OPERATIONAL PLAN
(SALMON)

AREA 8
BELLA COOLA SUB-DISTRICT

DEPARTMENT OF
FISHERIES AND OCEANS

FEBRUARY 1986

17

OPERATIONAL PLAN
(SALMON)

AREA 8
BELLA COOLA SUB-DISTRICT

DEPT. OF FISHERIES AND OCEANS
FEBRUARY 1986

Government of Canada | Gouvernement du Canada

MEMORANDUM
NOTE DE SERVICE

TO ->	Distribution	SECURITY CLASSIFICATION
		OUR FILE
	J. Greenlee	YOUR FILE
	G. Savard	
FROM	R. Goruk	
	H. R. McNairnay	DATE 27 February, 1986
	D. D. Radford	

SUBJECT: Area 8 Operational Plan - 1986

This is the second draft of the Area 8 1986 Operational plan, produced at Prince Rupert in February, 1986.

The plan consists largely of notes providing details regarding the stocks managed in Area 8, as well as detailed descriptions of the items considered by week during the management of the salmon fishery. These notes, or "rules", are combined with calculations of predicted returns (the Expectations), to provide a weekly net fishery management plan. From all of this information, the final section of the report, the Operational Requirements, which details the resources necessary to run the Area 8 salmon fishery for 1986 was derived. It should be noted that the Operational Requirements are not inflated "Wish Lists", but represent an honest estimate of the resources required to manage the salmon fishery in Area 8. The consequence of not meeting the Operational Requirements is an increase in the risk of foregoing salmon production and potentially losing the salmon resource in this Statistical Area.

It is anticipated that this document will serve two main functions. The first of these functions is as a support document to justify and rationalize the budgetary resources required to effectively manage the 1986 fishery. The other principal function is as a reference document for those involved in the management of the fishery.

As it is all "on disk" the plan should be easy to upgrade and update in subsequent years, and has been designed to encourage this.

Distribution:

G. Jaltema	G. Jones	F.E.A. Wood
D. Peacock	A. Gibson	D.T. Barrett
P. Sprout	E. Kremer	J. Burns
T. Perry	P. Chamut	

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Introduction

There are a number of activities that must be performed before, during, and after a salmon fishing season. These include broadly:

1. Developing salmon expectations;

2. Developing a Sub-district fishing pattern based on these expectations;

3. Execution of the fishery, including management, reporting and recording;

4. Season evaluation.

In the past these tasks have come no where near being a comprehensive operational plan. The "Salmon Expectations" format has remained unchanged since its beginnings in the early 1960's, while the complexity of fishery management has grown immensely, particularly in the last fifteen years.

Without adequate planning in any operation, time, money, and efforts spent can be largely wasted. More importantly, no assessment is possible, and without assessment there is no basis for improvement.

Several recent developments in the Central Coast District have layed the groundwork for the implementation of a more detailed operational planning process. These are:

1. The development of a comprehensive Sub-district Salmon History and Record of Management Strategies (RMS);

2. Compilation of upgraded Sub-district escapement data into a useable field book, including target escapements, annual escapements, 10-year averages and timing data, 1950-1983 by species, by stream, by sub-are, "Goruk, R., H. McNairnay, D. Peacock and J. Greenlee. 1985. Salmon escapement and timing data for Statistical Area 8 of the Central Coast of British Columbia. Can. Data Rep. Fish. Aquat. Sci. (#) v + 124 p."

3. Development of the use of Key Indicator streams, with an in-season field form for use in the RMS which includes average escapements, arrival and peak spawn timing, and target escapements;

4. Development of a weekly Operational Framework to identify indicators used in current week salmon management and to anticipate data requirements and operational needs in the coming week(s);

5. Development of a Minimum Fisheries Management Program to identify operational requirements (seasonal staff costs) based on in-season data required to manage the salmon fishery in a Sub-district;

6. Injection of existing Central Coast tagging information into the RMS in a revised format allowing some guidance as to the destination of fish being fished at a particular location in a particular week;

7. Division of Sub-districts into smaller sub-areas based on Key streams and the management of stocks in distinct locales, as opposed to the "blanket area" approach (this item is especially important in the identification of available surpluses, and where, when, and how they can be harvested);

8. Development, in general, of the use of "Adaptive Management", and the use of seasonal assessments to improve the future cycle of events.

Using these items as a foundation, a comprehensive salmon management framework has been developed and has been designed to allow annual fishing plans and operational requirements to be easily detailed. The principal components of the framework, which is the library of past information and local knowledge, are a series of "rules", both general and on a week by week basis, regarding the various stocks and fisheries in Area 8. These "rules" are largely dictated by timing and migration of the various stocks within Area 8 and are immutable except by nature.

The Sub-district Operational Plan begins with these rules together with the annual Salmon Expectations which identify fishable surpluses (or test fisheries where no surplus has been identified) by stock based on brood year escapements with respect to Key Streams and sub-areas. Together these form the weekly net fishing management plan.

When the weekly plans for the fishery have been layed out one important pre-season planning function remains, that being the formulation of an annual list of Operational Requirements based on the weekly management plan. This includes seasonal staffing requirements, patrol vessel requirements, and aircraft charter requirements.

Using this kind of planning approach would ensure:

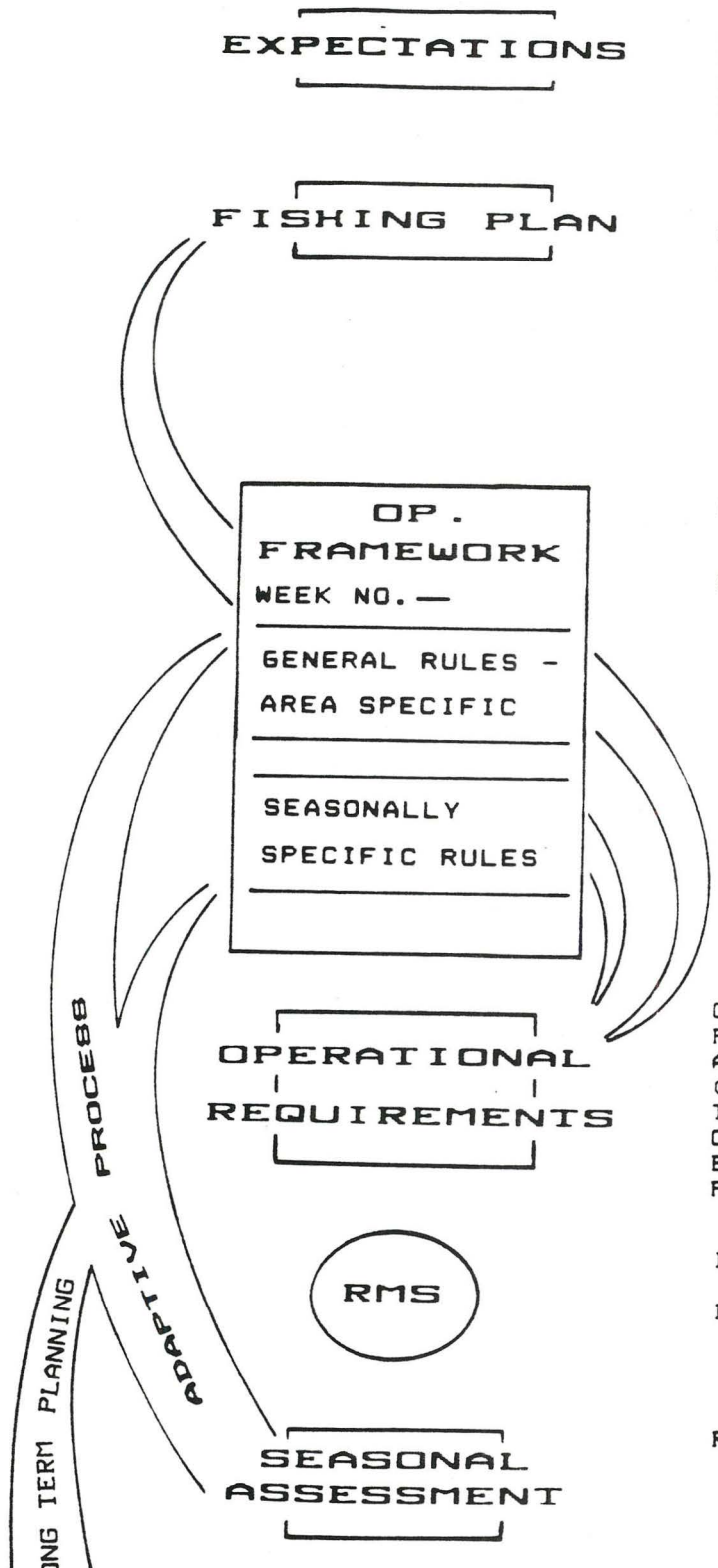
1. Clearer objectives for the Sub-district Fishery Officer to embark on and execute his fishery;

2. Better use of resources, both money and manpower;

3. A better opportunity to assess the operation and adapt accordingly;

4. A better understanding by fishermen of the Department and its operation providing a better opportunity for them to plan their season;

5. Better fishery management.



BROOD YR. ESC. NO.'S (SUB-AREAS, KEY STREAMS, OTHER)
SURVIVAL - OVERWINTERING
AGE COMPOSITION (CHINOOK, SOCKEYE, CHUM)
RETURN RATES
EXPECTED TOTAL RETURN (TO AREA)
TARGET ESCAPEMENTS
IDENTIFIABLE SURPLUS (FISHABLE)

WHERE, WHEN, AND HOW TO HARVEST SURPLUSES AND WHO WILL HARVEST THEM

AREA - SPECIFIC "RULES": (GENERAL)
SPECIES, TIMING, MIGRATION
OPERATIONAL REQUIREMENTS
SEASONALLY SPECIFIC RULES - GOVERNERED BY GENERAL RULES, SPECIFIC TO THE YEAR AND EXPECTATIONS.
SPECIFIC OPERATIONAL REQUIREMENTS

OP. REQUIREMENTS DERIVED FROM GENERAL RULES AND SEASONALLY SPECIFIC RULES (SEASONAL STAFF, PATROL VESSELS, AIRCRAFT TIME, ETC. FOR THE PURPOSES OF DATA COLLECTION AND FISHERY MANAGEMENT SUPPORT ENFORCEMENT AND PROTECTION OF FISHERIES POTENTIALS)

IN SEASON MANAGEMENT : "PROVING" THE EXPECTATIONS
IF-THEN" LIST (GREENLEE'S LIST)
(ABOUT 20,000,000,000,000,000,000 COMBINATIONS)

RECORD OF MANAGEMENT STRATEGIES
(VEHICLE FOR ADAPTIVE PROCESS)

DDR-HRM 88

READ CAREFULLY

1. Reporting of all catches to the Dept. of Fisheries and Oceans is the responsibility of the fisherman and a condition of licence renewal.
2. Accurate catch reports must include the map number or numbers showing the area in which your fish were caught.
3. The statistical areas shown on this map are to be used as a guide only. For more exact information refer to the Pacific Fishery Management Area Regulations.

Dept. of Fisheries and Oceans Office

Statistical areas are divided by red lines

Surfline

Note: All areas revised February 1985

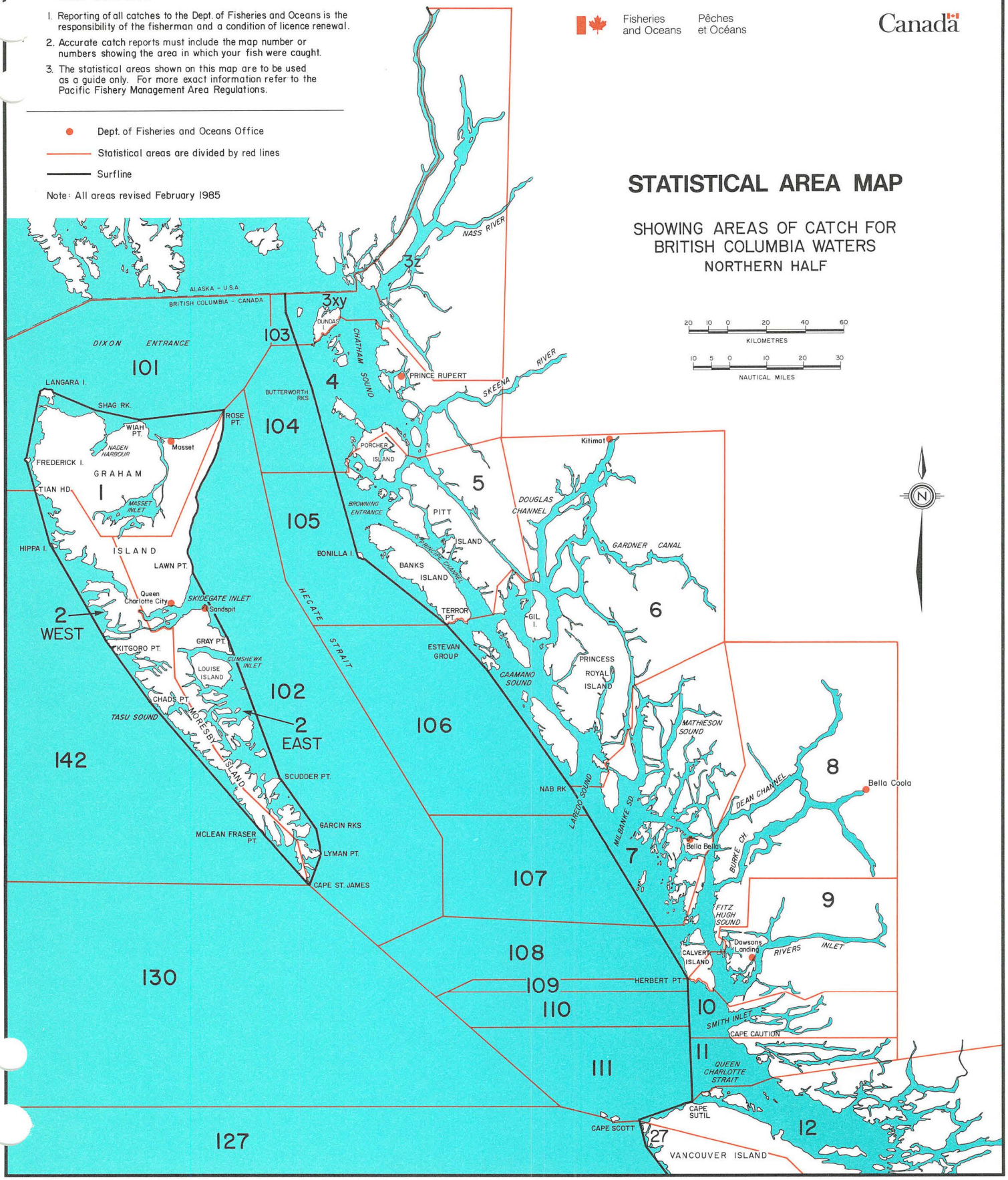
Fisheries and Oceans / Pêches et Océans

Canada

STATISTICAL AREA MAP

SHOWING AREAS OF CATCH FOR BRITISH COLUMBIA WATERS

NORTHERN HALF



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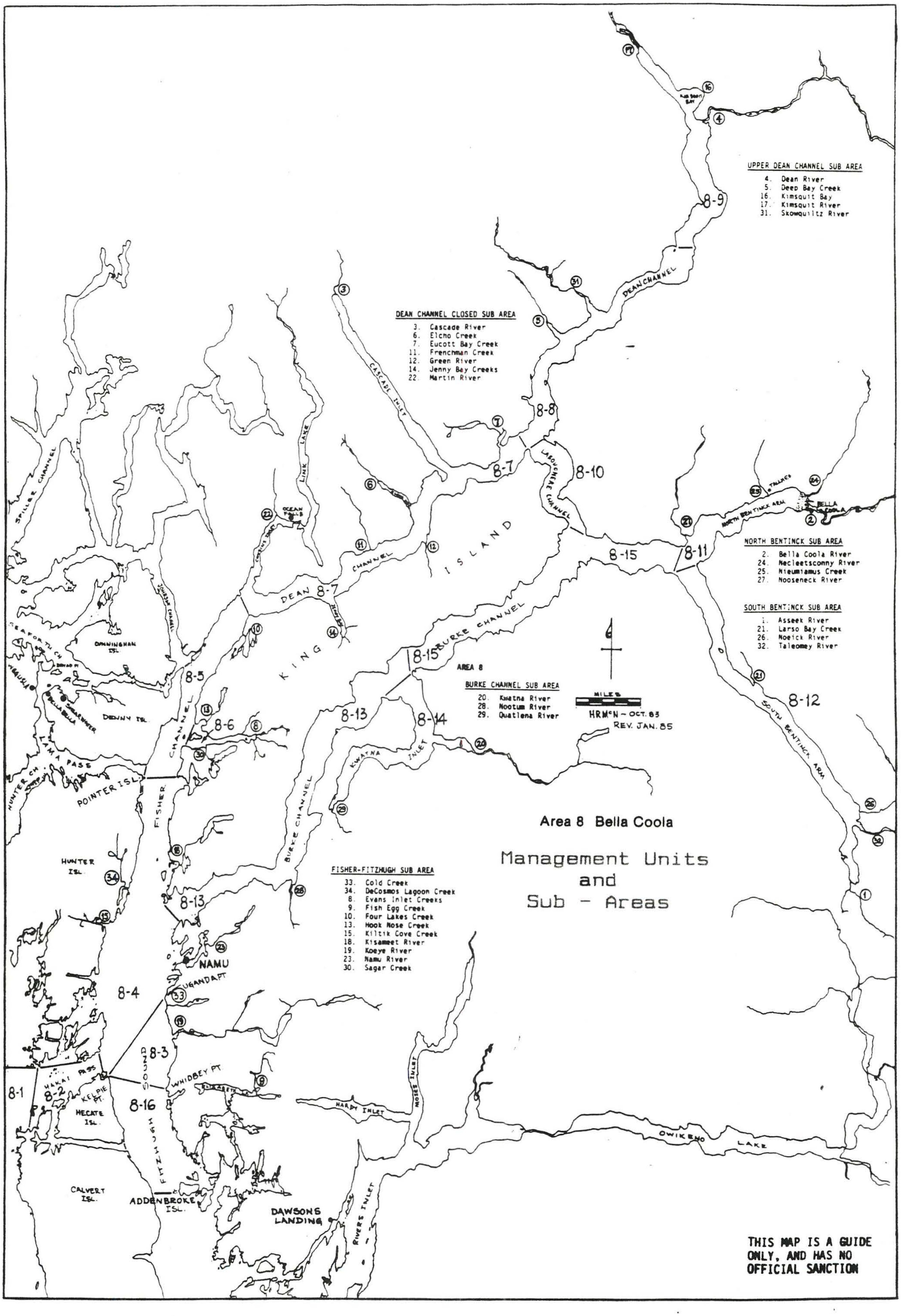
UPPER DEAN CHANNEL SUB AREA
4. Dean River
5. Deep Bay Creek
16. Kimsquit Bay
17. Kimsquit River
31. Skowquiltz River
DEAN CHANNEL CLOSED SUB AREA
3. Cascade River
6. Elcho Creek
7. Eucott Bay Creek
11. Frenchman Creek
12. Green River
14. Jenny Bay Creeks
22. Martin River
NORTH BENTINCK SUB AREA
2. Bella Coola River
24. Necleetsconny River
25. Nieumiamus Creek
27. Nooseneck River
SOUTH BENTINCK SUB AREA
1. Asseek River
21. Larso Bay Creek
26. Noeick River
32. Taleomey River
AREA 8
BURKE CHANNEL SUB AREA
20. Kwatna River
28. Nootum River
29. Quatlena River
MILES
HRMcN - OCT. 83
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FISHER-FITZHUGH SUB AREA
33. Cold Creek
34. DeCosmos Lagoon Creek
8. Evans Inlet Creeks
9. Fish Egg Creek
10. Four Lakes Creek
13. Hook Nose Creek
15. Kiltik Cove Creek
18. Kisameet River
19. Koeye River
23. Namu River
30. Sagar Creek
Area 8 Bella Coola
Management Units
and
Sub - Areas
DEAN CHANNEL
CASCADE INLET
LINK LAKE
OCEAN FALLS
DEAN CHANNEL
KING ISLAND
LABOUCHERE CHANNEL
NORTH BENTINCK ARM
BELLA COOLA
SOUTH BENTINCK ARM
BURKE CHANNEL
KWATNA INLET
FISHER CHANNEL
SPILLER CHANNEL
SEAFORTH CH.
CUNNINGHAM ISL.
DENNY ISL.
BELLA BELLA
LAMA PASS
HUNTER CH.
POINTER ISL.
HUNTER ISL.
NAMU
UGANDA PT.
WHIDBEY PT.
HAKAI PASS
KELPIE PT.
HECATE ISL.
FITZHUGH SOUND
NARDY INLET
MOSES INLET
OWIKENO LAKE
RIVERS INLET
CALVERT ISL.
ADDENBROKE ISL.
DAWSONS LANDING
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8-2
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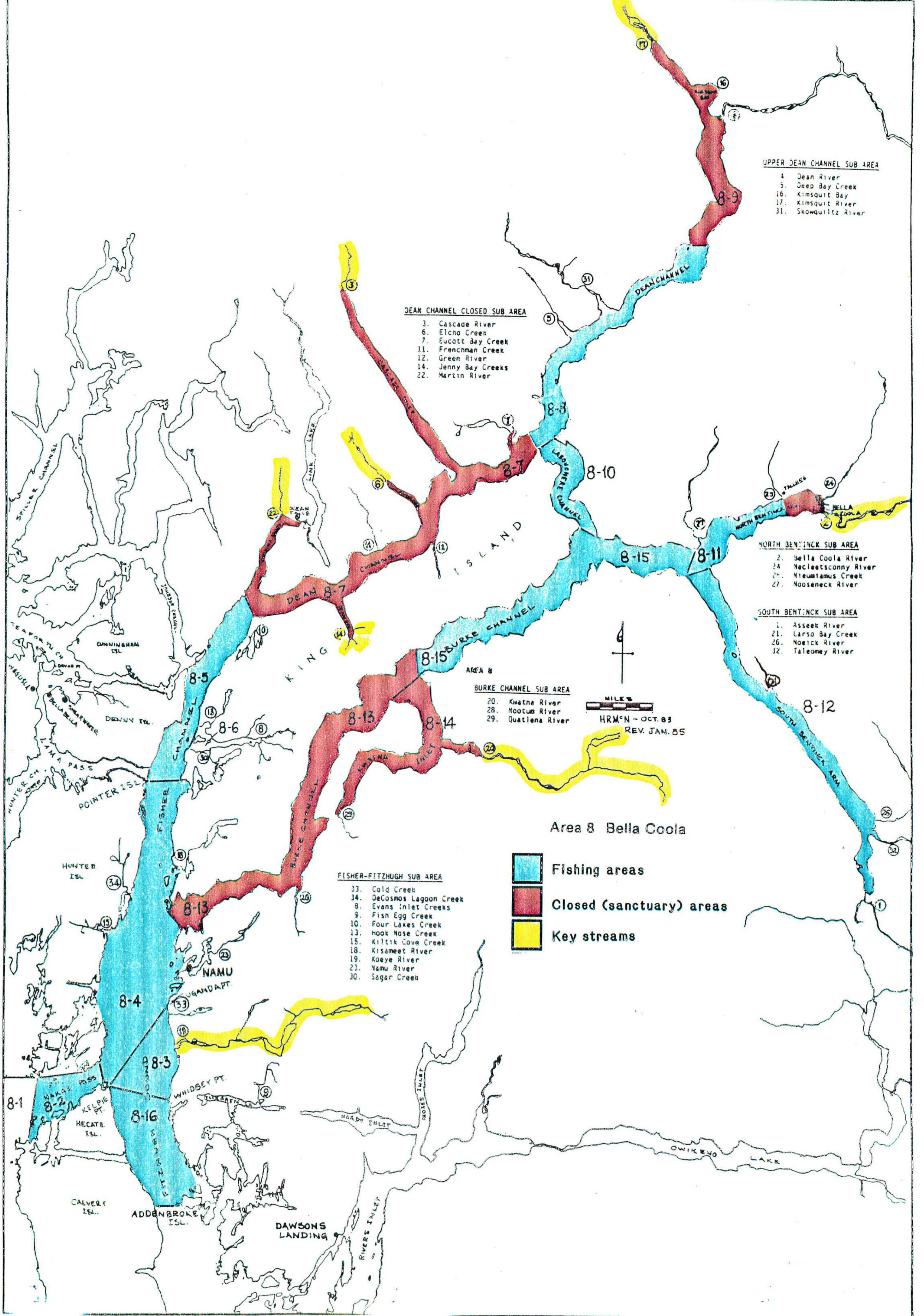
THIS MAP IS A GUIDE
ONLY, AND HAS NO
OFFICIAL SANCTION



Area 8 Bella Coola
Fishing areas
Closed (sanctuary) areas
Key streams
UPPER DEAN CHANNEL SUB AREA
4. Dean River
5. Deep Bay Creek
16. Kimsquit Bay
17. Kimsquit River
31. Skowquiltz River
DEAN CHANNEL CLOSED SUB AREA
3. Cascade River
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18. Kisameet River
19. Koeye River
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MILES
HRMcN - OCT. 83
REV. JAN. 85
8-1
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8-16
DEAN CHANNEL
BURKE CHANNEL
KING ISLAND
SOUTH BENTINCK ARM
FISHER CHANNEL
FITZ HUGH SOUND
KWATNA INLET
CUNNINGHAM ISL.
DENNY ISL.
HUNTER ISL.
POINTER ISL.
HECATE ISL.
CALVERT ISL.
ADDENBROKE ISL.
NAMU
DAWSONS LANDING
RIVERS INLET
OWIKENO LAKE
WHIDBEY PT.
KELPIE PT.
HAKAI PASS
LAMA PASS
BELLA COOLA
BELLA BELLA

Government of Canada 1986 Calendar

with Julian Calendar

Gouvernement du Canada Calendrier 1986

avec Calendrier Julien

05

JANUARY — JANVIER

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
			1 001	2 002	3 003	4 004
5 005	6 006	7 007	8 008	9 009	10 010	11 011
12 012	13 013	14 014	15 015	16 016	17 017	18 018
19 019	20 020	21 021	22 022	23 023	24 024	25 025
26 026	27 027	28 028	29 029	30 030	31 031	

FEBRUARY — FÉVRIER

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
						1 032
2 033	3 034	4 035	5 036	6 037	7 038	8 039
9 040	10 041	11 042	12 043	13 044	14 045	15 046
16 047	17 048	18 049	19 050	20 051	21 052	22 053
23 054	24 055	25 056	26 057	27 058	28 059	

MARCH — MARS

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
						1 060
2 061	3 062	4 063	5 064	6 065	7 066	8 067
9 068	10 069	11 070	12 071	13 072	14 073	15 074
16 075	17 076	18 077	19 078	20 079	21 080	22 081
23 082 / 30 089	24 083 / 31 090	25 084	26 085	27 086	28 087	29 088

APRIL — AVRIL

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
		1 091	2 092	3 093	4 094	5 095
6 096	7 097	8 098	9 099	10 100	11 101	12 102
13 103	14 104	15 105	16 106	17 107	18 108	19 109
20 110	21 111	22 112	23 113	24 114	25 115	26 116
27 117	28 118	29 119	30 120			

MAY — MAI

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
				1 121	2 122	3 123
4 124	5 125	6 126	7 127	8 128	9 129	10 130
11 131	12 132	13 133	14 134	15 135	16 136	17 137
18 138	19 139	20 140	21 141	22 142	23 143	24 144
25 145	26 146	27 147	28 148	29 149	30 150	31 151

JUNE — JUIN

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
1 152	2 153	3 154	4 155	5 156	6 157	7 158
8 159	9 160	10 161	11 162	12 163	13 164	14 165
15 166	16 167	17 168	18 169	19 170	20 171	21 172
22 173	23 174	24 175	25 176	26 177	27 178	28 179
29 180	30 181					

JULY — JUILLET

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
		1 182	2 183	3 184	4 185	5 186
6 187	7 188	8 189	9 190	10 191	11 192	12 193
13 194	14 195	15 196	16 197	17 198	18 199	19 200
20 201	21 202	22 203	23 204	24 205	25 206	26 207
27 208	28 209	29 210	30 211	31 212		

AUGUST — AOÛT

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
					1 213	2 214
3 215	4 216	5 217	6 218	7 219	8 220	9 221
10 222	11 223	12 224	13 225	14 226	15 227	16 228
17 229	18 230	19 231	20 232	21 233	22 234	23 235
24 236 / 31 243	25 237	26 238	27 239	28 240	29 241	30 242

SEPTEMBER — SEPTEMBRE

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
	1 244	2 245	3 246	4 247	5 248	6 249
7 250	8 251	9 252	10 253	11 254	12 255	13 256
14 257	15 258	16 259	17 260	18 261	19 262	20 263
21 264	22 265	23 266	24 267	25 268	26 269	27 270
28 271	29 272	30 273				

OCTOBER — OCTOBRE

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
			1 274	2 275	3 276	4 277
5 278	6 279	7 280	8 281	9 282	10 283	11 284
12 285	13 286	14 287	15 288	16 289	17 290	18 291
19 292	20 293	21 294	22 295	23 296	24 297	25 298
26 299	27 300	28 301	29 302	30 303	31 304	

NOVEMBER — NOVEMBRE

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
						1 305
2 306	3 307	4 308	5 309	6 310	7 311	8 312
9 313	10 314	11 315	12 316	13 317	14 318	15 319
16 320	17 321	18 322	19 323	20 324	21 325	22 326
23 327 / 30 334	24 328	25 329	26 330	27 331	28 332	29 333

DECEMBER — DÉCEMBRE

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
	1 335	2 336	3 337	4 338	5 339	6 340
7 341	8 342	9 343	10 344	11 345	12 346	13 347
14 348	15 349	16 350	17 351	18 352	19 353	20 354
21 355	22 356	23 357	24 358	25 359	26 360	27 361
28 362	29 363	30 364	31 365			

CALENDRIER 1987 CALENDAR

JANUARY — JANVIER

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
				1 001	2 002	3 003
4 004	5 005	6 006	7 007	8 008	9 009	10 010
11 011	12 012	13 013	14 014	15 015	16 016	17 017
18 018	19 019	20 020	21 021	22 022	23 023	24 024
25 025	26 026	27 027	28 028	29 029	30 030	31 031

FEBRUARY — FÉVRIER

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
1 032	2 033	3 034	4 035	5 036	6 037	7 038
8 039	9 040	10 041	11 042	12 043	13 044	14 045
15 046	16 047	17 048	18 049	19 050	20 051	21 052
22 053	23 054	24 055	25 056	26 057	27 058	28 059

MARCH — MARS

SUN DIM	MON LUN	TUES MAR	WED MER	THURS JEU	FRI VEN	SAT SAM
1 060	2 061	3 062	4 063	5 064	6 065	7 066
8 067	9 068	10 069	11 070	12 071	13 072	14 073
15 074	16 075	17 076	18 077	19 078	20 079	21 080
22 081	23 082	24 083	25 084	26 085	27 086	28 087
29 088	30 089	31 090				

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AREA 8 STOCK NOTES

CHINOOK

Migration and Timing

Bella Coola River (mouth) - from early May to mid-July, peaking June 20-25 (source: IFF and commercial gillnet fishery). Dean River, approximately one to two weeks later (source: commercial gillnet fishery - no IFF in this area).

Indian Food Fishery

The IFF for Chinooks on the Bella Coola River is an important indicator of timing and stock strength. Effort shifts from steelhead to large mesh nets for Chinooks after May 1. Effort increases with success rate and peaks during the first two weeks of June, at which time effort switches to smaller mesh nets for Sockeye (peak of effort does not coincide with peak of migration). N.B. During the recent commercial gillnet closures, an increased IFF effort and catch was evident.

Commercial Net Fishery

The main management effort has been directed toward the Atnarko (Bella Coola) Chinook, with Dean River stocks being passively managed. No other Chinooks in Area 8 are of commercial consequence. Prior to the late 1970's the area was opened by Regulation on February 1st for gillnets only (minimum 8.5 inch mesh) but there was no significant effort prior to mid-May. Fishing would peak in late June, and by early July most fishermen would switch to smaller mesh nets for Sockeye (small mesh nets and seines not permitted prior to late June - early July). Effort was spread throughout Area 8. Fishermen chose not to fish in upper Dean Channel due to seal predation, and South Bentinck Arm due to lack of fish. Kwatna Inlet was closed by Public Notice to protect "feeder Springs". Fleet size usually ranged from 50 to 60 boats. Catch during the May-June period usually ranged from 5000 to 10,000 pcs. (average weight 20-22 pounds dressed).

Extreme tides and foul weather adversely affect catch success.

Since the early 1980's, fishing in North Bentinck Arm has been restricted to daylight hours only, in an effort to reduce the loss of net-caught Chinook to seals.

Note: The definition of mesh size in the Regulations was changed in the early 1980's from 8.5 inches (stretch measure) to 8 inches (203 mm) taut measure.

Sport Fishery

Bella Coola/Atnarko River

The sport fishery concentrates in the Bella Coola River from early May through mid-June, at which time the river becomes glacial resulting in poor fishing success. Through June and July effort shifts to the non-glacial Atnarko River. The Atnarko River is closed to Chinook fishing by Regulation July 15th. Up to one third of the total Bella Coola/Atnarko Chinook non-tidal sport catch is taken during the last two weeks of the fishery. In recent years conservation measures have been taken, including bait bans, and July 1st closures.

Sport catch is not a good indicator of stock strength as success and effort is highly dependent upon water conditions. Turbidity and extreme high or low water levels contribute to low fishing success rates and reduced effort.

Enhancement

Atnarko River Chinook have been enhanced since 1981 by Snootli Creek Hatchery at Bella Coola in an effort to rehabilitate these recently (1980's) depressed stocks. The fifteen year International Chinook stock rebuilding program initiated in 1984 has also contributed to the rehabilitation of this stock. Current hatchery egg target is two million for the Atnarko River. An expansion scheduled for 1986 will increase the capacity to five million eggs, however, this expansion includes eggs from areas other than Area 8 (Area 9-Wannock River Chinook). The degree of enhancement has yet to be determined for the Atnarko River. The opportunity exists to enhance the Dean River Chinook and the Taleomey River in South Bentinck Arm.

The Atnarko Pilot Project, designed to rehabilitate odd year Pink salmon, trapped, reared, and nose-tagged wild Chinook fry from 1974 through to 1978. From the Fall of 1975 through to 1978 eggs were also taken.

	Fry trapped (Spring)	Eggs taken (Fall)
1974	20,076	
1975	64,141	3,228
1976	4,667	5,035
1977	56,570	15,200
1978	62,700	314,000

The project was discontinued after 1978.

Migration information regarding routes through Burke and/or Dean Channels is poor. The proportion of Atnarko/Dean River fish migrating through either channel is uncertain from year to year.

Escapements

Atnarko River Chinook escapement surveys are assessed by boat/foot and some by helicopter. Some experimental mark-recapture methods are currently being evaluated.

Inseason Stock Strength Indicators

1. Indian Food Fish (IFF) catch data
2. CPUE (commercial fishery)
   - Weather
   - Tides (Big tides and poor weather gives poor catches)
3. Fleet Size

1986 Expectations

Return rates to the terminal area have been much greater in 1984 (2.8:1) and 1985 (3.7:1) than average (1.5:1), probably due to restrictions in the early portion of the Northern British Columbia and Southeast Alaska troll fisheries precipitated by the Pacific Salmon Treaty negotiations. There is no reason to believe that those restrictions will not be in place for 1986. Therefore a return rate of 3.7:1 (which may be conservative) was chosen for the 1986 calculations, and may be conservative. Age composition, based on Area 8 ten year catch averages is assumed to be 8% three year olds, 33% four year olds, 48% five year olds, and 11% six year olds. (Source: commercial gillnet and in-river IFF and sport fisheries scale analysis).

Note: There are two methods that can be employed to calculate age composition from scale samples. The method used to calculate the age compositions above represents catch age composition. For example, in any year, the catch will consist of fish from two to four brood years. This information is useful for in-season management, however, in order to calculate expected returns the preferred method is to use age composition calculated for specific brood years. For example, the returning stock from one specific brood year will contribute to two to four catch years, dependent upon species. The Area 8 Chinook Age Composition Table included in the expectations section represents this method, and should provide for more accurate predictions.

SOCKEYE

Atnarko and Kimsquit sockeye are the actively managed stocks with respect to the commercial fishery in Area 8, with Koeye, Namu, Kisameet, and Hooknose being passively managed. The Namu/Koeye River stocks are utilized for Bella Bella IFF needs.

Migration and Timing

Atnarko River - measured by the IFF in the Bella Coola River, run timing from mid June to late July, peaking July 10th.

Kimsquit River - approximately one week to ten days later than the Bella Coola River timing. Run timing measured by the Dean Channel gillnet test fishery, from early July until late July early August, peaking approximately July 15th to 20th.

Koeye River, Namu River, Kisameet River, and Hooknose Creek are mostly June timing.

Indian Food Fishery

Bella Coola/Atnarko River:

The first portion of the Atnarko River Sockeye run is traditionally harvested exclusively by the Indian Food Fishery in the Bella Coola River. A major portion of this early segment of the run is also a significant contributor to the total escapement as it is not fished commerically. The principle gear used in this fishery are drift nets, however some set nets are also used.

Kimsquit River:

No Indian Food Fishery on this stock.

Koeye River:

Mainly utilized by Bella Bella Band since 1975, by agreement between the District Supervisor and the Areas 7 and 8 Fishery Officers, because of the pressure on limited Area 7 Sockeye stocks.

Namu River:

Sockeye utilized for Bella Bella Indian Food Fishery needs (Namu plant workers).

Commercial Net Fishery

Sockeye escapements to the Bella Coola River declined in the late 1970's to less than one third of the target escapement of 75000. Since 1981 Sockeye target fisheries have been restricted to the latter portion of the run during the first two weeks of July, and have usually been restricted to one day commercial test fisheries to assess stock strength. The stock is responding with escapements of 45000 to 50000 in 1984 and 1985 respectively.
Kimsquit River Sockeye appear to severely depressed (less than one half of target), however, escapements are difficult to enumerate. As with the Bella Coola/Atnarko River Sockeye, effort since 1981 has been restricted to short commercial test fisheries. There is currently a lenient approach to these test fisheries as they are scheduled even if brood year escapements indicate a small probability of surplus stock. Some justification can be made base upon the uncertainty of the escapement estimates, however the real problem is that there is a social-political barrier (one day fishery versus no fishery) that is difficult to cross.

Sport Fishery

There is no targetted sport fishery, either tidal or non-tidal, on sockeye.

Enhancement

There is no current enhancement of Sockeye in Area 8. There were enhancement pilot studies carried out by the Pacific Biological Station on Hooknose Creek from the mid 40's to mid 60's.

Escapements

Atnarko River escapements are well documented since the system is relatively easy to enumerate. The Kimsquit River, however, is difficult to enumerate as it is glacial during the migration period, there is a high percentage of lake spawners, the spawning season is long (September to November) and access for spawner enumeration is difficult due to its remoteness (aircraft only).

1986 Expectations

Total stock was calculated using the SEP Biostandard return rate (2.3:1), as in past years. The Area 8 average age composition for sockeye is 37% four year olds, and 63% five year olds.

PINK

The Area 8 pink fishery is dominated by the Atnarko River stock. The other actively managed stock originates in the Koeye River. The main fishery is managed by catch-per-unit-effort (CPUE) during the season to an Atnarko River escapement target of one million. Koeye River Pink arrive later in the season, are managed separately, and peak week for this fishery is August 10-16. There are a number of passive stocks throughout Area 8, but none are noteworthy on an individual basis except Kwatna River. These passive stocks seem to parallel the Atnarko River stock, such that if the Atnarko stock is managed successfully all the remaining pink stocks in Area 8 would appear to do well.

Migration and Timing

The migration of Area 8 pinks through the area is relatively quick and milling is not usually a problem. Arrival in the lower Bella Coola River is approximately July 14th for even years and July 24th for odd years and is defined as a total catch of greater than 250 fish in no less than 25 drift sets in the IFF. In the Atnarko River arrival is defined as 10,000 total to date past the Atnarko Counting Tower, approximately August 1 for even years and August 10 for odd years.

Migration routes vary from year to year. The proportion of the run using either Burke or Dean Channel is unpredictable and can have a profound effect on incidental chum and steelhead catches. Although the majority of the Pink salmon can be harvested in Fitz Hugh Sound depending on migration routes, a fair number can also be harvested in Fisher Channel. This results in a higher incidental catch of Chum and steelhead. In most years it is believed a major portion of the Atnarko River Pink run migrates through Burke Channel. Generally, numerous jumpers in Burke Narrows will be indicative of a large return of pink salmon.

Indian Food Fishery

Insignificant Indian Food Fish catches.

Sport Fishery

Sport fish catches of pink salmon in Hakai Pass can be an important preliminary indicator of arrival and stock strength in the fishing area.

Commercial Net Fishery

There appears to be an iverse relationship betwen fish size and run size. for example, if the first commercial seine catches show many large sized (4-6 lbs.) fish then a small

run is anticipated. The converse is not always, true although 3 to 3.5 lb. fish usuallly indicate a run of 1 to 1.5 million total stock. Later in the season (August) larger fish may also indicate Fraser River pink salmon passing through the area.

If there is a large returning stock Hakai Pass (8-2) can be opened to accommodate the fleet required to harvest the surplus.

The bulk of the Area 8 pink harvest is taken by the seine fleet. Gillnet catches in Fisher/Fitz Hugh are insignificant. This is not always the case for the Bella Coola gillnet fleet which may shift its preference from chum to pink salmon if there is a poor return of chum.

Enhancement

There is currently no enhancement for pink salmon in the area however a small scale stabilization spawning channel on the Atnarko River is being constructed in 1986. In the mid 1970's incubation boxes were utilized in an attempt to rebuild the declining odd year pink stocks in the Atnarko River but the stocks recovered naturally and the incubation boxes were only operated for a short period (1975-79).

1986 Expectations

The SEP Biostandard return rate is 2.8:1 while the Area 8 average for even year pink salmon is 3.95:1. Using these figures the projected returns to Atnarko and Kwatna Rivers range from 1.9 to 2.6 million fish. The projected range for Koeye River is 350,000 to 494,000.

Hydraulic sampling and downstream fry counts carried out by Biological crews in the Bella Coola/Atnarko River have become extremely important indicators of returning stock strength since its beginning in the mid-1970's.

Escapements

Escapements to the Atnarko River are determined by means of a tower count.

CHUM

There are 2 distinct groups of chum salmon in Area 8. The first and more important are the summer chum which are both earlier and larger than their fall run counterparts. The major summer chum stocks are referred to as the Bella Coola, Kimsquit and Dean Closed stocks. The Dean Closed stock is an amalgamation of 6 streams in outer Dean Channel.

The second group (Fall Chum) consists mainly of the Bella Coola and Martin River stocks along with several small stocks in Fisher Channel and Fitz Hugh Sound.

Migration and Timing

Summer chum timing is very similar to that of Pinks therefore these stocks are impacted upon by any commercial fishery directed on pink salmon. As with Pink, migration routes are thought to be variable.

Indian Food Fishery

Insignificant Indian Food Fishery on Chum salmon.

Sport Fishery

Insignificant Sport Fishery on Chum salmon.

Commercial Net Fishery

Summer Chum salmon are harvested by gillnets in Fisher Channel, Fitz Hugh Sound, Dean Channel Gillnet Area, and the Bella Cool Gillnet Area. They are also harvested incidentally by seines in Fisher Channel and Fitz Hugh Sound. In recent years the seine fleet has begun to target on Chum salmon, principally in Fisher Channel.

Martin River Fall Chum salmon are harvested by gillnets in Fisher Channel. Bella Coola River fall chum are harvested by gillnets in the Bella Coola Gillnet Area.

In addition to generally smaller size, fall Chum tend to be a poorer quality product.

Fall Chum salmon fisheries are held in daylight only to reduce Coho interceptions.

Enhancement

The only notable enhancement activity in Area 8 is the Snootli Hatchery on the Bella Coola River. The original purpose of the hatchery was to produce sufficient numbers of Summer Chum to allow the Pink fishery to continue at an required exploitation rate without adversely affecting the summer Chum population. There is little enhancement of fall Chum stocks largely due to the difficulty in acquiring brood stock.

1986 Expectations

SEP Biostandard return rate for Chum salmon is 1.8:1. A high incidence of three year old fish in 1985 indicates a higher than average return rate from the 1982 brood. Therefore the return rate for four year olds in 1986 was estimated at 2.5:1. The SEP standard was used for the three and five year olds. Catch-age composition has been calculated specifically for Kimsquit and Bella Coola River stocks. An Area 8 average age composition was used for the remainder of the Area 8 Chum stocks.

Escapements

Because of the glacial headwaters of the Bella Coola and Kimsquit Rivers they are very turbid and difficult to enumerate.

COHO

There are currently no target net fisheries on Coho. Escapement enumeration is difficult because of the extended spawning season (September to January), and the patrol vessels generally leave in October. For all systems where Coho are found, they should be counted in late December or January after they have moved onto the spawning beds, however, conditions and water levels in coastal areas often make this job difficult or impossible at this time of the year. At present the only systems adequately covered on an annual basis are the Bella Coola and Martin Rivers. In 1985 one charter vessel was kept on part time until the third week of November and even this was insufficient. In order to manage coho as other species a committment must be made to get better escapement information as well as some fry or smolt output data.

Area 8 Weekly Notes and Fishery Management Rules

Convention Regarding Use Of Dates

Convention will be that the week will run from Sunday to Saturday (eg. May 4th to May 10th 1986). A week is considered to be in the month with the majority of days (4 or more) in that particular week. In 1986, Week 1 for our purposes is March 30th to April 5th, 1986. This coincides roughly with fry emergence as well as with the beginning of the fiscal year.

Scale Sampling Program

Scales should be taken during the following fisheries:

1. Sockeye - commercial gillnet fishery in the Bella Coola Gillnet Area (BCGNA) and the Dean Channel Gillnet Area (DCGNA);
   - IFF in the Bella Coola River;
2. Chum - commercial gillnet fishery in the Bella Coola Gillnet Area (BCGNA) and the Dean Channel Gillnet Area (DCGNA);
   - IFF in the Bella Coola River;
3. Chinook - commercial gillnet fishery;
   - IFF Bella Coola River;
   - Sport fishery Bella Coola/Atnarko and Dean Rivers.

WEEK 6: May 4-10, 1986

IFF:
-Indian Food Fish (IFF) figures start to be of interest in Chinook management.
-in 1986 anticipate IFF catch near 1500 Chinook for the year
-expect to start Guardian on Bella Coola River for run timing and strength information and for enforcement.
-general monitoring of the fishery for catch statistics and scale samples
-in 1986 anticipate IFF catch near 50 Chinook this week (1984-10, 1985-50 in this week)
-in 1986 anticipate effort 30-50 gillnet drifts for the week

Sport Fishery:
-non-tidal water sport fishery starting on Chinook in the Bella Coola River.

Commercial Net Fishery:
-None Anticipated

Other:
-Chinook is the only species of concern in fishery management this week.

-the tails of the run appear to be extending as the run size increases (eg. first IFF caught Chinook of 1985 was in early April)
-take as many Chinook scale samples as possible from the IFF to establish age composition for Atnarko River Chinook.
-would like to have at least one patrol vessel in the sub-district this week for habitat, boundary signs, general creek inspections, etc.

WEEK 7:May 11-17, 1986

IFF:
-Chinook concerns same as previous week only more intense
-in 1986 a Chinook catch of 50-60 pieces is expected (1984-32, 1985-62 in this week).
-in 1986 effort on Chinook is expected to be 50-60 gillnet drifts for the week
-starting to look for trends in the IFF catch data over the season, in order to get some indication of Chinook run strength
-IFF Chinook catches in the 100+ range (given normal conditions and 50-60 gillnet drifts for the week) would stimulate interest, but no change would occur in the 1986 fishing plans.

Sport Fishery:
-Bella Coola River sports fishery accelerating providing water conditions are good (90% of the time water levels are good)
-hot weather in April and early May will increase water levels and reduce sport fishing pressure

Commercial Net Fishery:
-in 1987 expect to start commercial gillnet fishery for Chinook during this week, depending on stock strength. Two patrol vessels will be required for this fishery. The fishing area will consist of the Bella Coola Gillnet Area (BCGNA) plus 8-13. Dean Channel unlikely to be opened for Chinook. Should have a patrolmen to assist in patrolling Dean Channel to prevent poaching.
-in the future this fishing area could be altered depending upon migration routes (Burke or Dean Channels). A tagging program would be necessary to determine these routes.

Other:
-if fishing conditions are good in 1986 would be very concerned if less than 25 Chinook caught in the IFF for the week, this being an indicator stock strength.
-could start a charter boat this week in the future (not necessary in 1986)
-Atnarko River Guardian required on strength this week for Atnarko River sport fishery (May 15th).

WEEK 8: May 18-24, 1986

IFF:
-in 1986 IFF catches should be increasing to 100-110 Chinook with an effort of 50-70 gillnet drifts for the week
-Chinook IFF the same as the previous weeks but more intense, and starting to get a general feeling for Chinook run strength.
-if IFF Chinook catch trends are poor would begin to consider emergency restrictions.

Sport Fishery:
-The sport fishery for Chinook should be starting in Atnarko River this week.
-if IFF Chinook catch trends are poor, should consider conservation measure in the sport fishery, coinciding with IFF restrictions (eg: early closure on the Atnarko River).
-Atnarko River Guardian gathering catch data.

Commercial Net Fishery:
-None Anticipated

Other:
-monitor IFF and sport fishery catches for hatchery contribution
-not managing any other species at this point
-1986 ADMINISTRATIVE NOTE: office becomes extremely busy with requests for licences and inspections etc. as commercial fleet begins to prepare for upcoming season. Part time clerk required in the office. In the future (possibly 1987) this will move to Week 6 if Chinook fishery opens earlier.
-patrol boat could be diverted to Burke Channel herring spawn measurement from mid May to June
-logging referrals and inspections increase with increased activity in the forest.

WEEK 9: May 25-31, 1986

IFF:
-in 1986 IFF Chinook catches should be showing an increase this week.
-IFF starts to become dependant on Chinook run size
-in 1986 IFF catches should be 150-200 Chinook (1985-300, 1984-150) this week (50-70 drifts).

Sport Fishery:
-sport catch statistics not a relevant indicator of Chinook stock strength due to extreme variablility resulting from fluctuations in water levels and turbidity. Continue to get

catch statistics and enforce regulations in the Bella Coola/Atnarko River sport fishery.

Commercial Net Fishery:
-None Anticipated

Other:
-Chinook only species managed this week (same as previous week but more intense).
-picture of the 1986 Chinook run size taking form by the end of the week.
-information from Bella Bella regarding IFF troll fishery in Seaforth Channel and information from the 2 week commercial troll opening (unknown at this time) in outer Area 7 and 8-1 is important in Chinook management.
-start thinking about Koeye and Namu Sockeye

WEEK 10: June 1-7, 1986

IFF:
-still managing only Chinook, (too early for Sockeye).
-IFF Chinook catches can be an important management consideration. Large IFF Chinook catches (over 200 pieces) could be used as a stock strength indicator and may stimulate changes in commercial fishery management. Being early in the season, more confidence would be given to the expectations than to the IFF catch data.
-in 1986 IFF catches should be 140-160 Chinook (60-80 drifts)
-still looking at trends in IFF Chinook catches
-cumulative Chinook catch in IFF should be 500-700 pieces
-IFF seems to have a lull which could be associated with the 2 week troll opening. If the troll fishery is closed the IFF catch may be higher
-requests for permits for Namu/Koeye IFF for Sockeye starting, therefore would like to have Koeye Guardian in place this week

Sport Fishery:
-Bella Coola/Atnarko River sports fishery-no change. Bella Coola River may become unfishable shifting pressure to the Atnarko River

Commercial Net Fishery:
-commercial gillnet fishery targeting on Atnarko River Chinook should start this week.
-the commercial gillnet fishery anticipated fleet size 50-60 boats. Expect very little fleet moving in from other areas for 2 one day fisheries with an anticipated catch of 600-700 Chinook per day.
-Catch Per Unit Effort (CPUE) per day on a 2 day fishery is different than on a 1 day fishery because in a 2 day fishery deliveries occur at noon on the first day (1 day CPUE higher

than 2 day CPUE). This means the first day of a fishery of two or more days cannot be directly compared with a one day fishery.
-if catches are much different than expected, there will be no change in management for the first week of fishing. Considerations for the second week will be discussed if anticipated CPUE is very low.
-Expect CPUE to be higher than historic average, possibly due to international Chinook conservation measures assuming this program continues.
-The commercial Chinook fishery in Area 8 has a special problem with illegal set nets. This method is be more effective than legal drift nets, and therefore special enforcement is required.

Other:
-nearing the peak of the Atnarko River Chinook run
-big tides result in large bodies of fish moving into the Bella Coola River
-should note that recent Chinook fisheries have been very short (one day) which makes comparisons with previous two to three or four day fisheries difficult.
-Chinook return rates in recent years due to troll fishery restrictions are more uncertain than for other species (except pinks).
-jumpers in Fitz Hugh, Hakai Pass and near Sunny Island indicate presence of Sockeye.

WEEK 11:June 8-14, 1986

IFF:
-some Sockeye may begin to show in the Bella Coola River but will be very few (1985-11, 1984-17 Sockeye in IFF)
-this is peak week in terms of CPUE although effort decreases slightly
-in 1986 expect 30-50 gillnet drifts for a total IFF catch of approximately 150 Chinook for this week
-catch trend is important, but if the catch is low, it may be due to low tides, since tide level can influence Chinook entry into the Bella Coola River.
-IFF at Koeye River restricted to fishing outside river mouth boundary. Fishery based largely on use of commercial gillnets from Bella Bella. At present, this fishery is basically unmanaged, however IFF catch statistics are collected when possible. This situation is undesireable and could be easily remedied by having the Koeye Guardian on station from June 15th through September, rather than starting June 25th as in recent years.
-patrol boat should be in vicinity of Koeye/Namu for IFF
-Namu IFF outside Namu harbour. No reasonable requests for permits denied.

Sports Fishery:
-little change from previous week with some increases in effort
-may still be fishing Bella Coola River if May and June were cool

Commercial Gillnet Fishery:
-Chinook are still the only species managed this week.
-commercial gillnet fishery heavily dependent on direction from the Northern Panel of the Pacific Salmon Commission.
-In 1986 this week will have the second one day gillnet opening for Atnarko River Chinook. Anticipated catch average should be 15 Chinook per gillnet from an expected fleet size of 50 to 60 boats (unchanged from previous week). Weekly catch should be approximately 700 to 900 Chinook.

WEEK 12: June 15 - 21, 1986

IFF:
-monitoring IFF catch of Chinook in the Bella Coola River for indication of stock size, but catch is now considered incidental to Sockeye since 50% of the effort has switched to small-mesh nets. This could be considered transition week, since this is usually the last week that large-mesh nets are used are used in any numbers.
-sporadic IFF in North Bentinck for Sockeye using commercial gillnet gear (not significant).
-1986 Chinook IFF anticipated catch about 150 for this week (60 to 70 drifts). Cummulative catch to date in 1986 should be 800 to 1000 pcs. Any additional catch from this point will be incidental to the Sockeye fishery.
-If Chinook stocks require serious conservation, the Bella Coola Band may be requested to reduce fishing time (days per week).
-anticipated Sockeye catch in the Bella Coola River for years where expected run size is near 65,000 (eg. 1986) could range from 200 to 1000 for this week (highly dependent on run timing). Too early for catch information to be of great value to fisheries management, but beginning to look for trends.
-Week following the first appearance of Sockeye, expect heavy effort in the Bella Coola River IFF (probably this week).
-Koeye and Namu Sockeye IFF building, with the annual catches of 2000 to 3000 pieces total. Weekly catches in this fishery are highly variable and are dependent on effort. Annual catches seem to have remained stable.

Sport Fishery:
-same as last week but more intense. Probably finished fishing Chinook in the Bella Coola River with effort concentrated in the Atnarko River. This is a result of high, turbid water in the Bella Coola River.

-tidal water sport fishery begins in May/June in the vicinity of Kwatna and in Hakai Pass. Patrol coverage of the tidal sport fishery has been light in the past due to budgetary constraints.
-Atnarko River Chinook are not heavy contributors to the tidal water sport fishery because they do not seem to take sport gear in North Bentinck Arm.

Commercial Net Fishery:
-No commercial fishery this week in 1986.
-Ordinarily, this would be close to the peak of commercial fishing for Atnarko River Chinook (in years of good returns).
-the fleet may begin to move into Dean Channel (if open) to target on incoming Dean River Chinook.

Other:
-potential for herring to be spawning in Burke Channel requiring patrol vessel for survey.
-Sockeye are concentrated in Koeye Bay this week in preparation for upstream migration next week, therefore there should be a Guardian in place by June 15th.

WEEK 13: June 22 - 28, 1986

IFF:
-95% of the effort in the Bella Coola River is directed at fishing Sockeye this week (small mesh nets). The balance of one or two fishermen are still fishing Chinook using large mesh nets.
-IFF should be escalating with catches of 800 to 1000 Sockeye based on a projected run size of 40000, and in 1986 catches of 150 Chinook in 60 to 70 gillnet drifts for the week in the lower Bella Coola River. Chinook catch is mostly incidental in Sockeye nets.
-Chilcotin Indians will be likely fishing Sockeye and Chinook in the Atnarko River.
-Namu/Koeye IFF decreasing with possiblilty of this being next to last week.

Sport Fishery:
-Atnarko River Guardian monitoring and controlling bait restrictions with escalating sport fish pressure.
-The sports charter boats should be operational in Hakai Pass.
-Tidal sport fishery starting in Fisher Channel and Fitz Hugh Sound.

Commercial Net Fishery:
-Could be fishing (gillnet) Chinook in a strong year.

-Too early to fish for Sockeye in 1986 due to depressed stocks.
-Even if Sockeye returns were strong, seines would not be permitted to operate until mid-July for the conservation of immature Chinook ("squishers").

Other:
-Sockeye move into Koeye River from Koeye Bay this week.
-Koeye Guardian in the past was hired and in place by mid-June for the purpose of Sockeye escapement enumeration, protection, monitoring and control of IFF on this stock. In recent years this position has not been filled until the end of this week due to man year constraints. This is too late with respect to the above requirements.
-Herring spawn survey in Burke Channel should be finished.
-Logging referrals continuing.
-Selection of Dean Channel charter test fisherman and preparations for start of test fishery next week.
-Prime week for enforcement for illegal sales of Area 8 Chinook and Sockeye in Williams Lake.

WEEK 14: June 29 - July 5, 1986

IFF:
-Koeye/Namu IFF effort decreasing rapidly, although some Namu plant workers will continue to food fish throughout the season.
-IFF in the Bella Coola River increasing with 100% effort directed towards Sockeye. In years similar to 1986, catch anticipated to be 1000 to 2000 Sockeye, in 60 to 80 gillnet drifts with 100 incidentally caught Chinook in 1986.
-The Sockeye catch and CPUE in the Bella Coola River this week and in the next two are important indicators of Sockeye run strength with respect to any commercial gillnet fisheries.

Sport Fishery:
-no effort in the Bella Coola River because of water conditions, therefore effort now concentrated in Atnarko River.
-tidal effort increasing. This includes charter operations at Hakai Pass as well as private boats throughout Area 8.

Commercial Net Fishery:

-There is no commercial net fishery anticipated for this weekly period in 1986.
-In years of strong returns this would likely be the last week of a directed commercial gillnet fishery on Area 8 Chinook.
-There could be a Sockeye fishery on Atnarko River stocks during this week in years where July 2 or 3 falls on a

Sunday if stock strength warrants it (due to perceived timing of peak of Sockeye run).
-Since Chinook and Sockeye are both present in the fishing areas during this week, either species could be protected during potential commercial gillnet fisheries by imposing mesh restrictions.
-May begin to see a showing of Pink and Chum in the commercial gillnet catch in Fisher Channel and Fitz Hugh Sound (F/FH). (eg. In 1985 a total of 2400 Chum were recorded in F/FH, and in 1984 a total of 1400 Pink for the week.)
-Start of Kimsquit River Sockeye in Fisher Channel (indicated by increased abundance of Sockeye in Fisher Channel catches coincident with decreased abundances of Sockeye in catches in Fitz Hugh Sound).

Other:
-Dean Channel charter test fishery starts this week.

WEEK 15: July 6 - 12, 1986

IFF:
-Koeye/Namu IFF insignificant this week.
-peak of Atnarko River Sockeye migration in Bella Coola River IFF.
-In years similar to 1986 (total returning stock approximately 65,000), the Sockeye catch ranges from 1000 to 2000 for the week. In 1986 anticipate this catch plus 100 to 150 Chinook resulting from 60 to 80 gillnet drifts for the week.

Sport Fishery:
-Atnarko River sport fishery for Chinook closes July 15th by regulation, making this week a frenzy of sport fishing activity.
-The tidal water sport fishing activity remains steady and stable through July and August.
-Occasional Pink should appear in the Hakai sport fishery this week.
-Sport fish charter vessels in Hakai Pass are usually completely booked by this week, and will remain so for the balance of the summer sport fishing season.

Commercial Net Fishery:
-The Sockeye fishery in Area 8 is not governed by pre-season expectations or by predetermined target escapements, but rather by socio-economic considerations. THIS FISHERY IS NOT MANAGED TO MEET THOSE TARGET ESCAPEMENTS. For example the 1986 expectations show no fishable surplus available, yet a commercial gillnet fishery is scheduled. In theory, the Atnarko and Kimsquit Rivers Sockeye stocks alone could produce annual surpluses of

155,000 calculated using SEP biostandard return rate of 2.5:1, if the present Sockeye target escapements were consistently met.
-This is past the peak of Atnarko River Sockeye run in the commercial fishing areas.
-This could be a peak week for Kimsquit River Sockeye in the commercial gillnet fishery in Fisher Channel. Should see the beginning of Kimsquit River Sockeye in the Dean Channel Test Fishery (in 8-9). In years of good returns of Sockeye to the Kimsquit River a commercial fishery would be probable in the Dean Channel Gillnet Area (DCGNA, 8-8).
-There should be showings of Pink and Chum in the commercial fishery in F/FH this week. Beginning to look at Chum catch averages in all fishing areas. F/FH catch averages may begin to give early indication of Bella Coola and Kimsquit Rivers Chum run strength (especially if Kimsquit River Chum is predicted to be weak).
-Seines closed to conserve immature Chinook.
-For 1986, this is the first week of a commercial fishery using small mesh gillnets only, targeting on Atnarko River Sockeye. This week would normally be too early for a commercial Sockeye fishery in the DCGNA (8-8).

Others:
-Start to look for hatchery marks (fin clip) on Chum caught in the commercial net fishery in F/FH.
-The commercial fishing activity in other Areas may influence the magnitude of the fishing effort in Area 8. For example, Rivers Inlet may draw much of the gillnet fleet from the Area 8 Sockeye fishery.

WEEK 16: July 13 - 19, 1986

IFF:
-Begin to look for presence of Chum salmon in the Bella Coola River IFF. The actual Chum catch is not significant as the effort directed on Chum varies inversely with Sockeye run strength, by means of selected mesh sizes.
-Chinook are still an incidental catch in the Bella Coola River IFF
-Although still intense, this should be the last week for the Bella Coola River IFF on Sockeye. Because Sockeye are not managed in the commercial fishery, the IFF catch figures are relevant to in-season commercial fishery management, and are collected as a record of catch in the IFF.

Sport Fishery:
-Non-tidal in the Atnarko River same as in previous week until July 15th closure.
-Tidal water sport fishery also unchanged from previous week, however, Hakai Pass sport catches of Pink are now an important consideration in management of the commercial fishery. This Pink catch may not show up in sport catch

records since most will be released. A sportfish patrolman is essential in the collection and compilation of this type of information.

Commercial Net Fishery:

General:
-Beginning in 1985, catch data for Fisher Channel (8-5) and Fitz Hugh Sound (8-2,3,4 & 16) has been kept separate because of the disparate nature of the two areas. In order to consider historic information, these two areas will be discussed jointly herein, but will be separated wherever possible.
-In even years Pink and Chum now dominate this week's management in F/FH, however, Sockeye may still be considered in the management of the BCGNA and DCGNA. If, for example, Sockeye returns were poor and Chum returns warranted fishing, Sockeye could be protected with a minimum mesh size restriction.
-In odd years, with Pink being about one week to ten days later, Sockeye would continue to dominate the management in Area 8.

Fisher/Fitz Hugh:
Sockeye
-Tail end of Kimsquit River Sockeye in Fisher Channel.
-Management Units (MU) 8-2 and 8-16 are dealt with in the Rivers Inlet Sockeye management until late July. There are no other Area 8 Sockeye in Fitz Hugh Sound that warrant management considerations.
-Whidbey Point (MU 8-3 and 8-16 boundary) can produce good seine catches of Sockeye, believed to be destined for Rivers Inlet.
Pink
-Size of Pink in seine catches is of interest, in that small fish (3 to 3.5 lb.) may be indicative of a large run. Conversely, large fish (6 lb.) may indicate a small run or the presence of passing stocks.
-Pink jumpers in Hakai Pass, F/FH, and Humpback Bay (immediately south of Farewell Pt., East Coast Denny Island opposite Evans Inlet) and occasional large seine set indicate presence and possibly abundance.
-In even years, with good expectations and good fishing conditions the seine daily average catch could be in the order of 1000 per day. In odd years, Pink just starting to show.
Chum
-Seine catch averages in Fisher Channel are becoming significant. It is important to note that these may indicate some targeting on Chum.
-Fisher Channel (8-5) may not be open this week if there are concerns for the strength of Kimsquit River Chum.

DCGNA:

Sockeye

-Peak week for Kimsquit River Sockeye. There should be signs of Sockeye in the Kimsquit River.

-If Sockeye catches are low, some fishermen may switch to Chum nets (6 to 6.5 inch mesh), therefore, when collecting catch average data, it is important to ensure that mesh size is also noted.

Pink

-Pink are not actively managed in the DCGNA. Any surpluses destined for streams in this Sub-area will be harvested incidentally in other Area 8 fisheries.

-1986 should see good returns from a brood year escapement of 60,000 to the Kimsquit River. This may be evident in the incidental Pink catch in the DCGNA but will not affect the 1986 management plans.

Chum

-Catch averages in the DCGNA may give an early indication of Chum stock strength.

-Scale sampling should begin this week to determine age composition.

-First appearance of Chum in the Kimsquit River may occur this week, as noted by the sport fish guide.

BCGNA:

Sockeye

-Although the peak of the Atnarko Sockeye has passed, some fishermen may still be using Sockeye nets.

Pink

-Should begin to see some early indication of Pink in catches in Burke and Labouchere Channels, and a showing off the Bella Coola River.

Chum

-Scale sampling should begin this week to determine age composition.

-If Sockeye catches are low, some fishermen may switch to Chum nets (6 to 6.5 inch mesh), therefore, when collecting catch average data, it is important to ensure that mesh size is also noted.

Other:

-If open, Seaforth Channel (Area 7) net catches may be of interest as a preliminary indicator of incoming Area 8 Pink and Chum.

-Trollers operating in the outside portions of Areas 7 and 8 may reflect incoming Area 8 Pink run strength in their catches.

-Dean Channel Test Fishery continuing and becoming more important in indicating stock strength for Sockeye and Chum.

-Atnarko River Pink migration routes may become apparent this week (ie. Pink catches in Burke vs. Labouchere Channels). Also note "fleet talk" in Labouchere Channel.

-Fleet size is a major consideration (if greater than 60) in the management of the fishery in the DCGNA, that being catchability and movement of gear. In addition, a larger fleet represents a problem with the enforcement of both the upper and lower DCGNA boundaries.
-Start to look for hatchery marks (fin clip) on Chum caught in the commercial net fishery primarily in F/FH but also looking in all other fishing areas.
-Snootli Hatchery crew would be putting in fences this week in the Bella River system.

WEEK 17: July 20 - 26, 1986

IFF:
-Not considered in fisheries management this week.

Sport Fishery:
-Same as previous weeks.
-Atnarko River Chinook fishery now closed, but requires enforcement checks to ensure compliance, especially during the first week.

Commercial Net Fishery:

General:
-Managing Pink and Chum only this week, except DCGNA where Sockeye are also considered.
-Commercial catch data is relied upon heavily for indications of stock strength.
-Seine fisheries for Sockeye in Johnstone Strait, which usually peak in the third week of July, can draw the seine fleet away from F/FH. Conversely, if other areas such as Johnstone Strait and Area 6 have poor expectations or poor fishing, the F/FH seine fleet could increase. If activities in Johnstone Strait reduced the seine effort in F/FH, it may be necessary to consider more fishing time. If other Area's activities were such that the F/FH seine fleet was increased then the fishery may have to be adjusted accordingly.
-Look for hatchery marks (fin clip) on Chum caught in the commercial net fishery. This could be an indication of hatchery stock component in the commercial fishery. This information is required in-season to be of any use as a management tool.

F/FH:
<u>Sockeye</u>
-No longer actively managed.
<u>Pink</u>
-Commercial net fishery approaching the peak this week for even years, and in odd years showing increasing Pink catches as the run begins.
-In even years, with good expectations and good fishing conditions the seine daily average catch could be in the

order of 2500 per day. In odd years, under similar conditions, these catches would be 1000 per day.
-In even years, there should be indications of the presence of Pink in many parts of the area this week, such as jumpers, "fish balls", and schools.
-Hakai Pass Sport catch of Pink can be an important indicator of abundance of even year stocks, as well as an indicator of arrival of odd year stocks.
-Pink should be in Kwatna Bay by the end of this week and there should be jumpers evident in Burke Channel and especially Burke Narrows.
-Size of Pink in seine catches is of interest, in that small fish (3 to 3.5 lb.) may be indicative of a large run. Conversely, large fish (6 lb.) may indicate a small run or the presence of passing stocks.
-In 1986, this week's fishery is scheduled for two days. By the end of the fishery, the seine TTD for Pink should be approximately 300,000, given the 1986 expectations for Pink. If this catch is not reached by the end of the second day and returns appear to be as predicted, an extension will be considered unless there is evidence that the fleet size might substantially increase.

Chum
-If an extension is warranted for the harvest of Pink it may only be in Fitz Hugh Sound (8-3, 8-4) in order to conserve Chum in Fisher Channel (8-5). This is especially important if some seines are targeting on Chum salmon in 8-5.

DCGNA:
Sockeye
-If Sockeye catches are low, some fishermen may switch to Chum nets (6 to 6.5 inch mesh), therefore, when collecting catch average data, it is important to ensure that mesh size is also noted.
Pink
-Pink are not actively managed in the DCGNA. Any surpluses destined for streams in this Sub-area will be harvested incidentally in other Area 8 fisheries.
Chum
-Kimsquit river River should be given its first inspection for Chum by aircraft. There should be a presence of fish but in no significant numbers.
-Test fishery results important.
-Commercial net catch showing an increase toward the peak in Week 19.

BCGNA:
Sockeye
-No longer managed in this fishing area.
Pink
-Catches in the commercial fishery increasing over previous weeks.

-Some local fishermen may target on Pink with smaller mesh nets. This has the effect of skewing the catch averages and should be taken into account when evaluating them.
-Number of Pink salmon in the commercial gillnet catch in Labouchere Channel may help to indicate the migration route of Atnarko River Pink. This may have ramifications in the management of the Fisher Channel Pink and Chum fishery.

Chum

-There could be some milling of Chum in North Bentinck Arm, indicated by dark fish in the gillnet catches.
-In the event of poor Chum expectations, North Bentinck (8-11) could be closed this week.

Other:
-Snootli Hatchery crew should be busy this week with Chum egg-takes.
-Early escapement data for Bella Coola River Chum available from the Bella Coola River Guardian.
-Atnarko River Counting Tower is the principle indicator of Pink escapement to the Atnarko River, and should start on July 25th in even years and on August 1st in odd years. This tower count is a critical factor in the development of preseason Expectations and subsequently the developement of the season's Management Plan. Note that the tower has not been operated for two out of the past five years due to budgetary constraints. Given the economic value of the Atnarko River Pink run it is very important that this program continues on a yearly basis in the future.

WEEK 18: July 27 - August 2, 1986

IFF:
-Not considered in fisheries management this week.

Sport Fishery:
-Tidal water sport fishery proceeding as in previous weeks.

Commercial Net Fishery:

General:
-Commercial catch data is relied upon heavily for indications of stock strength. Pre-season expectations are given very little consideration for currently managed stocks.
-This week Area 8 is managed for Atnarko River Pink, Bella Coola River Chum, and Kimsquit River Chum. This is a key week for Chum in deciding whether to continue fishing or not. This is first week that Dean Closed Sub-area Chum may appear in the fishery in F/FH, and the last week for Kimsquit Sockeye in the DCGNA. Neither of the two latter stocks are actively managed this week.

-This may be the last week for the Rivers Inlet and Smith Inlet Sockeye fisheries. Therefore, gillnet fleet movement to other areas including Area 8 should be anticipated.
-Look for hatchery marks (fin clip) on Chum caught in the commercial net fishery. This could be an indication of hatchery stock component in the commercial fishery. This information is required in-season to be of any use as a management tool.

F/FH:
Pink
-Peak week for Atnarko River Pink in Fitz Hugh Sound during the even years.
-In both even and odd years, with good expectations and good fishing conditions the seine daily average catch could be in the order of 2500 per day.
-In odd years, there should be indications of the presence of Pink in many parts of the area this week, such as jumpers, "fish balls", and schools.
-Hakai Pass Sport catch of Pink can be an important indicator of abundance of odd year stocks.
Chum
-Seine TTD catch of Chum should be closely monitored. If catches are high, would consider closure of Fisher Channel (8-5) for conservation of Chum.

DCGNA:
Sockeye
-This is the tail end of the Kimsquit Sockeye run through the DCGNA and some fishermen may still be targeting on this species.
Pink
-Pink are not actively managed in the DCGNA. Any surpluses destined for streams in this Sub-area will be harvested incidentally in other Area 8 fisheries.
Chum
-Kimsquit river River should be given its second inspection for Chum by aircraft. There should be a greater presence of fish over the previous week, but still in no significant numbers.
-Test fishery results important.
-Commercial net catch showing an increase toward the peak in Week 19.
-Monitor the recruitment of fresh Chum migrating to the Kimsquit River at the outer boundary of the DCGNA (8-8).
-Monitor fish quality (colour) in the DCGNA, especially the inner boundary, where dark fish will indicate milling.

BCGNA:
Pink
-Atnarko River Tower count may be of interest as a preliminary evaluation of the run and the fishery to date.
-There should be a good showing in North Bentinck.

-Pink should be moving in to the lower end of the Kwatna River this week.
-There may be some targeting on Pink in the BCGNA.
-There may be some signs of milling (dark-coloured) Pink in North Bentinck Arm.

Chum
-Should see some good Chum catches for one or two boats (300-350 per day) in the outer portion of 8-15 (near Kwatna Inlet) indicating the movement of fresh fish into the gillnet area. -There may be some signs of milling or holding Chum in North Bentinck Arm.
-A shift in average weight of Chum in BCGNA may indicate recruitment of fresh fish moving into the fishing area.

Other:
-There should be Chum in the Bella River side channels, and the Snootli Hatchery egg-take should be well underway.

WEEK 19: August 3 - 9, 1986

IFF:
-Not considered in fisheries management this week.

Sport Fishery:
-Tidal water sport fishery proceeding as in previous weeks, except that the Hakai Pass Pink catches are declining.

Commercial Net Fishery:

General:
-This week Area 8 is managed for Atnarko River Pink, Bella Coola River Chum, Kimsquit River Chum, and Dean Closed Chum. This is the first week that Koeye River Pink may appear in the fishery in F/FH. The latter stock is not actively managed this week.
-Rivers Inlet and Smith Inlet Sockeye fisheries are finished this week, therefore, major gillnet fleet movement to other areas including Area 8 should be anticipated.
-Looking for hatchery marks (fin clip) on Chum caught in the commercial net fishery.
-Water levels are of concern this week. If low, holding and milling of fish may occur. This can increase the exploitation rate substantially.
-Eighty percent of the management this week is dependent upon performance to date in the current year except Koeye River Pink, the stock strength of which should be tested this week. By now an overall picture of the season should be developing. Commercial catch data is relied upon to a very high degree for indications of stock strength. Pre-season expectations are given little or no consideration for currently managed stocks.

-Depending on fishing activities in Johnstone Strait, the fishing fleet in F/FH may range from 30 to 80 seines and from 75 to 100 gillnets for this week.

F/FH:

Pink

-Koeye River Pink beginning to show in Koeye Bay and vicinity probably later in the week.
-Unless late, even year Atnarko River Pink should be just past the peak in F/FH. This is the peak week in F/FH for odd year Atnarko River Pink. In odd years, with good expectations and good fishing conditions the seine daily average catch could be in the order of 2500 per day.

Chum

-Dean Closed Sub-area Chum would now be present in Fisher Channel. This could be a critical week in the management of this stock. If expectations for Dean Closed Chum are poor, then a closure in 8-5 may have to be considered for protection of this stock.
-Kimsquit River and Bella Coola River Chum are just past the peak in F/FH.

DCGNA:

Chum

-Should be the peak week for Kimsquit River Chum.
-Test fishery should give definite information regarding run timing for Kimsquit River Chum.
-The Kimsquit River should have received its third inspection by this week. Escapement of Chum should be building and now can be compared to those of previous years. This should give the first indication of run strength (in conjuction with CPUE and catch TTD).
-Monitor fish quality (colour) in the DCGNA, especially the inner boundary, where dark fish will indicate milling.

BCGNA:

Pink

-Peak week for even year Pink this week.
-There may be some signs of milling (dark-coloured) Pink in North Bentinck.
-North Bentinck (8-11) could be closed to fishing this week if there was evidence of milling fish.
-This species is normally an incidental catch in the gillnet fishery in this fishing area, but in years of low Chum abundance Pink could become the target species, either by the imposition of a mesh restriction by DFO to conserve Chum, or as an economic decision on the part of the fishermen (a trade-off between volume and price per pound).
-In even years, 25% to 33% of the Atnarko River Pink escapement should be past the counting tower in this week.

Chum

-Peak week for Bella Coola River Chum in this fishing area.

-There may be some signs of milling or holding Chum in North Bentinck Arm. If escapements are questionable or poor, a closure of North Bentinck Arm should be implemented.

Other:
-Pinks should be moving into the Kwatna River in volume.
-Good numbers of Chum should be moving into the Kimsquit and Bella Coola Rivers towards the end of this week, and this week's stream inspection should provide the first good indication of the expected Chum escapement to the Kimsquit and Bella Coola Rivers. The opportunity may or exist to adjust the DCGNA Chum fishery at this point if the escapement is poor.

WEEK 20: August 10 - 16, 1986

IFF:
-Not considered in fisheries management this week.

Sport Fishery:
-Tidal water sport fishery proceeding as in previous weeks, except that the Hakai Pass Pink catches are declining.

Commercial Net Fishery:

General:
-This week Area 8 is managed for Atnarko River Pink, Koeye River Pink, Bella Coola River Chum, Kimsquit River Chum, and Dean Closed Chum.
-Area 8 could be closed to all commercial fishing this week if there were severe conservation problems. With respect to the Koeye River Pink, this week would give the best indication of stock strength.
-Low water levels in streams could be a concern throughout the Sub-district this week.
-Key streams should be monitored closely this week.

F/FH:
<u>Pink</u>
-Target fishery this week on Koeye River Pink.
-Monitor seine sets in the Koeye area for signs of dark Pink as an indicator of fish milling in and around Koeye Bay.
-Because Koeye River Pink have no natural geographic sanctuary, a triangular boundary (the "Koeye Triangle", 8-3) was created some years ago to serve this purpose. This boundary could be implemented this week in extreme situations.
-Odd year Pink are past the peak, however, in years when they are late, this could be the peak fishing week on Atnarko River and Kwatna River Pink in F/FH.
-Pink salmon destined for local streams in F/FH may appear this week in the F/FH commercial fishery as coloured fish.

Chum
-F/FH gillnet catches of Kimsquit River and Bella Coola River Chum are tapering off.
-This is an important week for Dean Closed Chum in Fisher Channel. The Chum catch should be closely monitored here this week, coincident with escapement monitoring. Unless there are indications that the escapement is building well this week, this is probably the last week that commercial fishing will be permitted in Fisher Channel (8-5) until mid-September.

DCGNA:
Chum
-Kimsquit River Chum should be moving into the river with the escapement to date in the order of 2000 to 3000.
-Test fishery should give definite information regarding run timing for Kimsquit River Chum.
-Monitor fish quality (colour) in the DCGNA, especially the inner boundary, where dark fish will indicate milling.

BCGNA:
Pink
-Atnarko tower should have 50% of the Atnarko River Pink escapement recorded by August 15 in even years.
-The tower count has some advantage as a management tool. For instance, by August 15th if 50% of the target escapement has not passed the tower, some additional Pink escapement could be salvaged in the BCGNA. The converse is also true, ie. if the 50% mark came fast and early then conceivably the BCGNA fishing time could be extended.

Chum
-Should still have good Chum catches this week in the BCGNA (the daily gillnet daily average could be in the order of 150 to 200 Chum).

Other:
-Snootli Hatchery should have 75% of their Chum egg-take by the end of this week.

WEEK 21: August 17 - 23, 1986

IFF:
-Not considered in fisheries management this week.

Sport Fishery:
-Tidal water sport fishery declining in Hakai Pass.

Commercial Net Fishery:

General:
-This is the beginning of the "wind-down" in Area 8.

-Gillnet morning catch averages may be influenced by the presence of phosphorescence in the water at night which reduces efficiency or effort.
-This week should have a greater emphasis on stream monitoring for escapement enumeration, since any fisheries next week will be dependent on this information.

F/FH:
Pink
-There may only be about 15 seines operating in F/FH this week. Fishing may be very poor with 1000 Pink and a few incidental Chum per day.
-The gillnet fleet will be scattered and catch may be about 75 Chum per day.
-Koeye triangle boundary should be in place for this week's fishery to protect large schools of Pink moving in and out of Koeye Bay.
-Pink should be colouring indicating local F/FH stocks.
-Stream water levels are an important consideration this week.

DCGNA:
Chum
-The escapement to the Kimsquit River this week should represent at least 50% of what to expect as a final escapement. This should be approximately 30,000 or more if the target of 60,000 is to be achieved.
-If there is a commercial fishery this week, quality is expected to be poor in DCGNA above Skowquiltz Point.

BCGNA:
Pink and Chum
-If there is a commercial fishery this week, quality is expected to be poor in North Bentinck Arm and upper Burke Channel.

Other:
-Atnarko tower count should broadly indicate in this week whether or not the final count will meet the escapement target.
-Kwatna River Pink should be all in the river with some starting to spread out.

WEEK 22: August 24 - 30, 1986

IFF:
-Not considered in fisheries management this week.

Sport Fishery:
-Tidal water sport fishery declining.

Commercial Net Fishery:

-Fisheries dependent upon whether or not escapement targets for Bella Coola River, Kimsquit River, and Dean Closed area Chum stocks are met.
-Pink are no longer considered in fisheries management this week.
-In even years the Atnarko tower count is nearing completion. Except for the tail end of the run, or in years when the run may be late, the bulk of the Atnarko River Pink escapement could be known by the end of this week. Despite the fact that the tower count can no longer influence fisheries management in the current season, it is important that complete escapement figures are known in order to properly develop future fishing plans and assess the current season's managment success. In the past the Atnarko River tower counting program has been prematurely terminated in this week because of budgetary constraints.
-Atnarko tower should have 50% of the Atnarko River Pink escapement recorded by August 25th in odd years.
-This is the last week of the Dean Channel Test Fishery Program.
-The monitoring of the build-up of escapements of Pink and Summer Chum should be continuing this week.
-Although it is unlikely, there could be a commercial fishery this week. If there was a commercial fishery this week it would target on known Chum surpluses to escapement in the BCGNA and the DCGNA. Fish quality may be less than desirable, and Coho conservation may be a major consideration. Because of Departmental allocation policies, Fitz Hugh Sound would also likely be open. This is not desirable because local Pink and Chum stocks in F/FH, many of which are severely depressed, will be heavily impacted upon.

WEEK 23: August 31 - September 6, 1986

IFF:
-If Bella Bella residents are food fishing for Chum off Sunny Island (Fisher Channel, 8-5) it may give an indication of early Fall Chum arrival to the Martin River. In the absence of food fishing, visual indications of the presence and abundance of Chum can be made in Fisher Channel and Cousins Inlet.
-Bella Coola River IFF beginning to target on Coho.

Sport Fishery:
-Tidal water sport fishery is dependent on weather conditions. Only two or three Hakai charter boats may be operating.
-Non-tidal sport fishery in the Bella Coola, Atnarko, and Kwatna Rivers beginning to target on Coho.

Commercial Net Fishery:
-Although it is unlikely, there could be a commercial fishery this week, targeting on known Chum surpluses to escapement in the BCGNA and the DCGNA. Fish quality will be less than desireable, and Coho conservation will be a major consideration. Because of Departmental allocation policies, Fitz Hugh Sound would also likely be open. This is not desirable because local Pink and Chum stocks in F/FH, many of which are severely depressed, will be heavily impacted upon.

Other:
-There should be visual indications of the presence of Fall Chum in Fisher Channel (probably destined for Martin River)
-Stream surveys are the highest priority this week.

WEEK 24: September 7 - 13, 1986

IFF:
-Occasional food fishing for Chum off Sunny Island (Fisher Channel, 8-5)
-Bella Coola River IFF beginning to target on Coho.

Sport Fishery:
-Tidal water sport fishery is dependent on weather conditions. Hakai charter boats gone by week's end.
-Non-tidal sport fishery in the Bella Coola, Atnarko and Kwatna Rivers targeting on Coho.

Commercial Fishing:
-Monitoring presence of Fall Chum in Fisher Channel (IFF and visual signs) in preparation for a possible commercial net fishery in the following week. The presence and abundance of Chum can be made by visual observations in Fisher Channel and Cousins Inlet.

Other:
-Stream surveys remain a high priority for Pink, Summer Chum, and early Fall Chum.
-Atnarko River Counting Tower Program terminates September 10 in even years.

WEEK 25: September 14 - 20, 1986

IFF:
-Monitoring Bella Coola IFF for Coho for indication of returning run strength.

Sport Fishery:
-Monitoring Bella Coola, Atnarko and Kwatna Rivers for Coho catches.

Commercial Net Fishery:
-This is the week to fish Fall Chum. Fisher Channel (8-5) may open for gillnets and seines depending upon good signs of fish in Cousins Inlet. If indications are poor may wait until next week to have a fishery, however fish quality will be a major concern.
-Fishery is unlikely to be more than one day, and will be during daylight hours only as a means to conserve Coho.
-There should be a good showing of jumpers and surface schools of Chum in Cousins Inlet prior to commercial fishing. The presence of milling fish on the top boundary (Rattenbury Pt. to Boscowitz Pt.) may indicate that the fish are not moving into the sanctuary area, but are milling in Upper Fisher Channel.

Other:
-Stream surveys remain a high priority for Pink, Summer Chum, and early Fall Chum.
-Atnarko River Counting Tower Program terminates September 15 in odd years.

WEEK 26: September 21 - 27, 1986

IFF:
-Monitoring Bella Colla IFF for Coho for indication of returning run strength.

Sport Fishery:
-Monitoring Bella Coola, Atnarko and Kwatna Rivers for Coho catches.

Commercial Net Fishery:
-May fish this week if didn't fish last week on Martin River Fall Chum, otherwise Area 8 will closed for the balance of the season.

Other:
-Final assessment of Atnarko River Sockeye escapements.
-Final assessment of Koeye River Sockeye escapements occuring this week.
-Kimsquit River Sockeye enumerated from mid-October to late November.
-Coho assessment on accessable streams continues through to mid-January.
-F/FH Pink, Chum, and Sockeye escapement information finalized by mid-October.
-Martin River Chum escapement finalized (mid November), Coho late December.

1986 Salmon Expectations

Area 8 - Bella Coola Sub-district

Salmon expectations are the beginning of the process that ultimately leads to the development of an annual salmon fishing plan. They are designed to provide a preliminary indication of the what will be available for harvest during the upcoming fishery, and are based on brood year escapements, age composition and standard or average return rates.

Since the origin of the expectations in the early 1960's, this exercise initially consisted of simple brood and catch year comparisons, evolving to calculations using brood year escapements, age composition, and in latter years, standard rates of return. Throughout this time all stocks were more or less managed on an Area-wide basis. This had the effect of masking weaker stocks, or those in need of special considerations within the Area.

Since the beginning of the pilot project in the Central Coast District in 1983 ("Record of Management Strategies"), Statistical Areas have been sub-divided into what have become known as Sub-areas. These divisions were chosen to delineate areas with distinctly separate management regimes or areas where escapements should be separated in order to evaluate stock status properly. Another major development within this period was the identification of stream and species specific escapement targets, and Key Indicator streams within the Sub-areas.

The use of these recent innovations in the development of expectations and fishing plans reduces this masking effect and identifies the existence of previously undetected surpluses.

In developing expectations, there are three areas of uncertainty where assumptions must be made. These are:

1. Accuracy of brood year escapements estimates;

2. Age composition of the brood year escapements;

3. The rate of return, or the number of adult returning to the fishing area per spawner.

The most sensitive of the three is the return rate, which accounts for overwintering and ocean survival, as well as any exploitation which occurs prior to the stock arriving in the fishing area. The source of escapement estimates is the Annual Report of Salmon Stream and Spawning Grounds ("BC 16") from the Sub-district Fishery Officer. Normally, age composition is derived from scale or otolith data.

For developing the 1986 Area 8 expectations the following data were used:

	Age Comp.	Return Rate
Sockeye	63%-4, 37%-5	2.3 : 1
Pink	100%-2	2.8 : 1
Chum	17%-3, 73%-4, 10%-5	1.8 : 1
Chinook	8%-3, 33%-4, 48%-5, 11%-6	3.7 : 1

In certain cases more specific information is available. For example, Bella Coola River and Kimsquit River Chum age compositions differ from other Area 8 Chum (14%-3, 76%-4, 10%-5 and 20%-3, 71%-4, 9%-5 respectively). In addition, the return rate for four year old Summer Chum has been upwardly adjusted to 2.5 : 1, based on the 1984 return of three year olds. The balance of the return rates used are SEP Biostandards. The Areas 6, 7 and 8 ten year average return rate for Pink is 3.95 : 1. Thus two options are included for the 1986 Pink return to Area 8.

Note: There are two methods that can be employed to calculate age composition from scale samples. The method used to calculate the age compositions above represents catch age composition. For example, in any year, the catch will consist of fish from two to four brood years. This information is useful for in-season management, however, in order to calculate expected returns the preferred method is to use age composition calculated for specific brood years. For example, the returning stock from one specific brood year will contribute to two to four catch years, dependent upon species. The Area 8 Chinook Age Composition Table included represents this method, and should provide for more accurate predictions.

Snootli Hatchery contributions of Chum and Chinook have been calculated separately and have simply been added to the calculated total stock numbers.

The following are definitions of some of the terms used in the expectations worksheets that follow:

"N/O" - None observed (inspected but nothing seen).

"N/I" - Not inspected.

"Others" - refers to non-key streams in a Sub-area.

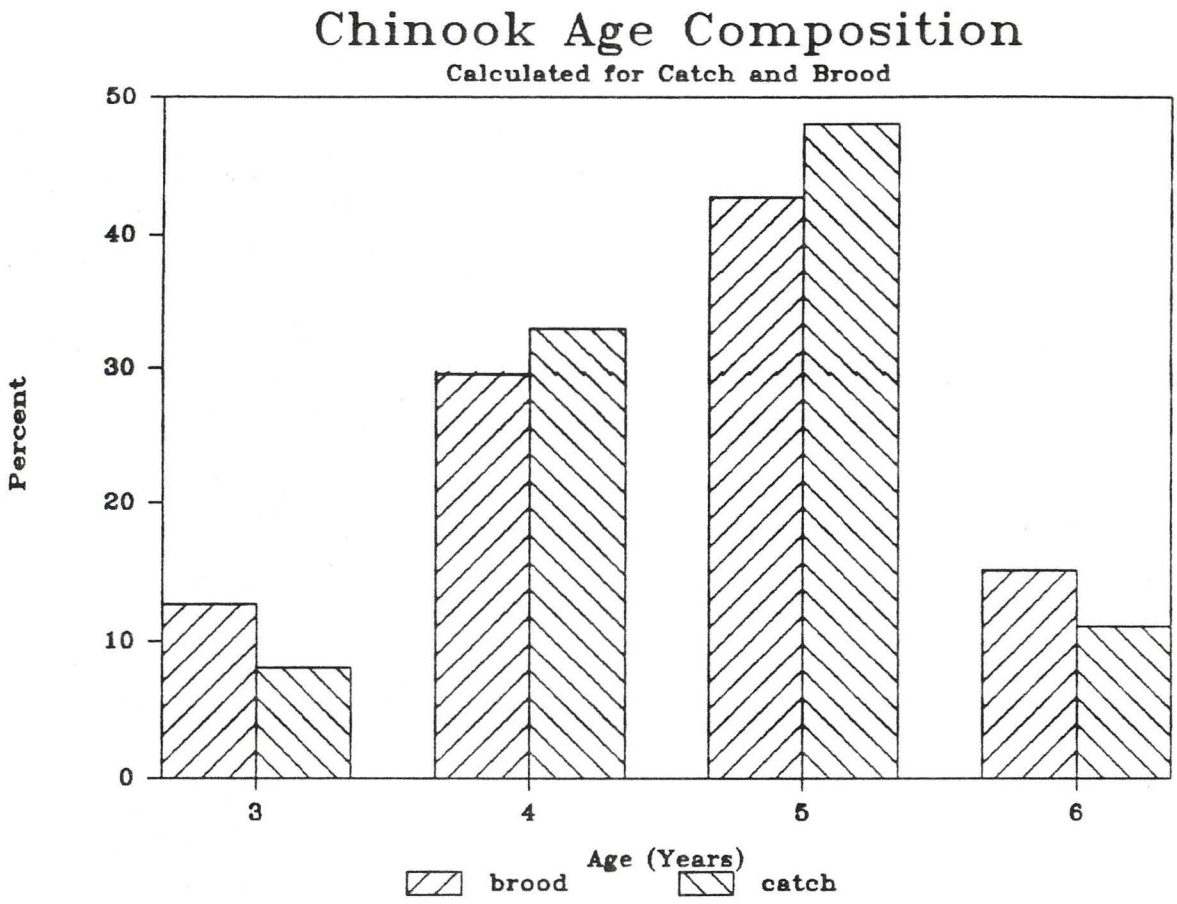
"Surplus" - that portion of the total returning stock not required for escapement.

"Deficit" - indicates an anticipated shortfall in escapement requirements.

Each expectations worksheet included is a printout of an AppleWorks (copyright) spreadsheet program. The inputs to this program are the brood escapements, age composition, return rates, and target escapement. Using these data the program calculates the projected returning stock, and identifies any surplus or deficit. These outputs are summed to an Area 8 total at the bottom of the worksheet. In future years, new expectations can be produced by simply altering the brood year escapements. As new or improved information becomes available, age composition and return rates can be as easily altered.

AREA 8 CHINOOK AGE COMPOSITION

					PROGENY								BROOD AGE COMPOSITION			
CATCH	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	TOTAL	% 3's	% 4's	% 5's	% 6's
BROOD																	
1970																	
1971	15114	2198															
1972	22669	8802	3164														
1973	1292	9574	18132	2573									31572	4	30	57	8
1974		8340	10123	12658	1425								32546	26	31	39	4
1975			3164	12032	17757	2658							35611	9	34	50	7
1976				8084	8552	8546	4193						29375	28	29	29	14
1977					2075	7398	10856	5036					25365	8	29	43	20
1978						2227	2098	9487	5446				19258	12	11	49	28
1979							605	9941	7367	5363			23277	3	43	32	23
1980								1046	6512	21461							
1981									4696	15170							
1982										739							
1983																	
1984																	
1985																	
1986																	
CATCH	23445	13430	15584	26248	20079	12779	9533	16260	4001	10623			AVERAGE =>	12.64	29.59	42.71	15.06
ESCAPEMENT	16550	15600	19000	9100	9729	8050	8220	9250	20020	32110							
TOTAL STOCK	39995	29030	34584	35348	29808	20829	17753	25510	24021	42733							
CATCH AGE COMPOSITION																	
%3YRS	3.23	28.73	9.15	22.87	6.96	10.69	3.41	4.1	19.55	1.73							
%4YRS	56.68	32.98	29.27	34.04	28.69	35.52	11.82	38.97	27.11	35.5							
%5YRS	37.79	30.32	52.43	35.81	59.57	41.03	61.15	37.19	30.67	50.22							
%6YRS	2.3	7.57	9.15	7.28	4.78	12.76	23.62	19.74	22.67	12.55							


Chinook Age Composition
Calculated for Catch and Brood
Percent
50
40
30
20
10
0
3
4
5
6
Age (Years)
brood
catch

File: A8EXPSOCK86

M43 A8EXPSOCK

AREA 8 EXPECTATIONS 1986

SOCKEYE

Sub Area:	Stocks	Year	Brood Esc	% Age Comp	Return Rate		Projected Returning Stock	Available Target	Surplus	Deficit
South Bentinck	Others (1)	1982	10	63	2.3		14	50	0	-30
		1981	6	37	2.3		5			
						Total=	20			
North Bentinck	Atnarko River	1982	20000	63	2.3		28980	75000	0	-11980
		1981	40000	37	2.3		34040			
						Total=	63020			
	Others (0)									
Upper Dean Chan.	Kimsquit River	1982	12000	63	2.3		17388	30000	0	-8357
		1981	5000	37	2.3		4255			
						Total=	21643			
	Others (1)	1982	N/I	63	2.3		0	1500	0	-1500
		1981	N/D	37	2.3		0			
						Total=	0			
Dean Closed	Others (2)	1982	35	63	2.3		51	200	0	-149
		1981		37	2.3		0			
						Total=	51			
Burke Channel	None									
Fisher/Fitzhugh	Koeye River	1982	2000	63	2.3		2898	20000	0	-12847
		1981	5000	37	2.3		4255			
						Total=	7153			
	Others (3)	1982	3500	63	2.3		5072	12000	0	-4758
		1981	2550	37	2.3		2170			
						Total=	7242			
						ACTIVE STOCKS (3)=	91816	125000	0	
						OTHERS (7)=	7312	13750	0	
						TOTAL=	99128	138750	0	

File: A8EXPPINK86

M36 ABEXPPINK

AREA 8 EXPECTATIONS 1986

PINKS

Sub Area:	Stocks	Year	Brood Esc	% Age Comp	Return Rate	Projected Returning Stock	Available Target	Available Surplus	Deficit
South Bentinck	Others (4)	1984	22100	100	2.8	61880	45500	16380	NA
North Bentinck	Atnarko River	1984	650000	100	2.8	1820000	1000000	820000	NA
	Others (3)	1984	37500	100	2.8	105000	36000	69000	NA
Upper Dean Chan.	Others (4)	1984	75050	100	2.8	210140	71500	138640	NA
Dean Closed	Others (7)	1984	21900	100	2.8	61320	76500	0	-15180
Burke Channel	Kwatna River	1984	30000	100	2.8	84000	100000	0	-16000
	Others (2)	1984	2350	100	2.8	6580	15000	0	-8420
Fisher/Fitzhugh	Koeye River	1984	125000	100	2.8	350000	100000	250000	NA
	Others (9)	1984	1460	100	2.8	4088	30900	0	-26812
					ACTIVE STOCKS (2)=	2170000	1100000	1070000	
					OTHERS (30)=	533008	375400	224020	
					TOTAL=	2703008	1475400	1294020	

File: A8EXPPINK86

M36 A8EXPPINK

AREA 8 EXPECTATIONS 1986

PINKS

Sub Area:	Stocks	Year	Brood Esc	% Age Comp	Return Rate	Projected Returning Stock	Available Target	Available Surplus	Deficit
South Bentinck	Others (4)	1984	22100	100	3.95	87295	45500	41795	NA
North Bentinck	Atnarko River	1984	650000	100	3.95	2567500	1000000	1567500	NA
	Others (3)	1984	37500	100	3.95	148125	36000	112125	NA
Upper Dean Chan.	Others (4)	1984	75050	100	3.95	296448	71500	224948	NA
Dean Closed	Others (7)	1984	21900	100	3.95	86505	76500	10005	NA
Burke Channel	Kwatna River	1984	30000	100	3.95	118500	100000	18500	NA
	Others (2)	1984	2350	100	3.95	9282	15000	0	-5718
Fisher/Fitzhugh	Koeye River	1984	125000	100	3.95	493750	100000	393750	NA
	Others (9)	1984	1460	100	3.95	5767	30900	0	-25133
					ACTIVE STOCKS (2)=	3061250	1100000	1961250	
					OTHERS (30)=	751922	375400	407372	
					TOTAL=	3813172	1475400	2368622	

M64 ABEXPCHUMSUM

AREA 8 EXPECTATIONS 1986

SUMMER CHUM

Sub Area	Stocks	Year	Brood Esc	% Age Comp	Return Rate		Projected Returning Stock	Target	Available Surplus	Deficit
South Bentinck	Others (4)	1983	4300	17	1.8		1316	21250	0	-17624
		1982	1100	73	2.5		2008			
		1981	1680	10	1.8		302			
						Total=	3626			
North Bentinck	Bella Coola River	1983	55000	14	1.8		13860	60000	97460	NA
		1982	30000	76	2.5		57000			
		1981	20000	10	1.8		3600			
				SNOOTLI CREEK HATCHERY		CONTR.=	83000			
						Total=	157460			
	Others (3)	1983	5600	17	1.8		1714	15500	0	-2517
		1982	5800	73	2.5		10585			
		1981	3800	10	1.8		684			
						Total=	12983			
Upper Dean Chan.	Kimsquit River	1983	55000	20	1.8		19800	60000	32420	NA
		1982	40000	71	2.5		71000			
		1981	10000	9	1.8		1620			
						Total=	92420			
	Others (4)	1983	860	17	1.8		263	25200	0	-22153
		1982	1210	73	2.5		2208			
		1981	3200	10	1.8		576			
						Total=	3047			
Dean Closed	Cascade River	1983	6000	17	1.8		2446	12000	833	NA
		1982	5000	73	2.5		9125			
		1981	7000	10	1.8		1260			
						Total=	12833			
	Elcho Creek	1983	12000	17	1.8		3672	20000	5547	NA
		1982	11000	73	2.5		20075			
		1981	10000	10	1.8		1800			
						Total=	25547			
	Jenny Bay Creeks	1983	1900	17	1.8		581	6000	1046	NA
		1982	3000	73	2.5		5475			
		1981	5500	10	1.8		990			
						Total=	7046			
	Others (3)	1983	650	17	1.8		199	12500	0	-8597
		1982	1650	73	2.5		3011			
		1981	3850	10	1.8		693			
						Total=	3903			
Burke Channel	Others (3)	1983	5740	17	1.8		1756	35000	0	-20665
		1982	6000	73	2.5		10950			
		1981	9050	10	1.8		1629			
						Total=	14335			
Fisher/Fitzhugh	None									
						ACTIVE STOCKS (3)=	295306	158000	137306	
						OTHERS (25)=	37894	109450	0	
						TOTAL=	333201	267450	137306	

File: ABEXPCHUMFALL86

M34 ABEXPCHUMFALL

AREA 8 EXPECTATIONS 1986

FALL CHUM

Sub Area:	Stocks	Year	Brood Esc	% Age Comp	Return Rate		Projected Returning Stock	Target	Available Surplus	Deficit
South Bentinck	None									
North Bentinck	Bella Coola River	1983	5000	14	1.8		1260	20000	0	-18740
		1982	NA	76	2.5		0			
		1981	NA	10	1.8		0			
				SNOOTLI CREEK HATCHERY CONTR.=			0			
						Total=	1260			
Upper Dean Chan.	None									
Dean Closed	Martin River	1983	2300	17	1.8		704	15000	10328	NA
		1982	16000	73	1.8		21024			
		1981	20000	10	1.8		3600			
						Total=	25328			
Burke Channel	None									
Fisher/Fitzhugh	Others (10)	1983	3695	17	1.8		1131	29650	0	-14851
		1982	8620	73	1.8		11327			
		1981	13010	10	1.8		2342			
						Total=	14799			
					ACTIVE STOCKS (2)=		26588	35000	10328	
					OTHERS (10)=		14799	29650	0	
					TOTAL=		41387	64650	10328	

File: A8EXPCHIN86

L50 A8EXPCHIN

AREA 8 EXPECTATIONS 1986

CHINOOK Sub Area:	Stocks	Year	Brood Esc	% Age Comp	Return Rate		Projected Returning Stock	Available Target	Available Surplus	Available Deficit
South Bentinck	Others (2)	1983	40	8	3.7		12	1000	0	-804
		1982	70	33	3.7		85			
		1981	50	48	3.7		89			
		1980	25	11	3.7		10			
						Total=	196			
North Bentinck	Atnarko River	1983	8600	8	3.7		2546	25000	3996	NA
		1982	8000	33	3.7		9768			
		1981	4500	48	3.7		7992			
		1980	7200	11	3.7		2930			
				SNOOTLI CREEK HATCHERY CONTR.=			5760			
						Total=	28996			
Upper Dean Chan.	Dean River	1983	500	8	3.7		148	12000	0	-4822
		1982	N/I	33	3.7		0			
		1981	3500	48	3.7		6216			
		1980	2000	11	3.7		814			
						Total=	7178			
	Others (1)	1983	50	8	3.7		15	4000	0	-3700
		1982	100	33	3.7		122			
		1981	FEW	48	3.7		0			
		1980	400	11	3.7		163			
						Total=	300			
Dean Closed	Others (1)	1983	N/O	8	3.7		0	100	0	-98
		1982		33	3.7		0			
		1981		48	3.7		0			
		1980	4	11	3.7		2			
						Total=	2			
Burke Channel	Others (1)	1983	50	8	3.7		15	500	0	-383
		1982	50	33	3.7		61			
		1981	FEW	48	3.7		0			
		1980	100	11	3.7		41			
						Total=	117			
Fisher/Fitzhugh	None									
						ACTIVE STOCKS (2)=	36174	37000	3996	
						OTHERS (5)=	614	5600	0	
						TOTAL=	36788	42600	3996	

1986 WEEKLY NET FISHING MANAGEMENT PLAN

The tables that make up this section are a compilation of the 1986-specific "rules" from the preceding sections of this plan, together with estimates of anticipated fleet size and catch averages. These catch averages are based on the expectations, also presented earlier, and historic performance of the fishery in similar years.

There are four sections on each table. The first section summarizes general information about the specific fishery, including dates, fishing areas, management units, target and passive, or incidental stocks, and the proposed duration. The second section of the table identifies the forecast fleet and anticipated catch averages, as well as weekly and to date totals for both gear types. Also displayed is the anticipated total catch for both gear types. The third section is intended to bound the forecasts identified in the second section. There are two sub-sections, one entitled "Reduced Fishing Strategy", and the other "Increased Fishing Strategy". Each of these sections represents an outer limit to the forecast, beyond which the manager would be looking very seriously for reasons for the departure from the expected. These reasons may range from simple causes like a late run to complex effects of weather and tides to a complete run collapse. There are innumerable combinations and permutations of factors that may affect the stock and cause deviation from the forecast, and some of the more important are noted in the fourth section of the table, and descibed in detail in the Weekly Rules section of this document.

These tables are intended to summarize the information specific to the current fishing season for in season reference as a guide to the Fishery Officer while managing the fishery. They are not intended to automatically steer the fishery through the season, although with an improved hail catch data base, this concept may evolve from these forms. They are also not intended to set catch quotas, but to "translate" from escapement based Expectation numbers to catch based forecasts. Since management of the fishery is based largely on CPUE, we feel that "translating" the escapement based forecasts to a catch based forecast will provide a more accurate and accessable tool to manage individual fisheries.

All of the weekly catch and effort estimates are summarized in the final table, entitled "Weekly Anticipated Pink and Summer Chum Fishery Summary". When compared to historic catch and escapement records, this table serves as a cross reference to confirm the anticipated values in the Weekly Net Fishing Management Plan sheets.

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 10 DATE: JUNE 1-7, 1986

FISHING AREA: BCGNA + BURKE CH. TARGET STOCKS: CHINOOK (ATNARKO)

MU'S: 8-10, 8-11, 8-12, 8-13, 8-15

ANTICIPATED OPENING: 24 HRS. (8-11 – 12HRS)

PASSIVE STOCKS: DEAN R. CHINOOK

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
55 GN:					12
TFW SN:					
TFW GN:					650
TTD SN:					
TTD GN:					650
TTD ALL:					650

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

1986 CPUE - EXPECTED HIGHER THAN HISTORIC AV. (INTERNATIONAL MEASURES?)
WATCH FOR SET NETS.

DATE

FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 11 DATE: JUNE 8-14, 1986

FISHING AREA: BCGNA + BURKE CH. TARGET STOCKS: ATNARKO CHINOOK.

MU'S: 8-10, 8-11, 8-12, 8-13, 8-15

ANTICIPATED OPENING: 24 HRS. (8-11 – 12HRS)

PASSIVE STOCKS: DEAN R. CHINOOK

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
55 GN:					15
TFW SN:					
TFW GN:					825
TTD SN:					
TTD GN:					1475
TTD ALL:					1475

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.)

DATE

FISHERY OFFICER

HRM/DDR - 01/9

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 12 DATE: JUNE 15-21, 1986

FISHING AREA: CLOSED TARGET STOCKS: _____

MU'S: _____ _____

_____ _____

ANTICIPATED OPENING: _____ HRS. _____

PASSIVE STOCKS: _____

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
GN:					
TFW SN:					
TFW GN:					
TTD SN:					
TTD GN:					
TTD ALL:					

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

PEAK ATNARKO CHINOOK

_____ _____

DATE FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 13 DATE: JUNE 22 - 28, 1986

FISHING AREA: CLOSED TARGET STOCKS: _____

MU'S: _____ _____

_____ _____

ANTICIPATED OPENING: _____ HRS. _____

PASSIVE STOCKS: _____

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
GN:					
TFW SN:					
TFW GN:					
TTD SN:					
TTD GN:					
TTD ALL:					

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

_____ _____

DATE FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 14 DATE: JUNE 29- JULY 5, 1986

FISHING AREA: CLOSED TARGET STOCKS: _____

MU'S: _____ _____

_____ _____

ANTICIPATED OPENING: _____ HRS. _____

PASSIVE STOCKS: _____

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
_____SN:	_____	_____	_____	_____	_____
_____GN:	_____	_____	_____	_____	_____
TFW SN:	_____	_____	_____	_____	_____
TFW GN:	_____	_____	_____	_____	_____
TTD SN:	_____	_____	_____	_____	_____
TTD GN:	_____	_____	_____	_____	_____
TTD ALL:	_____	_____	_____	_____	_____

****

-REDUCED FISHING STRATEGY:

_____SN:	_____	_____	_____	_____	_____
_____GN:	_____	_____	_____	_____	_____

-INCREASED FISHING STRATEGY:

_____SN:	_____	_____	_____	_____	_____
_____GN:	_____	_____	_____	_____	_____

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.)

CONSERVATION OF ATNARKO SOCKEYE.
DCGNA TEST FISHERY STARTS THIS WEEK.

_____ _____

DATE FISHERY OFFICER

HRM/DDR - 01/5

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 15 DATE: JULY 6-12, 1986

FISHING AREA: F/FH, BCGNA TARGET STOCKS: ATNARKO SOCKEYE.

MU'S: 8-3, 8-4, 8-5, 8-10, 8-11, 8-12

8-15.

ANTICIPATED OPENING: 24 HRS.

PASSIVE STOCKS: KIMSQUIT SOCKEYE, BCR AND KIMSQUIT CHUM

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
75 GN:	60 (AM av.)				
TFW SN:					
TFW GN:					
TTD SN:					
TTD GN:					
TTD ALL:					

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

TEST FISHERY — ATNARKO SOCKEYE.
PAST PEAK OF ATNARKO SOCKEYE IN FISHING AREAS
PEAK OF KIMSQUIT SOCKEYE - FISHER CHANNEL.
INCIDENTAL CHUM CATCH IN F/FH.

DATE

FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 16 DATE: JULY 13 - 19, 1986

FISHING AREA: F/FH TARGET STOCKS: ATNARKO PINK

MU'S: 8-3, 8-4, 8-5 BCR CHUM

KINSQUIT CHUM

ANTICIPATED OPENING: 24 HRS.

PASSIVE STOCKS: KIMSQUIT SOCKEYE

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
90 SN:			1000	146	
25 GN:				90	
TFW SN:			90,000	13,140	
TFW GN:				2250	
TTD SN:			90,000	13140	
TTD GN:				2250	
TTD ALL:			90,000	15,390	

****

-REDUCED FISHING STRATEGY:

SN:			500		
GN:				40	

-INCREASED FISHING STRATEGY:

SN:			2000		
GN:				125-150	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.)

CATCHES AT WHIDBEY PT. MAY REFLECT PRESENCE OF RIVERS INLET SOCKEYE
TAIL END OF KIMSQUIT SOCKEYE IN FISHER CH.
PINK AV. WT. IN SN CATCH.
PINK JUMPERS - HAKAI, F/FH, AND HUMPBACK BAY
OCCASIONAL LARGE SN SET (PINK)
SN TARGETING ON CHUM — SN AV.
WATCH FOR CHUM FINCLIPS

DATE

FISHERY OFFICER

HRM/DDR - 01/8

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 16 DATE: JULY 13-19, 1986

FISHING AREA: DC GNA TARGET STOCKS: KIMSQUIT SOCKEYE

MU'S: 8-8

ANTICIPATED OPENING: 24 HRS. (GN ONLY)

PASSIVE STOCKS: KIMSQUIT CHUM

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
13 GN:				25 (AM av.)	
TFW SN:					
TFW GN:				325	
TTD SN:					
TTD GN:				325	
TTD ALL:				325	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				15 (AM av.)	

-INCREASED FISHING STRATEGY:

SN:					
GN:				50 (AM av.)	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

PEAK WEEK FOR KIMSQUIT SOCKEYE IN DCGNA.
WATCH MESH SIZE IN AM av. (SOC. VS. CH)
WATCH CH. av. — EARLY INDICATOR
SCALE SAMPLING THIS WEEK ON CHUM

DATE

FISHERY OFFICER

HRM/DDR - 01/5

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 16 DATE: JULY 13 - 19, 1986

FISHING AREA: BCGNA TARGET STOCKS: ATNARKO PINK

MU'S: 8-10, 8-11, 8-12, 8-15 BCR CHUM

ANTICIPATED OPENING: 24 HRS. (GNONLY)

PASSIVE STOCKS: ATNARKO SOCKEYE

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
35 GN:			125 (PERDAY)	25 (AMOV)	
TFW SN:					
TFW GN:			4375	875	
TTD SN:					
TTD GN:			4375	875	
TTD ALL:			4375	875	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				15 (AMOV)	

-INCREASED FISHING STRATEGY:

SN:					
GN:				50 (AMOV)	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

WATCH MESH SIZE IN AM OV. — SOC. VS CHUM.
EARLY INDICATION OF PINK IN BURKE AND LABOUCHERE — SHOWING OFF BCR.
WATCH CHUM CATCH NEAR KWATNA.
SCALE SAMPLING (CHUM) SHOULD BEGIN.
WATCH PINK CATCH (BURKE VS LABOUCHERE) FOR POSSIBLE MIGRATION INDICATIONS.

DATE

FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 17 DATE: JULY 20-26, 1986

FISHING AREA: F/FH TARGET STOCKS: ATNARKO PINK

MU'S: 8-3, 8-4, 8-5 BCR CHUM

KIM SOUTH CHUM

ANTICIPATED OPENING: 48 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
90 SN:			2500 (PER DAY)	278	
25 GN:				100 (PER DAY)	
TFW SN:			450,000	50,040	
TFW GN:				5000	
TTD SN:			540,000	63,180	
TTD GN:				7250	
TTD ALL:			540,000	70,430	

****

-REDUCED FISHING STRATEGY:

SN:			1000		
GN:				40 (PER DAY)	

-INCREASED FISHING STRATEGY:

SN:			3500		
GN:				150 (PER DAY)	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

WATCH SN CHUM TTD (TARGETING) IN 8-5.
SOC. NOT ACTIVELY MANAGED IN F/FH.
HAKAI SPORT PINK CATCH.
SHOULD SEE JUMPERS AND SCHOOLS (PINK)
PINK IN KWATNA BAY END OF WEEK
PINK AV. WT.
SN CATCH (PINK) SHOULD BE 300,000 TTD BY DAY 2

DATE

FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 17 DATE: JULY 20-26, 1986

FISHING AREA: DCGNA TARGET STOCKS: KIMSQUIT CHUM

MU'S: 8-8

ANTICIPATED OPENING: 48 HRS.

PASSIVE STOCKS: KIMSQUIT SOCKEYE

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
20 GN:				100 PER DAY	
TFW SN:					
TFW GN:				4000	
TTD SN:					
TTD GN:				4325	
TTD ALL:				4325	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				40	

-INCREASED FISHING STRATEGY:

SN:					
GN:				150	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

GN MESH SIZES

TEST FISHERY RESULTS.

DATE

FISHERY OFFICER

HRM/DDR - 01/8

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 17 DATE: JULY 20-26, 1986

FISHING AREA: BCGNA TARGET STOCKS: ATNARKO PINK

MU'S: 8-10, 8-11, 8-12, 8-15 BCR CHUM

ANTICIPATED OPENING: 48 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
35 GN:			175 (PER DAY)	100 (PER DAY)	
TFW SN:					
TFW GN:			12,250	7000	
TID SN:					
TID GN:			16,625	7875	
TID ALL:			16,625	7875	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				40	

-INCREASED FISHING STRATEGY:

SN:					
GN:				150	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

WATCH MESH SIZE - PINK TARGETING
PINK CATCH - LABOUCHERE — MIGRATION
MILLING CHUM NORTH BENT.
ATNARKO COUNTING TOWER STARTS
SOME CHUM ESC. - HATCHERY CREW — BCR GUARDIAN

DATE

FISHERY OFFICER

HRM/DDR - 01/9

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 18 DATE: JULY 27 - AUG. 2, 1986

FISHING AREA: F/FH TARGET STOCKS: AINARKO PINK

MU'S: 8-3, 8-4, 8-5 BCR CHUM

KIMSQUIT CHUM.

ANTICIPATED OPENING: 48 HRS.

PASSIVE STOCKS: DEAN CLOSED CHUM.

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
90 SN:	-	-	2500	673	-
45 GN:	-	-	-	150	-
TFW SN:	-	-	450,000	121,140	-
TFW GN:	-	-	-	13,500	-
TTD SN:	-	-	990,000	184,320	-
TTD GN:	-	-	-	20,750	-
TTD ALL:	-	-	990,000	205,70	-

****

-REDUCED FISHING STRATEGY:

SN:	-	-	1000	-	-
GN:	-	-	-	50	-

-INCREASED FISHING STRATEGY:

SN:	-	-	5000	-	-
GN:	-	-	-	200	-

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

PEAK WEEK FOR PINK IN FITZHUGH.
KEY WEEK WHETHER OR NOT TO CONTINUE TO FISH CHUM.
GEAR MOVEMENT (RIVERS INLET GN)
WATCH SN TTD FOR CHUM - 8-5.

DATE

FISHERY OFFICER

HRM/DDR - 01/8

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 18 DATE: JULY 27 - AUG 2, 1986

FISHING AREA: DCGNA TARGET STOCKS: KIMSQUIT CHUM

MU'S: 8-8

ANTICIPATED OPENING: 48 HRS.

PASSIVE STOCKS: KIMSQUIT SOCKEYE.

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
35 GN:				160 (PER DAY)	
TFW SN:					
TFW GN:				6400	
TTD SN:					
TTD GN:				10,725	
TTD ALL:				10,725	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				60	

-INCREASED FISHING STRATEGY:

SN:					
GN:				220	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

TAIL END OF KIMSQUIT SOCKEYE - MAY STILL BE SOME TARGETING.
TEST FISHERY - CHUM.
RECRUITMENT OF FRESH CHUM - OUTER BOUNDARY
DCGNA - QUALITY, ESPECIALLY INSIDE BOUNDARY (MILLING FISH).

DATE

FISHERY OFFICER

HRM/DDR - 01/9

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 18 DATE: JULY 22 - AUG. 2, 1986

FISHING AREA: BCGNA TARGET STOCKS: ATNARKO PINK

MU'S: 8-10, 8-11, 8-12, 8-15 BCR CHUM.

ANTICIPATED OPENING: 48 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
35 GN:			275	160	
TFW SN:					
TFW GN:			19250	11,200	
TTD SN:					
TTD GN:			35,875	19,075	
TTD ALL:			35,875	19,075	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				60	

-INCREASED FISHING STRATEGY:

SN:					
GN:				220	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

- ATNARKO TOWER COUNT - PRELIMINARY INDICATOR
- SHOULD BE A GOOD SHOWING OF PINK IN NORTH BENT.
- PINK SHOULD MOVE INTO LOWER KWATNA RIVER THIS WEEK.
- MAY BE SOME TARGETING ON PINK IN BCGNA.
- MILLING P. & CHUM - NORTH BENT.
- SHIFT IN AV. WT. OF CHUM - WATCH FOR - IND. FRESH FISH
- SKOOTLI EGG-TAKE SHOULD BE UNDERWAY
- SHOULD BE CHUM IN BCR SIDECHANNELS

DATE

FISHERY OFFICER

HRM/DDR - 01/9

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 19 DATE: AUG 3-9, 1986

FISHING AREA: F/FH TARGET STOCKS: ATNARKO PINK

MU'S: 8-3, 8-4, 8-5 BCR CHUM

KIM SQUIT CHUM

ANTICIPATED OPENING: 48 HRS. DEAN CLOSED CHUM

PASSIVE STOCKS: KOEYE PINK

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
55 SN:			2500 (PER DAY)	513	
57 GN:				125	
TFW SN:			275,000	56,430	
TFW GN:				21,750	
TTD SN:			1,265,000	240,750	
TTD GN:				42,500	
TTD ALL:			1,265,000	283,220	

****

-REDUCED FISHING STRATEGY:

SN:			1000		
GN:				50	

-INCREASED FISHING STRATEGY:

SN:			5000		
GN:				200	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

GEAR FROM RIVERS/SMITH MAY MOVE IN. SN FLEET DEPENDENT ON J. STRAIT
CHUM WITH HATCHERY MARKS
WATER LEVELS THIS WEEK
KOEYE PINK SHOULD START TO SHOW IN BAY LATE WEEK.
JUST PAST PEAK ATNARKO PINK AND KIM. & BCR CHUM.
STATUS OF DEAN CLOSED CHUM AND 8-5.

DATE

FISHERY OFFICER

HRM/DDR - 01/8

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 19 DATE: AUG 3-9, 1986

FISHING AREA: DCGNA TARGET STOCKS: KIM SQUIT CHUM

MU'S: 8-8

ANTICIPATED OPENING: 48 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
50 GN:				200	
TFW SN:					
TFW GN:				20,000	
TTD SN:					
TTD GN:				30,725	
TTD ALL:					

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				100	

-INCREASED FISHING STRATEGY:

SN:					
GN:				350	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

PEAK WEEK FOR KIM. CHUM
TEST FISHERY SHOULD GIVE DEFINATE RUN TIMING INFO.
FISH QUALITY - ESPECIALLY INNER BOUNDARY
KIMSQUIT ESC. LATE IN WEEK.

DATE

FISHERY OFFICER

HRM/DDR - 01/9

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 19 DATE: Aug 3-9, 1986

FISHING AREA: BCGNA TARGET STOCKS: BCR CHUM

MU'S: 8-10, 8-11, 8-12, 8-13 ATNARKO PINK.

ANTICIPATED OPENING: 48 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
50 GN:			350 (max)	200	
TFW SN:					
TFW GN:			35,000	20,000	
TTD SN:					
TTD GN:			70,875	39,075	
TTD ALL:			70,875	39,075	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				100	

-INCREASED FISHING STRATEGY:

SN:					
GN:				350	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

PEAK WEEK FOR BCR CHUM, AND ATNARKO PINK.
MILLING P. & CHUM IN N. BENT.
1/4 TO 1/3 PINK ESC. SHOULD BE PAST TOWER (EVEN YRS.)

DATE

FISHERY OFFICER

HRM/DDR - 01/5

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 20 DATE: AUG. 10-16, 1986

FISHING AREA: F/FH TARGET STOCKS: ATNARKO PINK

MU'S: 8-3, 8-4, 8-5 KOEYE PINK

BC/R CHUM

ANTICIPATED OPENING: 24 HRS. (MINIMUM) KIMSQUIT CHUM

DEAN CLOSED CHUM.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
45 SN:			1500	461	
62 GN:				100	
TFW SN:			67,500	20,745	
TFW GN:				6200	
TTD SN:			1,332,500	261,495	
TTD GN:				48,700	
TTD ALL:			1,332,500	310,195	

****

-REDUCED FISHING STRATEGY:

SN:			500		
GN:					

-INCREASED FISHING STRATEGY:

SN:			2500		
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

WATER LEVELS
MONITOR KEY STREAMS
TARGETING ON KOEYE PINK THIS WEEK - MONITOR SN FOR DARK P. AROUND KOEYE
LOCAL F/FH PINKS MAY APPEAR COLOURED THIS WEEK
KWATNA PINK SHOULD ALL BE UP WITH SOME SPREADING OUT.
MONITOR CLOSED DEAN SN CATCH (CHUM) AND ESCAPEMENTS.
F/FH GN CHUM CATCH SHOULD BE TAPERING OFF

DATE

FISHERY OFFICER

HRM/DDR - 01/5

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 20 DATE: AUG 10-16, 1986

FISHING AREA: DC GNA TARGET STOCKS: KIM SQUIT CHUM

MU'S: 8-8

ANTICIPATED OPENING: 24 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
50 GN:				175	
TFW SN:					
TFW GN:				5750	
TTD SN:					
TTD GN:				36,475	
TTD ALL:				36,475	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				50	

-INCREASED FISHING STRATEGY:

SN:					
GN:				250	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

PAST FISHERY PEAK
WATCH FOR MILLING
SHOULD BE 2-3000 CHUM UP KIMSQ. RIVER

DATE

FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 20 DATE: Aug 10 - 16, 1986

FISHING AREA: BCGNA TARGET STOCKS: ATNARKO PINK

MU'S: 8-10, 8-11, 8-12, 8-15. BCR CHUM

ANTICIPATED OPENING: 24 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
50 GN:			200	175	
TFW SN:					
TFW GN:			10,000	5750	
TTD SN:					
TTD GN:			80,875	44,825	
TTD ALL:			80,875	44,825	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				50	

-INCREASED FISHING STRATEGY:

SN:					
GN:				250	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

JUST PAST PEAK OF PINK AND CHUM.

50% PINK SHOULD BE PAST TOWER BY AUG 15.

~~SOCKEYE~~ SHOULD HAVE 75% OF EGG TAKE BY WEEK'S END.

DATE

FISHERY OFFICER

HRM/DDR - 01/5

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 21 DATE: AUG 17-23rd, 1986

FISHING AREA: F/FH TARGET STOCKS: KOEYE PINK

MU'S: 8-4 (8-5?) DEAN CLOSED CHUM

(KOEYE Δ)

ANTICIPATED OPENING: 24 HRS.

PASSIVE STOCKS: BCR CHUM, KIMSQUIT CHUM

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
15 SN:			1000	352	
40 GN:				75	
TFW SN:			15,000	5280	
TFW GN:				3000	
TTD SN:			1 347,500	266,775	
TTD GN:				51,700	
TTD ALL:			1,347,500	318,475	

****

-REDUCED FISHING STRATEGY:

SN:			500		
GN:				20	

-INCREASED FISHING STRATEGY:

SN:			2000		
GN:				150	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

BEGINNING OF WIND-DOWN
KOEYE Δ IN PLACE FOR THIS WEEK'S FISHERY
WATER LEVELS.

DATE

FISHERY OFFICER

HRM/DDR - 01-5

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 21 DATE: AUG. 17-23, 1986

FISHING AREA: DCGNA TARGET STOCKS: KIM SQUITCHUK.

MU'S: 8-8

ANTICIPATED OPENING: 24 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
35 GN:				115	
TFW SN:					
TFW GN:				4025	
TTD SN:					
TTD GN:				40,500	
TTD ALL:				40,500	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				30	

-INCREASED FISHING STRATEGY:

SN:					
GN:				200	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

1/3 TO 1/2 KIM SQUIT CHUM SHOULD BE UPRIVER, REST IN CLOSED AREA.

EXPECT POOR QUALITY IN FISHERY.

DATE

FISHERY OFFICER

HRM/DDR - 01/5

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 21 DATE: AUG. 17-23, 1986

FISHING AREA: BCGNA. TARGET STOCKS: ATNARKO PINK.

MU'S: 8-10, 8-11, 8-12, 8-15. BCR CHUM

ANTICIPATED OPENING: 24 HRS.

PASSIVE STOCKS:

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
35 GN:				115	
TFW SN:					
TFW GN:				4025	
TTD SN:					
TTD GN:			80,875	48,850	
TTD ALL:			80,875	48,850.	

****

-REDUCED FISHING STRATEGY:

SN:					
GN:				30	

-INCREASED FISHING STRATEGY:

SN:					
GN:				200	

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.)

EXPECT POOR QUALITY - PINK AND CHUM.

ATN. TOWER SHOULD INDICATE WHETHER OR NOT TARGET ACHIEVED.

DATE

FISHERY OFFICER

HRM/DDR - 01/5

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 22 DATE: Aug 24 - 30, 1986

FISHING AREA: CLOSED TARGET STOCKS: _____

MU'S: _____ _____

_____ _____

ANTICIPATED OPENING: _____ HRS. _____

PASSIVE STOCKS: _____

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
GN:					
TFW SN:					
TFW GN:					
TTD SN:					
TTD GN:					
TTD ALL:					

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

WOULD BE FISHING IF BCR, KIMSQUIT, AND DEAN CLOSED CHUM ESC. TARGETS WERE MET.
LAST WEEK OF DCGNA TEST FISHERY.

_____ _____

DATE FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 23 DATE: AUG. 31 - SEPT. 6, 1986

FISHING AREA: CLOSED. TARGET STOCKS: _____

MU'S: _____ _____

_____ _____

ANTICIPATED OPENING: _____ HRS. _____

PASSIVE STOCKS: _____

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
GN:					
TFW SN:					
TFW GN:					
TTD SN:					
TTD GN:					
TTD ALL:					

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.!

COULD BE FISHING BCGNA AND DCGNA ON KNOWN CHUM SURPLUSES.

_____ _____

DATE FISHERY OFFICER

HRM/DDR - 01/8

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 24 DATE: SEPT. 7-13, 1986.

FISHING AREA: CLOSED. TARGET STOCKS: _____

MU'S: _____

ANTICIPATED OPENING: _____ HRS.

PASSIVE STOCKS: _____

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
GN:					
TFW SN:					
TFW GN:					
TTD SN:					
TTD GN:					
TTD ALL:					

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

MONITOR PRESENCE OF FALL CHUM - FISHER CHANNEL (JUMPERS, IFF).

_____ _____

DATE FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 25 DATE: SEPT. 14-20, 1986

FISHING AREA: FISHER CHANNEL TARGET STOCKS: MARTIN RIVER FALL CHUM

MU'S: 8-5

ANTICIPATED OPENING: 12 HRS.

PASSIVE STOCKS: FITZ HUGH SOUND FALL CHUM, AREA 8 COHO.

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
SN:					
GN:					
TFW SN:					
TFW GN:					
TTD SN:					
TTD GN:					
TTD ALL:					

****

-REDUCED FISHING STRATEGY:

SN:					
GN:					

-INCREASED FISHING STRATEGY:

SN:					
GN:					

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

DAYLIGHT FISHERY ONLY TO CONSERVE COHO.
FISHERY NOT LIKELY FOR MORE THAN 1 DAY.
MAY NOT OPEN IF INDICATIONS ARE POOR IN COUSINS INLET.

DATE

FISHERY OFFICER

1986 WEEKLY NET FISHING MANAGEMENT PLAN

WEEK: 26 DATE: SEPT. 21-27, 1986

FISHING AREA: CLOSED. TARGET STOCKS: MARTIN R. FALL CHUM

MU'S: _____

_____

ANTICIPATED OPENING: _____ HRS.

PASSIVE STOCKS: FITZ HUGH FALL CHUM, AREA 8 COHO.

ANTICIPATED GEAR AND DAILY CATCH AVERAGES:

-FORECAST FISHING STRATEGY:

	SOCKEYE	COHO	PINK	CHUM	CHINOOK
_____SN:	_____	_____	_____	_____	_____
_____GN:	_____	_____	_____	_____	_____
TFW SN:	_____	_____	_____	_____	_____
TFW GN:	_____	_____	_____	_____	_____
TTD SN:	_____	_____	_____	_____	_____
TTD GN:	_____	_____	_____	_____	_____
TTD ALL:	_____	_____	_____	_____	_____

****

-REDUCED FISHING STRATEGY:

_____SN:	_____	_____	_____	_____	_____
_____GN:	_____	_____	_____	_____	_____

-INCREASED FISHING STRATEGY:

_____SN:	_____	_____	_____	_____	_____
_____GN:	_____	_____	_____	_____	_____

****

NOTES AND COMMENTS - Where applicable, include weather average weight, age comp., run timing, visual signs, gear movement, fish quality, mesh sizes, etc.:

MAY FISH THIS WEEK IF NOT LAST WEEK, OTHERWISE CLOSED FOR THE BALANCE.

_____ _____

DATE FISHERY OFFICER

AREA 8 1986 WEEKLY ANTICIPATED PINK AND SUMMER CHUM FISHERY SUMMARY (JANUARY, 1986)

	DAYS OF	PINK						TOTAL ALL GEAR	CHUM						TOTAL ALL GEAR
		GN OF	AVG	TOTAL	GN OF	AVG	TOTAL		GN OF	AVG	TOTAL	GN OF	AVG	TOTAL	
WEEK 15															
F/FH:				0			0	0			0			0	0
BCGNA:	1			0			0	0			0			0	0
DCGNA:				0			0	0			0			0	0
TFW:				0			0	0			0			0	0
TTD:				0			0	0			0			0	0
WEEK 16															
F/FH:	1	90	1000	90000	25	0	0	90000	90	146	13140	25	90	2250	15390
BCGNA:	1	0	0	0	35	125	4375	4375	0	0	0	35	25	875	875
DCGNA:	1	0	0	0	13	0	0	0	0	0	0	13	25	325	325
TFW:				90000			4375	94375			13140			3450	16590
TTD:				90000			4375	94375			13140			3450	16590
WEEK 17															
F/FH:	2	90	2500	450000	25	0	0	450000	90	278	50040	25	100	5000	55040
BCGNA:	2			0	35	175	12250	12250			0	35	100	7000	7000
DCGNA:	2			0			0	0			0	20	100	4000	4000
TFW:				450000			12250	462250			50040			16000	66040
TTD:				540000			16625	556625			63180			19450	82630
WEEK 18															
F/FH:	2	90	2500	450000	45	0	0	450000	90	673	121140	45	150	13500	134640
BCGNA:	2			0	35	275	19250	19250			0	35	160	11200	11200
DCGNA:	2			0			0	0			0	20	160	6400	6400
TFW:				450000			19250	469250			121140			31100	152240
TTD:				990000			35875	1025875			184320			50550	234870
WEEK 19															
F/FH:	2	55	2500	275000	87		0	275000	55	513	56430	87	125	21750	78180
BCGNA:	2			0	50	350	35000	35000			0	50	200	20000	20000
DCGNA:	2			0			0	0			0	50	200	20000	20000
TFW:				275000			35000	310000			56430			61750	118180
TTD:				1265000			70875	1335875			240750			112300	353050
WEEK 20															
F/FH:	1	45	1500	67500			0	67500	45	461	20745	62	100	6200	26745
BCGNA:	1			0	50	200	10000	10000			0	50	175	8750	8750
DCGNA:	1			0			0	0			0	50	175	8750	8750
TFW:				67500			10000	77500			20745			23700	44445
TTD:				1332500			80875	1413375			261495			136000	397495
WEEK 21															
F/FH:	1	15	1000	15000			0	15000	15	382	5280	40	75	3000	8280
BCGNA:	1			0	35	0	0	0			0	35	115	4025	4025
DCGNA:	1			0			0	0			0	35	115	4025	4025
TFW:				15000			0	15000			5280			11050	16330
TTD:				1347500			80875	1428375			266775			147050	413825
WEEK 22															
F/FH:				0			0	0			0			0	0
BCGNA:				0			0	0			0			0	0
DCGNA:				0			0	0			0			0	0
TFW:				0			0	0			0			0	0
TTD:				1347500			80875	1428375			266775			147050	413825
WEEK 23															
F/FH:				0			0	0			0			0	0
BCGNA:				0			0	0			0			0	0
DCGNA:				0			0	0			0			0	0
TFW:				0			0	0			0			0	0
TTD:				1347500			80875	1428375			266775			147050	413825
WEEK 24															
F/FH:				0			0	0			0			0	0
BCGNA:				0			0	0			0			0	0
DCGNA:				0			0	0			0			0	0
TFW:				0			0	0			0			0	0
TTD:				1347500			80875	1428375			266775			147050	413825
WEEK 25															
F/FH:				0			0	0			0			0	0
BCGNA:				0			0	0			0			0	0
DCGNA:				0			0	0			0			0	0
TFW:				0			0	0			0			0	0
TTD:				1347500			80875	1428375			266775			147050	413825
WEEK 26															
F/FH:				0			0	0			0			0	0
BCGNA:				0			0	0			0			0	0
DCGNA:				0			0	0			0			0	0
TFW:				0			0	0			0			0	0
TTD:				1347500			80875	1428375			266775			147050	413825

OPERATIONAL REQUIREMENTS
(GENERAL)

The Area 8 - Bella Coola Sub-district is a remote coastal area with limited access, for the most part by water and by air.

With the exception of a road into Bella Coola, 300 miles West from Williams Lake, and some secondary logging roads in the Bella Coola valley, there are no roads in this Sub-district. Consequently, the commercial fisheries, and the habitat and enforcement activities must be conducted using boats and aircraft in order to access the fishing areas, and all but the Bella Coola valley salmon spawning streams.

The size of the Sub-district might be illustrated by the fact that there are over 250 miles of channels. The overall area of the Sub-district, including drainages, is slightly over 9000 square miles.

Each Fishery Sub-district has specific needs that relate to normal operations during the course of a salmon season in order to fulfil the Departmental mandate of maintaining the fishery resource for the greatest benefit for the people of Canada. These requirements are based on the tasks and information requirements necessary to maintain the salmon resource and its associated benefits in a Fisheries Sub-district through the careful management of various fisheries.

With detailed, pre-season planning involving both Area- and seasonally-specific needs, the resources required to operate the Sub-district for the salmon season can be easily identified (what, how long, how much). These Operational Requirements include the following:

1.Seasonally chartered Patrolmen with boats are necessary to collect data pertaining to catch and effort as well as to provide protection and a Departmental enforcement presence in isolated areas during the fishing season. They are also critical in the success of the spawning and escapement assessment program for their portion of the Sub-district.

2.Seasonally hired Guardians serve a similar purpose to Patrolmen, however, they are land-based and are concerned more with the production side of the Sub-district operation, with the protection of brood stocks in sanctuary and spawning areas, and the protection of their habitat. Guardians are also heavily relied upon for spawning and escapement estimating.

3.Clerical support during the peak load period is essential to the Fishery Officer so that he may concentrate on

resource management. This peak period in Area 8 runs from early June to late October.

4. Government patrol vessels are required as dictated by species-timing and planned fisheries, as well as other duties such as habitat and logging referrals. In addition to the smaller Sub-district vessels, there will be occasional requirements for larger watch-keeping vessels with round the clock patrol capabilities for outside areas and specific troublesome fishing boundaries. In most cases, watch-keeping vessel requirements are of short duration and can be predicted prior to the season. Sub-district patrol vessels are normally layed up in Prince Rupert over the winter months.

5. Aircraft charters are required for gear counts on some fishery openings. The calculation of daily catch can be dependent upon an exact gear count when catch figures and deliveries are difficult to obtain. Other uses include the movement of personnel during the course of the season, attending in-season District fisheries management meetings, enforcement, protection, and in-season escapement estimates during critical periods and for inaccessible areas. In most cases, charters are utilized in such a way as to cover a variety of the above tasks in single flight where possible.

6. Capital replacement of equipment (and the associated planning process) is essential to minimize "down time" during peak periods. Worn out equipment such as outboard engines, boats, and Guardian cabins can hamper operations during critical periods. This could mean loss of essential data which ultimately affects future fishery management, or the reduction or loss of protection of the resource.

A seasonal staff consisting of Patrolmen, Guardians and clerical support is required in addition to the full time compliment of Fishery Officers and Departmental patrol vessels because data is required from a large area in a concentrated time frame over the course of the season. In the Bella Coola Sub-district - Area 8, this period is roughly from mid-May to early October each year. The Sub-district Fishery Officer cannot alone collect all the information required for fishery management as has been the case since 1978-79, when much of the seasonal patrol staff in Pacific Region was lost (NOTE: Seasonal Guardians and Patrolmen have been reduced from a Region strength of 150 to ???). This situation has resulted in harvestable surpluses being lost to the fishing industry, and the adverse effects of over-fishing on future fisheries potentials. The concept of using full-time staffing as a replacement for seasonal positions for a fishery that lasts eight or nine weeks (Area 8), is imprudent. No matter how dedicated, no Fishery Officer can be in two places at one time. Where a Departmental patrol vessel must be used to replace lost

Patrolmen, the effect is to replace a $275 per day charter with a $635 per day three-man Government vessel, as well as limiting the Fishery Officer's flexibility by removing the vessel from his use.

The continuous and consistent stream of historical data (catch, escapement, migration patterns and timing, etc.) that these seasonal positions have provided over the years is important in the management of the local fishery and has proven invaluable in the development of both short term operational and long term strategic planning for Area 8. In recent years the loss of seasonal positions has created gaps in the data which can never be recovered.

TASKS AND DATA REQUIREMENTS

The tasks and collection of data as outlined below are a necessity for comprehensive fisheries management and protection. This work is dictated by the migration timing of the various stocks and should not be considered optional.

Indian Food Fishery (IFF)

There are four major tasks in the management of the Indian Food Fishery. These are: issuance of permits for both fresh and salt water; the monitoring of fishing activity for enforcement of permit conditions (time, place, gear, boundaries); enforcement of sanctuary areas for protection of fisheries potentials (broodstock); and the collection of catch and effort information. The catch by these fisheries can approach commercial fishery proportions while supplying food fish to numerous families.

The protection of fisheries potentials is especially critical in salt water with permits issued where commercial seine and gillnet gear is used. This gear, particularly seines (length 220 fathoms or 1320 feet, depth 28 fathoms or 170 feet) have the capability of destroying an entire escapement when salmon are schooled at the mouth of a stream prior to freshwater migration.

In fresh water these tasks can be accomplished on foot, by vehicle, and by river boats. In salt water, however, it is necessary to use both Government patrol vessels and chartered seasonal patrolman.

Effort and catch information from both fresh and salt water fisheries is weighted heavily in the management of the commercial fishery as an indicator of run strength and migration timing. The continuity of effort and catch data will be important in future allocation issues.

Sport Fishery

Tasks related to the freshwater sport fishery include: catch and effort data collection, and enformcement of closed seasons, closed areas, and gear restrictions.

In salt water the tasks are similar to the above with the exception that effort and catch success by species is used as an important indicator for commercial fishery management.

Commercial Fishery

The commercial net fishery generally requires a great deal of data collection over a large area within a short period of time (June, July, August, and early September). This data is crucial in fishery management in order to:

-verify the expectations,
-conduct the fishery as planned, or to adjust as necessary,
-attain escapements to perpetuate the run, and
-harvest available surpluses of the five salmon species.

Information used to accomplish the above can vary in importance from low to high depending upon the week of the fishing season. Subtle changes are important indicators to the fishery manager and must be monitored closely as they can have great effects on the outcome of fisheries management. (eg. a slight shift in average weight, incidental catch, a change in fish quality, etc.). In a given week, data requirements may be any number of combinations of the following:

- Catch (CPUE, weekly, Cummulative)
- Escapement
- Weather
- Average Weight (and/or change)
- Fleet size (gear counts)
- Run timing
- Visual signs
- IFF
- Gear movement
- Fleet talk
- Boundaries
- Fishing (how where what)
- Incidental catch
- Fish quality
- Trends in other Areas
- Sport fishery

Protection of Fisheries Potentials

This includes maintaining the integrity of boundaries (both fishing area and sanctuary area), closed times, and closed seasons, for the protection of escapement (brood stock) requirements for the future. The money and time spent on a well managed fishery is all wasted if the sanctuary areas or creek boundaries are violated and the brood stock lost.

Enforcement

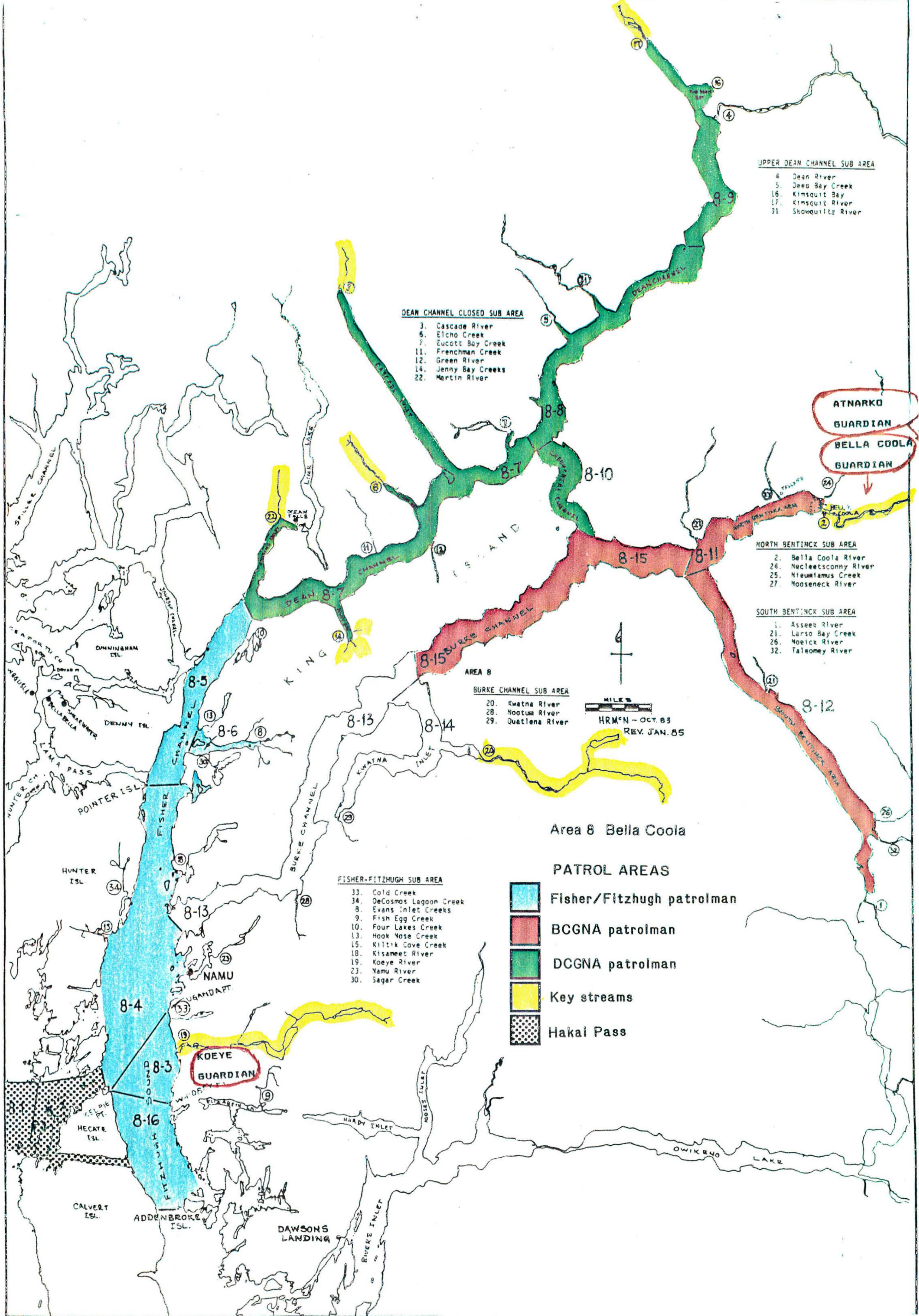
Enforcement is one of many management tools necessary to ensure regulations or special restrictions are adhered to for orderly fishery management. In addition to the protection of fisheries potentials, the enforcement of mesh size restrictions, other gear restrictions (length, depth, gear type), and fishing boundaries, etc. is the tool that helps ensure the management strategies have the desired effect.

Spawning and Stream Assessment

Escapement data are the basis of the whole fisheries management regime, beginning with the expectations of returning stocks based on brood year escapements through to the development of future fishing plans, according to the species and cycle of return. Obviously, neither pre-season planning nor computer stock modelling and run reconstruction or any other long-term strategic planning exercise is possible without this information.

As with data collection during the commercial fishing season, spawning and spawning ground assessment for the five salmon species must take place over large areas in a relatively short period of time. The number of streams, the distance between them (running time), accessability (road, air only, water only), the required method of inspection, the time required for inspection, species of salmon, and the timing of runs, are factors that influence the operational requirements to perform this extremely important task.

In the cut-backs that have occured since the late 1970's, this aspect of overall fishery management has suffered the most, it being easier to cut the ends off charters, especially the tail-ends, which are probably the more important sector when so much weight is being placed on escapement numbers.


Area 8 Bella Coola
PATROL AREAS
Fisher/Fitzhugh patrolman
BCGNA patrolman
DCGNA patrolman
Key streams
Hakai Pass
UPPER DEAN CHANNEL SUB AREA
4 Dean River
5. Deep Bay Creek
16. Kimsquit Bay
17. Kimsquit River
31 Skowquiltz River
DEAN CHANNEL CLOSED SUB AREA
3. Cascade River
6. Elcho Creek
7. Eucott Bay Creek
11. Frenchman Creek
12. Green River
14. Jenny Bay Creeks
22. Martin River
NORTH BENTINCK SUB AREA
2. Bella Coola River
24. Necleetsconny River
25. Nieumiamus Creek
27. Nooseneck River
SOUTH BENTINCK SUB AREA
1. Asseek River
21. Larso Bay Creek
26. Noeick River
32. Taleomey River
AREA 8
BURKE CHANNEL SUB AREA
20. Kwatna River
28. Nootum River
29. Quatlena River
FISHER-FITZHUGH SUB AREA
33. Cold Creek
34. DeCosmos Lagoon Creek
8. Evans Inlet Creeks
9. Fish Egg Creek
10. Four Lakes Creek
13. Hook Nose Creek
15. Kiltik Cove Creek
18. Kisameet River
19. Koeye River
23. Namu River
30. Sagar Creek
MILES
HRMcN - OCT. 83
REV. JAN. 85
ATNARKO GUARDIAN
BELLA COOLA GUARDIAN
KOEYE GUARDIAN
8-3
8-4
8-5
8-6
8-7
8-8
8-9
8-10
8-11
8-12
8-13
8-14
8-15
8-16
DEAN CHANNEL
BURKE CHANNEL
FISHER CHANNEL
FITZHUGH SOUND
KING ISLAND
KWATNA INLET
HUNTER ISL.
DENNY ISL.
CUNNINGHAM ISL.
HECATE ISL.
CALVERT ISL.
ADDENBROKE ISL.
POINTER ISL.
NAMU
DAWSONS LANDING
LAMA PASS
SPILLER CHANNEL
HARDY INLET
OWIKENO LAKE
RIVERS INLET

Operational Requirements
1986 Salmon Season
Area 8 - Bella Coola Sub-district

These operational requirements are based on both the expected 1986 fishery, and the inherent "rules" and conditions specific to the Sub-district which change little, if any, annually.

Patrolmen

1. Dean Channel Patrolman

This patrol area includes the Dean Channel Gillnet Area (DCGNA), the closed portions of Dean Channel, Cousins Inlet, Cascade Inlet, and Labourchere Channel. The patrol area is approximately 65 miles long, with an additional 25 miles of channels and inlets. (Management Units 8-7, 8, 9, & 10). Sub-areas: two - Dean Channel Closed and Upper Dean Channel.

Key Indicator Streams - five: Kimsquit River, Cascade River, Elcho Creek, Jenny Inlet Creeks, and the Martin River. There are seven other creeks.

Duties - this Patrolman is essential in supplying daily catch and effort in the DCGNA and Labouchere Channel. This has a direct influence on the management of Atnarko River Sockeye and Pinks, Bella Coola River Chums, and to a greater extent the management of Lower Dean Channel and Kimsquit River Chums. Information gathered by this Patrolman influences the commercial seine and gillnet fishery in Fisher Channel and Fitz Hugh Sound, approaches to and below his patrol area. In addition, an extensive sanctuary area must be maintained in the lower and upper thirds of Dean Channel. This Patrolman collects scale samples from the commercial fishery, monitors the sport fishery in this patrol area. He is the DFO representative in this portion of the Sub-district.

This area requires a Patrolman and his boat from June 25 to October 15: 119 days @ $275 per day (all inclusive charter): Total cost $32,725.00

This area is only accessible by boat.

2. Bella Coola Gillnet Area Patrolman

This patrol area includes upper Burke Channel, and North and South Bentinck Arm which is approximately 65 miles of channel. (Management Units 8-11, 12, & 15). Sub-areas: three - North Bentinck, South Bentinck, and Burke Channel.

Key Indicator Streams - Two: Bella Coola/Atnarko River and Kwatna River. Note: the Bella Coola River is monitored by the Bella River and the Atnarko River Guardians. Kwatna river Guardian was lost after the 1978 season.

Duties - this patrolman is responsible for patrolling and reporting on the terminal commercial gillnet fishery on Bella Coola/Atnarko River Chinooks, Sockeye, Pink, and Chum. The commercial net fishery on Chinook in May and June requires the coverage of a large area (in conjunction with departmental staff and patrol vessels) with gear spread throughout North Bentinck Arm, Labouchere Channel, Burke and Dean Channels, and Fisher Channel and Fitz Hugh Sound, a distance of about 125 miles of channnel with the gillnet fleet, although not large, scattered throughout. The Chinook fishery timing can flow into that of the small mesh net fishery for Sockeye in early July. South Bentinck Arm, although closed in past years for the protection of depressed stocks, has been cited for the enhancement of Chum salmon. This channel is 25 miles long and would require an additional Patrolman position if future potentials are to be realized. Also monitors the IFF (using commercial gilllnet gear) in North Bentink Arm.

This area requires a Patrolman and his boat from May 15 to September 10: 119 days @ $275 per day (all inclusive charter): Total cost $32,725.00

This area is only acessible by boat.

3. Fisher Channel/Fitz Hugh Sound

This patrol area includes Fisher Channel and Fitz Hugh Sound, a distance of more than 45 miles in length, with nearly half of the area being five miles in width from the mouth of Burke Channel south to Addenbroke Lighthouse. This is the approach area for Bella Coola salmon stocks and is the primary fishing area in the Sub-district, a history of fishing that dates back to the turn of the century. (Management Units 8-2, 3, 4, 5, & 16).

Key Indicator Streams - Koeye River (this is looked after by the Koeye River Guardian). There are ten other streams.

Duties - this patrolman's main responsibility lies in the commercial seine and gillnet fishery, a source of data and information for the management of the Bella Coola Sub-district salmon stocks. This responsibility is usually shared with the Sub-district patrol vessel and Fishery Officer, the area being so large, and the information so critical to fishery management in the area. The information gathered here concerns the exploitation of all of the Area 8 salmon stocks during the period of the commercial fishery.

This patrol position is essential for coverage of the Indian Food Fishery for Sockeye at Koeye and Namu in June and July. Pre-season inspections of spawning grounds are required for barriers or blockages to salmon migration, including their removal, if any, and Fall inspections for spawning and escapement data for Pink, Chum, and Coho. Assists the Dean Channel Patrolman and the Koeye River Guardian in Fall spawning inspections, this being done for their mutual safety. This Patrolman monitors the sport fishery in this patrol area. He is the DFO representative in this portion of the Sub-district.

This area requires a Patrolman and his boat from June 10 to October 6: 119 days @ $275 per day (all inclusive charter): Total cost $32,725.00

This area is only accessible by boat.

4. Hakai Pass Patrolman

This patrol position is required for Hakai Pass and the sport fishery that has developed and escalated there since the late 1970's. There are no spawning streams in this area, but information gathered there is used in records for that fishery as well as important indicators for the commercial net fishery on Atnarko Pink in Fisher Chanel, Fitz Hugh Sound, and the BCGNA for Pink salmon exploitation.

Duties - gathering effort and catch information and enforcement on the Hakai Pass sport fishery. Gathering of commercial net fishing data when Hakai Pass is open to net fishing for the harvest of Atnarko Pink salmon. He is the DFO representative in this portion of the Sub-district.

This area requires a patrolman and his boat from mid-June to September 10: 87 days @ $275 per day (all inclusive charter):Total cost $23,925.00

This area is only accessible by boat.

Total cost - four chartered Patrolmen: $122,100.00

Guardians

These positions are seasonally filled using man-days allotted to Districts and Sub-districts from a Regional Man-year pool. Man-day coverage is 5 days per week including statutory holidays, between starting and finishing dates. Currently there are no allowances for overtime although it is often required in order to complete the tasks.

1. Koeye River Guardian

The Koeye River is a Key Indicator Stream, and supports an Indian food fishery with its Sockeye, and a targeted commercial net fishery with its Pink stocks. It has a special triangular boundary which is annually implemented to protect stocks which otherwise have no natural sanctuary area and which are extremely vulnerable during the period between arrival and freshwater migration.

Duties - this Guardian is responsible for the protection of required escapements of salmon in the sanctuary area, for information concerning arrival and freshwater migration timing, for escapement and spawning data and monitoring the IFF and commercial net fishery around Koeye. Assists F/FH Patrolman in stream inspections.

This Guardian should be in place by June 15th for the protection of Koeye Sockeye, and to observe this species' migration from the bay to freshwater around June 25th. He is required until Fall escapement monitoring has been completed by September 30th.

Requirement: June 15 - September 30: Total 77 man-days

2. Bella Coola River Guardian

The Bella Coola River is a Key Indicator Stream and with its tributaries is the major river system in the Bella Coola Sub-district. It supports all five species of salmon which provides an Indian Food Fishery, a commercial seine and gillnet fishery, and a freshwater sport fishery.

Duties - this Guardian is responsible for patrolling the Bella Coola River and a number of its salmon-bearing tributaries in its 30 mile length. This patrolling intails enforcement of regulations with respect to the IFF and sport fishery, reporting of catch and effort for these fisheries, reporting on migration and timing of stocks, collecting scale samples and reporting on spawning and escapements over a period from early August to late October. Information from this person with respect to escapements, migration, the timing of stocks, and catch and effort in the IFF is critical to the management of the commercial net fisheries in Fisher Channel, Fitz Hugh Sound, and the Bella Coola and Dean Channel Gillnet Areas.

This Guardian must be in place by May 1st when the IFF and sport fishery begins in the river with the commencement of the Chinook migration. He is required until Fall escapement monitoring has been completed by late October.

Requirement: May 1 - October 24: Total 127 man-days

3. Atnarko River Guardian

The Atnarko River is tributary to the Bella Coola River and is the main spawning grounds for the Sockeye, Chinook and Pink in Area 8.

Duties - this Guardian's duties include enforcement of regulations on an intense sport fishery, monitoring an IFF (Chilcotins), reporting of catch and effort for this fishery, reporting on migration and timing of stocks, and reporting on spawning and escapements over a period from early August to late October. He must also enforce special regulations for the protection of spawning Chinook salmon with respect to the sport fishery, and maintain a large closed area for the protection of these same fish.

This Guardian must be in place by May 15th with the commencement of the Chinook migration, and is required until Fall escapement monitoring has been completed by late October.

Requirement: May 15 - October 24: Total 117 man-days

4. Office Clerk

Clerical support is required during the salmon season when the Fishery Officer is dedicated to the management of fisheries.

Duties - maintain a service to the public, and look after telephones, radio-telephones, telex, mail, and the issue of licences and permits. This can be accomplished with five half-days per week from June 1st to October 30th.

Requirement: Total 55 man-days

Total requirement: Guardians, Clerk - 376 man-days

Other Requirements

1. Fixed-wing Aircraft Charter

Chartered flights are required for gear counts at the beginning of commercial fisheries, for in-season and post-season escapement evaluation, for in-season meetings with Industry and Departmental staff, habitat and logging referrals, and for the movement of Sub-district personnel.

Locally based Cessna 185 on floats costs $250 per hour.
DH Beaver on floats costs $275 per hour.

Gear Counts

Require 8 Sunday opening counts for the 1986 commercial net fishery of 2 hours duration each ($4000.00).

Management Meetings

Require 8 flights for Fishery Officer to attend weekly in-season management meetings in the 1986 season of 2 hours duration each (this includes return) ($4000.00).

Meetings With Industry

Required as part of the consultative process with fishermen and industry. Require 6 flights - Bella Coola to Namu, drop off and pick up - total 2 hours duration each: ($3000.00).

Spawning Inspections

Because of the size of the Sub-district and the remoteness of many of its streams, it is necessary to assess escapements by air, both for in-season management and final escapement enumeration.

The Kimsquit River Chum requires 3 flights from late July to the end of August - 2 hour duration each: ($1500.00).

Tanya Lake/Takia River (Dean River system) Chinook escapement requires 1 flight timed at the peak of spawning (mid-August) - note: this flight is for access and the escapement enumeration is done on foot - duration 2 hours: ($500.00).

Atnarko and Koeye River Sockeye inspections in late September involve a series of relay flights between lakes and rivers with up to 10 personnel. This requires the use of a DH Beaver and C185 for a day, total cost: ($2200.00).

Two Kimsquit Sockeye inspections are required (one in late October and one in mid-November) to count lake spawners in Kimsquit Lake. This involves 2 hours flying time and 3 hours holding time each: total ($1500.00).

Total fixed-wing aircraft charter required in 1986: $16,700.00

2. Helicopter

Atnarko River requires 2 flights of 2.5 hours duration each to be used in conjuction with the Chinook escapement estimations gained through regular means (walking, floating,

tower count, etc.). First flight - early September, second flight - mid September. In addition to being a Key Indicator Stream in Area 8, the Atnarko River is a Regional key indicator for Chinook in terms of the Canada/US International Agreement: (Hughes 500D - $650.00 per hour) total: $3250.00.

Dean River requires 2 flights of 2 hours duration each to enumerate Chinook in the lower 18 miles of river in late August and early September. In some years water levels in September may allow this second escapement monitoring to be accomplished with the use of river boat. Total: $2600.00.

Koeye River requires 1 flight of 2 hours duration for a final Pink enumeration in mid-October (by this time the Departmental patrol vessels are usually laid up for the Winter in Prince Rupert, and Seasonal staff have been terminated). Total: $1300.00.

3. Capital Replacement Program

The following should be replaced prior to the 1986 salmon season:

Koeye Guardian Cabin - 14 X 20 ft. Panabode: total $8000.00.

Koeye Guardian 15 ft. speedboat and Mercury outboard engine - 50 HP longshaft: total: $6000.00.

Avon 12 ft. rubber raft: $3000.00

Mercury outboard engine - 75 HP jet drive: $4200.00.

Total Capital Replacement - $21,200.00

4. Atnarko Counting Tower Operation

This important operation has not had assured funding through the Sub-district in recent years but has received last minute funding and manpower through CEIC programs. In 1983 the tower was not operated because this was not available, making the 1983 Atnarko River Pink escapement (and therefore the 1985 expected returns) questionable.

This operation requires that the counting tower be manned 7 days per week during daylight hours from July 25 until September 10 (even years). To estimate the cost, the 1985 program cost $22,500 ($12,500 SEP manageablility, remainder MILAP).

5. Fuel Requirements - Patrolmen

It is estimated from past records that fuel requirements for four Patrolmen are as follows:
Diesel fuel - 7000 gal. @ $2.50 - total: $17,500.00.
Gasoline - 1500 gal. @ $2.95 - total: $4495.00.
Total all: $21,925.00.

6. Patrol Vessel requirements

Two Departmental patrol vessels are permanently assigned to the Bella Coola Sub-district, the FPV "Temple Rock" and the FPV "Gale Rock", and are annually allotted maximum operational days by Ships Division. These are 184 and 144 days respectively, of which 35 to 40 are consumed during the Roe Herring fishery in March each year. The Sub-district Fishery Officer in charge must therefore carefully manage the use of the vessel's time in order ensure the required coverage between early May and the Fall wrap-up in mid to late October, otherwise the allotment could be spent by the time the spawning and escapement is at its height.

The FPV "Temple Rock" - required to be in the Sub-district in the beginning of Week 6 (May 4-10, 1986). The termination date often depends upon Fall weather conditions during escapement enumeration. If weather and stream conditions are favourable, the vessel would be required until October 31, 1986.

The FPV "Gale Rock" is required in the Sub-district by the end of Week 9 (May 25-31, 1986). Termination date October 17, 1986.

Watchkeeping vessels - None required in 1986.

7. Other

Overwintering (egg and fry) Hydraulic sampling and down-stream fry trapping: the program that the Snootli Hatchery crew have maintained since the mid-1970's has been an invaluable tool in the development of salmon expectations and fishing patterns for Atnarko Pink. This information (eg.1983 brood and resultant 1985 return) improves the reliability of predicting the strength of returning stocks and thereby reduces the uncertainty involved in developing fishing plans. Expanding this program to a select number of other representative Area 8 streams should be given future consideration.

DCGNA Test Fishery: This first began in 1984 and was designed to develop an index of abundance of Sockeye and Chum destined for the Kimsquit River system. Should begin late in Week 14 (June 29 - July 5, 1986) and terminate in the end of Week 22 (August 24-30, 1986). The charter is paid for on the basis of a bid system with fish taken during the

test fishery in addition to directed payment fishing. Cost involved in this program arise out of the need for a technician aboard the test boat to record data. In the past these costs have been covered through office assistance programs provided by SEP and North Coast Management Biology. The costs amount to about $8000.00 annually.

AREA 8 OPERATIONAL REQUIREMENTS (BUDGET) SUMMARY

	O & M	Capital	Man Days
1) Patrolmen	122100		
2) Guardians			321
3) Adminstration*		2000	55
4) Aircraft**	23850		
5) Cap. Replacement***		21200	
6) Atnarko Tower	22500		
7) Fuel (patrolmen)	21925		
8) Patrol Vessels			
TOTAL	190375	23200	376

NOTES: *-Administration costs include clerical support on a half time basis throughout the salmon season, as well as office supplies and equipment (photocopier).

**-Aircraft charters include fixed wing and helicopter requirements for both in-season management and post-season assessment.

***-Capital replacement includes only those items which must be replaced prior to the 1986 salmon season.