		
0311/	5	19.0	0.369	223		
0315/	10	58.6	1.138	233		
0319/	15	49.8	0.967	253		
0322/	20	28.7	0.557	243		
0326/	30	23.4	0.455	253		
0329/	47	29.7	0.577	283		
0404/	5	23.7	0.460	198	200	12
0407/	10	62.4	1.212	220		
0411/	15	64.0	1.243	233		
0414/	20	55.2	1.072	263		
0418/	30	20.8	0.404	293		
0421/	43	59.6	1.158	283		
0508/	5	39.1	0.760	256		
0512/	10	70.6	1.371	235		
0515/	15	49.5	0.962	221		
0518/	19	72.2	1.402	250		
0521/	29	43.2	0.839	280		
0525/	43	36.9	0.717	263		
0607/	5	82.6	1.605	294		
0610/	10	62.4	1.212	289		
0613/	15	43.5	0.845	285		
0616/	20	26.2	0.509	288		
0620/	30	15.2	0.295	193		
0623/	50	16.8	0.326	168		
0711/	5	74.4	1.445	201		
0714/	10	61.5	1.195	295		
0717/	15	17.4	0.338	288		
0719/	20	75.7	1.470	293		
0722/	30	42.3	0.822	266		
0726/	49	36.4	0.707	210		
0801/	5	58.0	1.127	348	250	7-12
0808/	10	42.3	0.822	003		
0811/	15	29.7	0.577	338		
0814/	20	27.1	0.526	330		
0820/	30	24.6	0.478	288		
0824/	50	29.7	0.577	226		
0903/	5	65.3	1.268	050		
0905/	10	54.2	1.053	053		
0908/	15	46.4	0.901	030		

## JUAN DE PUCA STRAIT

## Ekman Current Meter Data

Station V-21 (Continued)

Time/Date	Depth (Metres)	Current			Wind	
		Speed		Direction ° T	Direction ° T	Speed m.p.h.
		Cm/sec	Knots			
0911/27/V/65	20	51.4	0.998	045		
0916/	30	53.9	1.047	059		
0919/	50	20.2	0.392	088		
1004/	5	65.9	1.280	360		
1009/	10	57.1	1.109	351		
1012/	15	56.1	1.090	023		
1016/	20	46.1	0.895	019		
1019/	30	52.3	1.016	050		
1022/	49	29.4	0.571	-		
1026/	49	24.9	0.484	058		
1119/	5	66.5	1.292	036		
1122/	10	57.7	1.121	043		
1125/	15	53.9	1.047	037		
1127/	20	58.3	1.132	046		
1130/	29	37.9	0.736	053		
1134/	48	16.8	0.326	035		
1204/	5	53.6	1.041	063	180	15
1207/	10	46.4	0.901	073		
1209/	15	40.4	0.785	073		
1211/	20	35.7	0.693	073		
1214/	30	22.4	0.435	068		
1216/	50	18.6	0.361	103		
1305/	5	41.6	0.808	080		
1307/	10	35.7	0.693	088		
1309/	15	23.1	0.449	103		
1314/	20	24.3	0.472	113		
1317/	30	28.9	0.561	117		
1322/27/V/65	50	22.3	0.433	003		

## JUAN DE FUCA STRAIT

## Surface Current Measurements

Station: V-22 (#4 Buoy) Latitude:  $48^{\circ} 21.30' N$  Remarks: Ship secured  
 to a large neval buoy.  
 Date: 1-2/VI/65 Longitude:  $123^{\circ} 25.00' W$   
 Sounding: 258 ft. Location: 7 s. mi. south  
 of Victoria.

## Tidegic Current Data

Time/Date	Current		Wind		
	Speed		Direction ° T	Direction ° T	Speed m.p.h.
	Ca/sec	Knots			
0430/1/VI/65	62.3	1.21	226		
0502/	86.0	1.67	236		
0530/	86.0	1.67	238		
0600/	91.6	1.78	241		
0630/	94.2	1.83	256		
0702/	106.6	2.07	290		
0731/	101.9	1.98	271		
0800/	99.4	1.93	267	265	7
0833/	96.8	1.88	261		
0903/	96.8	1.88	255		
0931/	91.6	1.78	260		
0958/	99.4	1.93	263		
1029/	54.6	1.06	318		
1110/	42.7	0.83	071		
1146/	80.8	1.57	058		
1206/	75.2	1.46	073	270	10
1236/	79.8	1.55	098		
1300/	96.8	1.88	079		
1310/	96.8	1.88	073		
1321/	106.6	2.07	047		
1344/	106.6	2.07	048		
1406/	101.9	1.98	062		
1443/	119.9	2.33	099		
1454/	119.9	2.33	097		
1503/	114.3	2.22	051		
1531/	89.1	1.73	048		
1600/	91.6	1.78	043	240	8
1632/	91.6	1.78	009		
1700/	64.9	1.26	001		
1729/	52.0	1.01	357		
1805/	39.1	0.76	328		
1830/	54.6	1.06	288		
1900/	70.0	1.36	329		

JUAN DE PUCA SOUND

Deep Current Data

Station V-22 (continued)

Time/Date	Current			Wind	
	Speed		Direction ° T	Direction ° T	Speed M.P.H.
	Cm/sec	Knots			
1932/1/VI/65	64.9	1.26	341		
2003/	67.4	1.31	343	205	15
2030/	57.1	1.11	338		
2103/	39.1	0.76	293		
2130/	64.9	1.26	293		
2150/1/VI/65	-	-	-		
0200/2/VI/65	41.7	0.77	003		
0234/	41.6	0.76	053		
0305/	33.5	0.65	071		
0347/	15.4	0.30	088		
0403/	28.3	0.55	054	245	13
0435/	28.3	0.55	063		
0502/	39.1	0.76	073		
0530/	-	-	-		
0546/	-	-	253		
0555/	-	-	-		
0853/	80.8	1.57	306	210	11-15
0836/	86.0	1.67	259		
0958/	106.6	2.07	131		
1039/	80.8	1.57	267		
1117/	75.2	1.46	283		
1147/	70.0	1.36	047		
1203/	72.6	1.41	058	210	10-15
1237/	89.1	1.73	063		
1310/	117.4	2.28	073		
1340/	161.6	3.14	078		
1345/	94.2	1.83	073		
1405/	-	-	-		
1420/2/VI/65	-	-	-		

## JUAN DE FUCA STRAIT

## Current Measurements

Station: V-22 (#4 Buoy) Latitude: 48° 21.30' N Remarks: Ship secured  
to a large naval buoy.  
Date: 1-2/VI/65 Longitude: 123° 25.00' W  
Sounding: 258 ft. Location: 7 n. mi. south  
of Victoria.

## Ekman Current Meter Data

Time/Date	Depth (Metres)	Current		Direction ° T	Wind	
		Speed			Direction ° T	Speed M.P.H.
		Cm/sec	Knots			
0511/1/VI/65	5	67.5	1.311	233	195	3
0513/	10	67.5	1.311	243		
0515/	15	64.0	1.243	246		
0516/	20	63.7	1.237	251		
0522/	29	61.8	1.200	227		
0525/	43	29.0	0.563	238		
0608/	5	85.1	1.653	243		
0611/	10	82.0	1.593	256		
0614/	14	77.2	1.500	248		
0618/	19	84.8	1.647	253		
0622/	26	128.3	2.492	255		
0626/	38	62.7	1.218	253		
0711/	5	97.4	1.892	276		
0714/	10	91.1	1.770	272		
0717/	14	111.9	2.174	278		
0721/	19	95.5	1.855	274		
0724/	26	98.0	1.904	263		
0727/	38	93.6	1.818	260		
0807/	5	98.7	1.917	268	265	7
0812/	10	106.2	2.063	267		
0816/	14	114.1	2.216	272		
0821/	19	104.3	2.026	263		
0824/	23	128.9	2.504	269		
0828/	35	97.7	1.898	263		
0907/	5	84.2	1.636	253		
0910/	10	87.0	1.690	253		
0913/	15	95.5	1.855	260		
0916/	19	102.7	1.995	262		
0919/	26	87.6	1.702	260		
0923/	38	70.3	1.366	242		
1002/	5	89.5	1.739	267		
1005/	10	85.4	1.659	263		
1008/	14	88.6	1.721	273		

JULIA R. PUGA SIPATI

Skman Current Meter Data

Station V-22 (#4 Buoy) (continued)

Time/Date	Depth (Meters)	Current		Direction D T	Wind	
		Speed			Direction	Speed m.p.h.
		cm/sec	Knots			
1011/1/VI/65	19	73.1	1.630	273		
1014/	28	96.1	1.690	273		
1017/	47	35.0	0.640	290		
1121/	5	50.0	0.971	060		
1125/	10	53.3	1.035	047		
1128/	15	59.3	1.152	043		
1132/	19	10.2	1.160	057		
1135/	28	51.7	1.004	037		
1139/	45	35.0	0.678	025		
1214/	5	72.5	1.408	048	270	10
1217/	10	45.7	0.848	055		
1220/	14	66.8	1.298	001		
1223/	19	61.2	1.189	048		
1227/	27	61.2	1.189	003		
1230/	45	49.1	0.954	070		
1319/	5	86.7	1.684	052		
1323/	10	85.7	1.605	030		
1329/	14	82.6	1.605	045		
1332/	17	82.6	1.605	044		
1334/	25	89.4	1.744	040		
1340/	35	146.7	2.740	057		
1421/	5	90.1	1.750	044		
1424/	10	80.7	1.684	038		
1427/	14	90.1	1.750	030		
1429/	17	107.2	2.004	097		
1432/	23	82.9	1.611	013		
1436/	35	76.6	1.489	094		
1510/	5	89.0	1.733	047		
1513/	10	73.2	1.607	033		
1514/	14	90.1	1.750	047		
1517/	17	85.1	1.653	044		
1522/	25	72.9	1.411	047		
1526/	35	86.1	1.677	035		
1609/	5	88.6	1.721	023	270	
1612/	10	88.3	1.715	023		
1615/	15	94.2	1.830	007		
1618/	19	80.1	1.550	001		
1623/	26	78.5	1.505	359		
1628/	38	87.3	1.690	350		
1704/	5	70.0	1.384	337		
1706/	10	74.1	1.439	320		
1709/	15	55.5	1.078	327		

## JUAN DE FUCA STRAIT

## Ekman Current Meter Data.

Station V-22 (#4 Buoy) (continued)

Time/Date	Depth (Metres)	Current		Direction ° T	Wind	
		Speed			Direction ° T	Speed M.P.H.
		Cm/sec	Knots			
1713/1/VI/66	20	42.9	0.833	323		
1716/	30	49.5	0.962	323		
1719/	50	58.3	1.132	343		
1810/	5	53.9	1.047	285		
1812/	10	42.0	0.816	283		
1815/	15	38.2	0.742	303		
1817/	20	37.9	0.736	318		
1821/	30	47.6	0.925	325		
1824/	50	48.9	0.950	309		
1909/	5	69.7	1.354	313		
1911/	10	72.5	1.408	307		
1914/	15	64.0	1.243	303		
1917/	20	85.4	1.659	301		
1920/	30	46.7	0.907	303		
1924/	49	54.9	1.066	315		
2009/	5	67.5	1.311	325	205	15
2012/	10	59.3	1.152	297		
2014/	15	54.2	1.053	283		
2018/	20	50.5	0.981	265		
2021/	30	37.2	0.723	300		
2024/	49	58.6	1.138	303		
2107/	5	56.1	1.090	265		
2110/	10	58.3	1.132	265		
2113/	15	44.2	0.859	260		
2116/	20	48.9	0.950	261		
2121/	30	41.6	0.808	270		
2125/	47	55.8	1.084	303		
2208/	5	82.6	1.605	270		
2321/	5	78.2	1.519	261		
2326/	10	138.5	2.690	269		
2330/	15	38.6	0.750	270		
2334/	20	62.3	1.210	253		
2338/	30	33.0	0.641	173		
2342/1/VI/65	49	9.4	0.183	093		
0017/2/VI/65	5	70.5	1.369	063	195	18
0021/	10	51.5	1.000	280		
0024/	15	37.2	0.723	266		
0027/	20	32.3	0.627	256		
0031/	30	31.3	0.608	213		
0035/	50	25.8	0.501	123		
0118/	5	68.1	1.323	323		
0122/	10	42.7	0.829	323		

## JUAN DE FUCA STRAIT

## Ekman Current Meter Data

Station V-22 (#4 Buoy) (continued)

Time/Data	Depth (Metres)	Current			Wind	
		Speed		Direction ° T	Direction ° T	Speed M.P.H.
		Cm/sec	Knots			
0125/2/VI/65	15	18.1	0.351	323		
0128/	20	6.3	0.122	-		
0132/	30	6.3	0.122	113		
0137/	50	15.3	0.297	173		
0223/	5	15.0	0.291	013		
0226/	10	8.7	0.169	-		
0231/	15	9.7	0.188	163		
0241/	20	18.8	0.365	293		
0246/	30	16.7	0.324	176		
0251/	50	11.1	0.216	153		
0257/	10	9.1	0.177	218		
0324/	5	24.2	0.470	055		
0328/	10	21.7	0.422	103		
0333/	15	2.9	0.056	-		
0336/	15	33.3	0.647	099		
0339/	20	26.8	0.521	037		
0344/	30	28.9	0.561	125		
0350/	50	16.4	0.319	223		
0419/	5	0	0	-	245	13
0423/	10	18.0	0.350	140		
0426/	15	15.7	0.305	138		
0430/	20	10.5	0.204	148		
0434/	30	20.2	0.392	213		
0441/	50	16.4	0.319	348		
0444/	5	28.2	0.548	153		
0507/	5	34.0	0.660	171		
0512/	10	28.6	0.556	185		
0516/	15	28.9	0.561	203		
0520/	20	38.8	0.754	229		
0523/	30	61.1	1.187	223		
0530/	49	16.4	0.319	240		
0603/	5	0	0	-		
0609/	5	0	0	-		
0614/	5	97.6	1.896	229		
0622/	10	93.4	1.814	230		
0624/	15	0	0	-		
0627/	15	0	0	-		
0631/	15	104.5	2.030	223		
0634/	19	80.9	1.571	250		
0638/	30	0	0	-		
0643/	26	85.1	1.653	259		
0646/	38	6.6	0.128	243		

## JEAN DE FUCA STRAIT

## Ekman Current Meter Data

Station V-22 (#4 Buoy) (continued)

Time/Date	Depth (Metres)	Current			Wind	
		Speed		Direction ° T	Direction ° T	Speed M.P.H.
		Cm/sec	Knots			
0715/2/VI/65	5	91.0	1.768	254		
0848/	10	60.1	1.167	252	210	11-15
0914/	5	101.4	1.970	253		
0917/	10	107.3	2.084	255		
0919/	14	109.2	2.121	254		
0923/	19	96.6	1.876	253		
0926/	28	96.9	1.882	254		
0930/	38	88.3	1.715	253		
1008/	5	126.0	2.448	276		
1010/	10	121.5	2.360	342		
1013/	14	83.2	1.616	320		
1019/	19	150.9	2.931	255		
1023/	27	107.3	2.084	254		
1026/	41	67.1	1.303	253		
1126/	5	71.7	1.393	279		
1129/	10	76.1	1.478	283		
1131/	15	72.0	1.399	265		
1134/	20	72.0	1.399	248		
1137/	30	68.4	1.329	233		
1141/	50	39.3	0.763	268		
1216/	5	76.8	1.492	066	210	20-15
1219/	10	73.7	1.432	048		
1222/	15	65.1	1.265	065		
1225/	19	65.1	1.265	043		
1228/	29	52.2	1.014	065		
1233/	47	33.0	0.641	073		
1321/	5	105.4	2.047	097		
1324/	10	75.1	1.499	082		
1327/	14	146.6	2.848	094		
1332/	19	120.3	2.337	082		
1336/	26	98.9	1.921	074		
1339/2/VI/65	43	105.1	2.043	083		

#### BATHYTHERMOGRAMS

##### Note

Bathythermograph traces are generally arranged by area from north to south, in chronological order of surveys, and by serial number for a given survey. However, since surveys in Northumberland Channel and Stuart Channel were often combined, it has been found convenient to combine the B.T. data. In May 1965, a survey of Haro Strait - Juan de Fuca Strait was conducted in sequence with those in the above two areas, and B.T. data are likewise arranged together. Standard pre-printed sheets with a given depth range were used for copying the B.T. traces, so that stations not taken in sequence or from the same survey were sometimes grouped together on one page.







1701/19/XI/54

STH. S-11

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1702/19/XI/54

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1703/19/XI/54

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1704/19/XI/54

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STH. S-11

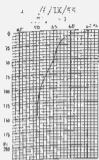
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STH. S-11

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OLD EL DAY AND LUSHORNE- AND CONCRETE CURVES  
as of September 1, 1955



STN. N-1



STN. N-2



STN. N-3



STN. N-7



STN. N-11



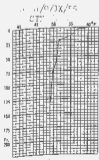
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STN. N-13



STN. N-8



STN. N-14



STN. N-15



STN. N-16



STN. N-17



NORTHUMBERLAND CHANNEL SURVEY  
6 July 1957



Ser. No. 13



Ser. No. 14



Ser. No. 15



Ser. No. 16



Ser. No. 17



Ser. No. 18

1500/9/VII/57 STN. R-7



Ser. No. 19



Ser. No. 20



Ser. No. 21



STUART CHANNEL - OSBORN BAY SURVEY  
10 July 1957



Ser. No. 24



Ser. No. 25



Ser. No. 26



Ser. No. 27



Ser. No. 28



1153/10/VII/57 STB S-6



Ser. No. 26



STB S-8

Ser. No. 27

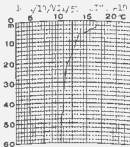


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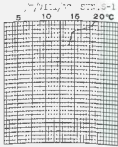
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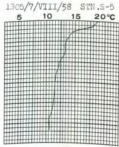
WATER SURVEYS  
 Oct 1958



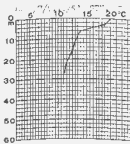
0920/8/VIII/58



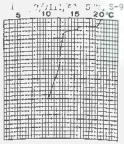
0920/8/VIII/58



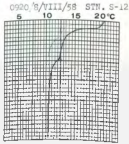
Ser. No. 5



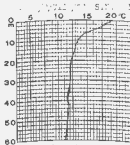
0920/8/VIII/58



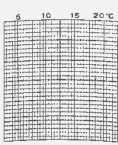
0920/8/VIII/58



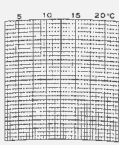
0920/8/VIII/58



0920/8/VIII/58



0920/8/VIII/58



0920/8/VIII/58



STUART CHANNEL SURVEY  
7-8 August 1958

0945/7/VIII/58 STN. S-2



Ser. No. 2

1112/7/VIII/58 STN. S-3



Ser. No. 3

1207/7/VIII/58 STN. S-4



No. 4



No. 6



No. 7



No. 10

0857/8/VIII/58



No. 11



No. 14

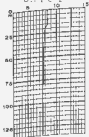


No. 15



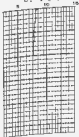
STATION MODEL SURVEY

1012/8/IV/59  
STN. S-1



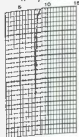
Sta. No. 1

1037/8/IV/59  
STN. S-2



Sta. No. 2

1052/8/IV/59  
STN. S-3



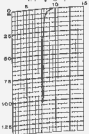
Sta. No. 3

1059/8/IV/59  
STN. S-4



Sta. No. 4

1300/8/IV/59  
STN. S-5



Sta. No. 5

1307/8/IV/59  
STN. S-6



Sta. No. 6

1401/8/IV/59  
STN. S-7



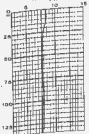
Sta. No. 7

1632/8/IV/59  
STN. S-8



Sta. No. 8

1740/8/IV/59  
STN. S-9



Sta. No. 9

1816/8/IV/59  
STN. S-10



Sta. No. 10

1828/8/IV/59  
STN. S-11



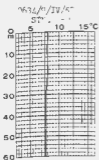
Sta. No. 11

1845/8/IV/59  
STN. S-12



Sta. No. 12





Station No. 57



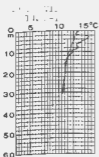
Station No. 58



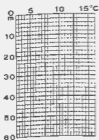
Station No. 59



Station No. 18



Station No. 18

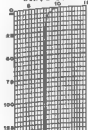




STUART CHANNEL SURVEYS  
8-10 April and 8-11 July 1959

1313/9/IV/59

STN. S-14



Ser. No. 14



Ser. No. 15



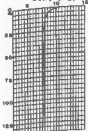
Ser. No. 16



Ser. No. 17

0915/10/IV/59

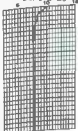
STN. S-19



Ser. No. 19

1134/10/IV/59

STN. S-20



Ser. No. 20



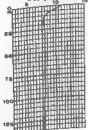
Ser. No. 21



Ser. No. 22

1454/10/IV/59

STN. S-23



Ser. No. 23



No. 24



No. 1

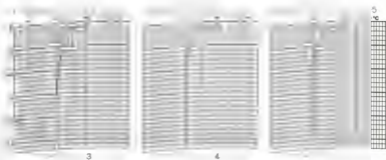


No. 2



STUART CHANNEL SURVEY

8-11 July 1959



0536/9/VII/59 STN. 5-6

1521/9/VII/59 STN. 5-7

1602/9/VII/59 STN. 5-8



1810/9/VII/59

0740/10/VII/59 STN. 5-12





STUART CHANNEL SURVEY

8-1: July 1959



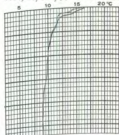
No. 14

/VII/59 STN. S-14



Ser. No. 15

1007/10/VII/59 STN. S-15



Ser. No. 16

1241 /10/VII/59



Ser. No. 17

1315 /10/VII/59 STN. S-17



Ser. No. 18

1337 /10/VII/59 STN. S-19



Ser. No. 20

0914/11/VII/59 STN. S-22



21



No. 22



No. 23



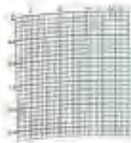
STUART CHANNEL SURVEY  
8-11 July 1959



Ser. No. 24



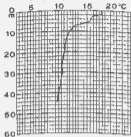
Ser. No. 25





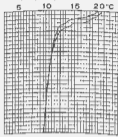
STUART CHANNEL SURVEY  
July 1959

July 10/VII/59 STN. 0-11



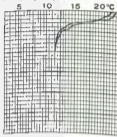
Surf. Temp. 18

July 10/VII/59 STN. 0-12



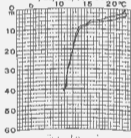
Surf. Temp. 18

July 11/VII/59 STN. 0-1<sup>a</sup>



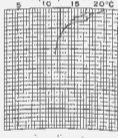
Surf. Temp. 18

July 11/VII/59 STN. 0-2<sup>a</sup>



Surf. Temp. 18

July 11/VII/59 STN. 0-3<sup>a</sup>



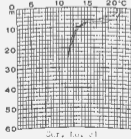
Surf. Temp. 18

July 11/VII/59 STN. 0-3<sup>b</sup>



Surf. Temp. 18

July 11/VII/59 STN. 0-4



Surf. Temp. 18

July 11/VII/59 STN. 0-5



Surf. Temp. 18

July 11/VII/59 STN. 0-6

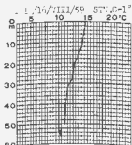


Surf. Temp. 18

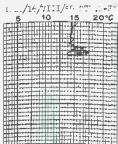
1. 0-50 F surface of pulped oil surface.      2. 10-20 F surface of pulped oil surface.  
 3. 10-50 F surface of pulped oil surface.      4. 10-20 F surface of pulped oil surface.  
 5. 0-50 F surface of pulped oil surface.



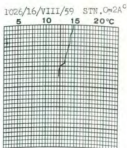
- 27 -  
 OCEAN CURRENT SURVEY  
 1959



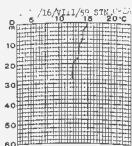
Ser. No. 1



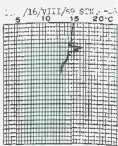
Ser. No. 1



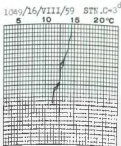
Ser. No. 22



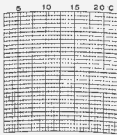
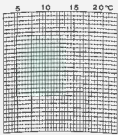
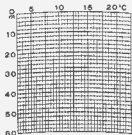
Ser. No. 1



Ser. No. 14



Ser. No. 1



1. 1/2 mile north of gulfall.  
 2. 1/2 mile gulfall, with none drift at  
 location during S.E. east.

3. 1/2 mile of ...  
 4. ...  
 5. ...  
 6. ...  
 7. ...  
 8. ...  
 9. ...  
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 94. ...  
 95. ...  
 96. ...  
 97. ...  
 98. ...  
 99. ...  
 100. ...



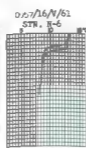
HOTIHLAND - STUENT CHANNELS SURVEY  
16 May 1961



Ser. No. 1



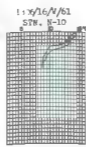
Ser. No. 5



Ser. No. 6



Ser. No. 9



Ser. No. 10

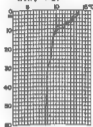


Ser. No. 12



NORTHUMBERLAND - STUART CHANNELS SURVEY  
16-18 May 1961

1915/16/V/61  
STN. 4-17



Ser. No. 17

0736/17/V/61  
STN. S-2



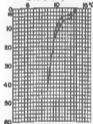
No. 20

0913/17/V/61  
STN. S-4



Ser. No. 22

0755/17/V/61  
STN. S-5



Ser. No. 23

Ser. No.



No.



No.



Ser. No. 43



Ser. No. 46



NORTHERNBERGAND - STUART CHANNELS SURVEY  
16-18 May 1961

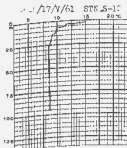
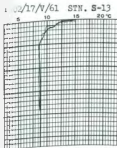
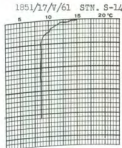


Chart No. 1



Ser. No. 31



Ser. No. 32

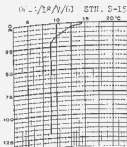


Chart No. 2

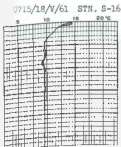


Chart No. 3

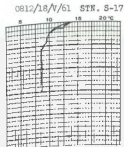


Chart No. 4

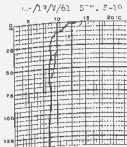
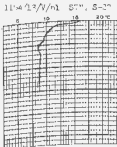


Chart No. 5



Ser. No. 33

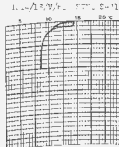


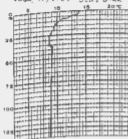
Chart No. 6



NORTHAMBERLAND - STRATA CONDENSELS SURVEY

19-1-61

1308/19/V/61 STN. S-22



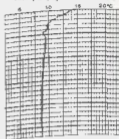
Ser. No. 41

1400/19/V/61 STN. S-23



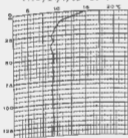
Ser. No. 42

1400/19/V/61 STN. S-24

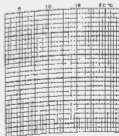
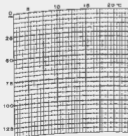
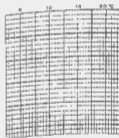
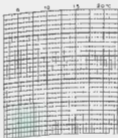


Ser. No. 43

1500/19/V/61 STN. S-25



Ser. No. 44

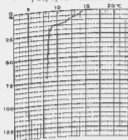




NORTHUMBERLAND - STIN RT CHANNELS SURVEY

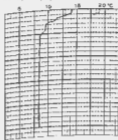
1961

10-16/61 STN. N-12



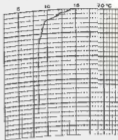
10-16/61

10-16/61 STN. N-13



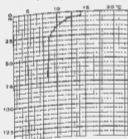
10-16/61

10-16/61 STN. N-14



10-16/61

10-16/61 STN. N-14



10-16/61

10-17/61 STN. S-1



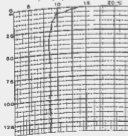
10-17/61

10-17/61 STN. S-3



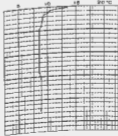
10-17/61

10-17/61 STN. S-6



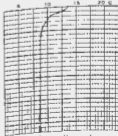
10-17/61

10-17/61 STN. S-8



10-17/61

10-17/61 STN. S-9

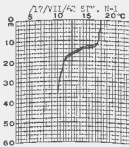


10-17/61

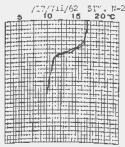


DELAWARE BAY - NORTHWHELAND TIDE GAGE - STRATA CHARTER SURVEY

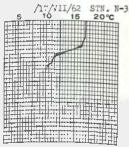
17 July 62



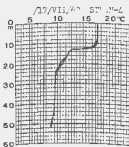
STN. N-1



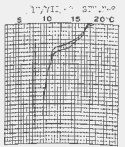
STN. N-2



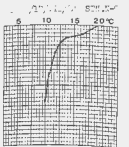
STN. N-3



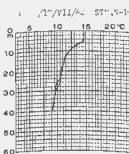
STN. N-4



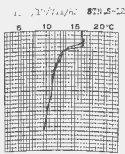
STN. N-9



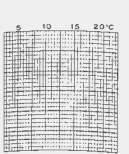
STN. N-10



STN. N-11



STN. S-12



STN. S-13



DEPARTURE BAY - NORTHUMBERLAND CHANNEL - STUART  
17-19 July 1962

SURVEY



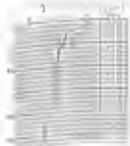
Ser. No. 5



Ser. No. -



No.



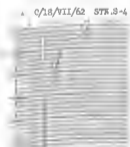
Ser. No. 11



Ser. No. -



No. 1



Ser. No. 14



Ser. No. 15



STN B-6

10/18/VII/62 STN B-4

11/18/VII/62 STN B-5

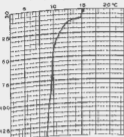
12/18/VII/62 STN B-3



DEW POINT DAY - NORTHOVERLAND CHANNEL - STURD CHANNEL

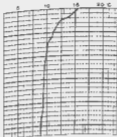
1962

11/11/62 STN S-7



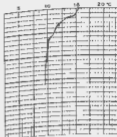
11/11/62

11/11/62 STN. S-8



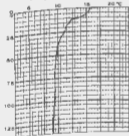
11/11/62

11/11/62 STN S-9



11/11/62

11/11/62 STN S-10



11/11/62

11/11/62 STN S-11

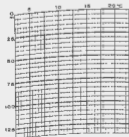


11/11/62

11/11/62 STN S-12



11/11/62



11/11/62



11/11/62



11/11/62

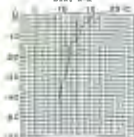


CHANNEL - STUART CHANNEL

9-11 July 1963

0717/9/VII/63

STN. S-1



Ser. No. 1

1000/9/VII/63

STN. S-2



Ser. No. 2

1130/9/VII/63

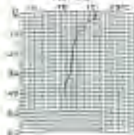
STN. S-3



Ser. No. 3

0717/9/VII/63

STN. S-4



Ser. No. 4

1000/9/VII/63

STN. S-8



Ser. No. 8

1130/9/VII/63

STN. S-9



Ser. No. 9

0717/9/VII/63

STN. S-11



Ser. No. 11

1000/9/VII/63

STN. S-12



Ser. No. 12

1130/9/VII/63

STN. S-15

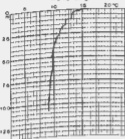


Ser. No. 15



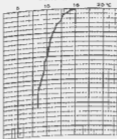
TEMPERATURE PROFILES - STATION 1007  
-11-11-63

13.5, 7, VII/63  
-11, 3-5



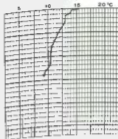
1007, 7, 1963

15.0, 4, VII/63  
-11, 3-4



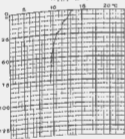
1007, 4, 1963

17.5, 9, VII/63  
-11, 3-7



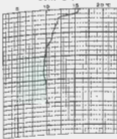
1007, 9, 1963

16.5, 10, VII/63  
-11, 3-9



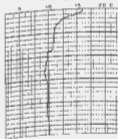
1007, 10, 1963

16.0, 11, VII/63  
-11, 3-10



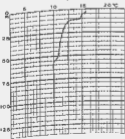
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16.5, 1, VII/63  
-11, 3-1



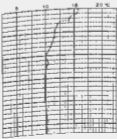
1007, 1, 1963

17.0, 21, VII/63  
-11, 3-21



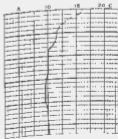
1007, 21, 1963

17.5, 11, VII/63  
-11, 3-11



1007, 11, 1963

17.0, 11, VII/63  
-11, 3-11

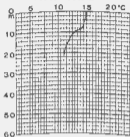


1007, 11, 1963



CHANNEL SURVEY

0930/11/VII/63  
CROFTON CURIA



0930/11/VII/63

0935/11/VII/63  
CROFTON CURIA



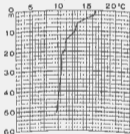
0935/11/VII/63

0935/11/VII/63  
CROFTON OUTFALL



0935/11/VII/63

1000/11/VII/63  
CROFTON CURIA



1000/11/VII/63

1005/11/VII/63  
CROFTON CURIA

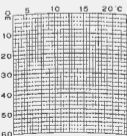


1005/11/VII/63

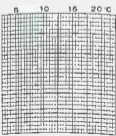
1005/11/VII/63  
CROFTON OUTFALL



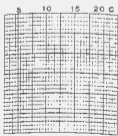
1005/11/VII/63



1010/11/VII/63



1015/11/VII/63

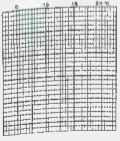
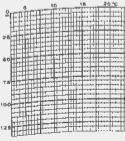
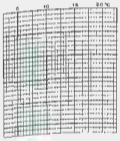
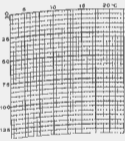
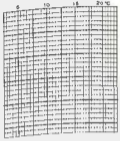
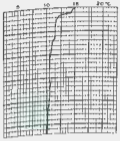
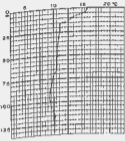


1015/11/VII/63



110, 11, 11, 11  
110, 11

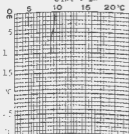
110, 11, 11, 11  
110, 11





1. SURFACE AND WATER TEMPERATURE RECORDS  
 2. SURFACE AND WATER TEMPERATURE RECORDS  
 3. SURFACE AND WATER TEMPERATURE RECORDS

157, 20, 7-15  
 1951, 7-15



157, 20, 7-15

157, 20, 7-15  
 1951, 7-15

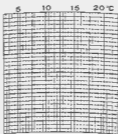
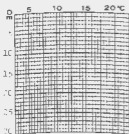
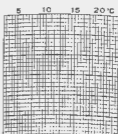
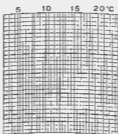
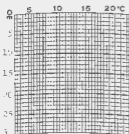


157, 20, 7-15

157, 20, 7-15  
 1951, 7-15



157, 20, 7-15



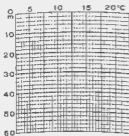
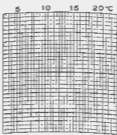
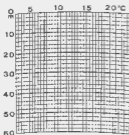
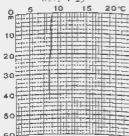


TEMPERATURE AND SALINITY - THERMISTOR LOGS  
 HULL STATION - 7-11-55 - 1000 FT. DEPTH

11/17/55  
 1-11

11/18/55  
 1-11

11/19/55  
 1-11





NORTHUMBERLAND CHANNEL - STUART CHANNEL AND  
HARO STRAIT - JUAN DE FUCA STRAIT SURVEYS  
11-20 May 1965

0950/11/7/65  
STN. B-2

1140/12/7/65  
STN. B-8



Ser. No. 1



Ser. No. 2



Ser. No. 3



Ser. No. 16



Ser. No. 24



Ser. No. 4

1737/19/7/65  
STN. V-6

1824/19/7/65  
STN. V-7

0912/20/7/65  
STN. V-12



Ser. No. 32



Ser. No. 5



Ser. No. 6



NORTHUMBERLAND CHANNEL - STUART CHANNEL AND  
HARO STRAIT - JUAN DE FUCA STRAIT SURVEYS  
11-20 May 1965



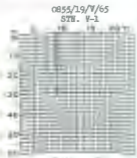
Ser. No. 11



Ser. No. 14



0515/14/7/65  
STN. 8-9



0855/19/7/65  
STN. V-1



0945/19/7/65  
STN. V-2



1919/19/7/65  
STN. V-8

No.



NORTHUMBERLAND CHANNEL - STUART CHANNEL AND HARGO STRAIT - JUAN DE FUCA STRAIT  
11-20 May 1965



No. 5



Ser. No. 6



Ser. No. 7



12



No. 13



No. 15



No. 17

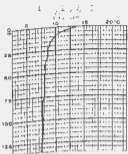


No. 18

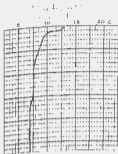


No. 19

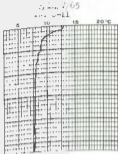




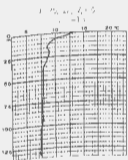
Sta. No. 1



Sta. No. 2



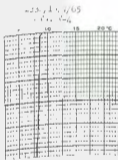
Sta. No. 23



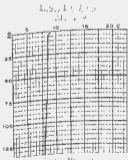
Sta. No. 24



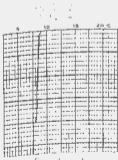
Sta. No. 25



Sta. No. 26



Sta. No. 27



Sta. No. 28



Sta. No. 29



NORTHUMBERLAND CHANNEL - STUART CHANNEL AND HARO STRAIT - JUAN DE FUCA STRAIT SURVEYS

11-20 May 1965

1329/20/V/65

TJ, V-16





STATION V-21 (ANCHOR STATION) JUAN DE FUCA STRAIT (48°21.24'N; 123°25.00'W)  
24-27 May 1965

2144/24/V/65



Ser. No. 1

2345/24/V/65



Ser. No. 2

0154/25/V/65



Ser. No. 3

0353/25/V/65



Ser. No. 4

0553/25/V/65



Ser. No. 5

0850/25/V/65



Ser. No. 6

1040/25/V/65



Ser. No. 7

1235/25/V/65



Ser. No. 8

1445/25/V/65



Ser. No. 9



STATION V-21 (ANCHOR STATION) JUAN DE FUCA STRAIT (48°21.24'N, 123°29.00'W)  
24-27 May 1965

1642/25/V/65

1845/25/V/65

1220/26/V/65



Ser. No. 10



Ser. No. 11



Ser. No. 12

1350/26/V/65

1540/26/V/65

1745/26/V/65



Ser. No. 13



Ser. No. 14



Ser. No. 15

1934/26/V/65

2044/26/V/65

2340/26/V/65



Ser. No. 16



Ser. No. 17



Ser. No. 18

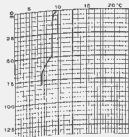


GATHER V-1 (GATHER STATION) 341 0 000 110.0 (20° 1.0'N, 113° 25.00'W)  
1. Day 1965

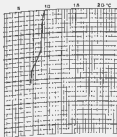
115/27, V/65

131, 21, V/65

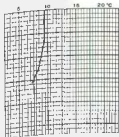
0531/21, V/65



Graph No. 11



Graph No. 12

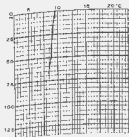


Graph No. 13

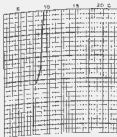
0531/21, V/65

0921/21, V/65

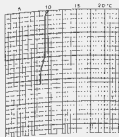
1130/21, V/65



Graph No. 14

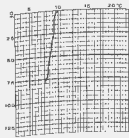


Graph No. 15



Graph No. 16

1351/21, V/65



Graph No. 17

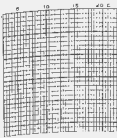


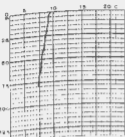


TABLE 1. SURFACE AND DEPTH TEMPERATURES IN NEKA STRAIT (48°21.30'N; 123°25.00'W)

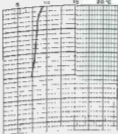
1965

0636/1, VI, 65

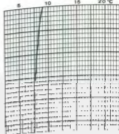
0636/1, VI, 65



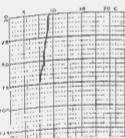
0636/1, VI, 65



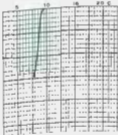
0636/2, VI, 65



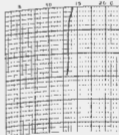
0636/3, VI, 65



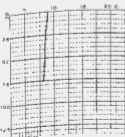
0636/4, VI, 65



0636/5, VI, 65



0636/6, VI, 65



0636/7, VI, 65



0636/8, VI, 65



0636/9, VI, 65

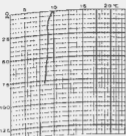


1950-1951 FISHING AT #4 BUOY, SWAN ISLAND, ALASKA (44° 21' N; 155° 00' W)  
 1st Cruise

1450/1, VI, 45

1455/1, VI, 45

1535/1, VI, 45



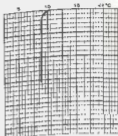
1450/1, VI, 45

1450/1, VI, 45



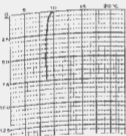
1455/1, VI, 45

1455/1, VI, 45



1535/1, VI, 45

1535/1, VI, 45



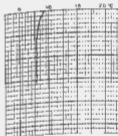
1450/1, VI, 45

1450/1, VI, 45



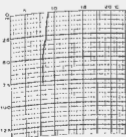
1455/1, VI, 45

1455/1, VI, 45



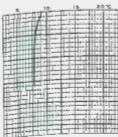
1535/1, VI, 45

1535/1, VI, 45



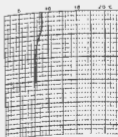
1450/1, VI, 45

1450/1, VI, 45



1455/1, VI, 45

1455/1, VI, 45



1535/1, VI, 45

1535/1, VI, 45



STATION V-22 (SECURED AT #4 BUDY) JUAN DE FUCA STRAIT (48°21.30'N; 123°25.00'W)  
1-2 June 1965

2345/1/VI/65



No. 19

0040/2/VI/65



No. 20

0140/2/VI/65



No. 21

0255/2/VI/65



No. 22

0300/2/VI/65



No. 23

0358/2/VI/65



No. 24

0448/2/VI/65



Ser. No. 25

0538/2/VI/65



Ser. No. 26

0649/2/VI/65



No. 27



STATION V-22 (SECURED AT #4 BUOY) JUAN DE FUCA STRAIT (48°21.30'N; 123°25.00'W)  
1-2 June 1965

0940/2/VI/65

1045/2/VI/65

1150/2/VI/65



Ser. No. 28



Ser. No. 29



Ser. No. 30

1245/2/VI/65



Ser. No. 31

