CONSOLIDATION OF FISHERIES RESOURCE INFORMATION WEST COAST VANCOUVER ISLAND

Clayoquot Sound and Long Beach

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ABSTRACT

In 1993, the South Coast Division of the Department of Fisheries and Oceans (DFO) initiated a program to collect, organize, map and report information pertinent to oil spill planning from fisheries field staff. This report, representing the second and third year of the program, incorporates information obtained from DFO field staff with experience in Clayoquot Sound and Long Beach and from representatives of Ahousaht, Tla-o-qui-aht and Ucluelet First Nations. Fisheries resources covered by this report include commercial, aboriginal and recreational inshore fisheries for finfish and shellfish as well as the location of important habitats. The location of shellfish beds and of spawning or rearing areas for finfish are also included as are areas where marine mammals are known to concentrate.

Key words: west coast Vancouver Island, Clayoquot Sound, Long Beach, fishery resources, oil spill planning

RÉSUMÉ

En 1993, la Division de la côte sud du ministère des Pêches et des Oceans (MPO) lançait un programme dont l'objet était de recueillir, d'organiser, de cartographier et de rendre compte de l'information concernaant les mesures d'intervention en cas de déversement de pétrole, en collaboration avec le personnel de terrain de MPO. Le présent rapport, qui fait état des travaux exécutés au cours de la deuxième et de la troisième année de ce programme, contient l'information obtenue auprès du personnel de terrain du MPO qui a une expérience de travail dans la région de Clayoquot Sound et de Long Beach, et des représentants des Premières nations Ahousaht, Tla-o-qui-aht et Ucluet. Les ressources halieutiques dont traite le rapport concernent les pêches commerciales, autochtones et récréatives infracôtières (poissons à nageoires et mollusques et crustacés). Le rapport traite également de l'emplacement des habitats importants, des sites où on trouve des mollusques et crustacés et des sites de reproduction ou de croissance des poissons à nageoires, de même que des endroits où on a observé des concentrations de mammifères marins.

Mots clés: côte ouests de l'île de Vancouver, Clayoquot Sound, Long Beach, ressources halieutiques, mesures d'intervention en cas de déversement de pétrole.

ACKNOWLEDGEMENTS

The authors would like to thank the staff of Department of Fisheries and Oceans who contributed their knowledge and time to assist in this project. Those who were interviewed included Edward Arnet, Brad Rushton, Doug Swift, Brenda Spence, Doug Palfrey, Frank Crabbe, Kim Hyatt, Greg Serbic, Jake Schweigert and Dennis Chalmers. We would also like to thank representatives of First Nations who arranged meetings and met with us to share their invaluable knowledge of fisheries resources in their territories. These included Reg Sutherland, Edwin Frank, Carl Jumbo, Darryll Campbell and Mark Jack (Ahousaht First Nation); Harold Touchie, Larry Baird Sr., Jack Touchie, Dan Touchie, Ray Haipee, Brenda Clayton and Bob Hais (Ucluelet First Nation); and Ernest David, Dan David and Moses Martin (Tla-o-qui-aht First Nation). In addition, we appreciate the contributions from Rod Palm and David Lightly (consultants) who provided detailed information based on their experience in the area. Margaret Wright (South Coast Division) coordinated the project and provided valuable input throughout the study.

1. INTRODUCTION

In 1993 the Department of Fisheries and Oceans (South Coast Division - Habitat Management Sector) initiated a project to capture information from DFO field staff regarding fishery stocks, fisheries and fish habitats in their sub-districts, with reference to their experience and to information on file in their offices. The goal of the program is to provide readily accessible detailed information to aid in oil spill response and in assessing damage for compensation and litigation purposes.

The pilot study, for Area 23 - Barkley Sound and Alberni Inlet - was completed in January 1994. The second year program, and subsequent studies, while following the format of the pilot study, have been expanded to include information from patrol vessel operators and Native Bands.

Information collected has been mapped (on hydrographic charts and digitally), site specific details incorporated into database files, and general related information, including reliability of data, presented in a report.

1.1 The Study Area

The study area (Area 24) is bounded by Hesquiat Peninsula in the north and Amphitrite Point in the south (Figure 1). This area includes Clayoquot Sound and Long Beach and is represented by Canadian Hydrographic Charts 3603 (Ucluelet Inlet to Nootka Sound), 3673 (Clayoquot Sound - Tofino Inlet to Millar Channel) and 3674 (Clayoquot Sound - Millar Channel to Estevan Point) (Table 1).

Clayoquot Sound is located on the west coast of Vancouver Island, north of Barkley Sound and Long Beach. It is characterized by a number of deep inlets fronted by three large islands. The outer portion of the inlet, surrounding the islands, is shallow and sandy. This habitat, particularly to the southeast (Lower Clayoquot Sound), is very rich, supporting large populations of geoducks and crabs. Gray whales take advantage of the invertebrates that live in these sandy bottoms. Much of this shallow outer portion is also important for herring spawn and there are extensive eelgrass beds that provide nursery areas for salmon and other finfish. The protected rocky areas towards the outside provide excellent habitat for shellfish such as urchins, abalone, sea cucumbers, goose barnacles and octopus.

The inside portion of Area 24 has proven to be excellent for salmon farming and at the present time Clayoquot Sound produces 25% of B.C.'s farmed salmon.

The area directly to the south-east of Clayoquot Sound, Long Beach, is also included in this study. It runs from Cox Point to Amphitrite Point and is comprised of long stretches of sandy beaches interspersed with rocky headlands. Most of this

area is part of Pacific Rim National Park. This area faces southwest onto the open Pacific Ocean.

1.2 Methods

Information Collection

The primary people interviewed for Area 24 are listed in Appendix A. These included a local Fishery Officer, two previous Fishery Officers (one of them is now the Habitat Technician for the area), a retired Patrol Boat Operator, the manager of the local salmon hatchery and representatives of local First Nations. Supplemental information came from field researchers at the Pacific Biological Station (PBS) and one contract researcher/dive fisher with extensive local knowledge.

The four Native bands in the area are Tla-o-qui-aht, Ahousaht, Hesquiaht and Ucluelet. Of these, all but the Hesquiaht people (due to concerns about confidentiality) were willing to meet with us and share their knowledge.

In addition, numerous documents and databases were reviewed, including the Salmon Escapement Database maintained at the Pacific Biological Station, DFO Management Plans, the Herring Operational Framework, the Record of Management Strategy (salmon) and a review of herring spawn areas (Hay *et al.*, 1989, including updates from J. Schweigert). Detailed herring spawn areas were determined by reviewing maps and reports prepared by Fishery Officers and Patrol personnel which were on file in the Fishery Office in Tofino.

Interviews were undertaken at DFO field offices in Tofino, Port Alberni, Campbell River and at the Tofino hatchery. Meetings with Native bands were held at their band offices. Marine charts were used to capture the spatial information and associated database and anecdotal information was recorded on blank database forms. In order to ensure maximum accuracy and completeness, interviews were taped and notes were reviewed, organized and typed up immediately following the meetings. A large amount of information was gathered in the initial interviews. This was mapped and incorporated into draft database format as soon after the interviews as possible.

Information Consolidation

Information has been organized into categories and sub-categories (see Table 2). The broad categories are based on biological classification and are referred to as 'elements' (salmon, groundfish, herring, clam, etc.) and the sub-categories are based on use and are referred to as 'attributes' (type of fishery, holding areas, spawning areas, etc.).

Areas with important fisheries resources were marked on hydrographic charts and labeled. Information about each area (or polygon) was incorporated into a database and linked by number codes to the map polygons. This information includes timing, level of importance, comments and source of information. Any general information that relates to the element/attribute is incorporated into the narrative portion of this report.

1.3 Criteria for inclusion of data in the study

Decisions had to be made regarding the level of importance of particular resources and whether or not to include them as mapped elements or include them in the database. While all resources have intrinsic value, they may not fit into the mandate of DFO, which is to protect fisheries, fish stocks and habitat. For example, while *Fucus* would be affected by an oil spill, it is not known to be critical to the survival of valuable fishery resources, so will be excluded. On the other hand, eel grass, which is not in itself of commercial value, provides rearing habitat to juvenile salmon and hence will be included.

1.4 Report Format

Each section of the report represents a particular element. The major categories (salmon, herring, groundfish) are divided into attributes. Each section includes a directory for the information about that particular component. The following describes these sections:

DATA SOURCES:

This is a list of people interviewed, reports consulted or existing databases that were compiled using district field staff or First Nations information. A "#" preceeding the data source signifies the major source of information.

DATA COMPILED:

Each element/attribute described in the text may or may not be mapped and/or included in a database file. This section gives specific information about where to find the:

- database file structure
- database file (gives name)
- mapped polygons (chart/map #'s)

USE LEVEL RATING:

This is an estimate (often subjective) of the relative importance of the site for that element/attribute (see Table 3). Generally the rating goes from 0 - 5 with

5 being the rating representing the highest level of use. The value -9 is used when there is use made of a resource, but no use level value can be determined. Variations to this basic scheme, as well as the rationale for rating each element/attribute are given in individual sections of the narrative.

Information obtained from DFO personnel is usually rated according to importance but Native representatives were less certain of use levels. Native fisheries are carried out in a less structured manner than the commercial fisheries which usually take place at discrete times (openings) with DFO monitoring and recording levels of effort.

GENERAL NOTES:

This section includes anecdotal information that is not site specific. It is often background or historical in nature. In addition, comments regarding reliability of the information are included here.

FURTHER INFORMATION:

Sources of further information on fisheries resources, published or gathered by other agencies or private consultants, are referenced here. These may supplement what has been provided in this study.

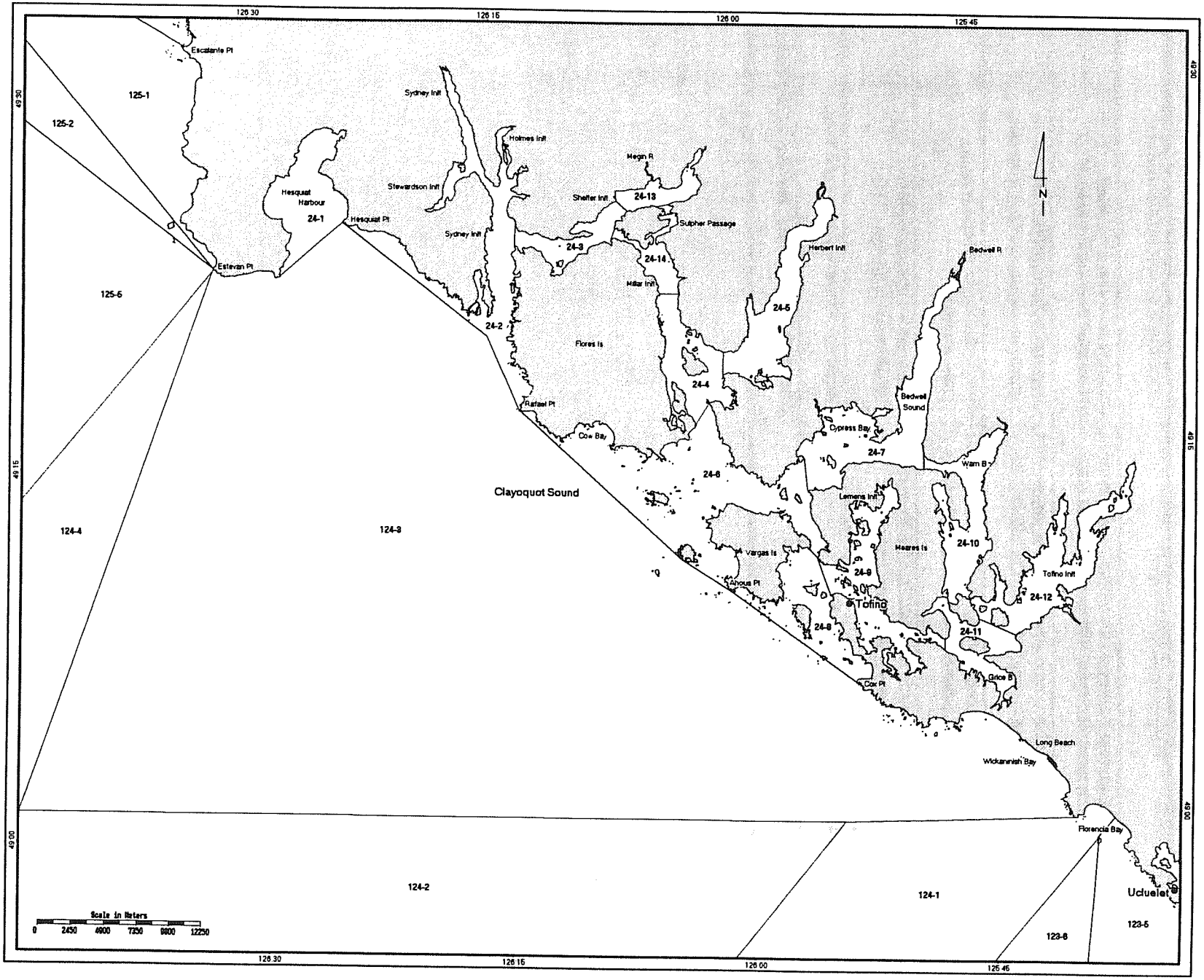

Figure 1. Map of Vancouver Island showing the study area.

Table 1. Charts used in mapping fishery resource information for Area 24.

Map #	Hydrographic Chart #	Resource Element/Attribute(s)
1 2	3674 - Clayoquot Sound - Millar Ch. to Estevan Pt. 3673 - Clayoquot Sound - Tofino In. to Millar Ch.	**Salmon** - Harvest, Holding, Juveniles, Spawning Escapement
3 4	3674 - Clayoquot Sound - Millar Ch. to Estevan Pt. 3673 - Clayoquot Sound - Tofino In. to Millar Ch.	**Herring/Groundfish/Other Finfish** - Harvest , Holding, Spawning
5 6	3674 - Clayoquot Sound - Millar Ch. to Estevan Pt. 3673 - Clayoquot Sound - Tofino In. to Millar Ch.	**Shellfish** - Beds/Harvest Areas; Closed areas.
7 8	3674 - Clayoquot Sound - Millar Ch. to Estevan Pt. 3673 - Clayoquot Sound - Tofino In. to Millar Ch.	**Mammals** - Concentrations **Significant Habitats** - Beds
9	3603 - Ucluelet In. to Nootka Sd.	**Salmon, Groundfish** - Long Beach
10	3603 - Ucluelet In. to Nootka Sd.	**Shellfish, Mammals, Habitat** - Long Beach

Table 2. Elements and attributes documented for Area 24.

Element	Attribute	Narrative	Map	Database
Salmon	Commercial Fisheries	X	X	X
	Aboriginal Fisheries	X	X	X
	Recreational Fisheries	X	X	X
	Estuaries with escapement	X	X	X
	Adult Holding	X	X	X
	Juvenile rearing	X	X	X
Herring	Commercial Fisheries	X	X	X
	Aboriginal Fisheries	X	X	X
	Spawning	X	X	X
	Holding	X	X	X
Groundfish	Commercial Fisheries	X	X	X
	Aboriginal Fisheries	X	X	X
	Recreational Fisheries	X	X	X
Other Finfish	Cf, Rf, Nf Fisheries; Sitings	X	X	X
Abalone	Beds/Harvest Areas	X	X	X
Chitons	Beds/Harvest Areas	X	X	X
Clams	Commercial, Aboriginal and Recreational Fisheries	X	X	X
Clams	Closures	X	X	
Crabs	Commercial, Aboriginal and Recreational Fisheries	X	X	X
Geoduck	Commercial Harvest areas	X	X	X
Goose Barnacles	Commercial/Aboriginal Harvest	X	X	X
Mussels	Recreational/Aboriginal Harvest	X	X	X
Octopus	Commercial/Aboriginal Harvest	X	X	X
Oysters	Beds/Leases/Aboriginal Harvest	X	X	X
Perch	Commercial, Aboriginal and Recreational Fisheries	X	X	X
Scallops	Commercial Fisheries; Presence	X	X	X
Sea Cucumbers	Beds/Harvest Areas	X	X	X
Sea Urchins	Commercial and Aboriginal Harvest	X	X	X
Shrimps/Prawns	Commercial Fisheries; Presence	X	X	X
Squid	Beds/Harvest Areas	X	X	X
Seals	Distribution	X	X	X
Sea Lions	Distribution	X	X	X
Whales	Distribution	X	X	X
Basking Sharks	Distribution	X	X	X
Marine Vegetation	Major kelp and *Zostera* beds	X	X	X

Table 3. Rationale for Use level Ratings

(See the use level rating in each section for specific details for each element/attribute)

Element: attribute	Rating Rationale
Salmon: commercial fishery	Subjective rating based on Fisheries personnel's estimates of the number of boats at the site or in the vicinity at the peak of the fishing season.
Salmon: aboriginal fishery	Subjective rating based on Fisheries personnel's estimates of the number of boats at the site or in the vicinity at the peak of the fishing season.
Salmon: recreational fishery	Subjective rating based on Fisheries personnel's estimates of the number of boats at the site or in the vicinity at the peak of the fishing season, or on the descriptive rating given in B.C. Outdoors, April 1989 issue (e.g., "hot spot"; see DATA SOURCES for this element).
Salmon: escapement	Based on the maximum escapement of any species using that stream over the 10-year period 1983-1992.
Herring: commercial fishery	Subjective rating based on Fisheries personnel's estimates of the number of boats using the area.
Herring: spawning areas	Based on a combination of magnitude and frequency of spawn as reported by Hay *et al.*, 1989.
Herring: adult holding areas	Subjective rating based on soundings carried out during pre-season assessment surveys.
Groundfish: commercial fisheries	Subjective rating based on Field personnel recollections of average numbers of boats.
Groundfish: recreational fisheries	Subjective rating based on Field personnel recollections of average numbers of boats.
Clams	Subjective ratings based on size of beds and number and frequency of harvest activities.
Crabs	Subjective rating based on Fisheries personnel's estimates of the number of boats using the area.
Other shellfish	See individual sections: generally, personnel were unable to rate use levels.

ELEMENT: Salmon

ATTRIBUTE: Commercial Fisheries

DATA SOURCES

Doug Palfrey. Manager of the Tofino P.I.P. hatchery project - 1985 to present.
- DFO 1995 Record of Management Strategy (RMS) - Salmon.
- Ucluelet Radar Counts.
- **Reg Sutherland**. Ahousaht Band Fisheries Program since 1984 (Manager).

DATA COMPILED

Database File Structure: Appendix Table B1
Database: SALMCOMM.dbf (Appendix Table C1)
Chart #: 1: CHS 3674 - Salmon Resources and Fisheries
2: CHS 3673 - Salmon Resources and Fisheries
9: CHS 3603 - Mixed (Salmon and Groundfish); Long Beach

USE LEVEL RATING

Use levels were rated 1 - 5 by DFO field staff during the course of interviews, based on the number of boats participating, the duration of the fishery, and the level of catch.

GENERAL NOTES

Net Fisheries

Area 24 has supported commercial net fisheries in the past, but there have been no openings since 1982. Up until the early 1970's there were consistent seine and gillnet fisheries targeting Kennedy River sockeye. Chum net fisheries were also consistent on many local stocks until 1963, after which there have been only sporadic catches during the 1970's and early 1980's. Overfishing and stream habitat deterioration are cited as causes of decline in these net fisheries.

Commercial Troll Fishery

All sub-areas of Area 24 are open for commercial trolling from approximately July 1 until July 31. After July 31, only Subareas 24-2, 24-6 and 24-8 (the outer areas) remain open. Closure of the inside subareas is to conserve local chinook stocks.

It is difficult to determine the commercial troll catches or use level of Area 24 inside the surfline because most hail catches and boat counts combine Area 24 with Area 124 which is outside the surfline (R. Brahniuk, pers. comm.). Radar counts, taken throughout the season from Mount Ozzard near Ucluelet, provide some information for the offshore areas and near the surfline, but show nothing inside Area 24.

Doug Palfrey, from his observations from boat and from Long Beach, showed some areas where smaller trollers (day boats), and the "Mosquito Fleet" (small Native-owned boats with commercial licences) fish inside the surfline, usually during periods of rough weather.

FURTHER INFORMATION

- unknown

ELEMENT: Salmon

ATTRIBUTE: Recreational Fisheries

DATA SOURCES

Brenda Spence. Area 24 Fishery Officer since 1991.
- **Doug Palfrey**. Manager of the Tofino P.I.P. hatchery project - 1985 to present.

Reference:
J.O. Thomas & Associates Creel Census

DATA COMPILED

Database File Structure: Appendix Table B2
Database: SALMRECR.dbf (Appendix Table C2)
Chart #: 1: CHS 3674 - Salmon Resources and Fisheries
2: CHS 3673 - Salmon Resources and Fisheries
9: CHS 3603 - Mixed (Salmon and Groundfish); Long Beach

USE LEVEL RATING

Use level rating information was provided by DFO field staff, as well as the contractor who carried out the 1993 WCVI creel survey. Use level is governed by proximity to populated areas and access, as well as concentration of the resource.

GENERAL NOTES

Information is more reliable and accurate for inside the surf line as these areas are more actively patrolled.

Recreational fishing for salmon is popular in Clayoquot Sound. Fishers come mainly by road, with a growing number from the U.S., launching their boats at Tofino and Grice Bay. Others travel up the west coast from Barkley Sound. There are 10 sport fishing charter businesses in Tofino, each with 10 - 15 guides. The fishery is expanding, both in numbers of boats and the distance boats travel from Tofino to fish. Most people fish aggressively, hoping to get their limit.

Creel surveys have been carried out in 1993 and 1994 (J. O. Thomas and Associates). The 1993 survey indicates that effort peaks from mid- to late August and is concentrated in the area outside Tofino and around Vargas Island.

FURTHER INFORMATION

Wilf Luedke, West Coast Salmon Management Biologist, South Coast Division.
J. O. Thomas and Associates, Vancouver, B. C.- 1993 Creel Census (Area 24).

ELEMENT: Salmon

ATTRIBUTE: Aboriginal Fisheries

DATA SOURCES

Reg Sutherland. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Ernest David.** Tla-o-qui-aht First Nation fisheries representative.
- **Harold Touchie**. Ucluelet First Nation Fisheries council.
- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Brenda Spence**. Area 24 Fishery Officer since 1991.

DATA COMPILED

Database File Structure: Appendix Table B3
Database: SALMABOR.dbf (Appendix Table C3)
Chart #: 1: CHS 3674 - Salmon Resources and Fisheries
2: CHS 3673 - Salmon Resources and Fisheries
9: CHS 3603 - Mixed (Salmon and Groundfish); Long Beach

USE LEVEL RATING

Use levels are subjective and based on estimates of the numbers of boats fishing a particular area, on average, during the time period specified.

GENERAL NOTES

"Aboriginal fisheries" refer to the fish caught to be used for subsistence, social and ceremonial purposes of local native people.

There are three bands represented in Clayoquot Sound: Ahousaht (village of Marktosis), Hesquiaht (Hot Springs Cove) and Tla-o-qui-aht (Opitsat and Esowista reserves). In addtion, Ucluelet Band fishes in Area 124 off Ucluth Peninsula.

The following is a list of the number of fish that are allocated to each band in Area 24 (1994), by species:

	Sockeye	Chinook	Chum	Coho	Pink	Total
Ahousaht	8700	6700	3350	17550	3600	39900
Hesquiaht	3000	2620	1500	6770	1300	15190
Tla-o-qui-aht	1800	2450	400	6075	900	11625
Ucluelet	6770	1885	500	4765	800	14720
Total	13500	11770	5250	30395	5800	66715

These allocations are target figures, based on the band populations and do not necessarily represent the number of fish caught.

Native food fisheries for salmon fall into two main categories; terminal net fisheries and troll fisheries. The net fisheries are mainly for chum (and some local sockeye) and the troll fisheries concentrate on chinook and coho, and Fraser River sockeye outside the surf line. There are 30 or more trollers (up to 36 feet) involved in these fisheries, one herring skiff equipped with a small seine, and up to 40 or 50 runabouts (12 to 18 feet). Some of the boats are commercially licenced but are used in the off-season for food fisheries.

FURTHER INFORMATION

Don Hall, Nuu-Chah-Nulth Tribal Council Biologist.
Jim Lane, Nuu-Chah-Nulth Tribal Council Biologist (Central Region).

ELEMENT: Salmon

ATTRIBUTE: Adult Holding Areas

DATA SOURCES

Brad Rushton. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
Doug Palfrey. Manager of the Tofino P.I.P. hatchery project - 1985 to present.
Doug Swift. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Brenda Spence**. Area 24 Fishery Officer since 1991.
- **Kim Hyatt**. Research scientist at Pacific Biological Station (Area 24: 1980 - 1995).

DATA COMPILED

Database File Structure: Appendix Table B4
Database: SALMHOLD.dbf (Appendix Table C4)
Chart #: 1: CHS 3674 - Salmon Resources and Fisheries
2: CHS 3673 - Salmon Resources and Fisheries

USE LEVEL RATING

Based on subjective estimate of those interviewed. This would depend on the size of schools and duration of time at a particular location. Note that these estimates are very subjective and vary from year to year.

GENERAL NOTES

Salmon bound for spawning streams often hold in schools for several weeks before heading upstream. In Area 24 virtually all the heads of inlets and stream mouths are important pre-spawn holding areas. The timing varies between stocks and streams.

The Kennedy is an important sockeye system and has been studied by Pacific Biological Station staff fairly intensively since 1980. There are several distinct races of sockeye in the Kennedy system, arriving at different times to spawn. The earliest run (Upper Kennedy) arrives in early June, peaking in mid- to late-July. Later runs arrive through July, August and September with maximum numbers pooling off the mouth from the end of August to early September. Chinook and coho are later than sockeye - typically entering fresh water from late August to November. The latest run of coho may not leave saltwater until December. The main area of pooling is Cannery Bay, off the Kennedy mouth, but Kennedy-bound fish also concentrate in Browning Passage and Tofino Inlet.

The extent and timing of adult holding in all systems vary with climate conditions. If river water temperature is high and flow low, fish will generally wait until the first rains of fall. This can be as late as November some years. On the other hand, if cool wet weather is prevalent, fish will move directly into freshwater.

If warm, dry weather continues for prolonged periods during the late summer and fall, inhibiting the upstream migration of salmon, the potential impact of an oil spill (or other environmental disaster) on salmon could be considerable (K. Hyatt, pers. comm.). Not only are the fish concentrated in confined areas, but stress to the fish will be compounded by adverse natural conditions such as high temperatures, low flushing rates and possibly low oxygen. Also, Area 24 has many narrow passages where salmon concentrate in their migrations.

FURTHER INFORMATION

- unknown

ELEMENT: Salmon

ATTRIBUTE: Juvenile Rearing Locations

DATA SOURCES

Brad Rushton. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
Kim Hyatt. Research scientist at Pacific Biological Station (Area 24: 1980 - 1995).
- **David Lightly**. Fisheries consultant with the Ahousaht band, 1985 - 1990. DFO field biologist from 1969 - 1979.

DATA COMPILED

Database file structure: Appendix Table B5
Database File: SALMREAR.dbf (Appendix Table C5)
Chart #: 1: CHS 3674 - Salmon Resources and Fisheries
2: CHS 3673 - Salmon Resources and Fisheries

USE LEVEL RATING

Based on subjective estimates made by field personnel, these in turn based on numbers of juveniles observed, and duration of the period of residence.

GENERAL NOTES

As well as estuary areas, there are many bays and eelgrass beds that are important to the early marine life of salmonids.

The timing of juvenile outmigrations vary between systems and as the result of climatic variations from year to year. As a general guideline, the periods of estuarine and nearshore rearing can be expected for the following species (D. Lightly, pers. comm.):

Chum	March 15 - July 15
Chinook	March 15 - April 15 (fry)
	June 1 - July 1 (smolts)
Coho	May 1 - Aug 30 (smolts)
	Some may remain as residents in the Sound
Sockeye	April 15 - July 31

The Kennedy system has been studied for a number of years by the staff of the Pacific Biological Station. Kim Hyatt provided some information on the outmigration

of juveniles from the system and their residence in the estuary and saltwater areas of Clayoquot Sound. The sockeye outmigration takes place mainly between April 15 and May 15 (85%). The last sockeye smolts clear fresh water between the end of May and the middle of June. They spend an average 3 to 5 weeks in Cannery Bay (Kennedy Cove) and in the passages and eelgrass beds between the estuary and the open ocean. By mid- to late July, all sockeye juveniles have cleared Clayoquot Sound.

Other major rearing areas include Grice Bay, Young Bay, Hesquiat Harbour, Lemmens Inlet and Matilda Inlet (B. Rushton).

There are also two sites where hatchery fry are held in net pens and fed prior to release - the mouths of Tranquil Creek and Cypre River. This takes place from the middle of May until the first week in June and involves about 50,000 fry at each site.

FURTHER INFORMATION

- unknown

ELEMENT: Salmon

ATTRIBUTE: Estuaries with Salmon Escapement

DATA SOURCES

Greg Serbic, Programmer, PBS Salmon Escapement Database.
- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Doug Palfrey**. Manager of the Tofino P.I.P. hatchery project - 1985 to present.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.

DATA COMPILED

Database File Structure: Appendix Table B6
Database: SALMESC.dbf (Appendix Table C6)
Chart #: 1: CHS 3674 - Salmon Resources and Fisheries
2: CHS 3673 - Salmon Resources and Fisheries
9: CHS 3603 - Mixed (Salmon and Groundfish); Long Beach

USE LEVEL RATING

Use level ratings for streams included in the salmon escapement database are based on the maximum escapement of any salmon species in the stream, during the period 1983 - 1992. The break levels, the same as those used in the Area 23 project, were chosen to reflect the magnitude of runs in Vancouver Island streams, where escapements over 50,000 are considered very high.

Use Level Rating	Verbal Rating	Maximum Escapement of any one Species	Number of Streams with Rating
0	Present historically, but none since 1983	0	7
1	Very Low	1 - 100	6
2	Low	101 - 1000	6
3	Moderate	1001 - 10,000	11
4	High	10,001 - 50,000	3
5	Very High	> 50,000	2

GENERAL NOTES

Salmon escapement estimates used in the data source (SEDS) are considered the best estimate available, drawing from the results of surveys conducted by overflight, annual or biannual stream walks (Fishery officers, guardians or contractors), surveys by local Native bands, or data gathered by research crews.

Information on timing of salmon is from the BC 16 Salmon Escapement Run-Timing reports maintained at the Pacific Biological Station and is based on observations during spawn surveys. The dates included in the database are for adults of all species, and are not available for all streams. In addition there is often a period when adults mill outside prior to entering the estuary, and also, a critical period when juveniles are outmigrating and feeding in the estuary (see Adult Holding and Juvenile Salmon databases).

Streams that have not had recorded escapements in the last 10 years are not included in the SEDS summary. However, in some of these streams, spawners have been observed by hatchery crews, volunteers or local residents (source: D. Palfrey and Ahousaht Band) and are added to the map and database with anecdotal documentation of species and escapement levels. Although the odd pink salmon appeared in the SEDS database (two in the Moyeha River and two in Tranquil Creek), E. Arnet felt that these were anomalies - either misidentified or strays - and that pink salmon no longer spawn in any Clayoquot Sound streams.

Caution should be used in interpreting numbers of spawners. Different individuals and different methods can result in considerably different estimates. Wilf Luedke (South Coast Salmon management biologist) points out that DFO biologists are now trying to standardize methods of estimating spawners and the methods used are producing higher estimates than previously (by a factor of 5-10 times), especially on some systems where visibility is difficult. The Bedwell River is being monitored intensively and will be used in future as an indicator stream, along with the Megin and Upper Kennedy, to estimate levels of escapements for the whole area. Mr. Luedke said that in 1993 there appears to be a jump in the number of spawners in the Bedwell River, but this could be explained, at least in part, by the change in method of enumerating.

FURTHER INFORMATION

Wilf Luedke, South Coast Division, Department of Fisheries and Oceans, Nanaimo, B.C.

ELEMENT: Herring

ATTRIBUTE: Commercial Fisheries

DATA SOURCES

Edward Arnet. Area 24 Fisheries Patrol from 1969-92.
- **Dennis Chalmers**. DFO Herring Management Biologist since 1978.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.

References
- Herring Operational Framework: WCVI
- Hay, P.B. McCarter, R. Kronlund and C. Roy. 1989. Spawning Areas of B.C. Herring: A review, geographical analysis and classification. Vol. VI: West Coast Vancouver Island.

DATA COMPILED

Database file structure: Appendix Table B7
Database: HERRCOMM.dbf (Appendix Table C7)
Chart #: 3: CHS 3674 - Herring, Groundfish and Other Finfish
4: CHS 3673 - Herring, Groundfish and Other Finfish

USE LEVEL RATING

Estimates on use level were based on the number of boats, catch levels and consistency of use for each area.

GENERAL NOTES

The most recent commercial net fishery for roe herring in Clayoquot Sound was in 1990. The main fishing areas during the last ten years have been in Lower Clayoquot Sound. Herring openings are usually in the second or third week of March and involve either seines or gillnets, or both.

Sydney Inlet, Millar Channel and Shelter Inlet often have fishable stocks and, prior to 1982, were the sites of seine and gillnet fisheries. Sydney Inlet is a major holding area for herring prior to spawning but fisheries are difficult to manage, timing-wise, because the fish tend to disperse almost as soon as they reach adequate ripeness. Dennis Chalmers stated that Sydney Inlet could be fished in the future if the fishery

style is changed. Hesquiat Harbour, although an important spawning area, also has not been fished for several years.

The areas shown on the map and detailed in the database are based on information from Edward Arnet who was on the grounds, monitored stock and spawn abundance and participated in patrolling the fisheries each year since 1969.

There is one commercial roe-on-kelp fishery (licence held by Ahousaht Band members) which takes place in Matilda Inlet. Live herring are seined and impounded in a floating pen. The captive herring deposit spawn on kelp which is suspended in the pen. The kelp and roe are then harvested, processed, boxed and sold to a Japanese market.

FURTHER INFORMATION

- unknown

ELEMENT: Herring

ATTRIBUTE: Aboriginal Fisheries

DATA SOURCES

Reg Sutherland. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.

DATA COMPILED

Database file structure: Appendix Table B8
Database: HERRABOR.dbf (Appendix Table C8)
Chart #: 3: CHS 3674 - Herring, Groundfish and Other Finfish
4: CHS 3673 - Herring, Groundfish and Other Finfish
9: CHS 3603 - Mixed (Salmon, Groundfish); Long Beach

USE LEVEL RATING

Use levels were not assigned for these fisheries due to lack of information.

GENERAL NOTES

In addition to a commercial roe-on-kelp fishery there are several areas in Matilda Inlet and central Clayoquot Sound where conifer boughs or small trees are placed to gather natural spawn by local Native bands. The Ucluelet band also collects spawn on beaches just outside Ucluelet Inlet (Area 23).

A herring food fishery takes place in Matilda Inlet during January and February (Ahousaht band), either by seine or by jigging. Whole fish are eaten fresh or smoked. Several hauls are made during the two months, about a tonne at a time, allowing time to process one batch before the next is caught.

FURTHER INFORMATION

- unknown

ELEMENT: Herring

ATTRIBUTE: Adult Holding Areas

DATA SOURCES

Dennis Chalmers. DFO Herring Management Biologist since 1978.
- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
- **Reg Sutherland**. Ahousaht Band Fisheries Program since 1984 (Manager).

DATA COMPILED

Database file structure: Appendix Table B9
Database: HERRHOLD.dbf (Appendix Table C9)
Chart #: 3: CHS 3674 - Herring, Groundfish and Other Finfish
4: CHS 3673 - Herring, Groundfish and Other Finfish

USE LEVEL RATING

Use levels were based on subjective estimates made by personnel involved in surveys. These estimates are based on the size of schools and consistency from year to year.

GENERAL NOTES

Sounding surveys take place prior to herring spawning each year to get an early estimate of abundance. Herring typically hold in 20 t. to 50 t. schools for 3 weeks to a month before spawning. Sometimes they spawn very close to the area of holding, in other cases they move to a completely different area. For example the large school holding in Sydney Inlet each year either spawn in Hesquiat Harbour or Nootka Sound. On the other hand Matilda Inlet and Hot Springs Cove hold and spawn in the same area. The depth affects the size of schools and they do not hold where there is a strong current. The herring move around and schools break up and reform. They occupy different depths depending on the tides. It is common for schools to form around pinnacles on the bottom.

The holding areas depicted in this study are the most common and consistent but not necessarily the only locations of schools of herring.

In addition to these holding areas, there are often large schools travelling offshore from Long Beach during February; made evident by large flocks of birds. These are bound either for Lower Clayoquot Sound or Barkley Sound (E. Arnet, pers. comm.).

FURTHER INFORMATION

- unknown

ELEMENT: Herring

ATTRIBUTE: Spawning Areas

DATA SOURCES

Edward Arnet. Area 24 Fisheries Patrol from 1969-92.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
- **Reg Sutherland**. Ahousaht Band Fisheries Program since 1984 (Manager).

References

- DFO Field Staff - Records of Herring Spawn Surveys 1938-1993. (Now on file at South Coast Division, Nanaimo.
- Hay, D. E., P. B. Carter, R. Kronland and C. Roy. 1989. Spawning of British Columbia Herring: a review, geographical analysis and classification.

DATA COMPILED

Database file structure: Appendix Table B10
Database: HERRSPAW.dbf (Appendix Table C10)
Chart #: 3: CHS 3674 - Herring, Groundfish and Other Finfish
4: CHS 3673 - Herring, Groundfish and Other Finfish

USE LEVEL RATING

Ratings of the various spawning areas (241 - 245) are based on frequency of spawn and intensity as reported by Fishery Officers and Patrol personnel over the years from 1938 - 1985. The information used here is from Hay et al., 1989.

Intensity of Spawn	Frequency of Spawn: Infrequent	Frequent	Common
Very Large	3	4	5
Large	2	3	4
Medium	1	2	3
Small	1	1	2
Very Small	1	1	1

GENERAL NOTES

Herring spawning areas were determined from maps and reports on file in the DFO office in Tofino (based on surface surveys from 1938 - 1993). These are the same maps used by Hay *et al.* in their assessment of herring spawning for Area 24. Updated information was also obtained from J. Schweigert at the Pacific Biological Station which included dive surveys.

The areas mapped in this study were reviewed by Edward Arnet, Brad Rushton, Doug Swift and Reg Sutherland (Ahousaht) for verification. The database that accompanies the maps amalgamates spawning areas into five main areas and assesses use level and timing "en masse" (based on the Hay report). A few additions were made, especially in the outer coastal areas which were not included in the DFO surveys. These areas are numbered differently (starting at "1" so as not to be confused with areas included in the DFO surveys [#241 - #245]).

It was noted in most areas that herring seem to rotate their spawning areas, using a portion of a beach one year and moving to others in subsequent years. Some areas, for example, the eastern entrance to Lemmens Inlet, are left unused for as long as 50 years before being revisited (E. Arnet, pers. comm).

FURTHER INFORMATION

- unknown

ELEMENT: Groundfish

ATTRIBUTE: Commercial Fisheries

DATA SOURCES

Reg Sutherland. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Brenda Spence**. Area 24 Fishery Officer since 1991.
- **Doug Palfrey**. Manager of the Tofino P.I.P. hatchery project - 1985 to present.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **David Lightly**. Fisheries consultant with the Ahousaht band, 1985 - 1990. DFO field biologist from 1969 - 1979.

DATA COMPILED

Database File Structure: Appendix Table B11
Database: GRNDCOMM.dbf (Appendix Table C11)
Chart #: 3: CHS 3674 - Herring, Groundfish and Other Finfish
4: CHS 3673 - Herring, Groundfish and Other Finfish
9: CHS 3603 - Mixed (Salmon and Groundfish); Long Beach

USE LEVEL RATING

Use level ratings were based on an estimate of average numbers of boats per day.

GENERAL NOTES

Commercial groundfish activity is light inside Area 24. Most of the information was provided by Ahousaht Band. DFO personnel were not aware of areas used by commercial boats. Most of the commercial areas included in this inventory take place on rocky reefs, nearshore and offshore. Most of the commercial harvest is by Native fishers who also provide food fish to their communities from the same fishing areas.

The only other commercial activity noted was longlining for dogfish in Hesquiat Harbour. There are times when the whole harbour is thick with dogfish but very little harvesting takes place. It is believed to be a nursery area (E. Arnet, pers. comm.).

FURTHER INFORMATION

Gary Buechler - Groundfish Management Unit -DFO Vancouver (Area 124).

ELEMENT: Groundfish

ATTRIBUTE: Recreational Fishery

DATA SOURCES

Brenda Spence. Area 24 Fishery Officer since 1991.
- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Frank Crabbe**. Aboriginal Fisheries Strategy Implementation Officer WCVI since 1992. Fishery Officer Area 25 - 1988 to 1992.

DATA COMPILED

Database File Structure: Appendix Table B12
Database: GRNDRECR.dbf (Appendix Table C12)
Chart #: 3: CHS 3674 - Herring, Groundfish and Other Finfish
4: CHS 3673 - Herring, Groundfish and Other Finfish
9: CHS 3603 - Mixed (Salmon and Groundfish); Long Beach

USE LEVEL RATING

Use level ratings are based on a combination of boat counts (Fisheries Patrol boats and creel surveys) and subjective estimates by field staff, based on their knowledge of accessibility and the habits of fishers. Generally, the further from populated areas, the lighter the useage.

GENERAL NOTES

Based on interviews with DFO field staff, there is little effort directed by sport fishers towards groundfish. Most areas designated recreational salmon fishing would be areas where halibut, lingcod and rockfish are hooked, but these catches would be incidental for the most part.

An area off Catface (Coomes Bank) has been identified by Doug Swift as an important rearing area for lingcod. There were large numbers of juveniles (<12 in.) discovered in this area one summer (June/July) as incidental catch in the recreational salmon fishery.

FURTHER INFORMATION

- unknown

ELEMENT: Groundfish

ATTRIBUTE: Aboriginal Fisheries

DATA SOURCES

Reg Sutherland. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Harold Touchie**. Ucluelet First Nation Fisheries council.
- **Ernest David.** Tla-o-qui-aht First Nation fisheries representative.
- **Frank Crabbe**. Aboriginal Fisheries Strategy Implementation Officer WCVI since 1992. Fishery Officer Area 25 - 1988 to 1992.

DATA COMPILED

Database File Structure: (Appendix Table B12)
Database: GRNDABOR.dbf (Appendix Table C12)
Chart #: 3: CHS 3674 - Herring, Groundfish and Other Finfish
4: CHS 3673 - Herring, Groundfish and Other Finfish
9: CHS 3603 - Mixed (Salmon and Groundfish); Long Beach

USE LEVEL RATING

No rating - Insufficient information was availbable to rate the different areas.

GENERAL NOTES

Halibut is an important winter food for local First Nations and there are likely many spots where fish are taken. The two areas shown to the southwest of Flores Island represent the most consistently important grounds for halibut, lingcod and rock fish (F. Crabbe, pers. comm.). While halibut is the main species targeted, the following species are known to be caught in these areas:

Lingcod	Silver-grey rockfish
Yelloweye rockfish	Black rockfish
Sablefish (at times)	Pacific cod
Copper rockfish	Rock salmon (rockfish)
Boccaciao	Canary rockfish
	Yellowtail rockfish

The fishing areas described by Native representatives fell into two main categories: Halibut (sand and gravel bottom) and Rockfish/Lingcod (reefs and rocky areas). It was stressed by R. Sutherland that different people in the Ahousaht Band have their favorite fishing spots and there may be some he was not aware of.

FURTHER INFORMATION

- unknown

ELEMENT: Other Finfish

ATTRIBUTE: Recreational and Aboriginal Fisheries and Observations

DATA SOURCES

- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Ernest David.** Tla-o-qui-aht First Nation fisheries representative.

DATA COMPILED

Database file structure: Appendix Table B14
Database: OTHFISH.dbf (Appendix Table C14)
Chart #: 3: CHS 3674 - Herring, Groundfish and Other Finfish
4: CHS 3673 - Herring, Groundfish and Other Finfish

USE LEVEL RATING

Based on subjective estimates of use levels for recreational and aboriginal fisheries.

GENERAL NOTES

Anchovies are present throughout the Sound mainly in the summer. They are found all over but prefer the sheltered areas. They are important as food for salmon and marine mammals. Crab fishers sometimes seine them (Z licence) for use as crab bait.

DFO field staff have noted particular areas where anchovy concentrate and these are marked on the map.

Surf perch have been targeted in small Native/commercial and recreational fisheries. This information is based on Doug Swift and Brad Rushton's observations and confirmed by Ernest David who also said the fishery is discontinued but interest was expressed by the Tla-o-qui-aht Band in resuming this fishery in the future. In the past the commercial licence to seine these 8" fish was held by a member of the Ahousaht Band. People also cast for surf perch off rocky points on Esowista Peninsula.

Fisheries on both perch and anchovy are "closed by regulation" year-round and openings will be considered on request by the fishers.

FURTHER INFORMATION

Vivian Haist - Pacific Biological Station - Survey of Anchovy in Barkley Sound and Clayoquot Sound - 1987-88.

ELEMENT: Abalone

ATTRIBUTE: Beds/Harvest Areas

DATA SOURCES

- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Brenda Spence**. Area 24 Fishery Officer since 1991.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Rod Palm**. Contract researcher and commercial diver in Area 24 since 1969.
- **Reg Sutherland**. Ahousaht Band Fisheries Program since 1984 (Manager).

DATA COMPILED

Database file structure: Appendix Table B15
Database: ABALONE.dbf (Appendix Table C15)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish

USE LEVEL RATING

Abalone are closed to any harvesting. The value -9 is used when there is use made of a resource, but no use level value can be determined. Abundance is also unknown.

GENERAL NOTES

Abalone have previously been an important commercial resource in the study area, but have been depleted due to overharvesting. It is known that there is illegal harvesting in the area but, officially, the fishery has been closed since 1989. Abalone occur in fairly exposed, rocky habitat, down to 50 feet, but more often 15 - 20 feet. Growth is somewhat better in areas that are partially protected from surf action.

Areas identified are those which have been observed by fishery staff to be the sites of poaching or observed in surveys or dive fisheries.

FURTHER INFORMATION

Allan Campbell. Shellfish Scientist, Pacific Biological Station, Nanaimo, B.C.

ELEMENT: Chitons

ATTRIBUTE: Aboriginal Fisheries

DATA SOURCES

Reg Sutherland. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Ernest David.** Tla-o-qui-aht First Nation.
- **Harold Touchie.** Ucluelet First Nation Fisheries council.

DATA COMPILED

Database File Structure: Appendix Table B16
Database: CHITONS.dbf (Appendix Table C16)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish

USE LEVEL RATING

The value -9 is used when there is use made of a resource, but no use level value can be determined.

GENERAL NOTES

Chitons (black katy and Pacific) are a traditional food of local Native people and are collected from rocky intertidal areas; often in the same locations as urchins, mussels and sometimes goose barnacles. They are eaten raw, baked or simmered.

FURTHER INFORMATION

- unknown

ELEMENT: Clams

ATTRIBUTE: Commercial, Aboriginal and Recreational Fisheries

DATA SOURCES

Reg Sutherland. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **David Lightly**. Fisheries consultant with the Ahousaht band, 1985 - 1990. DFO field biologist from 1969 - 1979.
- **Harold Touchie**. Ucluelet First Nation Fisheries council.

DATA COMPILED

Database File Structure: Appendix Table B16
Database: CLAMS.dbf (Appendix Table C16)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

Based on field personnel's subjective estimate of effort and harvest.

GENERAL NOTES

The main use of clams in the area is the commercial fishery. Native use is high, both for food and by way of their participation in the commercial fishery. There was some disagreement amongst DFO field staff with regard to the level of recreational use. Some felt it was high, others thought it minimal because of the constant threat of Paralytic Shellfish Poisoning (PSP) and the delay in getting the results of testing. Therefore, these ratings will be subject to uncertainty. It is generally agreed that public use is greatest close to Tofino.

The major clam beaches are the mouth of the Atleo River (and the beach to the north), Mosquito Harbour and Whitepine Cove. Whiskey Jenny Beach, Bawden Bay and Whitepine Cove are reserved for Native use only and Rae Basin is being considered for this designation.

Razor clams, which inhabit sandy beaches exposed to some surf action, are at very depleted levels. There was heavy overharvesting by sport diggers in the 1960's and 70's. Visitors would camp at Long Beach and preserve 100's of pounds per trip.

Abundance surveys have been carried out but not since the mid-70's, so it is not known whether this resource is making a comeback. Although harvest is prohibited in Pacific Rim Park, there is still some recreational use but the level is not known.

FURTHER INFORMATION

Harbo, R. et al. 1992. Intertidal Clam Resources for the South Coast of British Columbia. Operations Branch, South Coast Division, Nanaimo, B. C.

ELEMENT: Clams

ATTRIBUTE: Closure Areas

DATA SOURCES

1995 Management Plan for Intertidal Clam (South Coast Division)

DATA COMPILED

Database file structure: none
Database: none
Chart #: 10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

Not applicable.

GENERAL NOTES

The only permanent contamination closure in the area is off Grice Point near Tofino (Map 9). PSP closures occur throughout the season and affect the recreational fishery particularly. Apparently many tourists don't harvest clams because of the uncertainty with regards to safety.

Three areas are set aside as recreational or aboriginal harvest areas: Whiskey Jenny Beach, Bawden Bay and Whitepine Cove.

FURTHER INFORMATION

Rudy Chiang, DFO Inspections Branch, Vancouver.

ELEMENT: Crabs

ATTRIBUTE: Commercial, Recreational and Aboriginal Fisheries

DATA SOURCES

- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Brenda Spence**. Area 24 Fishery Officer since 1991.
- **Harold Touchie**. Ucluelet First Nation Fisheries council.

DATA COMPILED

Database file structure: Appendix Table B18
Database: CRABS.dbf (Appendix Table C18)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

Subjective ratings based on the number of traps observed by field staff. The following matrix describes how use levels were determined.

Est. No. Traps	Use Level rating
<20	1
20-50	2
51-100	3
101-150	4
>150	5

GENERAL NOTES

Crab fishing is one of the major commercial activities in the study area, especially in Lower Clayoquot Sound. Commercial harvest is by trap or pot to depths of about 50 feet, both in open coastal areas and protected harbours. Dungeness is the main species targetted.

There are about 30 licenced boats fishing crabs in the Sound (B. Spence, pers. comm.). Spring and summer are the peak fishing times with some drop-out for the commercial salmon season. Only about 3 or 4 boats fish crabs through the winter. Softshell periods vary. They usually occur in mid-summer but softshells have also been observed in December one year.

Crabs migrate so the concentrations and fishing intensity vary. They prefer sandy bottom with some current or tide activity. One area that would be expected to be productive, but is not, is Yellow Bank (E. Arnet, pers. comm.).

Red rock crabs are not targeted in fisheries, although they have been observed in underwater surveys for octopus. (They are an important food item of the octopus). There may be some incidental catch of this species, but it was not mentioned.

Recreational and Aboriginal Fisheries
Recreational crab fishing is concentrated in Tofino harbour. The general trend is for salmon sport fishers to put out a trap on their way out of the harbour and pick it up on their way back in. Some will also set them here and there throughout the Sound.

The Native fishery for crabs is minor. Some individuals set traps to obtain crabs for food, much like the recreational fishery. Only the Ahousaht (15 - 20 traps) and Ucluelet (up to 50 traps) Bands mentioned harvesting crabs, mainly in the bays near their villages.

The size limit for dungeness crabs is 165 mm and that for red rock crabs is 115 mm. Females are to be released.

FURTHER INFORMATION

- unknown

ELEMENT: Geoduck

ATTRIBUTE: Beds/Harvest Areas

DATA SOURCES

Edward Arnet. Area 24 Fisheries Patrol from 1969-92.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.

DATA COMPILED

Database file structure: Appendix Table B19
Database: GEODUCK.dbf (Appendix Table C19)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish

USE LEVEL RATING

Subjective ratings based on observations of field personnel.

GENERAL NOTES

Clayoquot Sound is a very productive geoduck area. They occur throughout the sound, in areas of shallow, sandy habitat and are fished, usually in somewhat protected areas, where they are the most concentrated.

The fishery is managed on both area and individual quotas. The idea is to take a certain portion of the biomass out of each area annually. In Clayoquot Sound the total geoduck biomass was estimated to be 100,000,000 pounds in the 1970's and annual quotas were 1,000,000 pounds. Current quota levels have since been reduced to approximately 500,000 lbs. per year and are allocated to certain subareas individually. At present, Elbow Bank and Yellow Bank are closed to divert effort from these areas to other less exploited beds. Ritchie Bay and the east side of Dunlap Island are set aside as research areas, and Ahous Bay is closed to geoduck harvest because it has been designated a gray whale sanctuary. There are seasonal closures to protect herring spawning grounds from February 15 to April 15, including sub-areas 24-7, 24-8, 24-9 and the inside portion of 24-6.

FURTHER INFORMATION

Geoduck fishery logbook system maintained by R. Harbo, South Coast Division. This information is provided by fishers and is confidential.

ELEMENT: Gooseneck Barnacles

ATTRIBUTE: Beds/Harvest Areas

DATA SOURCES

- **Brenda Spence**. Area 24 Fishery Officer since 1991.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Harold Touchie**. Ucluelet First Nation Fisheries council.
- **Ernest David.** Tla-o-qui-aht First Nation fisheries representative.
- **Reg Sutherland**. Ahousaht Band Fisheries Program since 1984 (Manager).

DATA COMPILED

Database file structure: Appendix Table B20
Database: GOOSENEC.dbf (Appendix Table C20)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

No ratings; areas of use only indicated. The value -9 is used when there is use made of a resource, but no use level value can be determined.

GENERAL NOTES

Gooseneck barnacles occur in rocky, intertidal areas of the sound that are exposed to surf. They are most common between Russel Channel and Portland Point. There is a commercial fishery which involves a total of about 15 - 25 people. Harvesting involves cutting the stalk with a knife during low tide. Pickers come in boats (2-4 people per boat), often herring skiffs. The boat is tied up on the lee side of a rock or island or in a bay near the seaward harvest site. Fishing takes place when the market is good (highly variable Spanish market) and also is preferred when tides are low in the daytime (spring, summer and early fall). Fishing intensity is focussed close to Tofino (Ahous Point to Moser Point has been extensively fished). D. Swift feels that gooseneck barnacles are abundant in the islands off Brabant Channel because they are harder to get to.

Native people value this species and harvest them in much the same areas as they do urchins.

There was little damage to gooseneck barnacles during the oil spill of 1989 due to calm weather and cold temperatures (oil stayed in globs). Most of the oil that was offshore did not wash onto the rocks in this area (D. Swift, personal observations).

FURTHER INFORMATION

Gooseneck barnacle fishery logbook system maintained by R. Harbo, South Coast Division. This information is provided by fishers and is confidential.

ELEMENT: Mussels

ATTRIBUTE: Beds/Harvest Areas

DATA SOURCES

Reg Sutherland. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Harold Touchie.** Ucluelet First Nation Fisheries council.
- **Ernest David.** Tla-o-qui-aht First Nation fisheries representative.

DATA COMPILED

Database file structure: Appendix Table B21
Database: MUSSEL.dbf (Appendix Table C21)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

No rating; areas of use only indicated. The value -9 is used when there is use made of a resource, but no use level value can be determined.

GENERAL NOTES

Two species of mussels accur in the study area: California (*Mytilus californianus*), and blue or bay mussel (*Mytilus edulis*). California mussels are larger than the bay mussels and occur in rockier, more exposed areas as opposed to the more protected shores. These are both very prolific and cover most of the rocky shoreline of the study area. Fisheries field staff did not mention any specific areas where recreational harvest takes place, however it is believed that tourists pick mussels on rocky headlands along Long Beach. This has not been mapped.

Native harvest of mussels is common and widespread and often occurs where urchins are being harvested. Barnacles growing on the mussel shells are also eaten after the mussels are steamed.

FURTHER INFORMATION

- unknown

ELEMENT: Octopus

ATTRIBUTE: Known Occurrence/Harvest Areas

DATA SOURCES

Rod Palm. Contract researcher and commercial diver in Area 24 since 1969.
- **Reg Sutherland**. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Ernest David.** Tla-o-qui-aht First Nation fisheries representative.

Reference

- Hartwick, B, D. Trotter, M. Walsh. 1982. An experimental trap fishery operation for Octopuses. Simon Fraser University, Department of Biological Sciences.

DATA COMPILED

Database file structure: Appendix Table B22
Database: OCTOPUS.dbf (Appendix Table C22)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

No rating; areas of occurrence and use only indicated. The value -9 is used when there is use made of a resource, but no use level value can be determined.

GENERAL NOTES

The giant Pacific Octopus (*Octopus dofleini*) is plentiful throughout the study area. Limited harvest (by dive) takes place in nearshore areas. Brenda Spence knows of one fisher who comes up from Victoria for a week every 2 months. The market is mostly for halibut bait, however markets have decreased and this fishery has dropped in intensity due to the introduction of the quota management system in the halibut fishery in 1991. The area where concentrations of octopus are high enough for commercial harvest has been marked on the chart. More detailed information was unavailable.

A study has been conducted (Hartwick, 1982) to determine the feasibility of a trap fishery off Area 24. The results showed that octopus can be caught in significant numbers out to at least 50 fathoms and that the smaller individuals migrate in and out seasonally (offshore Feb. - March; inshore April - July and Dec. - Jan.).

The main food for octopus are crabs. They are often caught incidentally in crab traps. A smaller octopus (*Octopus rubescans*) shows up in prawn traps off Bawden Bay.

Octopus is eaten by Native people in the area and are harvested by spear or long pole at low tide.

FURTHER INFORMATION

Octopus fishery logbook system maintained by R. Harbo, South Coast Division. This information is provided by fishers and is confidential.

ELEMENT: Oysters

ATTRIBUTE: Beds/Leases

DATA SOURCES

Doug Swift. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Reg Sutherland**. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Doug Palfrey**. Manager of the Tofino P.I.P. hatchery project - 1985 to present.
- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.

DATA COMPILED

Database file structure: (Appendix Table B23)
Database: OYSTER.dbf (Appendix Table C23)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish

USE LEVEL RATING

Based on bed size and amount of commercial and recreational harvest.

GENERAL NOTES

The majority of oysters in the area are found in Sydney Inlet and adjacent bays and inlets. This area was seeded in the past (details not known) with Japanese oysters and they have spread and established themselves in this area (E. Arnet, pers. comm.). There is widespread but light recreational harvest as well as areas of Native harvest (Ahousaht band) and a number of commercial leases. The only areas where harvest of "wild" stocks (unenhanced) take place are Pretty Girl Cove and Young Bay (Brenda Spence, pers. comm.). There are commercial aquaculture activities in Lemmens Inlet (several sites for suspended culture) and Fortune Channel (beach culture).

FURTHER INFORMATION

For specific and up-to-date locations of oyster leases and aquaculture operations contact Ministry of Agriculture, Fisheries and Food.

ELEMENT: Scallops

ATTRIBUTE: Known Occurance/Harvest Areas

DATA SOURCES

- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.

DATA COMPILED

Database file structure: Appendix Table B24
Database: SCALLOPS.dbf (Appendix Table C24)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish

USE LEVEL RATING

No rating; areas of occurrence and use only indicated. The value -9 is used when there is use made of a resource, but no use level value can be determined.

GENERAL NOTES

Purple-hinged rock scallops occur in rocky exposed areas, much the same as abalone. They are a popular item for recreational dive harvest. Two areas were mentioned as important by those interviewed although general descriptions of good scallop habitat were described and would include most of the rocky outer portions of the sound.

There is a commercial Japanese scallop culture operation in Cypress Bay (2 locations). The production is rated at 1.6 million seed which are grown suspended on strings.

FURTHER INFORMATION

For specific and up-to-date locations of aquaculture operations contact the Ministry of Agriculture, Fisheries and Food.

ELEMENT: Sea Cucumbers

ATTRIBUTE: Beds/Harvest Areas

DATA SOURCES

Brenda Spence. Area 24 Fishery Officer from 1991 to present.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.

DATA COMPILED

Database file structure: Appendix Table B25
Database: CUCUMBER.dbf (Appendix Table C25)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish

USE LEVEL RATING

Use levels for commercial harvest are not known by DFO field staff.

GENERAL NOTES

Sea cucumbers occur in rocky sub tidal areas to 50 feet - much the same habitat as urchins, but more sheltered. They are also found on sandy or muddy flat bottom.

Sea cucumbers are fished to area quotas, although there are efforts to establish individual quota system. This is a minor fishery in Area 24 with fewer than 20 boats fishing for a period of about 2 days each year (K. Hobbs, pers. comm.). Fishing usually takes place in fall and winter (October to February).

It is believed that sea cucumbers are harvested illegally, but the levels and locations of harvest are not known (B. Rushton, pers. comm.).

FURTHER INFORMATION

Sea cucumber fishery logbook system maintained by R. Harbo, South Coast Division. This information is provided by fishers and is confidential.

ELEMENT: Sea Urchins

ATTRIBUTE: Beds/Harvest Areas

DATA SOURCES

- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.
- **Rod Palm**. Contract researcher and commercial diver in Area 24 since 1969.
- **Frank Crabbe**. Aboriginal Fisheries Strategy Implementation Officer WCVI since 1992. Fishery Officer Area 25 - 1988 to 1992.
- **Ernest David.** Tla-o-qui-aht First Nation fisheries representative.
- **Reg Sutherland**. Ahousaht Band Fisheries Program since 1984 (Manager).
- **Harold Touchie**. Ucluelet First Nation Fisheries council.

DATA COMPILED

Database file structure: Appendix Table B26
Database: URCHINS.dbf (Appendix Table C26)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

No rating; areas of occurrence and use only indicated. The value -9 is used when there is use made of a resource, but no use level value can be determined.

GENERAL NOTES

Red, green and purple urchins occur in the area. They occur in rocky areas and kelp beds to depths of about 50 feet. Green and purple urchins are concentrated in the more exposed areas as opposed to reds, which seek more protection. There is a moratorium on purple urchins and only a small effort is directed toward green. Most of the harvest involves red urchins.

Urchins are managed by a voluntary individual vessel quota (IVQ) system. Fishing is possible throughout the year but quality is best from October to February so this is when openings take place. January - February and October - November are the peak times. The exact locations of fishing are given in the logbook submissions which are confidential. DFO field staff interviewed in this study are not directly involved in management of the fishery so the areas mapped here are based on their observations of fishing activity and on areas known to be important urchin beds.

Native harvest is common and widespread, by dive and by long pole from boats or shore. Two areas are designated Native Allocation - Barney Rocks and Hotsprings Cove, but harvest occurs throughout the Sound. There is probably some recreational harvest but no information was given.

FURTHER INFORMATION

Red and green urchin fishery logbook system maintained by R. Harbo, South Coast Division. This information is provided by fishers and is confidential.

ELEMENT: Shrimp/Prawns

ATTRIBUTE: Commercial Fisheries

DATA SOURCES

Brenda Spence. Area 24 Fishery Officer from 1991 to present.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.

DATA COMPILED

Database file structure: Appendix Table B27
Database: PRAWN.dbf (Appendix Table C27)
Chart #: 5: CHS 3674 - Shellfish
6: CHS 3673 - Shellfish

USE LEVEL RATING

For commercial fishery, based on the number of traps.

GENERAL NOTES

Prawn fishing is a minor activity in the area. Shelter Inlet is the main area for trapping of prawns, with some activity in Tofino Inlet and Bawden Bay as well. Very light recreational prawn fishing has been observed in the Bawden Bay area.

FURTHER INFORMATION

Jim Morrison, Shellfish Biologist, South Coast Division, Nanaimo, B.C.

ELEMENT: Squid

ATTRIBUTE: Reported Occurance/Harvest Areas

DATA SOURCES

Brenda Spence. Area 24 Fishery Officer from 1991 to present.

DATA COMPILED

Database file structure: Appendix Table B28
Database: SQUID.dbf (Appendix Table C28)
Chart #: 10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

Based on number of boats fishing.

GENERAL NOTES

Squid (*Loligo opalescens*) occur sporadically throughout the area. Fisheries have been observed in Florencia Bay (Long Beach area) and reported for Sidney Inlet (no specific area known). The squid are used mainly for bait.

FURTHER INFORMATION

- unknown

ELEMENT: Sea Lions

ATTRIBUTE: Haulout Sites

DATA SOURCES

Edward Arnet. Area 24 Fisheries Patrol from 1969-92.
- **Rod Palm**. Contract researcher and commercial diver in Area 24 since 1969.
- **Frank Crabbe**. Aboriginal Fisheries Strategy Implementation Officer WCVI since 1992. Fishery Officer Area 25 - 1988 to 1992.
- **Brenda Spence**. Area 24 Fishery Officer from 1991 to present.
  Doug Swift. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.

References

- Bigg, M.A. 1984. Sighting and Kill Data for the Stellar Sea lion (*Eumetopias jubatus*) and California Sea Lion (*Zalophus californianus*) in British Columbia, 1892-1982, with some records from Washington and Southeastern Alaska. Can. Data Rep. Fish. Aqua. Sci. No. 460.

DATA COMPILED

Database file structure: Appendix Table B97
Database: SEALIONS.dbf (Appendix Table C29)
Chart #: 7: CHS 3674 - Marine Mammals and Significant Habitats
8: CHS 3673 - Marine Mammals and Significant Habitats
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

Subjective, based on the numbers of animals observed.

GENERAL NOTES

Two species of sea lion occur in the area: Stellar and California. Information on the haulout sites is derived from recent observations of DFO and contract field personnel. There are a few large haulouts on the outer coast (Sea Lions Rocks has recently been recognized as a rookery) and otherwise the sea lions migrate in and out of the sound following herring in the spring and salmon in the fall.

There is a permit held by the Ahousaht Band to harvest 15 sea lions annually for food and traditional use (F. Crabbe, pers. comm.).

FURTHER INFORMATION

Peter Olesiuk, Marine Mammal researcher at Pacific Biological Station, Nanaimo, B.C.

ELEMENT: Harbour Seals

ATTRIBUTE: Haulout Sites

DATA SOURCES

- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.
- **Joe Martin, Carl Martin, Rod Palm, Jim Darling** (Participated in Clayoquot Biosphere Project compilation of information).
- **Harold Touchie**. Ucluelet First Nation Fisheries council.

DATA COMPILED

Database file structure: Appendix Table B30
Database: SEALS.dbf (Appendix Table C30)
Chart #: 7: CHS 3674 - Marine Mammals and Significant Habitats
8: CHS 3673 - Marine Mammals and Significant Habitats
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

No rating. Information was not available for most sites.

GENERAL NOTES

Harbour seal sitings are common throughout the sound. They tend to follow salmon into the heads of inlets and stream mouths in the late summer and fall. The sites that have been mapped here are the result of a compilation of information from Edward Arnet, Joe Martin, Carl Martin, Rod Palm and Jim Darling by the Clayoquot Pacific Biospehere Project. The use level and timing data was not included with the Biosphere Project map but some information was provided by E. Arnet. Most sitings would be small groups of less than 20 animals.

Northern fur seals live 15 or more miles offshore. There is a permit held by the Ahousaht Band to harvest 15 northern fur seals and 15 harbour seals annually for food and traditional use (F. Crabbe, pers. comm.).

FURTHER INFORMATION

- unknown

ELEMENT: Basking Sharks

ATTRIBUTE: Distribution

DATA SOURCES

Edward Arnet. Area 24 Fisheries Patrol from 1969-92.
- **Brad Rushton**. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990. Habitat Technician, Campbell River District since 1990.

DATA COMPILED

Database File Structure: Appendix Table B31
Database: SHARKS.dbf (Appendix Table C31)
Chart #: 7: CHS 3674 - Marine Mammals and Significant Habitats
8: CHS 3673 - Marine Mammals and Significant Habitats

USE LEVEL RATING

No rating; area of presence only indicated.

GENERAL NOTES

Basking sharks spawn in California but many spend their summers feeding in the coastal areas between California and the Gulf of Alaska. Area 24 is a consistent area of residency during the months of May to September. Numbers present in Clayoquot Sound range from 2 or 3 at a time up to a dozen. They are most common in Shelter and Sydney inlets.

Basking sharks, growing up to 45 feet in length, are filter feeders relying mainly on zooplankton, but are also known to feed on herring spawn. They get their name because of their habit of laying still at the surface with the dorsal fin protruding.

They may be a concern to fish farm operators because they are known to get entangled in fish nets.

FURTHER INFORMATION

Jim Darling - Clayoquot Pacific Biosphere Project, Tofino, B.C.

ELEMENT: Gray Whales

ATTRIBUTE: Distribution

DATA SOURCES

Edward Arnet. Area 24 Fisheries Patrol from 1969-92.
- **Rod Palm**. Contract researcher and commercial diver in Area 24 since 1969.
- **Harold Touchie**. Ucluelet First Nation fisheries council.

DATA COMPILED

Database file structure: Appendix Table B32
Database: WHALES.dbf (Appendix Table C32)
Chart #: 7: CHS 3674 - Marine Mammals and Significant Habitats
8: CHS 3673 - Marine Mammals and Significant Habitats
10: CHS 3603 - Mixed (Shellfish, Marine Mammals); Long Beach

USE LEVEL RATING

No rating; presence of whales only indicated.

GENERAL NOTES

Gray whales appear in Clayoquot Sound and off Long Beach every spring on their way from their southern breeding lagoons to Arctic feeding grounds. Some gray whales remain along the west coast of Vancouver Island throughout the summer.

It is estimated that during March and April there are 4 whales in Area 24 on any given day and, on average, a whale would stay from 2 days to several weeks. The main area of concentration is in the shallow sand-bottomed areas in outer Clayoquot Sound and off Long Beach.

Gray whales feed in two ways: 1) they sift through sediments in shallow sandy areas for benthic invertebrates and 2) they feed off rocky shorelines, filtering sea water for zooplankton such as mysid shrimps and crab zoea larvae. Rod Palm who was involved in sampling the sub-tidal sediments after the 1989 oil spill, feels that gray whales would be very vulnerable to oil spilled because of their dependence on sandy sub-tidal beaches for feeding. Although hydrocarbons were found in sediments and declined over the 3 months following the spill, it is not known what normal levels had been and to what extent the oil affected gray whales and their food sources.

The whale watching business in Tofino supports 9 businesses. There are 38,000 person-trips per season at a price of $46.00 per trip. R. Palm estimates the spin-off from this to local businesses could be two or three times that amount.

The Clayoquot Pacific Biospere Project has research stations throughout Clayoquot Sound and monitor the whales in the area.

FURTHER INFORMATION

Jim Darling (gray whale researcher) - Clayoquot Pacific Biosphere Project, Tofino, B.C.

ELEMENT: Killer Whales

ATTRIBUTE: Distribution

DATA SOURCES

Rod Palm. Contract researcher and commercial diver in Area 24 since 1969.
- **Edward Arnet**. Area 24 Fisheries Patrol from 1969-92.

DATA COMPILED

Database file structure: Appendix Table B32
Database: WHALES.dbf (Appendix Table C32)
Chart #: 8: CHS 3673 - Marine Mammals and Significant Habitats

USE LEVEL RATING

No rating; presence of whales only indicated.

GENERAL NOTES

Killer whales have been monitored intensively in Clayoquot Sound since 1990, except for the Hesquiat Harbour area. Sitings have been made throughout the sound at all times of the year. August, September and January may be more common than other times of the year. "Transient" whales travel in small pods and follow marine mammals, whereas the northern and southern "residents" are in larger pods and tend to feed on fish (salmon and herring).

Killer whales often travel to the heads of inlets but also may just pass by the sound. They are rarely seen in shallow areas, over intertidal mudflats. There are 13 different groups that visit Area 24 each year with an average size of 2.5 members per pod. The average period of visitation is 40 days for the general area, but 1-10 days inside the sound.

FURTHER INFORMATION

Jim Darling. Clayoquot Pacific Biosphere Project
Graeme Ellis. Pacific Biological Station, Nanaimo, B.C.

Other Marine Mammals

Dall's porpoises have been seen in Area 24. General areas of sitings have been given by Doug Swift as Fortune Channel, Tofino Inlet and off Catface. Numbers are usually between 2 and 4 and they are most common in the summer. Barry Campbell, a Pacific Rim National Park warden reported up to 12 Dall's porpoises at a time in Browning Passage.

Rod Palm listed some offshore pelagic mammal species he has seen offshore including Dall's porpoise, whitesided porpoise, northern Right whale dolphins, Minke whales and northern fur seals.

ELEMENT: Significant Habitats

ATTRIBUTE: Kelp Beds

DATA SOURCES

Brad Rushton. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
- **Rod Palm**. Contract researcher and commercial diver in Area 24 since 1969.
- **Doug Swift**. Area 24 Fishery Officer from 1985 to 1990.

DATA COMPILED

Database File Structure: Appendix Table B33
Database: KELP.dbf (Appendix Table C33)
Chart #: 7: CHS 3674 - Marine Mammals and Significant Habitats
8: CHS 3673 - Marine Mammals and Significant Habitats

USE LEVEL RATING

No rating; areas of presence only indicated.

GENERAL NOTES

Area 24 is not rich in kelp beds. There are some but they are not very extensive. *Macrocystis* and *nereocystis* are the main species present. They provide important habitat for herring spawn, rearing fish, bottom fish, urchins, abalone and other shellfish. Rocky outer coastal areas and some of the narrows inside the sound are the main locations for kelp. There is no harvesting of kelp. Kelp used in the commercial roe on kelp fishery is imported from other places.

FURTHER INFORMATION

Christine Hodgson, Ministry of Agriculture, Fisheries and Food, Courteney, B. C.

ELEMENT: Significant Habitats

ATTRIBUTE: *Zostera* Beds

DATA SOURCES

Brad Rushton. Area 24 Fishery Officer from 1983 to 1985. Habitat Technician since 1995.
- **Doug Palfrey**. Manager of the Tofino P.I.P. hatchery project - 1985 to present.

DATA COMPILED

Database file structure: Appendix Table B34
Database: ZOSTERA.dbf (Appendix Table C34)
Chart #: 7: CHS 3674 - Marine Mammals and Significant Habitats
8: CHS 3673 - Marine Mammals and Significant Habitats

USE LEVEL RATING

No rating. Areas of presence only indicated.

GENERAL NOTES

Eelgrass beds are important in stabilizing sediments and providing habitat for an abundance and diversity of invertebrate life. They are generally associated with estuaries, and are important areas for emergent salmonid juveniles in providing food and rearing habitat during a very critical part of their life cycle.

Area 24 is rich in eelgrass due to its extensive shallows, particularly the bays and banks in Lower Clayoquot Sound. These areas are important for herring spawning, juvenile salmon rearing and crabs.

FURTHER INFORMATION

- unknown

APPENDIX A - INFORMATION SOURCES

A1. REFERENCES

Bigg, M. A. 1985. Status of the Steller Sea Lion (Eumetopias jubatus) and California Sea Lion (Zalophus californianus) in British Columbia, 1892-1982, with some records form Washington and Southeastern Alaska. Can. Data Rep. Fish. Aquat. Sci. No. 460. 191 p.

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Hay, D. E., P. B. Carter, R. Kronland and C. Roy. 1989. Spawning of British Columbia Herring: a review, geographical analysis and classification. Can. MS Rep. Fish. Aquat. Sci. 2019. 213 p.

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Department of Fisheries and Oceans, Pacific Region, unpublished documents

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Record of Management Strategy (RMS). District 4 Port Alberni. 1994.

Department of Fisheries and Oceans, Pacific Region, 1996 Management Plans

Abalone
Crab
Geoduck and Horse Clam
Goose Barnacle
Groundfish by Hook and Line
Intertidal Clam
Octopus by trap and dive
Prawns
Sea Cucumber
Sea Urchin - red and green

A2. PEOPLE WHO PROVIDED FISHERIES RESOURCE INFORMATION

Department of Fisheries and Oceans

Field Staff:

Edward Arnet. Fisheries Patrol from 1969-92. Mr. Arnet is a life-long resident of the Tofino area where he worked in the forest and fishing industries through the 1950's and 60's. As a DFO employee he conducted stream surveys, herring surveys and patrolled virtually all fishing activities in the area.

Brenda Spence. Fishery Officer from 1991 to present. Ms. Spence has conducted stream surveys, herring and shellfish surveys, and provided enforcement in commercial, recreational and native fisheries in Area 24.

Doug Swift. Fishery Officer from 1985 to 1990. Participated in stock assessment surveys and monitoring and enforcement of all fishing activities in Area 24. Since 1990, Mr. Swift has been the Habitat Field Technologist responsible for Area 25 (Campbell River District).

Brad Rushton. Fishery Officer from 1983 to 1985. Participated in stock assessment surveys and monitoring and enforcement of all fishing activities in the area. Mr. Rushton is now the Habitat Field Technician responsible for Area 24 (Port Alberni District).

Doug Palfrey. Mr. Palfrey is the manager of the Tofino P.I.P. hatchery project and Thornton Creek hatchery (1985 to present). Prior to that he was a DFO field technician (1981-84), where he participated in stream surveys. He has lived in the Tofino area for 27 years and is familiar with the area through boating, hiking and kayaking throughout the sound as well as working as a warden (rescue and First Aid) on Long Beach.

Frank Crabbe. Aboriginal Fisheries Strategy Implementation Officer for the west coast of Vancouver Island from 1992 to present. From 1988 to 1992, Mr. Crabbe was a Fishery Officer in Area 25. Some of the information Mr. Crabbe provided for Area 24 was based on his experience as a recreational fisher in the area outside Hesquiat Peninsula.

Research and Management Biologists:

Kim Hyatt. Research scientist at Pacific Biological Station, Nanaimo. Mr. Hyatt's experience in Area 24 includes studies on the Kennedy and Megin River sockeye runs from 1980 to 1995.

Dennis Chalmers. South Coast Division herring management biologist from 1978 to present. Mr. Chalmers managed herring stock abundance surveys, fisheries and spawn surveys.

Greg Serbic. Programmer Salmon Escapement Database, Pacific Biological Station, Nanaimo, B.C.

Jake Sweigert. Stock Assessment Biologist (Herring), Pacific Biological Station, Nanaimo, B.C.

Additional information was obtained from Wilf Luedke, Rick Harbo and Kerry Hobbs regarding management strategies, timing and effort in various fisheries, stocks and survey methods. Randy Brahniuk, WCVI Area/Species Coordinator (Salmon & Herring), provided radar count information for salmon troll.

Native Bands

Reg Sutherland. (Ahousaht First Nation) Mr. Sutherland is the manager of the Fisheries Program for the Ahoushat Band. He has worked on the fisheries crew since 1984. Also present at the interviews were Edwin Frank (experienced fisher and volunteer with the Coast Guard), Carl Jumbo (experienced fisher), Darryll Campbell (fisheries guardian), and Mark Jack who, also contributed valuable information.

Harold Touchie. (Ucluelet First Nation) Mr. Touchie (fisheries council) provided most of the information for the Ucluelet Band but other contributors were Larry Baird Sr., Dan Touchie, Jack Touchie and Ray Haipee.

Ernest David and Dan David. (Tla-o-qui-aht First Nation) Both individuals are experienced fishers and lifelong residents of Clayoquot Sound.

Other

Rod Palm. Mr. Palm has been a resident of Tofino for 26 years. He is an experienced underwater shellfish harvester and contract researcher. Mr. Palm participates in pelagic bird surveys (Canadian Wildlife Service), marine mammal research for Pacific Biological Station, and runs a whale watching business. Mr. Palm also participated in post-spill assessment of the 1989 Nestucca oil spill.

David Lightly. Mr. Lightly was a fisheries consultant with the Ahousaht Band during 1985 - 1990. He also worked as a field biologist with DFO from 1969 - 1979 where he participated in stream surveys, geoduck surveys and other assessment projects in Area 24.

APPENDIX B - DATABASE FILE STRUCTURES

Table B1 . Data structure for SALMCOMM.dbf (Salmon - commercial fisheries).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Seine Sp	Text
Gillnet Sp	Text
Troll Sp	Text
Seine	Text
Gillnet	Text
Troll	Text
Seine Use	Number
Gillnet Use	Number
Troll Use	Number
Seine Tm	Text
Gillnet Tm	Text
Troll Tm	Text
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments 1	Memo
Comments 2	Memo
Comments 3	Memo
Data Date	Text
Map Date	Date/Time

Table B2. Data structure for SALMRECR.dbf (Salmon - recreational fisheries).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Use Level	Number
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comment 1	Memo
Comment 2	Memo
Data Date	Text
Map Date	Date/Time

Table B3 . Data structure for SALMABOR.dbf (Salmon - aboriginal fisheries).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Seine Sp	Text
Gillnet Sp	Text
Troll Sp	Text
Seine	Text
Gillnet	Text
Troll	Text
Seine Use	Number
Gillnet Use	Number
Troll Use	Number
Seine Tm	Text
Gillnet Tm	Text
Troll Tm	Text
Day Start	Number
Day End	Number
Timing	Text
Bands	Text
Source 1	Text
Source 2	Text
Comment	Memo
Data Date	Text
Map Date	Date/Time

Table B4 . Data structure for SALMHOLD.dbf (Salmon - adult holding).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Species	Text
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments 1	Memo
Comments 2	Memo
Data Date	Text
Map Date	Date/Time

Table B5 . Data structure for SALMREAR (Salmon - juvenile rearing).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Species	Text
Importance	Number
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments 1	Memo
Comments 2	Memo
Data Date	Text
Map Date	Date/Time

Table B6. Data structure for SALMESC.dbf (Salmon - streams with escapement).

FIELD NAME	DATA TYPE
Stream ID	Number
Chart	Number
Stat Area	Number
RAB Code	Text
Latitude	Number
Longitude	Number
Location	Text
Use Level	Number
SO Yr	Number
SO Max	Number
SO Max Yr	Number
SO Avg	Number
SO Avg Yrs	Number
CO Yr	Number
CO Max	Number
CO Max Yr	Number
CO Avg	Number
CO Avg Yrs	Number
PI Yr	Number
PI Max	Number
PI Max Yr	Number
PI Avg	Number
PI Avg Yrs	Number
CM Yr	Number
CM Max	Number
CM Max Yr	Number
CM Avg	Number
CM Avg Yrs	Number

continued.....

Table B6 continued

CN Yr	Number
CN Max	Number
CN Max Yr	Number
CN Avg	Number
CN Avg Yrs	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B7. Data structure for HERRCOMM.dbf (Herring - commercial fisheries).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Use Level	Number
Use	Text
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments 1	Text
Comments 2	Text
Data Date	Text
Map Date	Date/Time

Table B8. Data structure for HERRABOR.dbf (Herring - food fisheries, including spawn-on-bough and -kelp).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Text
Location	Text
Use Level	Number
Use	Text
Bands	Text
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B9. Data structure for HERRHOLD.dbf (Herring holding areas).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Use Level	Text
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B10. Data structure for HERRSPAW.dbf (Herring spawning areas).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Text
Location	Text
Use Level	Text
Consistent	Text
Magnitude	Text
Totrecords	Number
Avgwidth	Number
Avgint	Number
Indloc	Number
Day Start	Number
Day End	Number
Timing	Text
Wtdate	Text
Avgdate	Number
SEdate	Number
Indday	Number
Complete	Text
Source 1	Text
Source 2	Text
Comments	Text
Data Date	Text
Map Date	Date/Time

Table B11. Data structure for GRNDCOMM.dbf (Groundfish - commercial fisheries).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Gear	Text
Use Level	Number
Use	Text
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B12. Data structure for GRNDRECR.dbf (Groundfish - recreational fisheries).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Use Level	Number
Use	Text
Day Start	Number
Day End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B13. Data structure for GRNDABOR.dbf (Groundfish - aboriginal fisheries).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Gear	Text
Use Level	Number
Use	Text
Day Start	Number
Day End	Number
Timing	Text
Bands	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B14 . Data structure for OTHFISH.dbf (Other finfish).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Text
Location	Text
Targets	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B15. Data structure for ABALONE.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B16. Data structure for CHITON.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B17 . Data structure for CLAMS.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Location	Text
Stat Area	Number
Sub Area	Number
Chart	Number
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Source 1	Text
Source 2	Text
Comments 1	Memo
Comments 2	Memo
Data Date	Text
Map Date	Date/Time

Table B18. Data structure for CRABS.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Gear	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B19. Data structure for GEODUCK.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B20. Data structure for GOOSENEC.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B21. Data structure for MUSSEL.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B22. Data structure for OCTOPUS.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B23. Data structure for OYSTER.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Stat Area	Number
Sub Area	Number
Targets	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B24 . Data structure for SCALLOP.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B25. Data structure for CUCUMBER.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B26. Data structure for URCHIN.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B27. Data structure for SHRIMP.dbf (Shrimps and prawns).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B28. Data structure for SQUID.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Use Comm	Number
Use Abor	Number
Use Recr	Number
Use	Text
Day Start	Number
Day End	Number
Peak Start	Number
Peak End	Number
Timing	Text
Gear	Text
Source 1	Text
Source 2	Text
Source 3	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B29. Data structure for SEALIONS.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Timing	Text
Activity	Text
Source 1	Text
Source 2	Text
Comments 1	Memo
Comments 2	Memo
Data Date	Text
Map Date	Date/Time

Table B30. Data structure for SEALS.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Timing	Text
Activity	Text
Source 1	Text
Source 2	Text
Comments 1	Memo
Comments 2	Memo
Data Date	Text
Map Date	Date/Time

Table B31. Data structure for SHARKS.dbf (Basking sharks).

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Timing	Text
Peaks	Text
Activity	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B32. Data structure for WHALES.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Timing	Text
Activity	Text
Source 1	Text
Source 2	Text
Comments	Memo
Data Date	Text
Map Date	Date/Time

Table B33. Data structure for KELP.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Targets	Text
Comments	Memo
Source 1	Text
Source 2	Text
Data Date	Text
Map Date	Date/Time

Table B34. Data structure for ZOSTERA.dbf.

FIELD NAME	DATA TYPE
Polygon	Number
Chart	Number
Location	Text
Target	Text
Source 1	Text
Source 2	Text
Comments 1	Memo
Comments 2	Memo
Data Date	Text
Map Date	Date/Time

APPENDIX C - DATABASE TABLES

Table C1: COMMERCIAL SALMON fisheries in Area 24 - Clayoquot Sound

			Species			Use Level			Use			Timing			Day							
Polygon	Chart	Location	Seine	Gillnet	Troll	Seine	Gillnet	Troll	Seine	Gillnet	Troll	Seine	Gill-net	Troll	Start	End	Timing	Source 1	Source 2	Comment 1	Data Date	Map Date
1	1	Off Hotsprings Cove			CN, CO	0	0	1			Low (6)			July - Sept.	182	244	Summer	D. Palfrey		During westerly	D. Palfrey - 1981-present	3/16/95
2	1	W. Coast Flores Is.			CN, CO	0	0	1			Local Native fishers			July - Sept.	182	244	Summer	R. Sutherland		Also food fishing area	R. Sutherland - 1984 - present	12/20/95
3	9	Rafael Point			CN, CO	0	0	1			Sporadic			July - Sept.	182	244	Summer	D. Palfrey	Radar Counts		D. Palfrey - 1981-present	3/16/95
4	9	7 km off Long Beach			CN, CO, SO	0	0	3			Heavy use in first week			July 1-10	182	191	Early July	D. Palfrey	Radar Counts	Up to 400 boats at opening	D. Palfrey - 1981-present	3/16/95
5	9	Wya Point, near shore			CN, CO	0	0	1			Very few - mostly sport			Late Aug.-Sept.	227	244	Late summer	D. Palfrey		Mainly sport	D. Palfrey - 1981-present	3/16/95
6	9	100 m line off Clayoquot Sd.			CN,CO, SO, PK	0	0	1			Local Native fishers			July - Sept.	182	244	Summer	R. Sutherland	C. Jumbo	Fish the 100 m line	R. Sutherland - 1984 - present	1/18/96

Table C2: RECREATIONAL SALMON fisheries in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use Level	Use	Day		Timing	Source 1	Source 2	Comment 1	Data Date	Map Date
						Start	End						
0	0			0		0	0						
1	2	Wilf Rock	CN, CO	5	Troll - 20 boats/day	152	288	June-Early Oct.	B. Spence	J.O. Thomas & Assoc. (1993 Creel Census)	Concentration of chinook here	B. Spence - since 1991	2/2/95
2	2	Wickininish Is. - Stubbs Is.	CO, CN	3	Troll - 2.5 boats/day	152	288	June-Early Oct.	B. Spence		Coho mostly	B. Spence - since 1991	2/2/95
3	2	South of Blunden Is.	CN, CO	1	Troll - 0.25 boats/day	152	288	June-Early Oct.	B. Spence			B. Spence - since 1991	2/2/95
4	2	Browning Passage	CO	2	Troll - 1 boat/day	202	304	Late July - October	B. Spence			B. Spence - since 1991	2/2/95
5	2	Tsapee Narrows	CO	3	Troll - 5 boats/day	202	304	Late July - October	B. Spence		Local stocks (Kennedy, Kootowis)	B. Spence - since 1991	2/2/95
6	2	Kootowis C. area	CO	1	Troll - 0.25 boats/day	202	304	Late July - October	B. Spence			B. Spence - since 1991	2/2/95
7	2	Kennedy R. area	SO	1	Troll - 0.25 boats/day	152	212	June - July	B. Spence		No fishing in closed area (river mouth)	B. Spence - since 1991	2/2/95
8	2	Dawley Pass	CO, CN	2	Troll - 1 boat/day	182	304	July-Oct.	B. Spence			B. Spence - since 1991	2/2/95
9	2	Matlset Narrows	CO, CN	1	Troll - 0.5 boat/day	152	304	June-Oct.	B. Spence			B. Spence - since 1991	2/2/95
10	2	Morfee Is.	CO, CN	1	Troll - 0.25 boat/day	152	304	June-Oct.	B. Spence			B. Spence - since 1991	2/2/95

Table C2: RECREATIONAL SALMON fisheries in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use Level	Use	Day		Timing	Source 1	Source 2	Comment 1	Data Date	Map Date
						Start	End						
11	2	Bartlett Is.	CN, CO	4	Troll - 10 boats/day	152	304	June-Oct.	B. Spence	J.O. Thomas & Assoc. (1993 Creel Census)	Large area - anywhere in area	B. Spence - since 1991	2/2/95
12	2	Blunden Is. - Cleland Is.	CN, CO	-9	Troll - unknown	196	258	July - Sept. (maybe longer)	J.O. Thomas & Assoc. (1993 Creel Census)			1993 Creel Census	2/15/95
13	1	Hayden Pass	CN, CO	1	Troll - 0.25 boat/day	152	304	June-Oct.	B. Spence			B. Spence - since 1991	2/2/95
14	9	Portland Pt.	CN, CO	5	Troll - 15 boats/day	152	273	June-Sept.	B. Spence	J.O. Thomas & Assoc. (1993 Creel Census)	Boats from Tofino and Ucluelet	B. Spence - since 1991	2/2/95
15	9	Gowland Rocks	CN, CO	3	Troll - 3-4 boats/day	213	243	August	D. Palfrey		Mainly chinook	D. Palfrey - 1981-present	3/16/95
16	9	Rafael Point	CN, CO	1	Troll - few boats	182	243	July-Aug.	D. Palfrey		Sport fishing charters	D. Palfrey - 1981-present	3/16/95
17	9	Quisitis Pt.	CN, CO	5	Troll - 20 boats/day	152	273	June-Sept.	B. Spence		Boats from Tofino and Ucluelet	B. Spence - since 1991	2/2/95
18	9	7 km off Long Beach	CN, CO	1	Troll - few boats	182	243	July-Aug.	D. Palfrey		Sport fishing charters	D. Palfrey - 1981-present	3/16/95
19	9	Wya Pt and SE.	CN, CO	5	Troll - 40+ boats/day; shore casting <1/day	152	273	June-Sept.	B. Spence	D. Palfrey	Boats from Tofino and Ucluelet	B. Spence - since 1991	2/2/95

Table C3: ABORIGINAL SALMON fisheries in Area 24 - Clayoquot Sound

Polygon	Chart	Location	Species			Use Level			Use			Timing			Day		Timing	Bands	Source 1	Source 2	Comment 1	Data Date	Map Date
			Seine	Gillnet	Troll	SN	GN	Troll	SN	GN	Troll	SN	GN	Troll	Start	End							
1	1	Megin R.& Shelter Inlet	CM, SO	CM, SO		3	3	0	1 skiff with small seine	4-5 boats		Late Sept.-Oct.	Late Sept. - Oct.		264	304	Fall	Ahousaht	E. Arnet	B. Spence	Extends down inlet to conserve chinooks	E.Arnet-1966-92; 1991-95	1/29/95
2	1	Atleo R.	CM	CM		3	3	0	1 skiff with small seine	4-5 boats		Late Sept.-Oct.	Late Sept. - Oct.		264	304	Fall	Ahousaht	E. Arnet	B. Spence	Use level depends on escapement	E.Arnet-1966-92; 1991-95	1/29/95
3	1	Moyeha R.	CM	CM		3	3	0	1 skiff with small seine	4-5 boats		Late Sept.-Oct.	Late Sept. - Oct.		264	304	Fall	Ahousaht	E. Arnet	B. Spence	Use level depends on escapement	E.Arnet-1966-92; 1991-95	1/29/95
4	1	Bawden Bay	CM	CM		3	3	0	1 skiff with small seine	4-5 boats		Late Sept.-Oct.	Late Sept. - Oct.		264	304	Fall	Ahousaht	E. Arnet	B. Spence	Use level depends on escapement	E.Arnet-1966-92; 1991-95	1/29/95
5	1	Clifford Pt.-Bimms Is.			CN	0	0	4			4 boats (36 ft.) and 15 - 18 speedboa			Dec.-March	335	90	Winter	Ahousaht	B.Spence	R. Sutherland	Large area	E.Arnet-1966-92; 1991-95	1/29/95
6	1	McNeil Peninsula			CN, CO	0	0	4			15 - 18 small boats			July - Sept.	182	273	Summer	Ahousaht	R.Sutherland	E. Frank	Close to Ahousaht village	E.Arnet-1966-92; 1991-95	1/29/95
7	1	Lower Sydney Inlet			CN	0	0	3			3-4 boats			Jan. - March	1	90	Winter	Ahousaht and Hesquiaht	E. Arnet	B. Spence		E.Arnet-1966-92; 1991-95	1/29/95
8	1	Steamer Cove			CN	0	0	3			3-4 boats			Late Feb.-Early March	46	74	Winter	Ahousaht and Hesquiaht	E. Arnet	B. Spence	Very productive	E.Arnet-1966-92; 1991-95	1/29/95
9	1	N. Rafael Pt.			CO, CN	0	0	4			12 boats/day			Mid-July - End August	196	243	Summer	Ahousaht	R. Sutherland	E. Frank	Good fishing	R. Sutherland 1984-1996	12/20/95
10	1	Adventure Pt.			CN	0	0	2			1-2 boats/day			January to March	1	90	Winter - 30 days total	Ahousaht	R. Sutherland	E. Frank	Intermittant fishing during this period	R. Sutherland 1984-1996	12/20/95
11	1	Pretty Girl Cove			CN	0	0	2			1-2 boats/day			January to March	1	90	Winter - 30 days total	Ahousaht	R. Sutherland	E. Frank	Intermittant fishing during this period	R. Sutherland 1984-1996	12/20/95

Table C3: ABORIGINAL SALMON fisheries in Area 24 - Clayoquot Sound

Polygon	Chart	Location	Species			Use Level			Use			Timing			Day		Timing	Bands	Source 1	Source 2	Comment 1	Data Date	Map Date
			Seine	Gillnet	Troll	SN	GN	Troll	SN	GN	Troll	SN	GN	Troll	Start	End							
12	1	Hd. Shelter Inlet			CN	0	0	2			1-2 boats/day			January to March	1	90	Winter - 30 days total	Ahousaht	R. Sutherland	E. Frank	Intermittant fishing during this period	R. Sutherland 1984-1996	12/20/95
13	1	Barney Rks. and west			CN, CO	0	0	5			20 boats /day			March to September	80	273	Early spring and summer	Ahousaht and Hesquiaht	R. Sutherland	E. Frank	Also commercial fishing spot	R. Sutherland 1984-1996	12/20/95
14	2	Kutcous Pt. (large area)			CN, CO	0	0	4			15 - 18 small boats			July - Sept.	182	273	Summer	Ahousaht	E. Arnet	B. Spence	Herring skiffs and small boats	E.Arnet-1966-92; 1991-95	1/29/95
15	2	Off Kennedy River	SO, CN	SO, CN		3	3	0	1 skiff with small seine	A few speed boats		June-July	June-July		152	212	Summer	Ahousaht and Clayoquot	E. Arnet	B. Spence	Not DFO sanctioned since 1985	E.Arnet-1966-92; 1991-95	1/29/95
16	2	Warn Bay		CM		0	1	0		1 boat			Late Sept.-Oct		258	304	Fall	Clayoquot	E. Arnet	B. Spence	3 or 4 times during season	E.Arnet-1966-92; 1991-95	1/29/95
17	2	Wilf Rock - Lennard Is. (3 areas)			CN, CO	0	0	3			2 boats/day - up to 20 ft.			June - Sept.	152	273	Summer	Tla-o-qui-aht	B.Spence	E. David		B. Spence - 1991-1996	2/2/95
18	2	Morfee Is.			CN, CO	0	0	1			0.5 boat/day			June - Sept.	152	273	Summer	Ahousaht and Clayoquot	B.Spence		Intermittant - not every day	B. Spence - 1991-1996	2/2/95
19	2	Tonquin Pk. Beach			CN, CO	0	0	1			0.25/day			June - Sept.	152	273	Summer	Clayoquot	B.Spence		A few small boats and shore casting	B. Spence - 1991-1996	2/2/95
20	2	Tsapee Narrows			CN, CO, SO	0	0	2			1 boat/day			July - Oct.	182	304	Summer -Fall	Clayoquot	B.Spence		Small boats	B. Spence - 1991-1996	2/2/95
21	2	Dawley Pass			CO, CN	0	0	1			0.5 boat/day			July - Oct.	182	304	Summer -Fall	Clayoquot	B.Spence		Small boats	B. Spence - 1991-1996	2/2/95
22	2	Matlset Narrows			CO, CN	0	0	1			3 or 4 times during season			July - Oct.	182	304	Summer -Fall	Clayoquot	B.Spence			B. Spence - 1991-1996	2/2/95

Table C3: ABORIGINAL SALMON fisheries in Area 24 - Clayoquot Sound

Polygon	Chart	Location	Species			Use Level			Use			Timing			Day		Timing	Bands	Source 1	Source 2	Comment 1	Data Date	Map Date
			Seine	Gillnet	Troll	SN	GN	Troll	SN	GN	Troll	SN	GN	Troll	Start	End							
23	2	Off Bedwell R.		CM		0	1	0		Test Fishery			Sept. - Oct.		258	304	Fall	Clayoquot	B.Spence		Stock Assessment - DFO sanctioned	B. Spence - 1991-1996	2/2/95
24	2	Saranac Is.			CN	0	0	2			1-2 boats/day			January to March	1	90	Winter - 30 days total	Ahousaht	R. Sutherland	E. Frank	Intermittant fishing during this period	R. Sutherland 1984-1996	12/20/95
25	2	Ahous Pt.			CN, CO	0	0	4			1-20 boats/day			July - Sept	182	273	Summer	Ahousaht	R. Sutherland	E. Frank	Fishing among rocks	R. Sutherland 1984-1996	12/20/95
26	9	Rafael Pt.			CN, CO	0	0	3			6 - 10 boats at times			Mainly summer and winter	1	365	Year-round	Ahousaht and Hesquiaht	E. Arnet	B. Spence	Large and small boats, depends on weather	E.Arnet-1966-92; 1991-95	1/29/95
27	9	Cox Pt. - Portland Pt.			CN, CO	0	0	3			2 boats/day			June - Sept.	152	273	Summer	Tla-o-qui-aht	B.Spence	E. David	Boats up to 30 ft.	B. Spence - 1991-1996	2/2/95
28	9	Off Long Beach (2 areas)			CN, CO	0	0	4			3 boats			March - Sept.	60	273	Spring - Summer	Tla-o-qui-aht	E. David	D. David	Have many spot within area	E. David - lifetime resident	1/19/96
29	9	W. of La Perouse Bank			CN	0	0	2			Occasional winter use			Mid. Nov. - mid Mar.	320	74	Winter	Tla-o-qui-aht	D. David		Use landmarks to find tack	D. David - lifetime resident	1/19/96
30	9	Starlight Rf. - Portland Pt. (4 areas)			CN	0	0	3			Weather permitting			Mid. Nov. - mid Mar.	320	74	Winter	Ucluelet	H. Touchie	L. Baird	Winter springs feed whole community	H. Touchie - lifetime resident	1/19/96
31	9	Off Southern Long B. and Ucluth Pen.			SO	0	0	5						Mid-July - mid Sept.	196	258	Summer	Ucluelet	H. Touchie	L. Baird	Whole fleet	H. Touchie - lifetime resident	1/19/96

Table C4: SALMON holding in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Species	Timing	Source 1	Source 2	Comment 1	Comment 2	Data Date	Map Date
1	1	Dixon Bay	CO, CM	September	B. Spence		Bound for Megin		B. Spence -	2/2/95
2	1	Megin R. mouth	CO, CM, CN, SO	Aug.15 - Nov. 15	B. Rushton		Important holding area		B. Rushton -	2/17/95
3	1	Atleo R. mouth	CO, CM	Late Sept - End Nov.	B. Rushton		Important holding area		B. Rushton -	2/17/95
4	1	Unnamed Creek N. of Atleo	CM	Sep.20 - Oct. 30	D. Palfrey	D. Swift	Large numbers of chum		D. Palfrey - since 1981	3/16/95
5	1	Steamer Cove	CN	Dec. to March	D. Swift		Winter springs, feeding on herring		D. Swift - 1985 - 90	3/17/95
6	1	Hootla Kootla	CN	Dec. to March	D. Swift		Winter springs, feeding on herring		D. Swift - 1985 - 90	3/17/95
7	2	Mouth Kennedy R.	SO, CO, CN	June 1 - Nov.15	B. Rushton	K. Hyatt	Important - timing depends on weather	KennedyC./Cannery Bay most important area	B. Rushton -	2/17/95
8	2	Grice Bay	CO, CM, ST, CT	Sep.20 - Oct. 30	D. Palfrey		Until October rain	Up to 1000 fish concentrated on S.E. side	D. Palfrey - since 1981	3/16/95
9	2	Browning Passage	CO, SO, CN, CM	Sep.20 - Oct. 30	D. Palfrey	K. Hyatt	Mainly coho - seen jumping along mudflats		D. Palfrey - since 1981	3/16/95
10	2	Warn Bay	CM, CO	Sep.20 - Oct. 30	D. Palfrey	D. Swift	Mainly chum		D. Palfrey - since 1981	3/16/95
11	2	Off Cypre R.	CM	Sep.20 - Oct. 30	D. Swift				D. Swift - 1985 - 90	3/17/95

Table C5: SALMON rearing in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Species	Importance	Day		Timing	Source 1	Source 2	Comment 1	Comment 2	Data Date	Map Date
					Start	End							
1	1	Off Hesquiat R.	CM, SO	-9	74	196	Spring - Early summer	B. Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
2	1	Stewardson In.	CM	-9	74	196	Spring - Early summer	B.Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
3	1	Off Sydney R.	CM, CN, SO	-9	74	196	Spring - Early summer	B. Rushton		Creek sockeye		B.Rushton - 1983-85, 1994-95	2/17/95
4	1	Pretty Girl Cove	CM	-9	74	196	Spring - Early summer	B.Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
5	1	Young Bay	CN, CM	-9	74	196	Spring - Early summer	B. Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
6	1	Hootla Kootla	CO, CM	-9	74	196	Spring - Early summer	B. Rushton		Mainly chum		B.Rushton - 1983-85, 1994-95	2/17/95
7	1	Matilda In.	CM, CO	-9	74	196	Spring - Early summer	B.Rushton		Very rich plant growth		B.Rushton - 1983-85, 1994-95	2/17/95
8	1	Bawden Bay	CM	-9	74	196	Spring - Early summer	B.Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
9	1	Millar Ch. Stream mouths (3 polygons)	CO	-9	74	120	Early spring	D. Swift	ref. Brown et al.	Probably from Atleo R.		D. Swift - 1985-90	3/17/95
10	1	Megin R. mouth	SO, CN, CO, CM	-9	74	196	Spring - Early summer	B. Rushton		Important for sockeye		B.Rushton - 1983-85, 1994-95	2/17/95
11	1	Off Watta Cr.	CM,CN	-9	74	196	Spring - Early summer	B.Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
12	1	Moyeha R. mouth	CM, CN	-9	74	196	Spring - Early summer	B. Rushton				B.Rushton - 1983-85, 1994-95	2/17/95

Table C5: SALMON rearing in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Species	Import ance	Day		Timing	Source 1	Source 2	Comment 1	Comment 2	Data Date	Map Date
					Start	End							
13	2	Off Cypre R.	CM, CN	-9	74	196	Spring - Early summer	B. Rushton	D. Palfrey	Hatchery netpen (May)		B.Rushton - 1983-85, 1994-95	2/17/95
14	2	Kakawis	CM	-9	74	196	Spring - Early summer	B.Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
15	2	Lemmens In.	CM, CO	-9	74	196	Spring - Early summer	B.Rushton		Nearshore areas around inlet		B.Rushton - 1983-85, 1994-95	2/17/95
16	2	Browning Pass	CM, CO	3	74	196	Spring - Early summer	B.Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
17	2	Grice Bay	CM, CO	5	74	196	Spring - Early summer	B.Rushton				B.Rushton - 1983-85, 1994-95	2/17/95
18	2	Kennedy R. mouth	CN, SO	5	74	196	Spring - Early summer	B. Rushton	K. Hyatt	Sockeye don't rear long		B.Rushton - 1983-85, 1994-95	2/17/95
19	2	Tranquil In.	CN, CM	-9	74	196	Spring - Early summer	B.Rushton	D. Palfrey	R. mouth and other shallow, protected areas	Hatchery netpen (May)	B.Rushton - 1983-85, 1994-95	2/17/95
20	2	Bedwell R.	CM, CN	-9	74	196	Spring - Early summer	B. Rushton				B.Rushton - 1983-85, 1994-95	2/17/95

Table C6: SALMON ESCAPEMENTS in Area 24 - Clayoquot Sound

#	Chart	RAB Code	Location	Use Level	Sockeye					Coho					Chum					Chinook					Day Start	Day End	Timing	Sources		Comments	Data Date	Map Date
					Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)				1	2			
1	1	29-0002	Bedingfield Bay Creek	1	0	0	0	0	0	0	0	0	0	0	1	40	86	40	1	0	0	0	0	0	-9	-9	Fall	G.Serbic (PBS) -	E. Arnet	Adults observed but may not be spawnwers	1984-1993	3/3/95
2	9	93-3380	Lost Shoe Creek	2	0	0	0	0	0	6	150	86	120	6	3	25	85	16	4	0	0	0	0	0	288	358	Oct.15 - Dec.24	G.Serbic (PBS) -		Info from Parks staff	1984-1993	3/3/95
3	9	93-3400	Sandhill Creek	1	0	0	0	0	0	3	100	86	68	3	0	0	0	0	0	0	0	0	0	0	278	359	Oct.5 - Dec.25	G.Serbic (PBS) -		Last inspection 1987	1984-1993	3/3/95
4	2	93-3465	South Bay Creeks	2	0	0	0	0	0	0	0	0	0	0	1	280	85	280	1	0	0	0	0	0	293	339	Oct.20 - Dec.5	G.Serbic (PBS) -		Last inspection 1985	1984-1993	3/3/95
5	2	93-3500	Kootowis Creek	3	0	0	0	0	0	9	3500	85	879	9	9	2000	85	750	9	0	0	0	0	0	274	396	Oct.1 - Jan.31	G.Serbic (PBS) -			1984-1993	3/3/95
6	2	93-3600-	Kennedy R. system	5	10	60225	93	24853	10	8	3500	86	1732	9	0	0	0	0	0	8	301	89	193	8	196	372	July 15 - Jan.7	G.Serbic (PBS) -		Sockeye hold in Kennedy Cove (Aug.-Sep.)	1984-1993	3/3/95
7	2	93-3670	Woman Island Creek	1	0	0	0	0	0	1	1	91	0	4	4	50	85	12	5	0	0	0	0	0	288	309	Oct.15 - Nov.15	G.Serbic (PBS) -			1984-1993	3/3/95
8	2	93-3700	Tofino Creek	2	1	30	93	10	3	1	15	86	2	7	8	300	93	103	10	0	0	0	0	0	274	344	Oct.1 - Dec.10	G.Serbic (PBS) -			1984-1993	3/3/95
9	2	93-3800	Tranquil Creek	3	4	30	93	7	7	8	350	87	98	9	9	4400	88	1630	10	7	145	93	26	10	263	349	Sep.20 - Dec.15	G.Serbic (PBS) -			1984-1993	3/3/95
10	2	93-3897	Warn Bay Creek	3	0	0	0	0	0	8	100	85	47	9	9	6000	85	3305	10	0	0	0	0	0	288	349	Oct.15 - Dec.15	G.Serbic (PBS) -	E. Arnet	Cutthroat and steelhead	1984-1993	3/3/95
11	2	93-3900	Bulson Creek	2	0	0	0	0	0	0	0	0	0	0	2	300	86	110	5	0	0	0	0	0	293	334	Oct.20 - Nov.30	G.Serbic (PBS) -	E. Arnet	Chum obs. may spawn in Warn B. Cr.	1984-1993	3/3/95
12	2	93-3920-170	Meares Creek	3	0	0	0	0	0	0	0	0	0	0	9	1100	85	481	9	0	0	0	0	0	288	339	Oct.15 - Dec.5	G.Serbic (PBS) -			1984-1993	3/3/95
13	2	93-3920-200	Close Creeks (2)	2	0	0	0	0	0	0	0	0	0	0	2	220	84	98	3	0	0	0	0	0	288	339	Oct.15 - Dec.5	G.Serbic (PBS) -			1984-1993	3/3/95
14	2	93-3920-250	Sharp Creek	2	0	0	0	0	0	0	0	0	0	0	10	280	85	134	10	0	0	0	0	0	278	339	Oct.5 - Dec.5	G.Serbic (PBS) -			1984-1993	3/3/95
15	2	93-3920-400	Cone Creeks (2)	2	0	0	0	0	0	0	0	0	0	0	9	1000	85	475	10	0	0	0	0	0	283	324	Oct.10 - Nov.20	G.Serbic (PBS) -			1984-1993	3/3/95
16	2	93-3920-500	Kakawis Creek	1	0	0	0	0	0	0	0	0	0	0	1	50	85	50	1	0	0	0	0	0	288	319	Oct.15 - Nov.15	G.Serbic (PBS) -			1984-1993	3/3/95

1. Number of years of recorded esapement
2. Maximum escapement
3. Year in which maximum escapement occurred
4. Average escapement
5. Number of years included in average escapement

Table C6: SALMON ESCAPEMENTS in Area 24 - Clayoquot Sound

#	Chart	RAB Code	Location	Use Level	Sockeye					Coho					Chum					Chinook					Day Start	Day End	Timing	Sources		Comments	Data Date	Map Date
					Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)				1	2			
17	2	93-3920-750	Sutton Mill Creek	2	0	0	0	0	0	0	0	0	0	0	8	400	84	163	8	1	50	90	13	4	283	344	Oct.10 - Dec.10	G.Serbic (PBS) -			1984-1993	3/3/95
18	2	93-3920-810	Wood Islet Creeks	2	0	0	0	0	0	0	0	0	0	0	2	240	84	220	2	0	0	0	0	0	288	334	Oct.15 - Nov.30	G.Serbic (PBS) -			1984-1993	3/3/95
19	2	93-4000	Bedwell R./Ursus Cr.	3	4	300	93	84	6	7	700	93	182	9	9	1820	93	470	10	5	270	93	41	8	258	349	Sep.15 - Dec.15	G.Serbic (PBS) -	D. Palfrey	Run timing earlier re: stable flow in river	1984-1993	3/3/95
20	2	93-4100	Cypre River	3	4	10	92	4	5	10	800	90	407	10	10	4000	92	2170	10	9	30	84	21	9	273	365	Sep.30 - Dec.31	G.Serbic (PBS) -	D. Palfrey	Enhancing coho and chinook	1984-1993	3/3/95
21	2	93-4170	Bawden Bay Creek	3	0	0	0	0	0	4	120	90	20	9	8	6000	86	2389	9	0	0	0	0	0	288	349	Oct.15 - Dec.15	G.Serbic (PBS) -	R. Sutherland	Steelhead observed	1984-1993	3/3/95
22	2	93-4210(13&15)	Little Whitepine Cove Creeks	1	0	0	0	0	0	0	0	0	0	0	4	50	85	28	5	0	0	0	0	0	288	339	Oct.15 - Dec.5	G.Serbic (PBS) -	D. Palfrey	Coho fry observed in #2	1984-1993	3/3/95
23	2	93-4220	Whitepine Cove Creek	2	0	0	0	0	0	0	0	0	0	0	8	700	86	249	9	0	0	0	0	0	288	339	Oct.15 - Dec.5	G.Serbic (PBS) -			1984-1993	3/3/95
24	1	93-4300	Moyeha River	3	3	500	93	72	7	7	500	86	207	8	9	7000	93	4128	9	2	250	93	47	7	253	349	Sep.10 - Dec15	G.Serbic (PBS) -	R. Sutherland	Winter steelhead & Atlantic salmon obs.	1984-1993	3/3/95
25	1	93-4480	Atleo River	4	0	0	0	0	0	7	200	89	103	9	9	38500	85	12970	10	0	0	0	0	0	278	366	Oct.5 - Jan.1	G.Serbic (PBS) -	R. Sutherland	Winter steelhead & Atlantic salmon obs.	1984-1993	3/3/95
26	1	93-4500-760	Hootla Kootla System	2	0	0	0	0	0	2	100	86	43	3	4	110	86	55	5	0	0	0	0	0	288	349	Oct.15 - Dec.15	G.Serbic (PBS) -			1984-1993	3/3/95
27	1	93-4570	Watta Creek	3	3	10	93	3	8	6	100	85	43	9	9	5500	85	2245	10	4	40	86	7	8	280	349	Oct.7 - Dec.15	G.Serbic (PBS) -	E. Arnet	Sockeye probably strays	1984-1993	3/3/95
28	1	93-4600	Megin River	3	6	1000	88	338	8	7	300	86	88	8	10	9000	86	4230	10	7	436	93	88	8	258	349	Sep.15 - Dec.15	G.Serbic (PBS) -		Atlantic salmon observed	1984-1993	3/3/95
29	1	93-4670	Cecelia Creek	2	-9	-9	-9	-9	-9	1	2	86	0	8	6	300	85	72	8	0	0	0	0	0	278	349	Oct.5 - Dec.15	G.Serbic (PBS) -			1984-1993	3/3/95
30	1	93-4700	Ice River	3	3	15	85	5	5	6	60	93	30	8	10	1200	85	427	10	1	5	91	1	4	263	349	Sep.20 - Dec.15	G.Serbic (PBS) -	D. Swift	Also cutthroat	1984-1993	3/3/95
31	1	93-4800	Sydney River	3	1	8	87	2	4	5	150	86	84	6	8	2500	86	613	8	4	14	87	3	8	227	349	Aug.15 - Dec.15	G.Serbic (PBS) -			1984-1993	3/3/95
32	1	93-4870	Hot Springs Cove Cr. & Debbie Cr.	2	0	0	0	0	0	0	0	0	0	0	4	200	87	105	4	0	0	0	0	0	288	339	Oct.15 - Dec.5	G.Serbic (PBS) -		Last inspection 1987	1984-1993	3/3/95

1. Number of years of recorded esapement
2. Maximum escapement
3. Year in which maximum escapement occurred
4. Average escapement
5. Number of years included in average escapement

Table C6: SALMON ESCAPEMENTS in Area 24 - Clayoquot Sound

#	Chart	RAB Code	Location	Use Level	Sockeye					Coho					Chum					Chinook					Day Start	Day End	Timing	Sources		Comments	Data Date	Map Date
					Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)				1	2			
33	1	93-4990	Hesquiat Harbour Creeks (2)	1	0	0	0	0	0	2	35	86	30	2	2	100	86	100	2	0	0	0	0	0	278	339	Oct.5 - Dec.5	G.Serbic (PBS) -		Last inspection 1987	1984-1993	3/3/95
34	1	93-5000	Hesquiat River	2	0	0	0	0	0	1	400	86	200	2	6	1000	86	507	7	0	0	0	0	0	278	344	Oct.5 - Dec.10	G.Serbic (PBS) -			1984-1993	3/3/95
35	1	93-5100	Purdon Creek	2	0	0	0	0	0	1	400	91	400	1	0	0	0	0	0	0	0	0	0	0	305	365	Nov.1-Dec.30	G.Serbic (PBS) -			1984-1993	3/3/95
36	2	93-3920	Peterson Creek	1	0	0	0	0	0	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall	D. Palfrey		Small numbers of chum	Palfrey - 1981-present	3/16/95
37	2		Unnamed (adjacent to Cypre R.)	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	0	0		D. Palfrey		A few coho	Palfrey - 1981-present	3/16/95
38	2		Yarksis Cr.	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	0	0	Fall/ Winter	D. Palfrey		A few coho reported	Palfrey - 1981-present	3/16/95
39	2		Unnamed (Grice Bay)	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall	D. Palfrey		Coho seen - fry and adults	Palfrey - 1981-present	3/16/95
40	2		McKenzie Cr.	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey	D.Swift	<20 coho	Palfrey - 1981-present	3/16/95
41	2		Unnamed - Tofino Hatchery site	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey		A few coho	Palfrey - 1981-present	3/16/95
42	2		Unnamed (N.W. Vargas Is.)	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey		A few coho observed	Palfrey - 1981-present	3/16/95
43	2	93-4200-800 (&-805)	Open Bay Creeks	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey		A few coho observed	Palfrey - 1981-present	3/16/95
44	2	93-3850 (65&70)	Streams on E. Side Fortune Ch. (3)	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D. Swift	Brown et al, 1989	Coho and cutthroat reported	D. Swift - 1985 - 1990	3/17/95
45	2		Unnamed creek - Irving Cove	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D. Swift		Fry seen in bay (near fish farm)	D. Swift - 1985 - 1990	3/17/95
46	1		Unnamed (Kutcous Cove)	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey		A few coho observed; cutthroat	Palfrey - 1981-present	3/16/95
47	1		Unnamed (S.W. Flores Is.)	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey		A few coho observed; cutthroat	Palfrey - 1981-present	3/16/95
48	1	93-4500-550	Cow Cr.	1	0	0	0	0	0	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey		Coho and chum observed	Palfrey - 1981-present	3/16/95

1. Number of years of recorded esapement
2. Maximum escapement
3. Year in which maximum escapement occurred
4. Average escapement
5. Number of years included in average escapement

Table C6: SALMON ESCAPEMENTS in Area 24 - Clayoquot Sound

#	Chart	RAB Code	Location	Use Level	Sockeye					Coho					Chum					Chinook					Day Start	Day End	Timing	Sources		Comments	Data Date	Map Date
					Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)	Y (1)	M (2)	MY (3)	A (4)	AY (5)				1	2			
49	1	93-4500-780	Riley Cove Cr.	1	0	0	0	0	0	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey		May be barren, but good potential	Palfrey - 1981-present	3/16/95
50	1	93-4480-200	Unnamed (Barra Cr.)	1	0	0	0	0	0	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall	D. Palfrey	R. Sutherland	Atlantic Salmon (~20) observed	Palfrey - 1981-present	3/16/95
51	1	93-4930	Kanim Lake	1	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Almost year-round	D. Palfrey		Difficult access. Early sockeye - March-July	Palfrey - 1981-present	3/16/95
52	1		Hesquiat Point Cr.	1	0	0	0	0	0	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall/ Winter	D. Palfrey		Steelhead present	Palfrey - 1981-present	3/16/95
53	1		Hisnit Lake outlet	-9	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Un-known	D.Palfrey		Coho presence suspected	Palfrey - 1981-present	3/16/95
54	1		Unnamed Creeks - W. Head Hesquiat Hbr.	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Un-known	D.Palfrey		Coho fry seen	Palfrey - 1981-present	3/16/95
55	1		Unnamed Creek - LeClaire Pt.	1	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0	0	-9	-9	Fall/ Winter	D.Palfrey		A few coho	Palfrey - 1981-present	3/16/95
56	1		Unnamed - Matilda In.	1	0	0	0	0	0	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall	D. Swift		A few chum - heavy food fishery	D. Swift - 1985 - 1990	3/17/95
57	1		Unnamed - Sulphur Pass	1	0	0	0	0	0	0	0	0	0	0	-9	40	-9	-9	-9	0	0	0	0	0	-9	-9	Fall	R.Sutherland	E. Frank	Chum seen	R. Sutherland - since 1984	12/20/95
58	1	93-4295	Cotter Cr.	1	0	0	0	0	0	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall	D. Palfrey		Chum (50 - 60)	Palfrey - 1981-present	3/16/95
59	1		Unnamed - N. Flores Is.	1	0	0	0	0	0	0	0	0	0	0	-9	40	-9	-9	-9	0	0	0	0	0	-9	-9	Fall	R.Sutherland	E. Frank	Chum seen	R. Sutherland - since 1984	12/20/95
60	1		Unnamed - Coho Cr.	1	0	0	0	0	0	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall	R.Sutherland	E. Frank	Coho fry and chum adults seen	R. Sutherland - since 1984	12/20/95
61	1		Unnamed - Dixon Bay	1	0	0	0	0	0	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall/Winter	R.Sutherland	E. Frank	Chum and coho adults - a few	R. Sutherland - since 1984	12/20/95
62	1		Unnamed - Hd. Dixon Bay	1	0	0	0	0	0	0	0	0	0	0	-9	-9	-9	-9	-9	0	0	0	0	0	-9	-9	Fall	R.Sutherland	E. Frank	Chum reported by elders	Elders reported	12/20/95

1. Number of years of recorded esapement
2. Maximum escapement
3. Year in which maximum escapement occurred
4. Average escapement
5. Number of years included in average escapement

Table C7: COMMERCIAL HERRING fisheries in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level	Use	Day		Timing	Source 1	Source 2	Comments 1	Comments 2	Data Date	Map Date
					Start	End							
1	4	Cypress Bay	5	SN,GN	60	74	Early March	E. Arnet	D. Chalmers			E. Arnet 1966-92	1/29/95
2	4	Yellow Bank	4	GN	60	74	Early March	E. Arnet	D. Chalmers			E. Arnet 1966-92	1/29/95
3	4	Ritchie Bay	4	GN	60	74	Early March	E. Arnet	D. Chalmers			E. Arnet 1966-92	1/29/95
4	4	Elbow Bank	5	GN	60	74	Early March	E. Arnet	D. Chalmers			E. Arnet 1966-92	1/29/95
5	4	Yarksis	4	GN	60	74	Early March	E. Arnet	D. Chalmers			E. Arnet 1966-92	1/29/95
6	4	Epper Pass -	4	GN	60	74	Early March	E. Arnet	D. Chalmers			E. Arnet 1966-92	1/29/95
7	3	Millar Channel	-9	SN	60	74	Early March	E. Arnet	D. Chalmers	Fished prior to 1982; may be used in future	Ripeness a problem	E. Arnet 1966-92	1/29/95
8	3	Lower Sydney	-9	SN	60	74	Early March	E. Arnet	D. Chalmers	Fished prior to 1982; may be used in future	Ripeness a problem	E. Arnet 1966-92	1/29/95
9	3	N.E. Matilda In.	1	Roe-on Kelp	60	90	March	E. Arnet	R. Sutherland	Impoundment method	Kelp often imported from Area 23	E. Arnet 1966-92	1/29/95

Table C8: ABORIGINAL HERRING fisheries (including spawn-on-bough and -kelp) in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Bands	Use	Use Level	Day		Timing	Source 1	Source 2	Comments	Data Date	Map Date
						Start	End						
1	3	Hotsprings Cove	Hesquiat	Roe food fishery	-9	60	90	March	B. Rushton		Kelp and Bough	B. Rushton - 1983-86; 94-95	2/17/95
2	3	Matilda Inlet	Ahousaht	Whole fish - food fishery	4	1	59	Jan. - Feb.	R. Sutherland	C. Jumbo	Several fisheries - 1 ton at a time	R. Sutherland - since 1984	1/25/96
3	4	Matilda In. S.	Ahousaht	Roe food fishery	-9	60	90	March	B. Rushton		Bough	B. Rushton - 1983-86; 94-95	2/17/95
4	4	Matilda Inlet	Ahousaht	Roe food fishery	-9	60	90	March	E. Arnet	B. Rushton	Kelp and bough	E.Arnet - 1966-92	1/29/95
5	4	Calmus Pass	Ahousaht or Opitsaht	Roe food fishery	-9	60	90	March	B. Rushton		Bough	B. Rushton - 1983-86; 94-95	2/17/95
6	4	Epper Pass	Ahousaht	Roe food fishery	-9	60	90	March	R. Sutherland	C. Jumbo	Bough	R. Sutherland - since 1984	1/25/96
7	4	W. McKay Is.	Ahousaht	Roe food fishery	1	60	90	March	R. Sutherland	C. Jumbo	Bough - 1994 only	R. Sutherland - since 1984	1/25/96
8	4	Ritchie Bay (2 areas)	Ahousaht	Roe food fishery	-9	60	90	March	R. Sutherland	C. Jumbo	Bough	R. Sutherland - since 1984	1/25/96
9	4	Quait Bay	Ahousaht	Roe food fishery	-9	60	90	March	R. Sutherland	C. Jumbo	Bough	R. Sutherland - since 1984	1/25/96
10	4	Welcome Is.	Ahousaht	Roe food fishery	-9	60	90	March	R. Sutherland	C. Jumbo	Bough	R. Sutherland - since 1984	1/25/96
11	9	Newcombe Ch.	Ucluelet	Roe food fishery	1	60	90	March	H. Touchie	L. Baird Sr.	Kelp and Bough	H. Touchie - lifelong resident	1/18/96

Table C9: HERRING holding in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level	Use	Day		Timing	Source 1	Source 2	Source 3	Comments	Data Date	Map Date
					Start	End							
1	3	Sydney Inlet	5	Varies	41	59	Mid-Late Feb.	D. Chalmers	B. Rushton	R. Sutherland	Bound for Hesquiat or Lower Clayoquot	D. Chalmers - since 1978	2/9/95
2	3	W. Shelter Inlet	4	Varies	41	59	Mid-Late Feb.	D. Chalmers	B. Rushton		Bound for Lower Clayoquot	D. Chalmers - since 1978	2/9/95
3	3	Hd. Millar Channel	4	Varies	41	59	Mid-Late Feb.	D. Chalmers	B. Rushton		Bound for Lower Clayoquot	D. Chalmers - since 1978	2/9/95
4	3	W. McKay Is. and	3	Varies	41	74	Mid-Late Feb.	D. Chalmers	B. Rushton	R. Sutherland	First time in 1994	D. Chalmers - since 1978	2/9/95
5	3	Clifford Pt.	4	Varies	41	74	Feb. - March	D. Chalmers	B. Rushton		First time in 1994	D. Chalmers - since 1978	2/9/95
6	3	Steamer Cove	5	Important	41	74	Mid-Late Feb.	B. Rushton			Local spawning	B. Rushton - 1983-86;1994-95	2/17/95
7	3	Matilda Inlet	3	Consistent	41	59	Mid-Late Feb.	B. Rushton			Local spawning	B. Rushton - 1983-86;1994-95	2/17/95
8	3	Hot Springs C.	1	1-5 tons	41	59	Mid-Late Feb.	B. Rushton			Local spawning	B. Rushton - 1983-86;1994-95	2/17/95
9	3	Stewardson In.	-9	Small area	41	59	Mid-Late Feb.	D. Swift			Just hold; don't spawn in inlet	D. Swift - 1985-90	3/17/95
10	3	Mid - Millar Channel	3	Concentrate here	41	59	Mid-Late Feb.	D. Swift			Just hold; don't spawn	D. Swift - 1985-90	3/17/95
11	3	Bawden Bay	3	Moderate	41	59	Mid-Late Feb.	E. Arnet			Spawning in bay	E. Arnet - 1969-92	3/26/95
12	3	Sulphur Passage	4	"Lots"	41	59	February	R. Sutherland	C. Jumbo			R. Sutherland - since 1984	1/25/96
13	3	Whitepine Cove	4	"Lots"	320	74	Nov. til spawning	R. Sutherland	C. Jumbo		Important area for herring	R. Sutherland - since 1984	1/25/96
14	3	Hd. Shelter Inlet	-9	Minor holding area	41	59	Mid-Late Feb.	R. Sutherland	C. Jumbo			R. Sutherland - since 1984	1/25/96
15	4	Cypress Bay	5	Consistent	41	74	Feb. - March	D. Chalmers	B. Rushton		Heavier in Hecate Bay	D. Chalmers - since 1978	2/9/95
16	4	N. Vargas Is.	4	Moderate	41	59	Mid-Late Feb.	B. Rushton	E. Arnet			B. Rushton - 1983-86;1994-95	2/17/95

Table C9: HERRING holding in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level	Use	Day		Timing	Source 1	Source 2	Source 3	Comments	Data Date	Map Date
					Start	End							
17	4	Fortune Channel (4	1	Sporadic, patchy	74	105	Late March -	D. Swift			Later and darker than other herring	D. Swift - 1985-90	3/17/95
18	4	Ritchie Bay	3	Moderate	41	59	Mid-Late Feb.	E. Arnet			Spawn and comm. fishery in bay as well.	E. Arnet - 1969-92	3/26/95
19	4	Morfee Is. - Dunlap Is.	5	Important	41	59	Mid-Late Feb.	E. Arnet	D. Swift		Nearby spawn and comm. fishery	E. Arnet - 1969-92	3/26/95
20	4	Dawley Pass	-9	Moderate	32	59	February	C. Jumbo			Lots of salmon in winter	C. Jumbo - lifelong resident	1/25/96

Table C10: HERRING spawning in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level	Frequen-cy	Magnit ude	Rec (1)	Width (2)	Int. (3)	Loc. (4)	Start (5)	End (6)	Timing (7)	Timing (8)	Timing (9)	Timing (10)	Dur. (11)	Comp-lete (12)	Source 1	Source 2	Comments	Date Date	Map Date
1	3	Outside Hotsprings C.	-9	Unknown	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Extend DFO areas	R. Sutherland - since 1984	1/25/96
2	3	N. of Hootla Kootla	-9	Unknown	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96
3	3	S.W. Flores Is.	-9	Frequent	Medium	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Ahousaht Band	R. Sutherland - since 1984	1/25/96
4	4	Whitesand Cove	-9	Reported	Medium	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Used branch to confirm spawning	R. Sutherland - since 1984	1/25/96
5	4	Matilda Inlet& outside McNeil Pen. (2 areas)	-9	Frequent	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Extended DFO area	R. Sutherland - since 1984	1/25/96
6	4	McKay Is.	-9	One year at least	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	1994 only year observed (also Nf)	R. Sutherland - since 1984	1/25/96
7	4	S. of Clifford Pt. (2 areas)	-9	Unknown	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Little sand beaches - 1993 (maybe more)	R. Sutherland - since 1984	1/25/96
8	4	Chetarpe	-9	Unknown	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Extended DFO area	R. Sutherland - since 1984	1/25/96
9	4	Vargas Is. (2 areas)	-9	Frequent	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Extend DFO areas	R. Sutherland - since 1984	1/25/96

1. Total number of spawn records overall years.
2. Average width of spawn in meters.
3. Average intensity of spawn on a scale of 1 (very light) to 9 (very heavy).
4. Number of different spawning locations.
5. Earliest date spawn recorded (Julian day).
6. Latest date spawn recorded (Julian day).
7. Average weighted spawning day (weighted by length of spawn).
8. Julian day of average weighted spawning day.
9. Average spawning date - Julian day.
10. Standard error of the mean weighted date.
11. Number of days over which spawning occurred.
12. Completedness of report.

Table C10: HERRING spawning in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level	Frequen-cy	Magnit ude	Rec (1)	Width (2)	Int. (3)	Loc. (4)	Start (5)	End (6)	Timing (7)	Timing (8)	Timing (9)	Timing (10)	Dur. (11)	Comp-lete (12)	Source 1	Source 2	Comments	Date Date	Map Date
10	4	Quait Bay	-9	Unknown	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Also Nf (Spawn on Bough)	R. Sutherland - since 1984	1/25/96
11	4	Welcome Is.	-9	Unknown	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Also Nf (Spawn on Bough)	R. Sutherland - since 1984	1/25/96
12	4	Mouth Cypre R.	-9	Unknown	Unknown	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	R. Sutherland	C. Jumbo	Join two DFO areas	R. Sutherland - since 1984	1/25/96
13	9	Ucluelet Harbour	1	Reported	Small	-9	-9	-9	-9	60	90	March	-9	-9	-9	-9	Uncertain	H. Touchie		Ucluelet Band - harvest Roe-on-kelp nearby (A.23)	H. Touchie - lifelong resident	1/18/96
241	4	Mosquito Hbr. & outside Flores/ Vargas	1	Frequent	Very Small	54	11	1.8	3	32	121	March 4	59	63	2.2	22	Complete	Hay et al - 1989; DFO survey maps	B. Rushton, E. Arnet	Spawning mainly in Mosquito Hbr.	Hay et al - 1938-86; Maps to	2/10/95
242	3	Hesquiat Hbr.	1	Frequent	Small	135	35	3.9	4	16	102	March 9	63	68	1.1	29	Complete	Hay et al - 1989; DFO survey maps	B. Rushton, E. Arnet	Presently no fishery in Hesquiat	Hay et al - 1938-86; Maps to	2/10/95
243	3	Sydney Inlet	2	Constant	Small	298	12	4.6	14	32	113	March 15	74	75	0.56	40	Complete	Hay et al - 1989; DFO survey maps	B. Rushton, E. Arnet		Hay et al - 1937-86; Maps to	2/10/95
244	4	Whitepine Cove	3	Constant	Medium	239	19	4.2	38	49	107	March 19	78	78	0.62	38	Complete	Hay et al - 1989; DFO survey maps	B. Rushton, E. Arnet		Hay et al - 1938-86; Maps to	2/10/95
245	4	Meares Island	4	Constant	Large	814	49	4.6	27	40	103	March 13	72	74	0.3	43	Uncertain	Hay et al - 1989; DFO survey maps	B. Rushton, E. Arnet	Main spawning area in Area 24	Hay et al - 1940-86; Maps to	2/10/95

1. Total number of spawn records overall years.
2. Average width of spawn in meters.
3. Average intensity of spawn on a scale of 1 (very light) to 9 (very heavy).
4. Number of different spawning locations.
5. Earliest date spawn recorded (Julian day).
6. Latest date spawn recorded (Julian day).
7. Average weighted spawning day (weighted by length of spawn).
8. Julian day of average weighted spawning day.
9. Average spawning date - Julian day.
10. Standard error of the mean weighted date.
11. Number of days over which spawning occurred.
12. Completedness of report.

Table C11: COMMERCIAL GROUNDFISH fisheries in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets*	Gear**	Use Level	Use	Day Start	Day End	Timing	Source 1	Source 2	Comments	Data Date	Map Date
1	3	Hesquiat Harbour	DO	Lo	3	2 boats	-9	-9	Observed in late spring	D. Palfrey		Boats from Hotsprings Cove	D. Palfrey - since 1981	3/16/95
2	3	Outside Clayoquot Sd. (4 areas)	LI, RO	Lo, HI, Tr/Lo	3	2-3 boats	1	365	Year-round	R. Sutherland	E. Frank	Ahousaht boats with commercial licences	R. Sutherland - since 1984	1/25/96
3	3	W. Side Sydney Inlet	RO - live	HI	1	1 boat	1	365	Dep. on market	R. Sutherland	E. Frank		R. Sutherland - since 1984	12/20/95
4	4	Outside Clayoquot Sd. (2 areas)	LI, RO	Lo, HI, Tr/Lo	3	2-3 boats	1	365	Year-round	R. Sutherland	E. Frank	Ahousaht boats with commercial licences	R. Sutherland - since 1984	1/25/96
5	4	Cleland Is. (2 areas)	LI, RO, RS	Lo, HI	3	2-3 boats	1	365	Year-round	R. Sutherland	E. Frank	Ahousaht boats with commercial licences	R. Sutherland - since 1984	1/25/96
6	4	Outside Surprise Rf.	LI, RO	Lo, HI	-9	Varies	1	365	Year-round	E. David	D. David	Tla-o-qui-aht Band; also food fish area	E. David - lifelong resident	1/19/96
7	4	Epper Pass	RO - live	HI	3	3 boats	1	365	Year-round	B. Spence		Market driven	B. Spence - since 1991	2/2/95
8	4	Cypress Bay/ Saranac Is. (2 polygons)	RO - live and fresh	HI	4	6 boats	244	424	Observed in late fall/winter	D. Swift		Late 1980's - not sure about now	D. Swift - 1985-90	3/17/95

*DO = dogfish; LI = lingcod; RO = rockfish, RS = red snapper

**Lo = longline; HI = handline; Tr/Lo = trawl

Table C11: COMMERCIAL GROUNDFISH fisheries in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets*	Gear**	Use Level	Use	Day Start	Day End	Timing	Source 1	Source 2	Comments	Data Date	Map Date
9	9	Off Flores Is.	LI, RO	Lo, HI, Tr/Lo	3	2-3 boats	1	365	Year-round	R. Sutherland	E. Frank	Ahousaht Band - also food fishery	R. Sutherland - since 1984	12/20/95

*DO = dogfish; LI = lingcod; RO = rockfish, RS = red snapper

**Lo = longline; HI = handline; Tr/Lo = trawl

Table C12: RECREATIONAL GROUNDFISH fisheries in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets*	Use Level	Use	Day Start	Day End	Timing	Source 1	Comments	Data Date	Map Date
1	3	Hayden Pass	LI, RO	1	.25 boat/day	1	365	Lingcod closure in winter	B. Spence	Mainly incidental catch while fishing for slamon	B. Spence - since 1991	2/2/95
2	4	Tsapee Narrows	LI, RO	1	.5 boat /day	1	365	Lingcod closure in winter	B. Spence	Mainly incidental catch while fishing for slamon	B. Spence - since 1991	2/2/95
3	4	Dawley Pass	LI, RO	1	.5 boat /day	1	365	Lingcod closure in winter	B. Spence	Mainly incidental catch while fishing for slamon	B. Spence - since 1991	2/2/95
4	4	Matlset Narrows	LI, RO	1	.5 boat /day	1	365	Lingcod closure in winter	B. Spence	Mainly incidental catch while fishing for slamon	B. Spence - since 1991	2/2/95
5	9	Off Flores Is. (2 polygons)	HA, LI, RO	1	Light	60	181	March - June	F. Crabbe	Same area as Native fisheries	F. Crabbe - 1987 - present	3/16/95
6	9	Off Portland Pt.	HA	1	Light	60	264	Spring/Summer	E. Arnet	Mainly incidental catch while fishing for slamon	E. Arnet - 1966-92	3/26/95

*LI = lingcod; RO = rockfish; HA = halibut

Table C13: ABORIGINAL GROUNDFISH fisheries in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Tar-gets*	Gear	Use Level	Day Start	Day End	Timing	Bands	Source 1	Source 2	Comments	Data Date	Map Date
1	3	Outside Clayoquot Sd. (2 polygons)	HA	HI, Lo, Tr	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank		R. Sutherland - 1984-present	12/20/95
2	3	Throughout area 24 (5 polygons)	LI, RO	HI	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank	Lingcod closed in winter months	R. Sutherland - 1984-present	12/20/95
3	3	W. side Sydney Inlet	RO	HI	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank	Also live rockfish (commercial)	R. Sutherland - 1984-present	12/20/95
4	3	Various spots inside Clayoquot	RO	HI	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank		R. Sutherland - 1984-present	12/20/95
5	3	Various locations in Clayoquot (3	RO, RS	HI	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank		R. Sutherland - 1984-present	12/20/95
6	4	Outside Clayoquot Sd. (4 polygons)	HA	HI, Lo, Tr	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank	Lingcod closed in winter months	R. Sutherland - 1984-present	12/20/95
7	4	Throughout area 24 (3 polygons)	LI, RO	HI	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank	Lingcod closed in winter months	R. Sutherland - 1984-present	12/20/95
8	4	Cleland Is. (2 polygons)	LI, RO, RS	HI	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank	Lingcod closed in winter months	R. Sutherland - 1984-present	12/20/95
9	4	S.W. of Lennard Is. (offshore)	HA	HI, Lo, Tr	-9	1	365	Year-round	Tla-o-qui-aht	E. David	D. David	Food fishery	E. David - life resident	1/19/96
10	4	SW of Surprise Reef	LI, RO	Lo	-9	1	365	Winter Closure	Tla-o-qui-aht	E. David	D. David	Food and commercial	E. David - life resident	1/19/96
11	4	Matlset Narrows	LI	HI	-9	105	320	Winter closure	Ahousaht	R. Sutherland	E. Frank	Closed Nov. 15 - Apr.15	R. Sutherland - 1984-present	12/20/95
12	4	E. Matlset Narrows	LI, RO	HI	-9	1	365	Year-round	Ahousaht	R. Sutherland	E.Frank	Food fishery	R. Sutherland - 1984-present	12/20/95
13	9	W. Flores Is. (2 polygons)	HA, LI, RO	HI, Lo, Tr	-9	1	121	Jan. - April	Ahousaht, Hesquiaht	F. Crabbe	C. Jumbo	Fresh fish for winter	F. Crabbe - 1987-present	3/10/95
14	9	Off Flores Is.	LI, RO	HI, Lo	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank	Lingcod closed in winter months	R. Sutherland - 1984-present	12/20/95

*HA = halibut; LI = lingcod; RO = rockfish; RS = red snapper

HI = handline; Lo = longline; Tr = trawl

Table C13: ABORIGINAL GROUNDFISH fisheries in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Tar-gets*	Gear	Use Level	Day Start	Day End	Timing	Bands	Source 1	Source 2	Comments	Data Date	Map Date
15	9	S. of Rafael Pt.	HA	HI, Lo, Tr	-9	1	365	Year-round	Ahousaht	R. Sutherland	E. Frank		R. Sutherland - 1984-present	12/20/95
16	9	Off Esowista Pen. (5 polygons)	HA	HI, Lo	-9	1	365	Year-round	Tla-o-qui-aht	E. David	D. David	Food fishery	E. David - life resident	1/19/96
17	9	Wickaninnish B.	HA	HI, Lo	-9	320	74	Winter	Ucluelet	H. Touchie	L. Baird Sr.	Food fishery	H. Touchie life resident	1/18/96
18	9	NW of Amphitrite Pt.	LI, RO, RS	HI, Lo	-9	1	365	All year except	Ucluelet	H. Touchie	L. Baird Sr.	Lingcod closure Nov. - Apr	H. Touchie life resident	1/18/96

*HA = halibut; LI = lingcod; RO = rockfish; RS = red snapper

HI = handline; Lo = longline; Tr = trawl

Table C14: OTHER FINFISH populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Gear	Use Level			Use	Day		Timing	Source 1	Source 2	Comments	Data Date	Map Date
					Comm	Recr	Ab		Start	End						
1	3	Yates Pt.	Surf Perch	GN	1	0	-9	One boat	80	172	Spring	B. Rushton		Sold to San Francisco market	B. Rushton - 1985-90; 94 - present	2/17/95
2	4	Esowista Pen.(3 areas)	Surf Perch	Shore casting	0	1	0	Few - twelve or less	80	243	Spring /Summer	B. Rushton		Points along outer shore	B. Rushton - 1985-90; 94 - present	2/17/95
3	4	Wilf Rock area	Surf Perch	SN	-9	0	-9	Minor	80	243	Spring /Summer	D. Swift		Not during herring or salmon seasons	D. Swift - 1985-90	2/17/95
4	3/4	Sheltered areas in Area 24 (20 polygons)	Anchovy	-	0	0	0	Present	80	264	Spring /Summer	E. Arnet	D. Swift	Areas marked are places of concentration	E. Arnet -1966-92	1/29/95
5	4	Lemmens Inlet (3 areas)	Anchovy	SN	1	0	0	Bait fishery	74	264	Spring /Summer	D. Swift		Not during herring (Feb15 - Apr.15)	D. Swift - 1985-90	1/29/95

Table C15: ABALONE populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level			Use	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
			Comm	Ab	Rec		Start	End	Start	End							
1	6	W. Side Bartlett Is.	-9	0	0	Occsional	1	365	-9	-9	Unknown	Dive	B. Spence		Known poaching spot	B. Spence - Since 1991	2/2/95
2	6	N. Matilda In.	-9	0	0	Occsional	1	365	-9	-9	Unknown	Dive	B. Spence		Known poaching spot	B. Spence - since 1991	2/2/95
3	10	Gowland Rks.	-9	0	0	Occsional	1	365	-9	-9	Unknown	Dive	B. Spence		Known poaching spot	B.Spence - since 1991	2/2/95
4	5	S. of Rafael Pt.	-9	0	0	Occsional	1	365	-9	-9	Unknown	Dive	B. Rushton		Known poaching spot	B. Rushton - 1983-85; 1994-95	2/2/95
5	6	Off Catface	-9	0	0	Historically productive	-9	-9	0	0	Unknown	N/A	B. Rushton	R. Palm	Was very productive 15 years ago	B. Rushton - 1983-85; 1994-95	3/16/95
6	6	N. Vargas Is.	-9	-9	-9	Historically productive	-9	-9	0	0	Unknown	N/A	B. Rushton	R. Palm	Was very productive 15 years ago	B. Rushton - 1983-85; 1994-95	3/16/95
7	6	La Croix Group	-9	-9	-9	Historically productive	-9	-9	0	0	Unknown	N/A	B. Rushton	R. Palm	Good habitat - not very many now	B. Rushton - 1983-85; 1994-95	3/16/95
8	5	Lower Sydney In.	-9	-9	-9	Possible poaching	-9	-9	0	0	Unknown	N/A	D. Swift		Areas of current good (mainly east side)	D. Swift - 1985-90	3/17/95
9	6	Felice Is.	-9	-9	-9	Historically productive	-9	-9	0	0	Unknown	N/A	R.Palm		Was very productive	R. Palm - 1969-present	3/16/95
10	6	Islets off N. Vargas Is.	-9	-9	-9	Present	-9	-9	0	0	Unknown	N/A	E. Arnet		Aware of beds	E. Arnet - 1966-92	1/29/95
11	5	Hayden Pass	0	0	0	Present	1	365	0	0	Unknown	N/A	R. Sutherland		Observed	R. Sutherland - since 1984	1/19/96

Table C16: CHITON populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level			Use	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
			Comm	Ab	Rec		Start	End	Start	End							
1	6	Various locations in Clayoquot Sd.	0	-9	0	Varies	1	365	0	0	Year-round	Hand	R. Sutherland	C. Jumbo	Ahousaht Band	R. Sutherland - since 1984	1/25/96
2	6	Off Esowista Pen. (5 areas)	0	-9	0	Varies	1	365	0	0	Year-round	Hand	E. David	D. David	Tla-o-qui-aht Band	E. David - lifelong resident	1/19/96
3	10	Ucluth Pen.	0	-9	0	Varies	1	365	0	0	Year-round	Hand	H. Touchie	L. Baird Sr.	Ucluelet Band	H. Touchie - lifelong resident	1/18/96

Table C17 : INTERTIDAL CLAM populations in Area 24 - Clayoquot Sound

Poly-gon	Chart No.	Location	Stat. Area	Sub-Area	Targets*	Use Level Comm	Use Level Ab	Use Level Rec	Use Level	Source 1	Source 2	Comments	Comments 2	Data Date	Map Date
1	5	Atleo R. area	24	14	MN, LN	5	4	-9	5	B. Rushton		Very important clam beach		B.Rushton - 1983-86; 1994-95	2/17/95
2	6	Mosquito Hbr.	24	10	MN, LN	5	-9	-9	5	B. Rushton		Very important clam beach		B.Rushton - 1983-86; 1994-95	2/17/95
3	6	Whitepine C. (2 areas)	24	5	MN, LN	5	5	-9	5	B. Rushton	R. Sutherland	Very important clam beach	Protected for Native use (LN, MN)	B.Rushton - 1983-86; 1994-95	2/17/95
4	10	Lovekin Rk.	124		RZ	0	0	1	1	E. Arnet		Remnant population - overharvested	Has been used as a testing site for PSP	E. Arnet - 1966-1992	1/29/95
5	6	Cox Bay	24	8	RZ	0	0	1	1	E. Arnet	B. Rushton	Remnant population - overharvested	Possible sport harvest	B. Rushton - 1983-86;1994-95	2/17/95
6	6	McKenzie Beach	24	8	RZ	0	0	1	1	B. Rushton		Remnant population - overharvested	Possible sport harvest	B. Rushton - 1983-86;1994-95	2/17/95
7	10	Schooner C. - Long Beach	124		RZ	0	0	1	1	B. Rushton		Remnant population - overharvested	Possible sport harvest	B. Rushton - 1983-86;1994-95	2/17/95
8	5	Whiskey Jenny Beach	24	3	BU	0	5	1	5	D.Swift	R. Sutherland	PSP common	Protected for Native use	D.Swift - 1985-90	3/17/95
9	5	Dixon Bay	24	3	MN, LN	2	2	1	3	D.Swift	R. Sutherland	Ahousaht Band (manila only)		D.Swift - 1985-90	3/17/95
10	5	Pretty Girl Cove	24	2	MN, LN	4	2	2	4	D. Swift				D.Swift - 1985-90	3/17/95
11	5	Sulphur Pass	24	14	MN, LN, BU	4	2	2	4	D. Swift	R. Sutherland	Ahousaht Band		D.Swift - 1985-90	3/17/95
12	6	Cypress Bay (2 areas)	24	7	MN, LN	3	1	1	3	D. Swift		Includes islands off bay	Small beaches; quick to deplete	D.Swift - 1985-90	3/17/95
13	6	Beaches in Fortune Channel (3 areas)	24	10	MN, LN	5	5	5	5	D. Swift	R. Sutherland	All little beaches have clams		D.Swift - 1985-90	3/17/95
14	6	Beaches in Lemmens Inlet	24	9	MN, LN	5	5	5	5	D. Swift		One of the most productive areas in Area 24	Horse clam area as well	D.Swift - 1985-90	3/17/95
15	5	Rae Basin (Hesquiaht Hbr.)	24	1	MN, LN	-9	4	0	4	E. Arnet		Negotiating for Native use only	Very productive but recently hard hit	E. Arnet - 1969-92	3/26/95

*MN = manilla; LN = littleneck; RZ = razor; BU = butter; HC = horse clam; CC = cockle

Table C17 : INTERTIDAL CLAM populations in Area 24 - Clayoquot Sound

Poly-gon	Chart No.	Location	Stat. Area	Sub-Area	Targets*	Use Level Comm	Use Level Ab	Use Level Rec	Use Level	Source 1	Source 2	Comments	Comments 2	Data Date	Map Date
16	5	North of Atleo R.	24	14	MN, LN, BU	5	5	-9	5	E. Arnet	R. Sutherland	Native/commercial conflict (Ahousaht Band)	Productive	E. Arnet - 1969-92	3/26/95
17	5	Ross Passage (2 areas)	24	4	MN, LN	3	1	1	3	E. Arnet	R. Sutherland	Small area	Ahousaht Band	E. Arnet - 1969-92	3/26/95
18	5	Bawden Bay	24	4	MN, LN, BU	3	3	1	3	R. Sutherland	D. Lightly	Three little beaches	Protected for Native use	R. Sutherland - since 1984	3/26/95
19	5	Ahousaht Band Territory (15 polygons)	24	2 - 6; 13 &14	MN	-9	3	-9	-9	R. Sutherland	E. Frank	Steady sources of manila clams	Whitepine C. protected for Native use.	R. Sutherland - since 1984	12/20/95
20	5	W. of Hayden Pass	24	2 - 6; 13 &14	MN, LN, BU	-9	3	-9	-9	R. Sutherland	E. Frank			R. Sutherland - since 1984	12/20/95
21	5	Megin Bay	24	13	LN, BU	-9	3	-9	-9	R. Sutherland	E. Frank			R. Sutherland - since 1984	12/20/95
22	6	Kutcous Pt.	24	6	BU	-9	2	-9	-9	R. Sutherland	E. Frank			R. Sutherland - since 1984	12/20/95
23	6	Ahousaht Band Territory (4 polygons)	24	5 & 10	MN	-9	3	-9	-9	R. Sutherland	E. Frank			R. Sutherland - since 1984	12/20/95
24	6	Ahousaht Band Territory (7 polygons)	24	7, 8 & 10	BU	-9	3	-9	-9	R. Sutherland	E. Frank			R. Sutherland - since 1984	12/20/95
25	6	Ahousaht Band Territory (2 polygons)	24	7, 8, & 10	MN, BU	-9	3	-9	-9	R. Sutherland	E. Frank			R. Sutherland - since 1984	12/20/95
26	6	E. Side Fortune Ch.	24	10	MN, CC	-9	3	-9	-9	R. Sutherland	E. Frank			R. Sutherland - since 1984	12/20/95
27	6	E. Side Warn Bay	24	10	BU	-9	3	-9	-9	R. Sutherland	E. Frank	Salmon farm offshore		R. Sutherland - since 1984	12/20/95
28	10	Ucluelet Harbour (4 areas)	23	11	BU	0	2	0	1	H. Touchie	L. Baird	Contaminated - would like harbour cleaned up		H. Touchie - lifelong resident	1/18/96
29	10	Ucluelet Harbour (5 areas)	23	11	MN	0	2	0	1	H. Touchie	L. Baird	Contaminated - would like harbour cleaned up		H. Touchie - lifelong resident	1/18/96
30	6	Elbow Bk. (2 areas)	24	6	MN, LN, BU, HC	0	-9	0	-9	R. Sutherland	C. Jumbo	MN, LN, BU depleted, mainly horse clams		R. Sutherland - since 1984	1/25/96

*MN = manilla; LN = littleneck; RZ = razor; BU = butter; HC = horse clam; CC = cockle

Table C17 : INTERTIDAL CLAM populations in Area 24 - Clayoquot Sound

Poly-gon	Chart No.	Location	Stat. Area	Sub-Area	Targets*	Use Level Comm	Use Level Ab	Use Level Rec	Use Level	Source 1	Source 2	Comments	Comments 2	Data Date	Map Date
31	6	Off Cypre R.	24	7	BU, HC	0	-9	0	-9	R. Sutherland	C. Jumbo	Mainly BU		R. Sutherland - since 1984	1/25/96
32	6	Cypress Bay (2 areas)	24	7	BU	0	-9	0	-9	R. Sutherland	C. Jumbo	Was good for butter clams, now a fish farm		R. Sutherland - since 1984	1/25/96
33	10	Tofino - Stubbs Is.	24	8	all	0	0	0	0	DFO Clam Mgmt. Plan		Contamination closure		1996	1/25/96

*MN = manilla; LN = littleneck; RZ = razor; BU = butter; HC = horse clam; CC = cockle

Table C18: CRAB populations in Area 24 - Clayoquot Sound

				Use Levels				Day		Peak								
Poly-gon	Chart	Location	Targets	Cm	Ab	Rec	Use Level	Start	End	Start	End	Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
1	10	Long Beach	Dungeness	5	0	0	400 traps est.	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence	Only larger boats in winter	E.Arnet - 1966-1992	1/29/95
2	6	Cox B. - Templar Ch.	Dungeness	4	0	0	300 traps est.	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
3	6	Father Charles Ch. (2 polygons)	Dungeness	3	0	0	150 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence	2 Polygons	E.Arnet - 1966-1992	1/29/95
4	6	Betw. Wickaninnish Is. and Stubbs Is.	Dungeness	2	0	0	75 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
5	6	Van Neville Ch.	Dungeness	2	0	0	60 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
6	6	Heynen Ch.	Dungeness	2	0	0	75 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
7	6	Lemmens In.	Dungeness	5	0	0	500 traps max	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
8	6	Stockham Is. - Morpheus Is	Dungeness	4	0	0	100-150 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
9	6	Browning Passage	Dungeness	4	0	0	250 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
10	6	Tsapee Narrows	Dungeness	2	0	0	50 - 60 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
11	6	Indian Is.	Dungeness	5	0	0	300 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
12	6	Grice Bay (S. end Indian Is.)	Dungeness	3	0	0	100 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
13	6	Tofino Hbr.	Dungeness	2	0	3	20 - 30 traps	1	365	152	274	Summer	Trap	E. Arnet	B.Spence	Sports fishers leave 1 - 2 traps in while fishing	E.Arnet - 1966-1992	1/29/95
14	6	Dawley P. - Baxter Is.	Dungeness	2	0	0	30 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95

Table C18: CRAB populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use Levels			Use Level	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
				Cm	Ab	Rec		Start	End	Start	End							
15	6	Fortune Ch.	Dungeness	3	0	0	100 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	D. Swift	E. Arnet suggested south portion, D. Swift to Warn Bay	E.Arnet - 1966-1992	1/29/95
16	6	Cypress B.	Dungeness	2	0	0	50 -70 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
17	6	Elbow Bk. - Maurus Ch.	Dungeness	4	0	0	150 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence	Crowded with traps	E.Arnet - 1966-1992	1/29/95
18	10	Calmus Passage	Dungeness	3	0	0	80 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
19	10	Brabant Ch.	Dungeness	4	0	0	100+ traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence	Occasionally heavy use	E.Arnet - 1966-1992	1/29/95
20	10	Monks Is. - Tibbs Is.	Dungeness	4	0	0	100 - 150 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
21	10	Kutcous - Clifford Pt.	Dungeness	5	0	0	300-400 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
22	10	Ahous B.	Dungeness	3	0	0	100 traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
23	5	Hesquiat Hbr (2 polygons)	Dungeness	5	0	0	300+ traps	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
24	5	Atleo R. mouth	Dungeness	1	0	0	very little	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
25	5	Megin R. mouth	Dungeness	1	0	0	very little	1	365	91	320	Spring-Fall	Trap	E. Arnet	B.Spence		E.Arnet - 1966-1992	1/29/95
26	6	Kennedy R. mouth	Dungeness	1	0	0	10 traps	1	365	91	320	Spring-Fall	Trap	B.Spence			B.Spence - 1991-1995	2/2/95
27	10	Ucluelet Harbour	Dungeness	0	3	2	50 (band); 40-100 (recr.)	1	365	91	320	Spring-Fall	Trap	H. Touchie	L. Baird	Don't fish when soft shell	H. Touchie - lifelong	1/18/96
28	5	Matilda Inlet	Dungeness	0	2	0	15 - 20 (band)	1	365	91	320	Spring-Fall	Trap	R. Sutherland		A few individuals set traps in bay	R. Sutherland - since	1/19/96

Table C19: GEODUCK AND HORSE CLAM populations in Area 24 - Clayoquot Sound

Poly-gon	Location	Chart	Use Level			Use	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
			Comm	Ab	Rec		Start	End	Start	End							
1	Templar Channel	6	3	0	0		1	365	-9	-9		Dive	E. Arnet			E. Arnet - 1966-92	1/29/95
2	Father Charles Ch. (2 polygons)	6	3	0	0		1	365	-9	-9		Dive	E. Arnet	D. Swift		E. Arnet - 1966-92	1/29/95
3	Maurus Ch. - Morfee Is.	6	3	0	0		1	365	0	0		Dive	E. Arnet			E. Arnet - 1966-92	1/29/95
4	Yellow Bank	6	3	0	0	Geoducks and Horse Clams	1	365	0	0		Dive	E. Arnet	D. Swift		E. Arnet - 1966-92	1/29/95
5	W. of Morfee Is.	6	3	0	0		1	365	0	0		Dive	E. Arnet			E. Arnet - 1966-92	1/29/95
6	Coomes Bank	6	3	0	0		1	365	0	0		Dive	E. Arnet			E. Arnet - 1966-92	1/29/95
7	Brabant Ch.	6	3	0	0		1	365	0	0		Dive	E. Arnet	D. Swift		E. Arnet - 1966-92	1/29/95
8	N. Bartlett Is. - Shot Is.	6	3	0	0		1	365	0	0		Dive	E. Arnet			E. Arnet - 1966-92	1/29/95
9	Kutcous Pt. - Clifford Pt.	6	5	0	0	Very heavy use	1	365	0	0		Dive	E. Arnet	B. Rushton	Area extended by B. Rushton	E. Arnet - 1966-92	1/29/95
10	E. Blunden Is. - Ahous B. (2 areas)	6	0	0	0	Formerly very productive	0	0	0	0		Dive	E. Arnet		Whale sanctuary - closed to harvest	E. Arnet - 1966-92	1/29/95
11	Ritchie Bay	6	0	0	0	Research/ Reserve	1	365	0	0	Study area only		E. Arnet		Closed to harvest	E. Arnet - 1966-92	1/29/95
12	E. Dunlap Is.	6	0	0	0	Research/ Reserve	1	365	0	0	Study area only		E. Arnet		Closed to harvest	E. Arnet - 1966-92	1/29/95
13	Elbow Bank	6	5	0	0	Heavy - Geoduck and Horse Clam	1	365	-9	-9	Subject to opening	Dive	B. Rushton	D. Swift	Also a crab harvest area	B. Rushton - 1983-86; 1994-95	2/17/95
14	Matlset Narrows	6	-9	0	0	Experimental fishery	1	365	-9	-9	Subject to opening	Dive	D.Swift		Used to have openings	D. Swift - 1985-90	3/17/95
15	N.E. of Morfee Is. (2 areas)	6	5	0	0	Productive area - Horse Clams	1	365	-9	-9	Subject to opening	Dive	D. Swift		Commercial use only	D. Swift - 1985-90	3/17/95

Table C19: GEODUCK AND HORSE CLAM populations in Area 24 - Clayoquot Sound

Poly-gon	Location	Chart	Use Level			Use	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
			Comm	Ab	Rec		Start	End	Start	End							
16	Lemmens Inlet	6	-9	0	0	Geoducks and Horse Clams	1	365	-9	-9	Subject to opening	Dive	D. Swift (map)			D. Swift - 1985-90	3/17/95
17	Lower Sydney Inlet (2 areas)	5	-9	0	0	Geoducks	1	365	-9	-9	Presence noted		D. Swift (map)			D. Swift - 1985-90	3/17/95
18	Hesquiaht Hbr.	5	-9	0	0	Geoducks	0	0	0	0	Presence noted		D. Swift (map)			D. Swift - 1985-90	3/17/95
19	W. Vargas Is.	6	-9	0	0	Geoducks	0	0	0	0	Presence noted		D. Swift (map)			D. Swift - 1985-90	3/17/95

Table C20: GOOSENECK BARNACLE populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level			Use	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
			Comm	Ab	Rec		Start	End	Start	End							
1	6	Tonquin Is.	-9	0	0	Sporadic, market-driven	1	365	0	0	Winter, due to markets	Hand (knife)	B. Spence			B. Spence - 1991-present	2/2/95
2	6	Lennard Is.	-9	0	0	Sporadic, market-driven	1	365	0	0	Winter, due to markets	Hand (knife)	B. Spence			B. Spence - 1991-present	2/2/95
3	10	Gowland Rks.	0	0	0	Present	1	365	0	0	Winter, due to markets	Hand (knife)	B. Spence		Park - Closed Area	B. Spence - 1991-present	2/2/95
4	6	Wilf Rk.	-9	0	0	Sporadic, market-driven	1	365	0	0	Winter, due to markets	Hand (knife)	B. Spence			B. Spence - 1991-present	2/2/95
5	6	Cleland Is.	0	0	0	Present	1	365	0	0	Winter, due to markets	Hand (knife)	B. Spence		Closed area (reserve)	B. Spence - 1991-present	2/2/95
6	6	Sea Otter Rks.	-9	0	0	Sporadic, market-driven	1	365	0	0	Winter, due to markets	Hand (knife)	B.Spence			B. Spence - 1991-present	2/2/95
7	6	Blunden Is.	-9	0	0	Intensity unknown	1	365	0	0	Winter, due to markets	Hand (knife)	D. Swift		Known harvest area	D. Swift - 1985-1990	3/17/95
8	6	Off Esowista Pen. (6 areas)	-9	-9	0	Tla-o-qui-aht Band - Cf and Nf	1	365	0	0	Year-round	Hand (knife)	E. David	D. David	6 commercial licences	E. David - lifelong resident	1/19/96
9	6	Various locations in outer Clayoquot Sd.	0	-9	0	Ahousaht Band - Nf	1	365	0	0	Year-round	Hand (knife)	R. Sutherland	C. Jumbo	Monks It. and outer areas	R. Sutherland - since 1984	1/25/96
10	10	Ucluth Pen.	0	-9	0	Ucluelet Band - Nf	1	365	0	0	Year-round	Hand (knife)	H. Touchie	L. Baird Sr.	Same area as urchins	H. Touchie - lifelong resident	1/19/96

Table C21 : MUSSEL populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level			Use Level	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
			Comm	Ab	Rec		Start	End	Start	End							
1	6	Various (outside Vargas Is. area)	0	-9	0	Ahousaht Band	1	365	0	0	Year-round	Hand	R. Sutherland	C. Jumbo	Also eat barnacles attached to mussels	R. Sutherland - since 1984	1/25/96
2	6	Off Esowista Pen.	0	-9	0	Tla-o-qui-aht Band	1	365	0	0	Year-round	Hand	E. David	D. David	Same areas as urchins	E. David - lifelong resident	1/19/96
3	10	Ucluth Peninsula	0	-9	0	Ucluelet Band	1	365	0	0	Year-round	Hand	H. Touchie	L. Baird Sr.	Same areas as urchins	H. Touchie - lifelong resident	1/18/96

Table C22 : OCTOPUS populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level			Use	Day		Peak		Timing	Gear	Source 1	Source 2	Source 3	Comments	Data Date	Map Date
			Comm	Ab	Rec		Start	End	Start	End								
1	10	E. and N. Vargas Is.	-9	0	0	Present	1	365	-9	-9	Year-round	Dive	R. Palm			Area supports concentrations high enough for commercial harvest	R. Palm - 1969-95	3/16/95
2	6	Wickaninnish to Beck Is. (3 areas)	0	-9	0	Food fishery	1	365	-9	-9	Year-round	Handline	E. David	D. David		Fish at low tide	E. David - lifelong resident	1/19/96
3	6	W. Vargas Is. - Clifford Pt. (4 areas)	0	-9	0	Food fishery	1	365	-9	-9	Year-round	Poles, spear	R. Sutherland	C. Jumbo		Fish at low tide	R. Sutherland - since 1984	1/25/96

Table C23: OYSTER populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Stat. Area	Sub-Area	Targets	Use Level Comm	Use Level Ab	Use Level Rec	Use Level	Source 1	Source 2	Comments	Data Date	Map Date
1	5	Young Bay	24	2	Japanese	5	3	1	4	D. Swift	R. Sutherland	Lease	D.Swift - 1985-90	3/17/95
2	5	Pretty Girl C.	24	2	Japanese	4	3	1	2	D. Swift	R. Sutherland	Hard hit by culture operation	D.Swift - 1985-90	3/17/95
3	5	Hootla Kootla	24	2	Japanese and wild	0	0	2	1	D. Swift		Heavy pressure from tourists	D.Swift - 1985-90	3/17/95
4	5	Stewardson Inlet	24	2	Japanese	0	0	2	1	D. Swift		Tourists	D.Swift - 1985-90	3/17/95
5	6	Morpheus Is.	24	9	Japanese	0	0	4	3	D. Swift		Close to Tofino	D.Swift - 1985-90	3/17/95
6	5	Upper Sydney Inlet	24	2	Japanese	0	0	-9	-9	E. Arnet		Planted many years ago and spread	E. Arnet - 1969-92	3/26/95
7	6	Lemmens Inlet (5 locations)	24	9	Japanese	5	0	0	4	E. Arnet		All suspended culture	E. Arnet - 1969-92	3/26/95
8	6	Browning Pass	24	9	Japanese	0	0	-9	-9	E. Arnet	D. Palfrey	Scattered	E. Arnet - 1969-92	3/26/95
9	6	Outside Mosquito Hbr.	24	10	Japanese	-9	0	-9	-9	E. Arnet		Cultivated on beach	E. Arnet - 1969-92	3/26/95
10	5	Holmes Inlet	24	2	Japanese	0	4	0	2	R. Sutherland	E. Frank	Ahousaht Band	R. Sutherland - since 1984	12/20/95
11	5	Bottleneck Cove	24	2	Japanese	0	3	0	2	R. Sutherland	E. Frank	Ahousaht Band	R. Sutherland - since 1984	12/20/95
12	5	Opposite Atleo R. (3 areas)	24	14	Japanese	0	3	0	2	R. Sutherland	E. Frank	Ahousaht Band	R. Sutherland - since 1984	12/20/95
13	6	Anderson Bay	24	4	Japanese	0	3	0	0	R. Sutherland	E. Frank	Ahousaht Band	R. Sutherland - since 1984	12/20/95
14	6	North of Matilda Inlet	24	4	Japanese	0	3	0	0	R. Sutherland	E. Frank	Ahousaht Band	R. Sutherland - since 1984	12/20/95
15	6	Outer Mosquito Hbr.	24	10	Japanese	0	3	0	0	R. Sutherland	E. Frank	Ahousaht Band	R. Sutherland - since 1984	12/20/95

Table C24: SCALLOP populations in Area 24 - Clayoquot Sound

				Use Level				Day		Peak								
Poly-gon	Chart	Location	Tar-gets	Comm	Ab	Rec	Use	Start	End	Start	End	Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
1	6	Cypress Bay	Purple-Hinge Rock	0	0	-9	Sport only - not sure of intensity	1	365	-9	-9	Year-round	Dive	D. Swift		Probably occurs in rocky areas throughout Area 24	D. Swift - 1985-90	3/17/95
2	6	Islets off N.Vargas Is. (5 areas)	Purple-Hinge Rock	0	0	-9	Has observed recreation al harvest	1	365	-9	-9	Year-round	Dive	E. Arnet		Same areas as abalone	E. Arnet - 1966-92	1/29/95
3	5	Hayden Pass	Purple-Hinge Rock	0	-9	0		1	365	-9	-9	Year-round	Dive	R. Sutherland	E. Frank		R. Sutherland - since 1984	12/21/95

Table C25: SEA CUCUMBER populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Use Level			Use	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
			Comm	Ab	Rec		Start	End	Start	End							
1	6	N.E. Vargas Is.	-9	0	0	<20 boats; usually 2 days/year	1	365	274	424	Fall/Winter	Dive	B. Spence		Managed by quota	B. Spence - Since 1991	2/2/95
2	6	Opp. Dunlap Is.	-9	0	0	<20 boats; usually 2 days/year	1	365	274	424	Fall/Winter	Dive	B. Spence		Managed by quota	B. Spence - Since 1991	2/2/95
3	6	N. Dunlap Is.	-9	0	0	<20 boats; usually 2 days/year	1	365	274	424	Fall/Winter	Dive	B. Spence		Managed by quota	B. Spence - Since 1991	2/2/95
4	6	Yellow Bank	-9	0	0	<20 boats; usually 2 days/year	1	365	274	424	Fall/Winter	Dive	B. Spence		Managed by quota	B. Spence - Since 1991	2/2/95
5	6	N. Shore Meares Is.	-9	0	0	<20 boats; usually 2 days/year	1	365	274	424	Fall/Winter	Dive	B. Spence		Managed by quota	B. Spence - Since 1991	2/2/95
6	6	Fortune Ch. (2 areas)	-9	0	0	<20 boats; usually 2 days/year	1	365	274	424	Fall/Winter	Dive	B. Spence		Managed by quota	B. Spence - Since 1991	2/2/95
7	6	Cypress Bay	-9	0	0	<20 boats; usually 2 days/year	1	365	274	424	Fall/Winter	Dive	D. Swift		Managed by quota	D. Swift - 1985-90	3/17/95
8	5	Steamer Cove	-9	0	0	Probably some harvest.	1	365	274	424	Fall/Winter	Dive	B. Rushton		Managed by quota	B. Rushton - 1983-86; 1994-95	2/17/95

Table C26: SEA URCHIN populations in Area 24 - Clayoquot Sound

				Use Level				Day		Peak								
Poly-gon	Location	Chart	Tar-gets	Comm	Ab	Rec	Use Level	Start	End	Start	End	Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
1	W. Shore Flores Is.	5	Red	-9	0	0	8-10 boats	1	365	274	424		Dive	E. Arnet			E. Arnet - 1966-1992	1/29/95
2	Opp. Shelter In. (Starling Pt.)	5	Red	-9	0	0	8-10 boats	1	365	274	424		Dive	E. Arnet			E. Arnet - 1966-1992	1/29/95
3	Kutcous Pt. (2 areas)	5	Red	-9	0	0	8-10 boats	1	365	274	424		Dive	E. Arnet			E. Arnet - 1966-1992	1/29/95
4	Epper Pass	6	Red	-9	0	0	8-10 boats	1	365	274	424		Dive	E. Arnet			E. Arnet - 1966-1992	1/29/95
5	Templar Ch.	6	Red	-9	0	0	8-10 boats	1	365	274	424		Dive	E. Arnet			E. Arnet - 1966-1992	1/29/95
6	Moser Pt.	6	Red	-9	0	0	Study Area	1	365	274	424		Dive	E. Arnet		Within research area	E. Arnet - 1966-1992	1/29/95
7	McIntosh Bay/N.End Vargas Is.	6	Red	-9	0	0	8-10 boats	1	365	274	424		Dive	E. Arnet	R. Palm	Area specified by E.A. extended by R.P.	E. Arnet - 1966-1992	1/29/95
8	Morfee Is.	6	Red	-9	0	0	8-10 boats	1	365	274	424		Dive	E. Arnet			E. Arnet - 1966-1992	1/29/95
9	Barney Rks.	5	Red and Green	-9	-9	0	Native Allocation	1	365	-9	-9			Urchin Management Plan			1996	2/14/95
10	Hot Springs Cove	5	Red and Green	-9	-9	0	Native Allocation	1	365	-9	-9			Urchin Management Plan			1996	2/14/95
11	Cypress Bay	6	Red	5	-9	-9	Very productive	1	365	274	424	Subject to openings	Dive	D. Swift		Rocky areas throughout Bay	D. Swift - 1985-90	3/17/95
12	Schindler Pt.	6	Red	5	0	0	Important harvest site	1	365	274	424	Subject to openings	Dive	R. Palm		Also good octopus site	R. Palm - 1969-95	3/16/95
13	Outside Flores Is.	5	Red	-9	0	0	Was Important in late '80's	1	365	274	424		Dive	D. Swift		Had an opening during late summer	D. Swift - 1985-90	3/17/95
14	N.W. of Barney Rock	5	Unknow	-9	3	0	Seen commercial divers	1	365	274	-9		Dive	F. Crabbe		Ahousaht Band	F. Crabbe - 1987-92	3/14/95
15	LaCroix Group and other reefs	6	Mixed	5	0	0	Important areas	1	365	274	424	No information	Dive	R. Palm		Tend to be shortspine (green, purple)	R. Palm - 1969-95	3/16/95

Table C26: SEA URCHIN populations in Area 24 - Clayoquot Sound

Poly-gon	Location	Chart	Tar-gets	Use Level			Use Level	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
				Comm	Ab	Rec		Start	End	Start	End							
16	Cleland Is.	6	Mostly green/ purple	0	0	0	Ecological Reserve	0	0	0	0	No harvest	N/A	R. Palm		Good urchin spot	R. Palm - 1969-95	3/16/95
17	Barney Rocks	5	Red	-9	-9	0	Ahousaht Band	1	365	0	0		Dive	R. Sutherland		Food Fishery	R. Sutherland - since 1984	12/20/95
18	E. Openit Peninsula	5	Red	-9	-9	0	Ahousaht Band	1	365	0	0		Dive	E. Arnet	R. Sutherland	Food Fishery	E. Arnet - 1966-1992	1/29/95
19	Hayden Pass (2 areas)	5	Red	0	-9	0	Ahousaht Band	1	365	0	0		Dive	R. Sutherland	E. Frank	Food Fishery	R. Sutherland - since 1984	12/20/95
20	Bawden Pt. & Clifford Pt. (2 areas)	6	Red	0	-9	0	Ahousaht Band	1	365	0	0		Dive	DFO Management Plan		Food Fishery	R. Sutherland - since 1984	12/20/95
21	Monks Is. - Chetarpe (3 areas)	6	Red	0	-9	0	Ahousaht Band	1	365	0	0		Dive	DFO Management Plan		Food Fishery	R. Sutherland - since 1984	12/20/95
22	Russell to Brabant Channels (5 areas)	6	Red	0	-9	0	Ahousaht Band	1	365	0	0		Dive	DFO Management Plan		Food Fishery	R. Sutherland - since 1984	12/20/95
23	Blunden Is.	6	Red	5	-9	0	Ahousaht Band	1	365	274	424		Dive	R. Palm	R. Sutherland	Tend to be shortspine (green, purple)	R. Palm - 1969 - 1995	3/16/95
24	S. Vargas Is. (2 areas)	6	Red	0	-9	0	Ahousaht Band	1	365	0	0		Dive	R. Sutherland	E. Frank	Some overlap with commercial - 15	R. Sutherland - since 1984	12/20/95
25	N.W. of Saranac Is.	6	Red	0	-9	0	Ahousaht Band	1	365	0	0		Dive	R. Sutherland	E. Frank		R. Sutherland - since 1984	12/20/95
26	N.W. side Vargas Is.	6	Red	0	-9	0	Ahousaht Band	1	365	-9	-9		Dive and long poles	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96
27	N.W. Ahous Bay	6	Red	0	-9	0	Ahousaht Band	1	365	-9	-9		Dive and long poles	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96
28	Cleland Is.	6	Red	0	-9	0	Ahousaht Band	1	365	-9	-9		Dive and long poles	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96
29	Gerrard Gp. and S. Flores Is. (4 areas)	5	Red and Purple	0	-9	0	Ahousaht Band	1	365	-9	-9		Dive	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96
30	Siwash Cove	6	Purple	0	-9	0	Ahousaht Band	1	365	-9	-9		Dive	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96

Table C26: SEA URCHIN populations in Area 24 - Clayoquot Sound

				Use Level				Day		Peak								
Poly-gon	Location	Chart	Tar-gets	Comm	Ab	Rec	Use Level	Start	End	Start	End	Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
31	N. McNeil Pen. to S. McKay Is. (2 areas)	5	Red and Green	0	-9	0	Ahousaht Band	1	365	-9	-9		Dive and long poles	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96
32	Sulphur Passage	5	Red and Green	0	-9	0	Ahousaht Band	1	365	-9	-9		Dive and long poles	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96
33	Morfee Is. - Epper Pass	6	Red	0	-9	0	Ahousaht Band	1	365	-9	-9		Dive and long poles	R. Sutherland	C. Jumbo		R. Sutherland - since 1984	1/25/96
34	Off Esowista Pen. (6 areas)	6	Red	0	-9	0	Tla-o-qui-aht Band	1	365	-9	-9	Year-round	Dive	E. David	D. David	Also areas for Goose barnacles and nussels	E. David - lifelong resident	1/19/96
35	Ucluth Peninsula	10	Red	0	-9	0	Ucluelet Band	1	365	-9	-9	Year-round	Dive	H. Touchie	L. Baird Sr.		H. Touchie - lifelong resident	1/18/96

Table C27: SHRIMP and PRAWN populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use Level			Use Level	Day		Peak		Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
				Comm	Ab	Rec		Start	End	Start	End							
1	5	Shelter In.	Prawns	-9	0	0	1 boat; 30 - 40 traps	1	365	244	304	Late summer, fall	Trap	B. Spence	D. Swift	Aware of one boat - 1993	B. Spence - 1991-95	2/17/95
3	6	Tofino Inlet	Prawns	1	0	1	1 boat	1	365	305	334	Fall	Trap	D. Swift		Sporadic	D. Swift - 1985-90	3/17/95
2	5	Off Bawden Pt.	Prawns	1	0	1	1 boat	1	365	305	334	Fall	Trap	D. Swift		In deep water	D. Swift - 1985-90	3/17/95

Table C28: SQUID populations in Area 24 - Clayoquot Sound

			Use Level				Day		Peak								
Poly-gon	Chart	Location	Comm	Ab	Rec	Use	Start	End	Start	End	Timing	Gear	Source 1	Source 2	Comments	Data Date	Map Date
1	10	Florencia Bay	1	0	0	1 boat	1	365	80	172	Spring-opens on request	Seine	B. Spence		Local boat	B. Spence - since 1991	2/17/95

Table C29: SEA LION populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use	Timing	Activity	Source 1	Source 2	Comments 1	Comments 2	Data Date	Map Date
1	7	Flores Is. (Opp. Openit Pen.)	Mixed Stellar and California	Unknown	Mar. - April	Haulout (winter)	E. Arnet		During herring season		E. Arnet - 1966-92	1/29/95
2	7	Rafael Pt.	Mixed	Up to 250 stellar	Winter - Spring	Haulout	M. Bigg (1984)		Aerial and visual		1962-82	2/17/95
3	7	Adventure Pt.	California	Unknown	Winter	Haulout	R. Palm				R. Palm - 1969-present	3/16/95
4	7	Shelter In.	Unknown	20 est.	Spring	Haulout	D. Swift		Herring season		D. Swift - 1985-90	3/17/95
5	7	Sydney In./Openit Pen.	Unknown	20 est.	Spring	Haulout	D. Swift		Herring season		D. Swift - 1985-90	3/17/95
6	8	Plover Reefs	Mixed Stellar and California	50 - 75	Mar. - April	Haulout (winter)	E. Arnet		During herring season		E. Arnet - 1966-92	1/29/95
7	8	Lennard Is.	Stellar	1 - 13 per siting	Feb. - March	Haulout	M. Bigg (1984)		Visual counts		1962-82	2/17/95
8	8	Robert Pt.	Mixed	12 sea lions	Feb. - March	Siting	Brad Rushton		Feeding on herring		B. Rushton - 1983 - 86	2/17/95
9	10	Long Beach (Sea Lion Rks.)	Mixed	75 - 100 est.	Year-round	Haulout & stellar rookery	E. Arnet	R. Palm	Feed on herring and salmon	Soon will receive rookery status	E. Arnet - 1966-92	1/29/95

Table C30: SEAL populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use	Timing	Activity	Source 1	Source 2	Comments 1	Comments 2	Data Date	Map Date
1	7	Hayden Pass	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
2	7	Watta Cr. estuary	Harbour	Sitings	Fall	Feeding on chum and coho	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
3	7	Megin R.	Harbour	Sitings and haulout	Fall	Feeding on chum and coho	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
4	7	Steamer Cove	Harbour	Haulout			E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
5	7	Driver Pt.	Harbour	Haulout rock			E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
6	7	Le Claire Point	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
7	8	Arakun Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
8	8	Lagoon Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
9	8	Head of Lemmens In.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
10	8	Morpheus Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
11	8	Laddie (Twin) Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92

Table C30: SEAL populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use	Timing	Activity	Source 1	Source 2	Comments 1	Comments 2	Data Date	Map Date
12	8	Matty slough	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
13	8	Tsapee Narrows	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
14	8	Indian Is.	Harbour		Spring - Fall	Following sockeye	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
15	8	Grice Bay	Harbour		Spring - Fall	Following sockeye	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
16	8	Warne Is. (3 points)	Harbour		Spring - Fall	Following sockeye	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
17	8	Gunner Inlet	Harbour	Up to 15	Spring - Fall	Following sockeye	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
18	8	Ridout Is.	Harbour		Spring - Fall	Following sockeye	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
19	8	Kennedy Esturay	Harbour	Six or more	Spring - Fall	Following sockeye	E. Arnet	D. Swift	Other sources - R. Palm, J. Martin, C. Martin, J. Darling	Go right up to lake	E. Arnet 1966-92	1/1/92
20	8	Rankin Rks.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
21	8	Wingen Is.'s	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
22	8	Tranquil R. estuary	Harbour		Fall	Feeding on chum and coho	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92

Table C30: SEAL populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use	Timing	Activity	Source 1	Source 2	Comments 1	Comments 2	Data Date	Map Date
23	8	Wollan Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
24	8	Deer Bay	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
25	8	Kershaw Is.'s	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
26	8	Wood It.'s	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
27	8	Mosquito Hbr.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
28	8	Plover Pt.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
29	8	Maltby Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
30	8	Bulson Cr. estuary	Harbour		Fall	Feeding on chum and coho	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
31	8	Warn Bay Entrance	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
32	8	Matlset Narrows	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
33	8	Bedwell R. mouth	Harbour		Fall	Feeding on chum and coho	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92

Table C30: SEAL populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use	Timing	Activity	Source 1	Source 2	Comments 1	Comments 2	Data Date	Map Date
34	8	Quait Bay	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
35	8	Hecate Bay	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
36	8	Wilf Rock	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
37	8	La Croix Group	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
38	8	Cleland Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
39	8	Shot Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
40	8	Bawden Bay	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
41	8	Ross Passage (4 areas)	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
42	8	Millar Channel	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
43	8	Dawley Pass	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
44	8	Lennard Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92

Table C30: SEAL populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Targets	Use	Timing	Activity	Source 1	Source 2	Comments 1	Comments 2	Data Date	Map Date
45	8	Tonquin Is.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
46	8	Father Charles Ch.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
47	10	Schooner Cove - Portland Pt.	Harbour				E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
48	10	Gowland Rks.	Harbour			Large rookery	E. Arnet	Clayoquot Biosphere Project	Other sources - R. Palm, J. Martin, C. Martin, J. Darling		E. Arnet 1966-92	1/1/92
49	10	S. of Long Beach (12 spots)	Harbour	Sitings and haulout	Year-round		H. Touchie		Numbers vary - Move between these spots	Lot more than there used to be	H. Touchie	1/18/96

Table C31: BASKING SHARK populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Timing	Peaks	Activity	Source	Comments	Data Date	Map Date
1	7	Millar Ch. - Shelter In.	May - Sept	Summer	Plankton feeders	E. Arnet	Throughout the area shown - sporadic	E. Arnet - 1966-1992	1/29/95
2	7	Bottleneck Bay	Summer	Summer	Feeding/basking	R. Palm	Local siting	R. Palm - 1969-present	3/16/95
3	7	Herbert In.	Summer	Summer	Feeding/basking	D. Swift	Local siting	D. Swift - 1985-90	3/17/95
4	7	Hesquiat Harbour	April		Feeding on herring spawn	D. Swift		D. Swift - 1985-90	3/17/95
5	7	Stewardson In.	May - Sept	Summer	Feeding/basking	D. Swift	Local siting	D. Swift - 1985-90	3/17/95

Table C32: WHALE populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Target	Timing	Activity	Source 1	Source 2	Comments	Data Date	Map Date
1	8	Cox Bay -Templar Ch.	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet		Feed on benthic invertebrates	E. Arnet - 1966-92	1/29/95
2	8	Cow Bay (Flores)	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet	R. Palm	Beaches and rocky areas	E. Arnet - 1966-92	1/29/95
3	8	Off Kutcous	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet		Feed on benthic invertebrates	E. Arnet - 1966-92	1/29/95
4	8	Coomes Bank	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet		Feed on benthic invertebrates	E. Arnet - 1966-92	1/29/95
5	8	Morfee Is. to Kraan Is.	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet		Feed on benthic invertebrates	E. Arnet - 1966-92	1/29/95
6	8	Father Charles Ch.	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet		Feed on benthic invertebrates	E. Arnet - 1966-92	1/29/95
7	8	Ahous Bay	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet		Sanctuary for Gray Whales	E. Arnet - 1966-92	1/29/95
8	8	Brabant Ch.	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet	R. Palm	Not a major area	E. Arnet - 1966-92	1/29/95
9	8	Grice Bay	Gray	March 1 - Mid-Oct.	Feeding - mother and baby	E. Arnet			E. Arnet - 1966-92	1/29/95
10	8	Chetarpe Pt.	Gray	March - April	Feeding on herring roe	R. Palm			R. Palm - 1969-present	3/16/95
11	8	Tofino Inlet	Killer	Year-round	Following sockeye	E. Arnet	D. Palfrey	3 or 4 times	E. Arnet - 1966-92	1/29/95
12	7	Hesquiat Harbour	Gray	Late Feb. - Mid-March	Feeding on herring roe	E. Arnet		Less exploited by viewers due to distance	E. Arnet - 1966-92	1/29/95
13	7	Rafael Pt.	Gray	Spring and summer	Feed on Porcelina crab (zoea larvae) and mysids	R. Palm			R. Palm - 1969-present	3/16/95

Table C32: WHALE populations in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Target	Timing	Activity	Source 1	Source 2	Comments	Data Date	Map Date
14	7	Estevan - Matlahaw Pt.	Gray	Spring and summer	Feed on mysids	R. Palm			R. Palm - 1969-present	3/16/95
15	10	Long Beach - Florencia Bay	Gray	March 1 - Mid-Oct.	Feeding in shallows	E. Arnet		Feed on benthic invertebrates	E. Arnet - 1966-92	1/29/95
16	10	Gowland Rks - Rks. off Portland Pt.	Gray	Spring and summer	Feeding on mysid shrimp off rocks	R. Palm		Feed amongst rocks	R. Palm - 1969-present	3/16/95
17	10	George Fraser Islands	Gray	Spring	Feeding on shellfish	H. Touchie	L. Baird	Feed on shellfish	H. Touchie - lifelong resident	1/18/96

Table C33: KELP BEDS in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Target	Source 1	Comments	Data Date	Map Date
1	8	Vargas Is. (north and south ends)	Nereocystis and Macrocystis	R. Palm	Large bed at south end	R. Palm 1969-95	3/16/95
2	8	Chetarpe Pt.	Nereocystis and Macrocystis	D. Swift	Small kelp beds	D. Swift - 1985-90	3/17/95
3	8	Matlset Narrows	Nereocystis and Macrocystis	D. Swift	Productive area with fast tide	D. Swift - 1985-90	3/17/95
4	7	Hesquiat Harbour	Nereocystis and Macrocystis	D. Palfrey	Shallow area - very productive	D. Palfrey - 1981 - present	3/16/95

Table C34: ZOSTERA BEDS in Area 24 - Clayoquot Sound

Poly-gon	Chart	Location	Target	Source 1	Source 2	Comments	Data Date	Map Date
1	8	Grice Bay	Zostera	B. Rushton	D. Palfrey	Important for salmon rearing	B. Rushton - 1983-86; 94-95	2/17/95
2	8	Browning Pass (2 areas)	Zostera	B. Rushton		Important for salmon rearing	B. Rushton - 1983-86; 94-95	2/17/95
3	8	Lemmens In.	Zostera	B. Rushton		Important for salmon rearing	B. Rushton - 1983-86; 94-95	2/17/95
4	8	Heads of Inlets (4 areas)	Zostera	B. Rushton		Important for salmon rearing	B. Rushton - 1983-86; 94-95	2/17/95
5	8	Ahousaht	Zostera	B. Rushton		Important for salmon rearing	B. Rushton - 1983-86; 94-95	2/17/95
6	8	Opitsaht	Zostera	B. Rushton		Cattle graze on eelgrass here	B. Rushton - 1983-86; 94-95	2/17/95
7	8	Father Charles Ch.,Maurus Ch. (5 areas)	Zostera	B. Rushton		Important herring spawn sites	B. Rushton - 1983-86; 94-95	2/17/95
8	8	Yellow Bank	Zostera	B. Rushton		Important herring spawn sites	B. Rushton - 1983-86; 94-95	2/17/95
9	8	McKay Is.	Zostera	D. Swift		Someone asking for booming ground	D. Swift - 1985-90	3/17/95
10	7	Heads of Inlets (4 areas)	Zostera	B. Rushton		Important for salmon rearing	B. Rushton - 1983-86; 94-95	2/17/95
11	7	Hootla Kootla (E.side Sydney In.)	Zostera	B. Rushton		Important herring spawn sites	B. Rushton - 1983-86; 94-95	2/17/95