Exxon Valdez Trustee Council

Restoration and Habitat Protection Planning

Stream Habitat Assessment Project:

Prince William Sound and Lower Kenai Peninsula

Project No. R-51

Principal Investigator: Kathrin Sundet
Project Manager: Mark N. Kuwada
Project Staff: Jeff Barnhart, Wes Ghormley, Dan Gray

Technical Report No. 94-2

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Table of Contents

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List of Tables

List of Figures

List of Appendices

List of Maps

List of Maps (continued)

Page

List of Acronyms

Acronym	Definition
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
AWC	Catalog and Atlas of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes (commonly referred to as 'Anadromous Waters Catalog')
BLM	Bureau of Land Management
CAC	Chugach Alaska Corporation
FPA	State of Alaska Forest Practices Act
GIS	Geographic Information System
GPS	Global Positioning System
H&R	Habitat and Restoration (a division of ADF&G)
NAD27	North American Datum, 1927
PWS	Prince William Sound
SHA	Stream Habitat Assessment
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator
WGS84	World Geodetic System, 1984

Executive Summary

During the period August 2, 1993 to September 23, 1993, the Alaska Department of Fish and Game (ADF&G), Habitat and Restoration Division (H&R), conducted surveys of anadromous fish streams in Prince William Sound and on the lower Kenai Peninsula. These surveys are the second phase of a two-year Stream Habitat Assessment (SHA) project begun on Afognak Island in 1992. The 1993 stream surveys focused on Chenega, Eyak and Tatitlek corporation lands and Chugach Alaska Corporation (CAC) lands in Prince William Sound, and on Port Graham and English Bay (Nanwalek) corporation lands on the lower Kenai Peninsula as part of an Exxon Valdez oil spill restoration study designed to document anadromous fish distribution and habitat on private lands throughout the oil spill area. The information obtained in the study will be used by the Exxon Valdez Trustee Council in conjunction with the results of other restoration studies to evaluate and rank candidate lands for possible habitat protection or acquisition.

Surveys were conducted using a backpack electrofisher, minnow traps, and dip nets. Streams were accessed by helicopter and surveyed on foot. Approximately 995 km (620 miles) of shoreline and 117km^2 (28,900 acres) of upland habitat were surveyed. As a result, 180 new anadromous fish streams were documented totalling approximately 57 km (35 miles). Pink and coho salmon were the principal fish species found, followed by chum salmon, sockeye salmon, Dolly Varden, rainbow trout, cutthroat trout, stickleback and sculpin, and in intertidal channels, juvenile flounder.

Objectives

The Stream Habitat Assessment (SHA) project objective is to provide basic habitat information for evaluating candidate lands under the Habitat Protection process of the Exxon Valdez oil spill restoration program. Candidate lands are nominated by landowners, agencies, or the general public for additional habitat protection or acquisition using Exxon Valdez settlement funds. At a minimum, candidate lands must meet the following criteria: 1) there is a willing seller of the parcel or property right; 2) the parcel contains key habitats that are linked to, replace, provide the equivalent of, or substitute for injured resources or services; 3) the parcel or property rights are available at fair market value; and 4) an injured or equivalent resource or service will benefit from protection in addition to that provided by the owner and applicable laws and regulations. The Habitat Protection process recognizes that certain land use activities can impede the recovery of injured resources and services if those activities result in additional impacts to species populations, or the loss of key habitats (Exxon Valdez Trustee Council, 1992a).

The SHA project documents the: 1) number and type of anadromous fish streams that occur on potential candidate lands; 2) location of these streams; 3) upper limits of distribution and species of anadromous fish that occur in each stream; 4) physical and vegetative characteristics that constitute existing fish habitat; and 5) barriers that impede upstream fish migration. This process provides an inventory of anadromous stream resources that can then be used to compare and rank candidate lands. The SHA project also provides information that can be used to define specific habitat protection measures on candidate lands.

The products of this effort will be integrated as one data layer in a comprehensive Geographic Information System (GIS). The Habitat Protection GIS will incorporate many other types of information including hydrography, land ownership, wildlife habitat and vegetation, and will be used to assist in the analysis and identification of key habitats throughout the spill-affected area.

The SHA project also provides a minimum level of habitat protection simply by documenting where anadromous fish streams occur. Alaska's Forest Practices Act (FPA) requires that logging be restricted near anadromous fish streams in order to protect riparian areas from the adverse effects of timber harvest activities. The intent of this requirement is to protect fish habitat and maintain water quality. Where anadromous fish streams occur on private land in the coastal forest, a protective buffer of up to 66 feet will be applied. Therefore, identification of new streams or extension of known fish distribution, is an incremental step toward achieving restoration objectives.

Introduction

During the period August 2, 1993 to September 23, 1993, the Alaska Department of Fish and Game (ADF&G), Habitat and Restoration Division (H&R), conducted surveys of anadromous fish streams on privately-owned lands in the Exxon Valdez oil spill area. The surveys are the second phase of a two-year study commissioned by the Exxon Valdez Trustee Council, and are designed to promote restoration of injured fish and wildlife resources and services by providing information that will aid in developing habitat protection strategies. Specifically, the Stream Habitat Assessment (SHA) project focuses on supplementing available information on anadromous fish streams for use in evaluating and ranking lands in the comprehensive habitat protection process.

Freshwater streams and associated riparian areas are critical habitat for several species of injured fish and wildlife resources. Pink salmon, sockeye salmon, Dolly Varden and cutthroat trout use freshwater environments for important life functions such as spawning, rearing and overwintering. Harlequin ducks use riparian areas along freshwater streams for nesting and feeding. Riparian areas also serve as important feeding areas and movement corridors for river otters.

Potential candidate lands for the second year of the SHA project were evaluated in March of 1993. Study-site selection was influenced by several factors, including: 1) the landowner's desire to have their lands included in the comprehensive habitat protection process, and surveyed; 2) the amount of lands that could reasonably be studied during the short period of time when pink and chum salmon were returning to streams; and 3) logistical considerations.

In 1992, SHA surveys were conducted on private lands on Afognak Island (Kuwada and Sundet, 1993). In 1993, the SHA project focused on Chenega, Tatitlek and Eyak corporation lands and Chugach Alaska Corporation lands in Prince William Sound, as well

as English Bay (Nanwalek) and Port Graham corporation lands on the southern-most end of the Kenai Peninsula. Tatitlek corporation first agreed to allow access to all of their lands for this study, but later restricted access to only Bligh Island. Map A provides an overview of the 1993 study areas.

Prince William Sound is approximately 15,000 square miles in size. Precipitation, mostly rain, is heavy with 50 to 200 inches annually along the coast and up to 400 inches on the mountain slopes (Henning, Olds and Rennick 1980). Steep slopes and narrow fjords characterize much of the lower Kenai Peninsula's coast and Prince William Sound (Rennick 1986). The Gulf of Alaska is one of the most active meteorological regions on earth. Winter storms can create 15-meter seas, gale-force coastal winds, and enough rain to classify some coastal areas as extratropical rain forests (Wilson and Overland 1986).

Southcentral Alaska, including Prince William Sound and the Aleutian area, is also an active seismic region. On March 27, 1964 an earthquake measuring 8.3 to 8.6 on the Richter scale and lasting three to four minutes affected a 50,000 square mile area of southcentral Alaska and Prince William Sound (Krauskopf 1971). Data from Johansen (1971) and Plafker et al., (1969) indicate that tectonic uplift in the SHA area in Prince William Sound ranged from +3.6 to +10.0 feet. Conversely, tectonic subsidence, ranging from -3.0 to -5.0 feet, occurred in the study area on the southern end of the Kenai Peninsula (Plafker et al., 1969).

The mountains surrounding Prince William Sound are steep. Most of the streams are short, and many have impassable falls within a small distance from salt water. Due to the limited amount of accessible freshwater spawning habitat, the proportion of pink and chum salmon populations that spawn in intertidal stream channels is larger in Prince William Sound than elsewhere in Alaska. Approximately 45 percent of the pink salmon population spawn in the intertidal zone in odd-numbered years and 75 percent in even-numbered years, respectively. The proportion of chum salmon spawning that occurs in intertidal zones has not been determined but is believed to be substantial (Thorsteinson, Helle, and Birkholz 1971).

The lower Kenai Peninsula is also characterized by steep slopes. However, the major anadromous fish systems are extensive and contain numerous primary, secondary and tertiary tributaries. Although some intertidal spawning occurs, the primary spawning habitat is above mean high water, extending in some cases to the headwaters of the system.

Historically, much of the land in both Prince William Sound and the lower Kenai Peninsula was in the public domain. Large-scale private ownership is relatively recent, resulting from the Alaska Native Claims Settlement Act (ANCSA) of 1971 and an amendment to the Alaska National Interest Lands Conservation Act (ANILCA) of 1980.

The lower Kenai Peninsula was in Bureau of Land Management (BLM) ownership until the mid-1960s when the State of Alaska selected land in the area. Following ANCSA, Port Graham, English Bay (Nanwalek), and Seldovia corporations selected lands in the mid-1970s from the previous state land selections. (B. Latocha, ADNR, pers. comm.).

The Chugach National Forest was one of the first reserves to be withdrawn from public domain after the National Forest system was established in 1891. In 1907, the Chugach National Forest was formally established. At one time the Chugach National Forest encompassed the Anchorage bowl and the area that is now the Kenai National Wildlife Refuge (U.S. Department of the Interior, 1974). After ANCSA, Chenega, Tatitlek and Eyak corporations selected lands from the Chugach National Forest.

Methods

To efficiently cover the extensive survey area, three bases of operation were established. Surveys in western Prince William Sound were based out of Chenega Bay Village on Evans Island, and surveys in the eastern Sound were conducted from Cordova. Homer was the base of operations for the lower Kenai Peninsula surveys. Prior to starting the surveys, fuel caches were established at Chenega Bay Village on Evans Island, Two Moon Bay in Port Fidalgo and Windy Bay on the Kenai Peninsula. Transportation from the base camps to the remote streams occurred via a Bell 206B (jet ranger) helicopter. The pilot and helicopter were stationed with the four-person crew at the base camps.

We scheduled surveys to begin in Prince William Sound in early August to coincide with the timing of the pink salmon runs: the first western Prince William Sound visit from August 2 - 13; eastern Prince William Sound surveys from August 14 - 25; the second western Prince William Sound visit from August 26 - September 2; and the lower Kenai Peninsula surveys from September 6 - 23. We had originally planned to survey all of western Prince William Sound before proceeding to the eastern Sound, but extremely low water conditions and a low return of pink salmon in early August forced us to change the survey schedule. A total of 12.5 down-days occurred, 9 days attributed to weather conditions and 3.5 days associated with helicopter mechanical problems and pilot replacement.

The four-person crew was split into teams of two. Each two-person team was equipped with laminated United States Geologic Survey (USGS) topographic maps at a scale of 1:63,360, designating land ownership status and the most current cataloged anadromous fish stream data. Before starting foot surveys, low-level helicopter reconnaissance flights were used to identify stream locations and plan logistics. Potential anadromous fish streams were marked and numbered with a grease marker on both sets of topographic maps. Following the overflight, both teams would begin foot surveys of their assigned candidate streams. The

team that completed its survey first would then fly reconnaissance for the next study area. To avoid bias in the collection of field data we reconfigured the teams on a weekly basis.

The teams walked stream channels and tributaries, electrofishing and dipnetting in selected rearing areas, primarily pools, to determine the presence of anadromous fish. In shallow water areas we visually identified adult salmon (Figures 1 and 2). Juvenile fish, when present, were captured to make positive identification prior to releasing them alive into the system. We continued this process until the upstream limit of anadromous fish distribution was established by the location of the last capture or sighting of anadromous fish. We always walked some distance upstream of the upper limit to locate barriers to upstream passage, if any. Distances surveyed above the upper limit ranged from 50 to 600 meters. As the purpose of this project was to determine the presence or absence of anadromous fish, population estimates were not attempted.

We recorded habitat characteristics as we walked along the stream. Since many streams exhibit widely varying characteristics along their course, we divided the streams into segments (Figures 3 and 4). A segment represents a stream reach which shows fairly homogeneous characteristics such as substrate, gradient, channel morphology and bank incision. As a general guideline, we did not divide reaches of less than 100m into separate segments. At each segment break, we completed a segment data form (Appendix F1). Recorded stream segment habitat data included: Type of waterway such as mainstem, tributary, lake/pond, wetland, intertidal or other; stream gradient; channel profile; channel pattern; stream substrate ranked by the three most predominant types; instream cover types and general abundance; riparian vegetation in the over- and understory within 20 meters of the banks; canopy above stream; type of growth such as mature, secondary, shrubs, meadow, muskeg, or intertidal, for reference to thematic maps; and barrier type, height and distance from the upper extent of fish distribution. For practical purposes, springs at the headwaters of streams were included in the barrier category. We also recorded incidental wildlife observations in or near each segment. Multiple stream channels

Figure 1. Pink salmon spawning near Sahlin Lagoon.

Figure 2. Sockeye salmon in Eshamy Lake tributary.

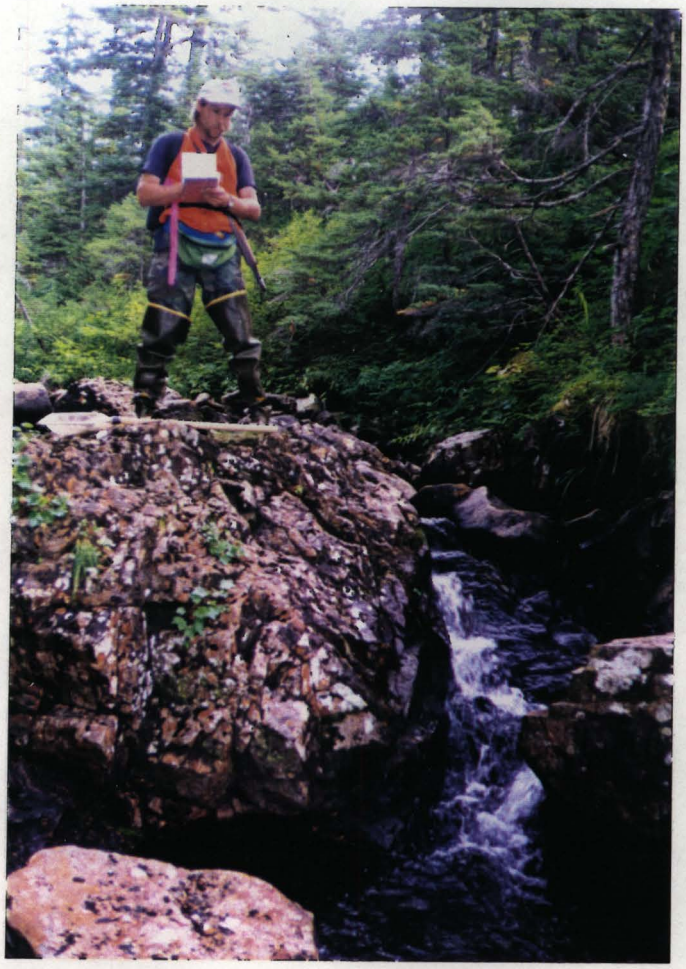

Figure 3. Segment 0-01 of stream 226-20-16010, Paddy Bay.

Figure 4. Segment 0-03 of stream 226-20-16010, Paddy Bay.

found within 20 meters of one another were recorded as wetland. We spot-checked each wetland area for anadromous fish and surveyed its perimeter for future mapping as a wetland polygon.

After completing an entire stream, we recorded general stream information pertaining to location, land ownership, water level, Universal Transverse Mercator (UTM) zone, and associated photo and video documentation. On the stream forms (Appendix F2) we sketched each waterbody and noted barriers, fish species, segment breaks, extents, and other reference locations for future mapping. Newly documented anadromous fish streams were assigned temporary unique stream identification numbers. These will be converted to serial anadromous fish stream numbers upon their integration into the Catalog and Atlas of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes, commonly referred to as the "Anadromous Waters Catalog" (AWC), in the spring of 1994. For the unique identification of stream segments we devised the following system: segments were numbered sequentially, with two digits, i.e. 01, 02. Each segment was preceded by the mainstem or tributary ID. Mainstems were always referred to as "0", and tributary IDs were usually numeric. If two survey teams worked in the same stream system, one team assigned alphabetical tributary IDs, while the other team assigned numerical IDs. Thus, the first segment of the mainstem is 0-01, the second segment 0-02, and so forth; the first segment of tributary A is A-01, and the second segment of tributary 1 is referred to as 1-02.

Fish were usually captured with electrofishers and hand-held dip nets. We used a Smith-Root model 11-A battery-powered backpack electrofisher unit at frequencies from 60 to 90 Hz and voltages from 400 to 800 volts (Figure 5), and hand-held dip nets with an opening of 25cm x 40cm. We employed minnow traps in one pond where we could not capture juvenile fish with electroshocking or dipnetting: standard 3mm mesh wire minnow traps, 41 cm x 19 cm, were baited with cured salmon eggs and set for one hour.

Other survey equipment included: A Trimble Global Positioning System (GPS) Pathfinder Basic Plus receiver to collect geographic coordinates on each stream system; two Motorola

Saber II VHF radios; two Suunto model S-73 hand-held clinometers for measuring stream gradient; two Nikon 35 mm cameras, models N2000 and N2020 for photographing stream habitat and fish; two Cannon model E808 video cameras also for recording stream habitat, and two Remington model 870 shotguns for bear protection.

We recorded stream channel coordinates with a hand-held GPS receiver capable of tracking up to eight satellites and storing up to 10,000 coordinates. During last year's surveys we learned that the GPS receivers do not perform adequately under forest canopy, and that GPS coordinates are best collected aerially. Therefore, we marked the stream mouth, segment breaks and the upper extent prior to GPS overflights. We mounted a GPS receiver on the helicopter's dashboard and tracked each stream channel from a low altitude, just above treetop level, at 10 - 20 mph. In order to accurately map strategic stream locations such as high tide mark, fish extents, segment breaks and barriers, we recorded the time in minutes and seconds at each location from the receiver's display onto the stream form sketches. While coordinates may be updated during post-processing of GPS data files, the associated times will always remain unaltered. GPS Positions were collected as UTM coordinates in WGS84 datum. At the end of each day we downloaded the GPS data files from the receiver to a laptop computer to monitor the quality and completeness of the GPS positions. The raw GPS data files were periodically sent to the ADF&G office for differential corrections. In this process, the raw GPS data files were corrected using simultaneous positions collected at a reference base station operated by Surveyor's Exchange in Anchorage. Differential corrections reduce random position errors from approximately 100m to less than 8m.

Preparations for survey work began on August 2, 1993, in western Prince William Sound with the arrival of two of the four-person crew at Chenega Bay Village. The other two crew members were delayed by inclement weather and arrived on August 3. Field surveys started slowly. During the first five days, a combination of helicopter mechanical problems and pilot replacement consumed a total of three days. We encountered extremely low water conditions (Figure 6) and a weak return of pink salmon. Potential anadromous fish streams

Figure 5. Electrofishing in Port Graham stream.

Figure 6. Chum salmon stranded in low water, in mid-August, Chenega Island.

could not be verified because fish were absent. However, we collected habitat characteristics and geographic coordinates of the stream courses. Increased streamflow and more anadromous fish were necessary to complete the surveys in western Prince William Sound. Therefore, we departed Chenega Bay Village on August 13 to conduct surveys in eastern Prince William Sound until August 25.

On August 26, the pilot and one team returned to Chenega Bay Village to verify the presence of anadromous fish and determine the upper extents of their distribution in all streams that were devoid of salmon during the first visit. If fish were observed during two slow helicopter passes at tree-top level, a foot survey was then conducted to positively identify the fish.

Results

The Stream Habitat Assessment (SHA) project surveyed approximately 995 km of shoreline and 117 km^2 of upland habitat in Prince William Sound and the lower Kenai Peninsula, resulting in the documentation of 180 anadromous fish streams, wetlands, intertidal spawning areas and ponds, totalling approximately 57 km (35 miles). Nearly 91 percent of these waterbodies had not been depicted previously on USGS topographic maps, and 167 of these (93 percent) could not be identified in aerial photographs and satellite images that were analyzed as part of initial site reconnaissance. In 20 of the streams, fish distribution was restricted to intertidal spawning. Table 1 depicts the number of anadromous waterbodies that were found in each of the three regions surveyed (eastern Prince William Sound, western Prince William Sound, and lower Kenai Peninsula), including a summary of waterbody types, the total length, and, where appropriate, the area of anadromous fish stream habitat.

The majority of discrepancies noted between field observations and USGS topographic maps appear due to the 1964 Alaska earthquake. Most USGS maps were prepared in 1951 and 1952 and have not been revised to reflect altered stream courses or locations, modified shoreline features, or varied land contours that result in barriers to upstream fish migration. The difference between the USGS maps, most of which received only minor updates after the earthquake, and field observations in areas such as Sheep Bay, Simpson Bay and Hawkins Island in Prince William Sound was so acute that the survey team sometimes had problems orienting to the surrounding environment. In order to accurately reflect the location of newly documented anadromous fish streams, GPS coordinates were collected along large sections of shoreline in Sheep Bay.

Discrepancies appeared to be most pronounced in Prince William Sound where large segments of shoreline uplifted, causing stream mouths to shift, previous high tide lines to

Table 1. Types and sizes of anadromous waterbodies identified during 1993 surveys.

Area	Anadromous Waterbody	Number of Waterbodies[1]	Total Length of Channels (km)	Total Area of Lake and Wetlands (km^2)
Western PWS	Intertidal	13	0.5	
Western PWS	Lake/Pond	3		.075
Western PWS	Mainstem	23	6.8	
Western PWS	Tributary	10	2.1	
Eastern PWS	Intertidal	2	<.1	
Eastern PWS	Lake/Pond	5		.139
Eastern PWS	Mainstem	34	13.2	
Eastern PWS	Tributary	17	2.3	
Lower Kenai	Intertidal	5	0.7	
Lower Kenai	Lake/Pond	4		.008
Lower Kenai	Mainstem	17	17.0	
Lower Kenai	Side Channel	1	2.8	
Lower Kenai	Tributary	49	11.3	
Lower Kenai	Wetland	2		.368
Lower Kenai	Wetland, Tidal	1		.205
Total		**186**	**56.8**	**.796**

[1] In six instances, a stream contained more than one type of waterbody.

move inland (Figure 7), or waterfalls to occur a short distance inland from the coast. However, earthquake-induced changes are also visible on the lower Kenai Peninsula where examples of subsidence are more common (Figure 8). Table 2 presents summaries of some of the most obvious discrepancies noted between mapped information and field survey observations.

Fish species and life stages documented during the surveys include: adult and juvenile sockeye salmon, coho salmon, anadromous and resident Dolly Varden, cutthroat and rainbow trout, adult pink and chum salmon, stickleback, sculpin, and one juvenile starry flounder in an intertidal stream mouth. By far the most commonly encountered anadromous fish in all areas were adult pink salmon and juvenile coho salmon. Appendix A contains a list of fish species observed in each of the surveyed anadromous streams. Fish species and life stage observations are also included in Appendices B, C, and D.

Geography is an important factor in explaining the contrast between anadromous fish streams in Prince William Sound and the lower Kenai Peninsula. Mountains rise steeply from the tideline in Prince William Sound producing short, steep streams (Figure 9). Tributaries are limited; waterfalls are abundant. The lower Kenai Peninsula exhibits a similar topography, but generally contains longer and broader watersheds, resulting in more lakes and ponds, tributaries and wetlands (Figure 10). Appendix B contains general location information for each stream and Appendix C provides detailed habitat information for each stream segment.

In western Prince William Sound, the habitats in which anadromous fish were most frequently documented were stream mainstems, followed by intertidal stream mouths and tributaries. We found adult pink salmon in 69 percent, and juvenile coho salmon in 28 percent of the surveyed streams. In eastern Prince William Sound, anadromous fish were also most frequently documented in mainstems, but tributaries contributed to a higher number of documented sightings than in western Prince William Sound. Adult pink salmon and juvenile coho salmon were documented in 91 and 16 percent of the surveyed streams,

Figure 7. Pre-1964 earthquake beach on southern Latouche Island, ~ 100m inland of present high tide line.

Figure 8. Intertidal pink salmon spawning areas created by subsidence after the 1964 earthquake, Rocky River.

Table 2. Discrepancies between mapped information and field observations.

Location	USGS Map Number	Discrepancy
Latouche Island	Blying D-3	On the south end, the pre-quake shore is ~100m inland at ~10m elevation.
Paddy Bay	Seward B-3	Streams 226-20-16010 and Paddy-03 were drawn by USGS as one stream. However, 226-20-16010 drains from the east, and Paddy-03 drains from the south into the head of the bay. Both streams share a common intertidal zone.
Drier Bay	Seward B-3	The stream immediately west of Drier-04 should be in the drainage 200m west of the stream instead within 50m of Drier-04.
Ewan Bay	Seward B-2	Both Ewan Lake and stream 226-20-16030, which drains the lake, are mistakenly catalogued in the AWC as anadromous throughout. However, 8m and 20m falls within 200m of the mouth of 226-20-16030 form a total barrier to anadromous fish. Also, the stream mouth is depicted 450m too far north on the USGS map. Aerial photos suggest that this error is an artifact of photogrammetry.
Comfort Cove	Cordova C-5	The high tide line is ~60m onshore in the middle of the bay, and 200m onshore at the head of the bay compared to the USGS map.
Sheep Bay	Cordova B-5	Sheep-04 (Sahlin Creek) is blocked by a 50m waterfall, which appeared to be at high tide line before the earthquake. The waterfall is now 80m inland. On the USGS map, Sahlin-01 is shown as a portion of Sheep River's delta; it is actually a separate stream system.

Table 2. Continued

Location	USGS Map Number	Discrepancy
Sheep Bay	Cordova B-5	The east-central portion of Sheep Bay's shoreline differs greatly from the maps. The land has risen and many islands are now peninsulas. The streams now join the intertidal zone 40-60m offshore on the USGS maps. The old shoreline is clearly visible as a forested bluff.
Nelson River	Cordova B-4	The shore has been uplifted and the delta extends ~100m further into Nelson Bay. The mouth of stream 221-10-10170, near the mouth of Nelson River, is now ~60m off the mouth on the USGS map, and the course of the mainstem has changed.
Hawkins Island	Cordova B-4	The intertidal and mouth area of Canyon Creek (Hawkins-17) extends now ~200m from the old shoreline. Immediately west of Canyon Creek, a new stream (Hawkins-16) has formed seaward of the old shoreline. The whole western shoreline of Hawkins Island has changed substantially; new spits have formed and old lagoons have turned into lakes.
Windy Bay	Seldovia A-4	Major shoreline changes appear restricted to the mouth of Rocky River, where subsidence occurred, with the shoreline receding up to 500m inland after the earthquake.

Figure 9. Typical short Prince William Sound stream, Port Gravina.

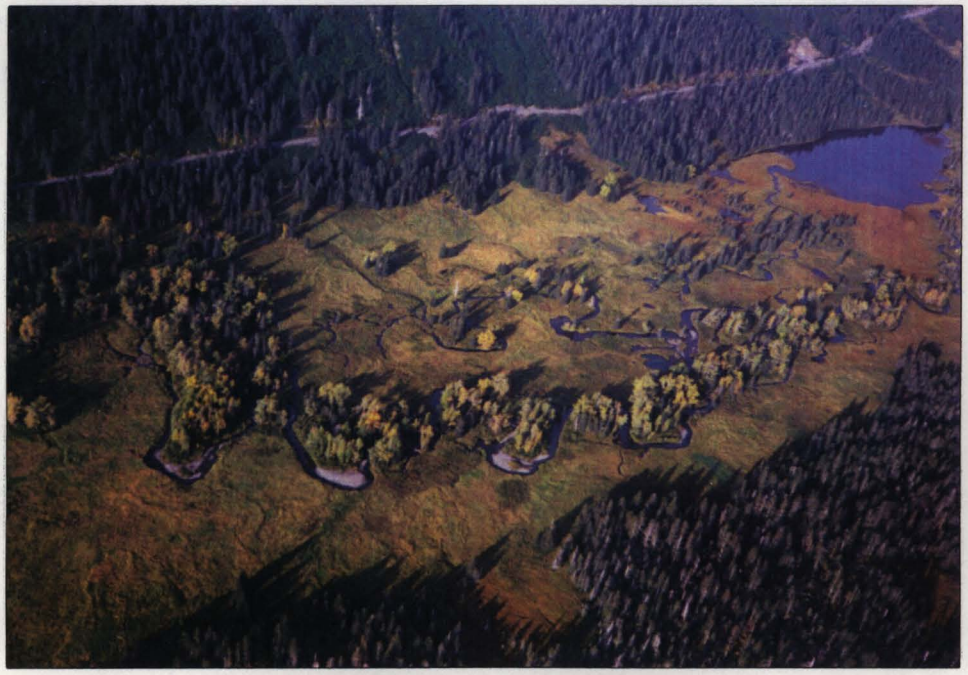

Figure 10. Wetland and coho salmon rearing habitat on the lower Kenai Peninsula, English Bay River.

respectively. On the lower Kenai Peninsula, newly documented anadromous fish habitat comprised most commonly tributaries, followed by mainstem habitats. Similar to Prince William Sound, adult pink salmon were found in 69 percent of the streams. Juvenile coho salmon, however, were observed in 52 percent of surveyed waterbodies on the lower Kenai Peninsula.

Substrate composition of anadromous stream reaches varied between eastern and western Prince William Sound and between Prince William Sound and the lower Kenai Peninsula. Table 3 summarizes the predominant stream substrates for the three regions. In Prince William Sound, anadromous fish were most commonly found over gravel and cobble substrates. In western Prince William Sound, the frequency of anadromous stream reaches with rubble or boulders as the predominant substrate was higher than in the eastern Sound. On the lower Kenai Peninsula, the frequencies of anadromous stream reaches with gravel and cobble substrates were similar to Prince William Sound. Mud/silt substrates, however, were far more frequent than in Prince William Sound and provided common habitats for rearing coho salmon in tributaries and wetlands.

Identification of anadromous streams in Prince William Sound was hampered by two factors: greatly diminished flows in many streams, and weak runs of returning adult pink salmon. Records from the Alaska State Climate Center in Anchorage provide precipitation data collected at the Main Bay hatchery in Prince William Sound. The hatchery is located approximately six miles north of Eshamy Bay in the northernmost portion of the study area. For the five-year period 1983 - 1987, average precipitation was 11.88 and 7.32 inches, respectively. During June and July 1993, however, precipitation was only 4.27 and 9.58 inches, respectively.

SHA surveys began in early August and many streams, including cataloged anadromous fish streams, lacked sufficient surface flow to allow access for spawning fish. In some streams, discharge was restricted to interstitial flow in the substrates for distances of up to 50 meters

Table 3. Predominant substrate in anadromous stream segments identified during 1993 surveys.

	Western PWS		Eastern PWS[1]		Lower Kenai[2]	
Stream Substrate	No. of Streams	%	No. of Streams	%	No. of Streams	%
Bedrock	2	3	3	4	0	0
Boulder (>30cm)	5	9	2	3	1	1
Rubble (15-30cm)	11	19	3	4	3	4
Cobble (5-15cm)	16	28	19	28	9	10
Gravel (.25-5cm)	20	34	39	57	52	60
Sand (<.25cm)	0	1	1	1	3	4
Silt	1	2	2	3	17	20
Organics	3	4	0	0	1	1
Total	**58**	**100**	**69**	**100**	**86**	**100**

[1] No substrate information was collected for stream OLSEN-03.
[2] No substrate information was collected for stream 241-20-10550, segment 0-01.

from the mouth. While some streams had surface flow above these interstitial flow sections, most streams were dry above. These conditions made it necessary to resurvey 26 western Prince William Sound streams in late August when conditions were expected to improve. Unfortunately, upon returning on August 26, medium-to-high water conditions existed, making it again difficult to document fish. Precipitation for August 1 - 12 was 1.1 inch; by the end of the month, 23.05 inches had been recorded at the Main Bay hatchery (Alaska State Climate Center, 1993).

Pink salmon returns in Prince William Sound were unexpectedly low for 1993. In eastern Prince William Sound, no directed fishery for pink salmon occurred, yet only 70 percent of the escapement goal was reached in that year. No harvestable surplus existed (W. Donaldson, ADF&G, pers. comm.). Thus some streams that normally support anadromous fish may not have been documentable in 1993. Fish distribution could also be more extensive if normal returns result in more fish migrating up streams and increased stream flows allow access to stream reaches that were inaccessible during the time this study was conducted.

Waterfalls were the most common barrier to fish passage, particularly in Prince William Sound. However, other barriers were observed including log jams, rock slides, and beaver dams, aside from natural springs at the headwaters of streams. In some cases, distribution of adult fish was limited by the availability of suitable spawning substrate (Figure 11), or simply by the low numbers of returning spawners. As noted previously, low water levels constituted a barrier to fish passage in some stream systems in early August. Conversely, during high water, fish could enter usually inaccessible reaches (Figure 12). Table 4 contains a summary of barrier types and heights, and Appendix D provides detailed information on the types of barriers that were observed on each of the surveyed streams.

Typically, riparian vegetation was dense in all portions of the study area. In Prince William Sound, the overstory was mainly mature Sitka spruce and Western hemlock, with a mixed

Figure 11. Temporary barrier at low water levels, Eshamy Lake tributary.

Figure 12. Temporary passage at high water levels, Port Gravina.

Table 4. Summary of barriers to anadromous fish in streams surveyed in 1993.

		Western PWS[1]		Eastern PWS		Lower Kenai	
Type of Barrier[2]	Height of Barrier (cm)	No. of Streams	%	No. of Streams	%	No. of Streams	%
FSL	0 - 50	8	17	13	24	10	13
FSL	51 - 100	11	23	15	27	7	9
FSL, beaverdams	101 - 150	4	8	3	5	2	3
FSL	151 - 200	5	11	4	7	4	5
FSL, beaverdams	>201	6	13	7	13	4	5
unsuitable substrate	-	4	9	0	0	6	8
springs (headwaters)	-	6	13	7	13	27	35
no barrier	-	3	6	6	11	17	22
Total	-	**47**	**100**	**55**	**100**	**77**	**100**

[1] No height was recorded for the logjam in stream 226-20-16010, tributary 1.
[2] FSL: 'Falls, slides, logjams'.

understory composed variously of alder, devil's club, blueberry, cranberry, willow, skunk cabbage, grasses, mosses and ferns (Figure 13). On the lower Kenai Peninsula we found a similar understory, but overstory vegetation consisted primarily of mature Sitka spruce and black cottonwood in the flood plains. Western hemlock was absent. In all regions, riparian vegetation contributed greatly to fish habitat by providing instream woody debris. Most juvenile fish were captured where overhanging vegetation, undercut banks, and instream obstructions such as fallen trees and root wads provide cover and slower flows (Figure 14). Appendix C, which lists habitat information for each stream segment, also describes riparian vegetation.

Riparian areas also provide important habitat for a number of terrestrial and avian species. Wildlife sightings and observations of game trails, tracks and other sign during the study are documented in Appendix E. In general, we observed a wider variety and abundance of terrestrial mammals on the lower Kenai Peninsula than in Prince William Sound. The reasons for this are unknown and the data are not statistically significant. In particular, evidence of heavy predation by bear and river otter was observed on many occasions, especially on the lower Kenai Peninsula near Port Chatham and Dogfish (Koyuktolik) Bay, and in Prince William Sound in Sheep Bay and Port Gravina.

Figure 13. Typical riparian vegetation, Hawkins Island.

Figure 14. Coho rearing habitat showing high stream cover and undercut banks, Port Graham.

Discussion

The SHA project supplements existing information on anadromous fish distribution on large, private parcels of land in the oil spill area. This information is used by the Exxon Valdez Trustee Council to evaluate lands based on their degree of linkage to injured salmon species and the potential benefits that habitat protection can provide. The 180 anadromous fish waterbodies documented in this study contribute to a more thorough understanding of the resource value of certain parcels by cataloging previously undocumented habitats.

Habitat protection can be accomplished in many ways. Protection tools such as fee title acquisitions, the purchase of conservation easements or various rights of ownership, cooperative management agreements, and other measures can be used either singularly or in combination to produce a desired protection result. Regardless of the approach taken, a fundamental step involves identifying what resources need to be protected and where they occur. Habitat protection can assist in the natural recovery of injured populations by minimizing additional impacts from other forms of development (1993 Draft Restoration Plan).

The SHA project focused on anadromous fish because of oil spill-related injuries to pink and sockeye salmon. During 1989, the Alaska Department of Fish and Game, Habitat Division, conducted a comprehensive survey of anadromous fish streams throughout the oil spill area to document oiling conditions and develop cleanup recommendations. However, the 1989 survey was restricted to near-tidal areas and did not attempt to document the upstream extent of fish distribution. The SHA project confirmed the thoroughness of those initial investigations by identifying only 42 additional anadromous coastal streams and intertidal spawning areas along the coast of western Prince William Sound and the lower Kenai Peninsula. This compares to a total of 220 coastal anadromous fish streams and intertidal spawning areas that were documented in 1989 in the same geographic area (Middleton et al., 1992). These numbers reflect the affinity of Prince William Sound pink

salmon for spawning in intertidal and near-coastal habitat. Conversely, the higher number of salmon streams that were documented in upland habitats on the lower Kenai Peninsula highlights the physiographic differences between regions and the predominance in that region of coho salmon, which spawn and rear in a variety of freshwater habitats.

The importance of ground-truthing lands to document the presence of anadromous fish is apparent from the high percentage of anadromous streams found that were not depicted on USGS topographic maps or visible from aerial photographs (91 and 93 percent, respectively). There are several reasons for this: 1) many anadromous fish streams are obscured by dense overhanging vegetation, or are too small to be visible when viewed from maps and aerial photographs; 2) fish may exhibit a patchy distribution throughout a variety of habitats, including streams, lakes, ponds, sloughs, wetlands, and intertidal areas, limiting the ability to accurately predict fish distribution; and 3) earthquake-induced changes have resulted in significant landscape modifications affecting stream courses, shorelines, coastal wetlands, and other physical features that influence fish distribution, including waterfalls and stream gradients.

Global Positioning System (GPS) technology allowed anadromous fish streams and other waterbodies to be located precisely during this study. However, existing base maps, including widely-used GIS coverages, are frequently inaccurate and use the outdated NAD27 datum, creating problems in reconciling stream coordinates and mapping the study results. To the extent possible, stream courses have been adjusted to tie into the existing GIS coverages, a process called "rubber-sheeting." However, base maps need to be updated state-wide to avoid the perpetuation of mapping errors. Data files of unadjusted stream positions were kept for future integration into updated base maps, when available.

Although the SHA project found abnormal streamflow conditions and a weak run of pink salmon returning to Prince William Sound, we feel confident that most anadromous fish streams on private lands in the study area have been identified: The Alaska Department of Fish and Game annually surveys approximately 208 index streams in Prince William

Sound (W. Donaldson, ADF&G, pers. comm.), and ten streams in the SHA study area on the lower Kenai Peninsula (L. Hammarstrom, ADF&G, pers. comm.) in order to forecast run strength and develop escapement counts. Furthermore, a comprehensive anadromous fish stream survey was conducted during 1989 along the spill-affected coastline, and the majority of streams surveyed during our 1993 study had limited tributary systems, thereby minimizing the potential for anadromous fish habitats to remain undiscovered.

The comprehensive 1993 surveys are in contrast to a similar study conducted on Afognak Island in 1992 (Kuwada and Sundet, 1993). During that study, extensive systems of tributaries associated with broad, moderately sloping watersheds were found, leading to the conclusion that an indeterminate number of undocumented tributaries might still exist on previously cataloged anadromous fish streams on Afognak Island. Physiographic differences between Afognak Island, Prince William Sound, and the lower Kenai Peninsula are primarily responsible for the decreased likelihood of this occurring on streams surveyed in 1993.

We suspect, however, that fish distribution extends further up many streams, beyond the limits established in this study. Low run strength may account for fewer fish using upper stream reaches as competition for available spawning habitat diminishes and spawning is focused in the lower reaches of some streams. During weak runs the fish populations may also be more vulnerable to the effects of predation, as evidenced by half-eaten fish carcasses that frequently comprised the only documentation of anadromous fish within a given stream reach. Based on field observations of game trails and fish carcasses adjacent to many small tributaries and streams, it appears that many pink salmon are removed from the population prior to spawning. The predation efficiency is likely to be high in these small streams because fish can be easily captured.

Other important factors affecting upstream distribution of anadromous fish are the availability of suitable spawning substrate or rearing habitat, the presence of barriers, and levels of ambient stream flow. The low stream flows encountered in western Prince William

Sound in early August resulted in both pink and chum salmon becoming stranded in shallow freshwater streams on their way to the spawning grounds. Chum salmon are more susceptible to stranding than pink salmon, because they are larger and more of their body mass extends above water during low flow conditions. We observed chum salmon attempting to migrate upstream with only their lower mandibles submerged. Pink salmon often seemed able to find small pools of water where they could survive; however, in early August many pink salmon were observed stranded in the same manner as chum salmon.

Instream barriers to salmon migration can be permanent or temporary. Permanent barriers, such as major waterfalls, do not change significantly over time or with stream flow. Temporary barriers are often determined by stream discharge and channel changes. We observed temporary barriers such as small logjams, falls or slides that blocked upstream salmon migration only at low stream flows. At higher flows, salmon were observed to navigate the low-flow barriers resulting in additional upstream distribution. Conversely, we also encountered a few barriers that only occurred during extreme high water flows when water volumes and velocities combined to create insurmountable torrents.

The quantity of available spawning habitat also plays a role in determining anadromous fish distribution. In many streams that we surveyed, fish congregated in gravel-lined pools and riffles -- and nowhere else. In this respect, riparian vegetation contributes significantly to the character of a stream by providing root wads, logs and branches that moderate flows and create pools and depositional areas conducive to the development and maintenance of salmon spawning habitats. Bank vegetation lends further stability to stream channels, reduces daily temperature fluctuations, and provides a source of cover for rearing fish. Riparian areas function also as important movement corridors and feeding habitats for a variety of terrestrial mammals.

In summary, the SHA project attempted a systematic survey of private lands in Prince William Sound and on the lower Kenai Peninsula. This information has a direct influence on the evaluation and ranking of parcels for habitat protection by the Trustee Council.

Documented anadromous fish streams have been nominated for inclusion in the AWC. These documents are maintained by the ADF&G and represent a comprehensive inventory of anadromous fish resources throughout the State of Alaska (ADF&G, 1993).

The protection and wise management of Alaska's fish and wildlife resources is crucial not only to the economy of the state, but the well-being of all who live here. We hope that this study will contribute, incrementally, to the realization of that goal.

Conclusions

- Through the Stream Habitat Assessment (SHA) project, 180 previously undocumented anadromous fish streams, wetlands, ponds and intertidal spawning areas were found during 1993 surveys. The principal fish species found were pink and coho salmon.

- Of the 180 streams that were documented, 91 percent were not depicted on USGS topographic maps.

- Prior to foot surveys, most streams (an estimated 93 percent) could not be located by either remote sensing or aerial photographs.

- Substantial earthquake-related discrepancies between base maps and field observations were found in eastern Prince William Sound and, to a lesser extent, in the western Sound and on the lower Kenai Peninsula.

- The majority of streams in Prince William Sound were short, steep, and without tributaries. These streams provided primarily pink salmon spawning habitat, usually in their lowest reaches. Most stream systems on the lower Kenai Peninsula were extensive, providing spawning and rearing habitat for multiple anadromous species.

- Riparian areas serve as important movement corridors and feeding areas for terrestrial mammals such as bear and river otter.

Literature Cited

Alaska Department of Fish and Game (ADF&G). 1993. An Atlas to the Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fish. Southcentral Region, Resource Management, Region II.

Alaska State Climate Center. Form 10-77, Record of River and Climatological Observations, 1982 - present.

Exxon Valdez Trustee Council. 1992a. Exxon Valdez Oil Spill Restoration: Restoration Framework Supplement. 54 pp.

Exxon Valdez Trustee Council. December 1993. Draft Restoration Plan. Exxon Valdez Restoration office, Anchorage, AK.

Henning, R.A., B. Olds. and P. Rennick (Ed.). 1980. A Photographic Geography of Alaska. Alaska Geographic. Vol. 7. Alaska Geographic Society, Anchorage, Alaska. 191 p.

Hood, D.W. 1986. Physical Setting and Scientific History, p.5-27. In D.W. Hood and S.T. Zimmerman [ed.] The Gulf of Alaska. U.S. Dep. of Commerce, Alaska.

Johansen, H.W. 1971. Effects of Elevation Changes on Benthic Algae in Prince William Sound, p.35-68. In the Committee on the Alaska Earthquake, The Great Alaska Earthquake of 1964. Nat. Acad. of Sci., Washington, D.C.

Krauskopf, K.B. 1971. Preface, p.ix-xii. In the Committee on the Alaska Earthquake, The Great Alaska Earthquake of 1964. Nat. Acad. of Sci., Washington, D.C.

Kuwada, M.N. and Sundet, K. 1993. Stream Habitat Assessment Project: Afognak Island. Project No. R-47. ADF&G Technical Report No. 93-3.

Middleton, K., Fink, M.J., Sundet, K., Kuwada, M.N. 1992. Exxon Valdez Oil Spill Response Operations Report - Habitat Division, 1989-1992. ADF&G.

Plafker, G., R. Kachadoorian, E.B. Eckel, and L.R. Mayo. 1969. Effects of the Earthquake of March 27, 1964 on Various Communities. Geo. Surv. Prof. Paper 542-G. Washington, D.C. 50 pp.

Rennick, P. (Ed.). 1986. Where Mountains Meet the Sea. Alaska Geographic. Vol. 13, No. 1., Alaska Geographic Society, Anchorage, Alaska. 191 p.

State of Alaska. 1990. Alaska Forest Resources and Practices Act - 1990. Chapter 17, Article 1A, Riparian Management. 19 pp.

Literature Cited (continued)

Thorsteinson, F.V., J.H. Helle and D.G. Birkholz. 1971. Salmon Survival in Intertidal Zones of Prince William Sound Streams in Uplifted and Subsided Areas, p.194-219. In the Committee on the Alaska Earthquake, The Great Alaska Earthquake of 1964. Nat. Acad. of Sci., Washington, D.C.

U.S. Department of the Interior, Alaska Planning Group (prep). 1974. Proposed Chugach National Forest Additions, Alaska. Final Environmental Statement. 416pp.

Wilson, J.G. and J.E. Overland. 1986. Meteorology, p.31-54. In D.W. Hood and S.T. Zimmerman [ed.] The Gulf of Alaska. U.S. Dept. of Commerce, Alaska.

Appendices

Appendix A. Common and scientific names for fish species identified during 1993 surveys.

Common Name	Scientific Name
Coho salmon	Oncorhynchus kisutch
Chum salmon	Oncorhynchus keta
Pink salmon	Oncorhynchus gorbuscha
Sockeye salmon	Oncorhynchus nerka
Dolly Varden	Salvelinus malma
Rainbow trout	Oncorhynchus mykiss
Cutthroat trout	Oncorhynchus clarki
Threespine stickleback	Gasterosteus aculeatus
Starry Flounder	Platichthys stellatus
Sculpin	Cottus sp.

Appendix B. Anadromous fish streams identified during 1993 surveys.

REGION: WESTERN PWS

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
CHENEGA ISLAND	CHENEGA-01 0	2	SO-J, CH-A, PI-A, DV-U, ST, CO-J	525 n/a	CHENEGA CORPORATION
CHENEGA ISLAND	CHENEGA-01 1	1	PI-A	37 n/a	CHENEGA CORPORATION
CHENEGA ISLAND	CHENEGA-03 0	1	PI-A	9 n/a	CHENEGA CORPORATION
ESHAMY BAY	ESHAMY-02 0	1	PI-A	102 n/a	CHENEGA CORPORATION
ESHAMY BAY	ESHAMY-04 0	1	PI-A, SC	40 n/a	CHENEGA CORPORATION
ESHAMY BAY	ESHAMY-09 0	1	PI-A	12 n/a	CHENEGA CORPORATION
ESHAMY BAY	ESHAMY-10 0	1	PI-A	24 n/a	CHENEGA CORPORATION
ESHAMY LAKE	ESHAMY-13 0	1	SO-A, PI-A	117 n/a	CHENEGA CORPORATION
ESHAMY LAKE	ESHAMY-17 0	1	DV-A, SC	184 n/a	CHENEGA CORPORATION
ESHAMY LAKE	ESHAMY-19 0	1	PI-A, RB, SC	128 n/a	CHENEGA CORPORATION
ESHAMY LAKE	ESHAMY-20 0	1	SO-A, DV-U, SC	90 n/a	CHENEGA CORPORATION
ESHAMY LAKE	ESHAMY-21 0	1	SO-A, PI-A, DV-U, SC	23 n/a	CHENEGA CORPORATION
ESHAMY LAKE	ESHAMY-22 0	1	CO-J, SO-A	25 n/a	CHENEGA CORPORATION
ESHAMY LAKE	ESHAMY-23 0	2	CO-J, RB, SO-A	896 n/a	CHENEGA CORPORATION
ESHAMY LAKE	ESHAMY-23 1	1	SO-A	120 n/a	CHENEGA CORPORATION
EVANS ISLAND	EVANS-03 0	1	PI-A	29 n/a	CHENEGA CORPORATION
EVANS ISLAND	EVANS-04 0	1	PI-A, DV-A	140 n/a	CHENEGA CORPORATION
EVANS ISLAND	EVANS-05 0	1	PI-A	31 n/a	CHENEGA CORPORATION
JACKPOT BAY	226-20-16080 0	1	CO-J, SO-A, DV-A, DV-U	894 n/a	CHENEGA CORPORATION

FISH CODES:
CO-A adult coho; CO-J juvenile coho; DV-A anadr. Dolly Varden; DV-U Dolly Varden; SO-A adult sockeye; SO-J juvenile sockeye; PI-A adult pink; CH-A adult chum; CU cutthroat trout; RB rainbow trout; ST stickleback; FL juvenile flounder; SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: WESTERN PWS

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
JACKPOT BAY	226-20-16080 8	3	CO-J, PI-A, SO-A	395 44329	CHENEGA CORPORATION
JACKPOT BAY	226-20-16080 9	2	CO-J, PI-A	392 9715	CHENEGA CORPORATION
JACKPOT BAY	226-20-16080 10	1	CO-J	195 n/a	CHENEGA CORPORATION
JACKPOT BAY	226-20-16080 11	1	CO-J	81 n/a	CHENEGA CORPORATION
JACKPOT BAY	JACK-01 0	1	PI-A	91 n/a	CHENEGA CORPORATION
JACKPOT BAY	JACK-02 0	1	PI-A	122 n/a	CHENEGA CORPORATION
JACKPOT BAY	JACK-05 0	1	CH-A, PI-A	56 n/a	CHENEGA CORPORATION
KNIGHT ISLAND	DRIER-01 0	1	PI-A	60 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	DRIER-02 0	1	PI-A	47 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	DRIER-03 0	1	PI-A	47 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	DRIER-04 0	1	PI-A	206 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	DRIER-04 1	1	PI-A	33 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	ISLES-02 0	1	PI-A	36 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	ISLES-04 0	1	PI-A	84 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	ISLES-05 0	1	PI-A	21 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	ISLES-06 0	1	PI-A	32 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	ISLES-07 0	1	PI-A	20 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	MARSHA-04 0	1	PI-A	12 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	MARSHA-05 0	1	PI-A	154 1084	CHUGACH ALASKA CORPORATION

FISH CODES:
CO-A adult coho; CO-J juvenile coho; DV-A anadr. Dolly Varden; DV-U Dolly Varden
SO-A adult sockeye; SO-J juvenile sockeye; PI-A adult pink; CH-A adult chum
CU cutthroat trout; RB rainbow trout; ST stickleback; FL juvenile flounder
SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: WESTERN PWS

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
KNIGHT ISLAND	MARSHA-06 0	1	PI-A	15 n/a	CHUGACH ALASKA CORPORATION
KNIGHT ISLAND	MARSHA-07 0	1	PI-A	32 n/a	CHUGACH ALASKA CORPORATION
LATOUCHE ISLAND	226-50-16384 1	1	PI-A	567 n/a	CHUGACH ALASKA CORPORATION
LATOUCHE ISLAND	LATOUCHE-03 0	2	CO-J, DV-U	1088 4285	CHUGACH ALASKA CORPORATION
LATOUCHE ISLAND	LATOUCHE-03 1	1	CO-J	96 n/a	CHUGACH ALASKA CORPORATION
LATOUCHE ISLAND	LATOUCHE-03 3	1	CO-J	119 n/a	CHUGACH ALASKA CORPORATION
PADDY BAY	226-20-16010 0	3	PI-A, SO-A, DV-U	1103 15936	CHENEGA CORPORATION
PADDY BAY	226-20-16010 1	1	PI-A, DV-U	205 n/a	CHENEGA CORPORATION
PADDY BAY	PADDY-02 0	2	CO-J, SO-A, PI-A, ST, DV-U	607 n/a	CHENEGA CORPORATION
PADDY BAY	PADDY-03 0	2	CH-A, PI-A	131 n/a	CHENEGA CORPORATION

FISH CODES:
CO-A adult coho; CO-J juvenile coho; DV-A anadr. Dolly Varden; DV-U Dolly Varden; SO-A adult sockeye; SO-J juvenile sockeye; PI-A adult pink; CH-A adult chum; CU cutthroat trout; RB rainbow trout; ST stickleback; FL juvenile flounder; SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: EASTERN PWS

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
BLIGH ISLAND	BLIGH-01 0	1	PI-A	35 n/a	TATITLEK CORPORATION
BLIGH ISLAND	BLIGH-02 0	2	CO-J, PI-A	565 20077	TATITLEK CORPORATION
BLIGH ISLAND	BLIGH-02 1	1	CO-J, PI-A	64 n/a	TATITLEK CORPORATION
BLIGH ISLAND	BLIGH-03 0	1	PI-A	347 n/a	TATITLEK CORPORATION
EYAK LAKE	EYAK-01 0	2	PI-A, SO-A, DV-U	1219 n/a	EYAK CORPORATION
HAWKINS ISLAND	228-30-18560 1	2	PI-A	443 2694	EYAK CORPORATION
HAWKINS ISLAND	228-30-18560 2	1	PI-A	128 n/a	EYAK CORPORATION
HAWKINS ISLAND	228-30-18560 3	1	PI-A	25 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-03 0	1	PI-A	34 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-05 0	1	PI-A	19 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-06 0	2	PI-A	838 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-06 1	1	PI-A	17 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-06 2	1	PI-A	73 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-07 0	1	PI-A	385 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-09 0	1	PI-A	518 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-11 0	1	CH-A, PI-A	406 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-12 0	1	PI-A	366 n/a	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-16 0	1	PI-A	68 485	EYAK CORPORATION
HAWKINS ISLAND	HAWKINS-17 0	1	PI-A	516 n/a	EYAK CORPORATION

FISH CODES:
CO-A adult coho; CO-J juvenile coho; DV-A anadr. Dolly Varden; DV-U Dolly Varden; SO-A adult sockeye; SO-J juvenile sockeye; PI-A adult pink; CH-A adult chum; CU cutthroat trout; RB rainbow trout; ST stickleback; FL juvenile flounder; SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: EASTERN PWS

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
HENEY RANGE	221-10-10010 1	1	CO-J, PI-A	213 n/a	EYAK CORPORATION
HENEY RANGE	221-10-10010 2	1	CO-J, DV-U, RB, SC, FL	369 n/a	EYAK CORPORATION
HENEY RANGE	HENEY-01 0	2	CO-J, PI-A, DV-A, DV-U, CU	1475 n/a	EYAK CORPORATION
HENEY RANGE	HENEY-02 0	2	CO-A, CO-J	606 n/a	EYAK CORPORATION
NELSON BAY	221-10-10170 1	1	PI-A	195 n/a	EYAK CORPORATION
PORT GRAVINA	COMFORT-01 0	1	PI-A	408 n/a	EYAK CORPORATION
PORT GRAVINA	COMFORT-01 1	1	PI-A	36 n/a	EYAK CORPORATION
PORT GRAVINA	COMFORT-02 0	1	PI-A	135 n/a	EYAK CORPORATION
PORT GRAVINA	COMFORT-03 0	1	PI-A	35 n/a	EYAK CORPORATION
PORT GRAVINA	COMFORT-05 0	1	PI-A	201 n/a	EYAK CORPORATION
PORT GRAVINA	GRAVINA-03 0	1	PI-A	52 n/a	EYAK CORPORATION
PORT GRAVINA	GRAVINA-05 0	1	PI-A	46 n/a	EYAK CORPORATION
PORT GRAVINA	GRAVINA-06 0	1	PI-A	25 n/a	EYAK CORPORATION
PORT GRAVINA	GRAVINA-07 0	1	PI-A	46 n/a	EYAK CORPORATION
PORT GRAVINA	OLSEN-01 0	1	PI-A	82 n/a	EYAK CORPORATION
PORT GRAVINA	OLSEN-02 0	1	CH-A, PI-A	84 n/a	EYAK CORPORATION
PORT GRAVINA	OLSEN-03 0	1	PI-A	9 n/a	EYAK CORPORATION
PORT GRAVINA	OLSEN-04 0	2	PI-A, DV-A, ST	183 12645	EYAK CORPORATION
SHEEP BAY	SAHLIN-01 0	2	SO-A, CH-A, PI-A	1041 n/a	EYAK CORPORATION

FISH CODES:
CO-A adult coho
CO-J juvenile coho
DV-A anadr. Dolly Varden
DV-U Dolly Varden
SO-A adult sockeye
SO-J juvenile sockeye
PI-A adult pink
CH-A adult chum
CU cutthroat trout
RB rainbow trout
ST stickleback
FL juvenile flounder
SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: EASTERN PWS

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
SHEEP BAY	SAHLIN-01 1	1	CO-J, CH-A	94 n/a	EYAK CORPORATION
SHEEP BAY	SAHLIN-01 2	1	PI-A	87 n/a	EYAK CORPORATION
SHEEP BAY	SAHLIN-01 3	1	SO-A, CH-A, PI-A	148 n/a	EYAK CORPORATION
SHEEP BAY	SAHLIN-01 4	1	PI-A	132 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-01 0	3	PI-A, CO-A	567 98509	EYAK CORPORATION
SHEEP BAY	SHEEP-01 1	1	PI-A	98 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-01 2	1	CO-J	23 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-01 3	1	PI-A	112 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-02 0	2	PI-A	167 4610	EYAK CORPORATION
SHEEP BAY	SHEEP-04 0	1	PI-A	155 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-06 0	1	PI-A	62 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-07 0	2	PI-A	851 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-07 1	1	PI-A	60 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-09 0	3	PI-A	523 n/a	EYAK CORPORATION
SHEEP BAY	SHEEP-10 0	2	PI-A	639 n/a	EYAK CORPORATION
SIMPSON BAY	SIMPSON-05 0	1	CO-J	69 n/a	EYAK CORPORATION
SIMPSON BAY	SIMPSON-09 0	1	PI-A	435 n/a	EYAK CORPORATION

FISH CODES:
CO-A adult coho
CO-J juvenile coho
DV-A anadr. Dolly Varden
DV-U Dolly Varden
SO-A adult sockeye
SO-J juvenile sockeye
PI-A adult pink
CH-A adult chum
CU cutthroat trout
RB rainbow trout
ST stickleback
FL juvenile flounder
SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
CHUGACH PASSAGE	CHUGACH-01 0	1	PI-A	0 4049	PORT GRAHAM CORPORATION
CHUGACH PASSAGE	CHUGACH-02 0	4	PI-A, CO-J, ST	1044 n/a	ENGLISH BAY CORPORATION
CHUGACH PASSAGE	CHUGACH-02 1	1	CO-J, ST	63 n/a	ENGLISH BAY CORPORATION
CHUGACH PASSAGE	CHUGACH-02 2	1	CO-J, PI-A	118 n/a	ENGLISH BAY CORPORATION
CHUGACH PASSAGE	CHUGACH-04 0	1	CO-J, PI-A, DV-U	147 n/a	ENGLISH BAY CORPORATION
CHUGACH PASSAGE	CHUGACH-05 0	1	CO-J, SO-J, PI-A	813 n/a	ENGLISH BAY CORPORATION
CHUGACH PASSAGE	CHUGACH-06 0	1	CO-J, PI-A, DV-U	314 n/a	ENGLISH BAY CORPORATION
CHUGACH PASSAGE	CHUGACH-06 1	1	CO-J, PI-A, DV-U	33 n/a	ENGLISH BAY CORPORATION
CHUGACH PASSAGE	CHUGACH-06 2	1	PI-A	19 n/a	ENGLISH BAY CORPORATION
CHUGACH PASSAGE	CHUGACH-06 3	1	PI-A	24 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	241-40-10300 1	1	CH-A, DV-U, PI-A	134 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	241-40-10300 2	1	CH-A, PI-A	80 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	241-40-10300 3	1	CH-A, PI-A	61 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	241-40-10300 4	1	CH-A, PI-A	97 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	241-40-10300 5	1	CH-A, PI-A	74 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	241-40-10300 6	1	CH-A, PI-A	303 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	241-40-10300 A	1	PI-A	464 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	241-40-10300 B	1	PI-A	208 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	DOGFISH-05 0	1	PI-A	38 n/a	ENGLISH BAY CORPORATION

FISH CODES:
CO-A adult coho
CO-J juvenile coho
DV-A anadr. Dolly Varden
DV-U Dolly Varden
SO-A adult sockeye
SO-J juvenile sockeye
PI-A adult pink
CH-A adult chum
CU cutthroat trout
RB rainbow trout
ST stickleback
FL juvenile flounder
SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
DOGFISH BAY	DOGFISH-07 0	1	PI-A	90 n/a	ENGLISH BAY CORPORATION
DOGFISH BAY	DOGFISH-11 0	1	PI-A, DV-U	354 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 1	1	CO-J	36 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 2	1	CO-J	88 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 3	1	CO-J, DV-U	268 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 A	1	CO-J	156 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 B	1	CO-J	548 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 C	1	CO-J, DV-U	55 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 D	1	CO-J, DV-U	32 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 E1	1	CO-J, DV-U	111 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 E2	1	CO-J, DV-U	0 308747	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 F	1	CO-J, DV-U	44 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 G	1	CO-J, DV-U	27 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 H	1	CO-J, DV-U	26 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 I	1	CO-J, DV-U	24 n/a	ENGLISH BAY CORPORATION
ENGLISH BAY	241-30-10500 J	1	CO-J	28 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	242-10-10230 0	1	PI-A	1075 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	242-10-10230 1	1	PI-A	132 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	242-10-10230 2	1	PI-A	137 n/a	ENGLISH BAY CORPORATION

FISH CODES:
CO-A adult coho; CO-J juvenile coho; DV-A anadr. Dolly Varden; DV-U Dolly Varden; SO-A adult sockeye; SO-J juvenile sockeye; PI-A adult pink; CH-A adult chum; CU cutthroat trout; RB rainbow trout; ST stickleback; FL juvenile flounder; SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
PORT CHATHAM	242-10-10230 3	1	CO-J, PI-A	402 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	242-10-10230 4	1	PI-A	302 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	242-10-10230 5	1	PI-A	84 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	242-10-10230 6	1	PI-A	200 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	CHATHAM-04 0	1	PI-A	278 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	CHATHAM-04 1	1	PI-A	82 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	CHATHAM-12 0	1	CH-A, PI-A	77 n/a	ENGLISH BAY CORPORATION
PORT CHATHAM	CHATHAM-13 0	1	PI-A	85 n/a	ENGLISH BAY CORPORATION
PORT DICK	242-42-10460 0	1	SO-A, PI-A, DV-U	1431 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 0	1	DV-A	1052 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 1	1	CO-J, SO-A, DV-A, DV-U, SC	990 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 3	2	CO-J	280 2249	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 4	1	CO-J, DV-U, SC	186 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 5	1	CO-J	50 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 8	1	CO-J	168 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 9	1	DV-A	52 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 10	1	CO-J	460 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550 11	1	CO-J	137 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550-2018 2	1	CO-J, PI-A	391 n/a	PORT GRAHAM CORPORATION

FISH CODES:
CO-A adult coho; CO-J juvenile coho; DV-A anadr. Dolly Varden; DV-U Dolly Varden; SO-A adult sockeye; SO-J juvenile sockeye; PI-A adult pink; CH-A adult chum; CU cutthroat trout; RB rainbow trout; ST stickleback; FL juvenile flounder; SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
PORT GRAHAM	241-20-10550-2024 6	1	CO-J, PI-A	45 n/a	PORT GRAHAM CORPORATION
PORT GRAHAM	241-20-10550-2024 7	2	CO-J, PI-A, DV-A, DV-U	1358 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 0	1	CO-A	3964 n/a	SELDOVIA CORPORATION
ROCKY BAY	242-31-10120 5	1	PI-A	0 205198	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 6	1	PI-A	530 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 7	1	CO-J, PI-A, SC	296 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 8	1	CO-J, PI-A	679 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 9	1	PI-A	92 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 12	1	CO-J, SO-A, PI-A, DV-A	0 1820	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 15	1	CO-J, SO-A, PI-A, DV-U	328 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 16	2	CO-J, PI-A	792 n/a	SELDOVIA CORPORATION
ROCKY BAY	242-31-10120 17	1	CO-J, PI-A, DV-U	59 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120 S	2	CO-J, SO-A, PI-A, DV-A	2837 300	PORT GRAHAM CORPORATION
ROCKY BAY	242-31-10120-3048 0	4	CO-A, CO-J, SO-A, CH-A, PI-A, DV-A, DV-U, SO-A	5802 59569	PORT GRAHAM CORPORATION
ROCKY BAY	ROCKY-01 0	1	PI-A	121 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	ROCKY-03 0	1	PI-A	98 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	ROCKY-10 0	1	PI-A	167 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	ROCKY-11 0	2	PI-A	558 n/a	PORT GRAHAM CORPORATION
ROCKY BAY	ROCKY-13 0	1	PI-A	60 n/a	PORT GRAHAM CORPORATION

FISH CODES:
CO-A adult coho
CO-J juvenile coho
DV-A anadr. Dolly Varden
DV-U Dolly Varden
SO-A adult sockeye
SO-J juvenile sockeye
PI-A adult pink
CH-A adult chum
CU cutthroat trout
RB rainbow trout
ST stickleback
FL juvenile flounder
SC sculpin

The tributary ID for mainstems is 0.

Appendix B. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID TRIBUTARY ID	NO. OF SEGMENTS	FISH CODES	LENGTH (m) AREA (sqm)	LAND OWNER
ROCKY BAY	ROCKY-14 0	1	PI-A	63 n/a	PORT GRAHAM CORPORATION

FISH CODES:
CO-A adult coho
CO-J juvenile coho
DV-A anadr. Dolly Varden
DV-U Dolly Varden
SO-A adult sockeye
SO-J juvenile sockeye
PI-A adult pink
CH-A adult chum
CU cutthroat trout
RB rainbow trout
ST stickleback
FL juvenile flounder
SC sculpin

The tributary ID for mainstems is 0.

Appendix C. Segment information for anadromous fish streams identified during 1993 surveys.

REGION: WESTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
CHENEGA ISLAND CHENEGA-01 0-01	MAINSTEM 3.0 - 3.0 251m	1 SINGLE C	GRAVEL COBBLE RUBBLE	LOW MEDIUM OD, CB, OV	SO-J, CH-A, PI-A	SPRUCE HEMLOCK	GRASSES ALDER WILLOW	MEADOW
CHENEGA ISLAND CHENEGA-01 0-02	MAINSTEM/POND 5.0 - 20 216m, 1221sqm	1 SINGLE C	MUD/SILT ORGANICS GRAVEL	NONE HIGH OD, DB, B, OV	CO-J, PI-A, DV-U, ST		GRASSES FERNS WILLOW	MEADOW
CHENEGA ISLAND CHENEGA-01 1-01	TRIBUTARY 2.5 - 2.5 37m	1 SINGLE C	GRAVEL COBBLE RUBBLE	HIGH MEDIUM DB, CB, OV	PI-A	WILLOW	GRASSES FERNS	MEADOW
CHENEGA ISLAND CHENEGA-03 0-01	INTERTIDAL 5.0 - 4.0 9m	6 SINGLE A	BEDROCK BOULDER RUBBLE	LOW LOW L, B	PI-A	SPRUCE HEMLOCK	ALDER SALMONBERRY	MATURE
ESHAMY BAY ESHAMY-02 0-01	MAINSTEM 3.0 - 10 102m	1 SINGLE C	GRAVEL MUD/SILT COBBLE	NONE LOW CB, OV	PI-A	HEMLOCK SPRUCE	GRASSES	MEADOW
ESHAMY BAY ESHAMY-04 0-01	INTERTIDAL 2.0 - 1.0 40m	1 SINGLE F	RUBBLE COBBLE BOULDER	NONE LOW OD, B	PI-A, SC	HEMLOCK SPRUCE	GRASSES	MATURE
ESHAMY BAY ESHAMY-09 0-01	INTERTIDAL 15 - 5.0 12m	3 SINGLE F	COBBLE RUBBLE GRAVEL	NONE NONE NONE	PI-A	SPRUCE	GRASSES	MATURE
ESHAMY BAY ESHAMY-10 0-01	MAINSTEM 11 - 20 24m	1 SINGLE F	COBBLE RUBBLE GRAVEL	LOW LOW L	PI-A	HEMLOCK SPRUCE	GRASSES DEVILS CLUB BLUEBERRY	MATURE
ESHAMY LAKE ESHAMY-13 0-01	MAINSTEM 2.0 - 2.0 117m	2 BRAIDED C	GRAVEL COBBLE RUBBLE	NONE LOW DB, CB, OV	SO-A, PI-A	HEMLOCK SPRUCE	SALMONBERRY ALDER GRASSES	MEADOW
ESHAMY LAKE ESHAMY-17 0-01	MAINSTEM 3.0 - 1.5 184m	3 SINGLE C	GRAVEL RUBBLE BOULDER	LOW LOW B, CB, OV	DV-A, SC	SPRUCE HEMLOCK	GRASSES ALDER HEART LEAF	MATURE
ESHAMY LAKE ESHAMY-19 0-01	MAINSTEM 1.5 - 2.0 128m	3 SINGLE C	GRAVEL COBBLE BOULDER	MEDIUM MEDIUM DB, B, CB, OV	PI-A, RB, SC	SPRUCE HEMLOCK	ALDER BLUEBERRY GRASSES	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: WESTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
ESHAMY LAKE ESHAMY-20 0-01	MAINSTEM 4.0 - 1.5 90m	1 BRAIDED C	BOULDER COBBLE GRAVEL	MEDIUM MEDIUM DB, L, B, CB, OV	SO-A, DV-U, SC	SPRUCE HEMLOCK	BLUEBERRY GRASSES ALDER	MATURE
ESHAMY LAKE ESHAMY-21 0-01	MAINSTEM 7.5 - 1.0 23m	5 BRAIDED C	COBBLE RUBBLE BOULDER	MEDIUM MEDIUM DB, L, B, CB, OV	SO-A, PI-A, DV-U, SC	SPRUCE HEMLOCK	SALMONBERRY DEVILS CLUB FERNS	MATURE
ESHAMY LAKE ESHAMY-22 0-01	MAINSTEM 1.5 - 1.0 25m	2 SINGLE C	COBBLE RUBBLE GRAVEL	LOW LOW OD, DB, CB, OV	CO-J, SO-A	SPRUCE HEMLOCK	GRASSES BLUEBERRY FERNS	MATURE
ESHAMY LAKE ESHAMY-23 0-01	MAINSTEM 2.0 - 3.5 642m	4 SINGLE A	RUBBLE BOULDER COBBLE	LOW LOW L, B	CO-J, RB	SPRUCE	HEMLOCK BLUEBERRY MOSS	MATURE
ESHAMY LAKE ESHAMY-23 0-02	MAINSTEM 3.0 - 3.0 254m	3 SINGLE C	COBBLE RUBBLE GRAVEL	LOW LOW L, B, CB, OV	SO-A	HEMLOCK	BLUEBERRY GRASSES	MEADOW
ESHAMY LAKE ESHAMY-23 1-01	TRIBUTARY 1.5 - 2.5 120m	2 SINGLE C	GRAVEL COBBLE RUBBLE	NONE LOW CB, OV	SO-A		ALDER GRASSES HEARTLEAF	MEADOW
EVANS ISLAND EVANS-03 0-01	MAINSTEM 1.0 - 1.0 29m	2 SINGLE C	COBBLE BEDROCK BOULDER	MEDIUM LOW OD, DB, L	PI-A	HEMLOCK ALDER	BLUEBERRY DEVILS CLUB SALMONBERRY	SECONDARY
EVANS ISLAND EVANS-04 0-01	MAINSTEM 4.0 - 4.0 140m	3 NONE C	RUBBLE GRAVEL COBBLE	MEDIUM HIGH DB, L	PI-A	SPRUCE	ALDER HEMLOCK	MATURE
EVANS ISLAND EVANS-05 0-01	MAINSTEM 0.5 - 1.0 31m	4 SINGLE C	RUBBLE ORGANICS	HIGH HIGH DB, OV	PI-A	SPRUCE ALDER	CURRANT HEMLOCK FERNS	SECONDARY
JACKPOT BAY 226-20-16080 0-01	MAINSTEM 8.0 - 5.0 894m	4 SINGLE D	BOULDER BEDROCK COBBLE	MEDIUM MEDIUM L, B	CO-J, SO-A, DV-A, DV-U	HEMLOCK SITKA SPRUCE	ALDER SALMONBERRY GRASSES	SECONDARY
JACKPOT BAY 226-20-16080 8-01	TRIBUTARY 4.0 - 4.0 245m	3 SINGLE D	RUBBLE BOULDER COBBLE	MEDIUM MEDIUM OD, DB, L, B, CB, OV	CO-J, PI-A	HEMLOCK SPRUCE	BLUEBERRY GRASSES DEVILS CLUB	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: WESTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
JACKPOT BAY 226-20-16080 8-02	LAKE/POND 60 - 80 44329sqm	0 SINGLE D	BOULDER MUD/SILT	LOW MEDIUM OD, L, B, OV	CO-J, SO-A	HEMLOCK SPRUCE	DEVILS CLUB GRASSES	MATURE
JACKPOT BAY 226-20-16080 8-03	TRIBUTARY 4.0 - 4.0 150m	3 SINGLE C	BOULDER RUBBLE COBBLE	MEDIUM HIGH L, B, OV	CO-J	HEMLOCK SPRUCE	BLUEBERRY GRASSES FERNS	MATURE
JACKPOT BAY 226-20-16080 9-01	TRIBUTARY 2.0 - 2.0 250m	2 SINGLE C	ORGANICS COBBLE BOULDER	MEDIUM MEDIUM OD, DB, B, OV	CO-J	SPRUCE HEMLOCK	GRASSES BLUEBERRY FERNS	MATURE
JACKPOT BAY 226-20-16080 9-02	TRIBUTARY/POND 5.0 - 20 142m, 8596sqm	0 SINGLE D	ORGANICS GRAVEL COBBLE	NONE LOW OD, DB	CO-J, PI-A	SPRUCE HEMLOCK	GRASSES HEMLOCK	MATURE
JACKPOT BAY 226-20-16080 10-01	TRIBUTARY 3.0 - 2.0 195m	2 SINGLE C	GRAVEL COBBLE BOULDER	LOW MEDIUM DB, B, CB, OV	CO-J	SPRUCE	WILLOW GRASSES ALDER	SHRUBS
JACKPOT BAY 226-20-16080 11-01	TRIBUTARY 4.0 - 3.0 81m	2 SINGLE D	RUBBLE COBBLE BOULDER	LOW LOW DB, B, OV	CO-J	SPRUCE	ALDER WILLOW FERNS	SECONDARY
JACKPOT BAY JACK-01 0-01	INTERTIDAL 2.0 - 2.0 91m	2 SINGLE D	COBBLE RUBBLE BOULDER	LOW LOW L, B	PI-A	SPRUCE HEMLOCK	DEVILS CLUB CURRANT MOSS	MATURE
JACKPOT BAY JACK-02 0-01	INTERTIDAL 2.0 - 2.0 122m	3 SINGLE D	RUBBLE GRAVEL BOULDER	LOW LOW L, B	PI-A	HEMLOCK SPRUCE	GRASSES FERNS MOSS	MATURE
JACKPOT BAY JACK-05 0-01	INTERTIDAL 2.5 - 2.0 56m	2 SINGLE C	GRAVEL COBBLE RUBBLE	LOW LOW B	CH-A, PI-A	HEMLOCK SPRUCE	MOSS CURRANT DEVILS CLUB	MATURE
KNIGHT ISLAND DRIER-01 0-01	INTERTIDAL 4.0 - 3.0 60m	4 SINGLE D	COBBLE GRAVEL RUBBLE	LOW LOW B	PI-A		ALDER GRASSES	SECONDARY
KNIGHT ISLAND DRIER-02 0-01	INTERTIDAL 4.5 - 3.0 47m	3 SINGLE F	GRAVEL COBBLE RUBBLE	NONE NONE NONE	PI-A		GRASSES	MEADOW

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: WESTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
KNIGHT ISLAND DRIER-03 0-01	MAINSTEM 10 - 2.5 47m	3 SINGLE C	GRAVEL COBBLE RUBBLE	MEDIUM MEDIUM DB, L, CB, OV	PI-A	HEMLOCK	ALDER BLUEBERRY GRASSES	SECONDARY
KNIGHT ISLAND DRIER-04 0-01	MAINSTEM 15 - 3.5 206m	2 SINGLE C	GRAVEL COBBLE RUBBLE	LOW MEDIUM L, B, OV	PI-A	HEMLOCK	SALMONBERRY ALDER FERNS	MATURE
KNIGHT ISLAND DRIER-04 1-01	TRIBUTARY 4.0 - 5.0 33m	3 SINGLE C	COBBLE GRAVEL RUBBLE	MEDIUM MEDIUM L, B, OV	PI-A	HEMLOCK SPRUCE	SALMONBERRY ALDER	MATURE
KNIGHT ISLAND ISLES-02 0-01	MAINSTEM 2.0 - 2.0 36m	3 SINGLE D	COBBLE GRAVEL RUBBLE	HIGH LOW L, B, OV	PI-A	HEMLOCK	ALDER SALMONBERRY BLUEBERRY	SECONDARY
KNIGHT ISLAND ISLES-04 0-01	MAINSTEM 4.0 - 3.0 84m	5 SINGLE C	GRAVEL COBBLE RUBBLE	MEDIUM MEDIUM DB, CB, OV	PI-A	HEMLOCK	BLUEBERRY SALMONBERRY ALDER	MATURE
KNIGHT ISLAND ISLES-05 0-01	INTERTIDAL 3.0 - 2.0 21m	5 SINGLE F	COBBLE GRAVEL RUBBLE	NONE NONE B	PI-A		GRASSES	SECONDARY
KNIGHT ISLAND ISLES-06 0-01	INTERTIDAL 3.0 - 1.5 32m	5 SINGLE F	GRAVEL COBBLE RUBBLE	NONE NONE NONE	PI-A		GRASSES	SECONDARY
KNIGHT ISLAND ISLES-07 0-01	INTERTIDAL 2.5 - 2.0 20m	3 SINGLE F	GRAVEL COBBLE RUBBLE	NONE NONE NONE	PI-A		GRASSES	SECONDARY
KNIGHT ISLAND MARSHA-04 0-01	INTERTIDAL 2.0 - 2.0 12m	5 SINGLE F	GRAVEL COBBLE RUBBLE	NONE NONE B	PI-A		ALDER	SECONDARY
KNIGHT ISLAND MARSHA-05 0-01	MAINSTEM,POND 2.0 - 20 154m, 1084sqm	3 SINGLE F	GRAVEL ORGANICS RUBBLE	LOW LOW CB, OV	PI-A	HEMLOCK SPRUCE	ALDER GRASSES FERNS	SHRUBS
KNIGHT ISLAND MARSHA-06 0-01	INTERTIDAL 2.0 - 1.5 15m	3 SINGLE F	GRAVEL COBBLE RUBBLE	NONE NONE NONE	PI-A		GRASSES	SHRUBS

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: WESTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
KNIGHT ISLAND MARSHA-07 0-01	MAINSTEM 2.0 - 2.0 32m	4 MULTI-CHANNEL D	GRAVEL COBBLE RUBBLE	MEDIUM MEDIUM DB, L, CB, OV	PI-A	SPRUCE (SCATTERED)	ALDER GRASSES FERNS	SHRUBS
LATOUCHE ISLAND 226-50-16384 1-01	TRIBUTARY 3.0 - 2.0 567m	1 BRAIDED C	GRAVEL	NONE LOW DB, CB, OV	PI-A		GRASSES RASPBERRY FERNS	MEADOW
LATOUCHE ISLAND LATOUCHE-03 0-01	MAINSTEM,POND 2.0 - 1.5 686m, 4285sqm	1 SINGLE C	COBBLE GRAVEL RUBBLE	MEDIUM HIGH DB, L, CB, OV	CO-J, DV-U	SPRUCE	ALDER SPRUCE SKUNK CABBAGE	MATURE
LATOUCHE ISLAND LATOUCHE-03 0-02	MAINSTEM 1.0 - 0.5 402m	1 SINGLE B	COBBLE GRAVEL MUD/SILT	NONE HIGH CB, OV	CO-J		GRASSES BLUEBERRY	MEADOW
LATOUCHE ISLAND LATOUCHE-03 1-01	TRIBUTARY 2.0 - 1.0 96m	1 SINGLE D	ORGANICS MUD/SILT SAND	MEDIUM HIGH OD, DB, L, OV	CO-J		ALDER GRASSES	MEADOW
LATOUCHE ISLAND LATOUCHE-03 3-01	TRIBUTARY 1.0 - 0.5 119m	1 SINGLE B	RUBBLE ORGANICS GRAVEL	NONE HIGH OD, CB, OV	CO-J		GRASSES	MEADOW
PADDY BAY 226-20-16010 0-02	MAINSTEM 4.0 - 2.5 389m	3 SINGLE C	RUBBLE BEDROCK BOULDER	MEDIUM MEDIUM DB, L,B, OV	PI-A, DV-U	SPRUCE	HEMLOCK ALDER FERNS	MATURE
PADDY BAY 226-20-16010 0-03	MAINSTEM 1.5 - 5.0 1088m	1 SINGLE C	COBBLE GRAVEL RUBBLE	LOW LOW OD, DB, L, OV	PI-A, DV-U	SPRUCE	GRASSES ALDER FERNS	MEADOW
PADDY BAY 226-20-16010 0-04	LAKE/POND 10 - 30 15936sqm	0 SINGLE C	RUBBLE COBBLE ORGANICS	NONE LOW L, CB, OV	SO-A	SPRUCE	GRASSES ALDER	MEADOW
PADDY BAY 226-20-16010 1-01	TRIBUTARY 3.0 - 2.0 205m	3 SINGLE E	RUBBLE COBBLE GRAVEL	HIGH MEDIUM DB, L, B, CB, OV	PI-A, DV-U	SPRUCE	ALDER DEVILS CLUB SALMONBERRY	MATURE
PADDY BAY PADDY-02 0-01	MAINSTEM 10 - 3.0 361m	1 SINGLE C	COBBLE GRAVEL RUBBLE	NONE MEDIUM B, CB, OV	SO-A, PI-A, DV-U, ST	SPRUCE HEMLOCK	GRASSES FERNS	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: WESTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
PADDY BAY PADDY-02 0-02	MAINSTEM 3.0 - 3.0 246m	4 SINGLE D	BOULDER BEDROCK RUBBLE	MEDIUM HIGH OD, DB, L, B, OV	CO-J	HEMLOCK SPRUCE	DEVILS CLUB SALMONBERRY FERNS	MATURE
PADDY BAY PADDY-03 0-01	MAINSTEM 30 - 4.0 74m	1 SINGLE E	COBBLE GRAVEL RUBBLE	MEDIUM MEDIUM DB, L, B, CB, OV	CH-A, PI-A	SPRUCE HEMLOCK	ALDER FERNS BLUEBERRY	MATURE
PADDY BAY PADDY-03 0-02	MAINSTEM 4.0 - 6.0 57m	3 SINGLE C	BEDROCK BOULDER RUBBLE	LOW LOW B, OV	PI-A	SPRUCE HEMLOCK	ALDER BLUEBERRY	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: EASTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
BLIGH ISLAND BLIGH-01 0-01	INTERTIDAL 6.0 - 6.0 35m	4 SINGLE A	BEDROCK COBBLE RUBBLE	NONE LOW L, B	PI-A	HEMLOCK SPRUCE	ALDER DEVILS CLUB BLUEBERRY	MATURE
BLIGH ISLAND BLIGH-02 0-01	LAKE/POND 20 - 50 20077sqm	0 SINGLE C	SAND GRAVEL ORGANICS	NONE MEDIUM DB, L, OV	PI-A	SPRUCE HEMLOCK	AQUATIC GRASSES	MEADOW
BLIGH ISLAND BLIGH-02 0-02	MAINSTEM 4.0 - 5.0 565m	2 SINGLE C	COBBLE GRAVEL RUBBLE	HIGH HIGH DB, L, CB, OV	CO-J, PI-A	HEMLOCK SPRUCE	SALMONBERRY BLUEBERRY ALDER	MATURE
BLIGH ISLAND BLIGH-02 1-01	TRIBUTARY 1.0 - 1.5 64m	4 SINGLE C	COBBLE GRAVEL RUBBLE	HIGH HIGH DB, L, CB, OV	CO-J, PI-A	HEMLOCK SPRUCE	BLUEBERRY SALMONBERRY DEVILS CLUB	MATURE
BLIGH ISLAND BLIGH-03 0-01	MAINSTEM 3.0 - 3.0 347m	3 SINGLE C	COBBLE BOULDER GRAVEL	MEDIUM MEDIUM DB, L, B, CB, OV	PI-A	HEMLOCK	ALDER FERNS SKUNK CABBAGE	MATURE
EYAK LAKE EYAK-01 0-01	MAINSTEM 15 - 10 662m	2 BRAIDED D	GRAVEL COBBLE RUBBLE	LOW MEDIUM DB, L, CB, OV	SO-A, PI-A, DV-U	SPRUCE	ALDER DEVILS CLUB SALMONBERRY	SECONDARY
EYAK LAKE EYAK-01 0-02	MAINSTEM 10 - 8.0 557m	2 SINGLE E	GRAVEL COBBLE RUBBLE	LOW MEDIUM DB, L, B, CB	PI-A	SPRUCE HEMLOCK	DEVILS CLUB ALDER	MATURE
HAWKINS ISLAND 228-30-18560 1-01	TRIBUTARY 2.0 - 1.5 443m	2 SINGLE C	COBBLE RUBBLE GRAVEL	MEDIUM MEDIUM L, B, CB, OV	PI-A	HEMLOCK SPRUCE	GRASSES ALDER BLUEBERRY	SECONDARY
HAWKINS ISLAND 228-30-18560 1-02	LAKE/POND 1.5 - 8.0 2694sqm	0 SINGLE C	COBBLE GRAVEL MUD/SILT	NONE HIGH OD, DB, L, B, CB, OV	PI-A	HEMLOCK SPRUCE	BLUEBERRY GRASSES FERNS	SECONDARY
HAWKINS ISLAND 228-30-18560 2-01	TRIBUTARY 1.0 - 3.0 128m	1 SINGLE B	GRAVEL COBBLE SAND	LOW HIGH OD, DB, CB, OV	PI-A	HEMLOCK	GRASSES FERNS SKUNK CABBAGE	SECONDARY
HAWKINS ISLAND 228-30-18560 3-01	TRIBUTARY 1.5 - 2.0 25m	2 SINGLE B	GRAVEL COBBLE SAND	LOW HIGH OD, DB, CB, OV	PI-A	HEMLOCK SPRUCE	GRASSES FERNS BLUEBERRY	SECONDARY

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Appendix C. Continued

REGION: EASTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
HAWKINS ISLAND HAWKINS-03 0-01	MAINSTEM 1.0 - 1.0 34m	3 SINGLE C	COBBLE RUBBLE GRAVEL	HIGH LOW L, OV	PI-A	HEMLOCK	ALDER GRASSES	MATURE
HAWKINS ISLAND HAWKINS-05 0-01	MAINSTEM 2.0 - 1.0 33m	2 SINGLE D	COBBLE GRAVEL RUBBLE	HIGH MEDIUM L, OV	PI-A	HEMLOCK SPRUCE	BLUEBERRY DEVILS CLUB FERNS	MATURE
HAWKINS ISLAND HAWKINS-06 0-01	MAINSTEM 6.0 - 5.0 559m	3 SINGLE C	COBBLE GRAVEL RUBBLE	HIGH HIGH DB, L, OV	PI-A	HEMLOCK SPRUCE	BLUEBERRY SALMONBERRY DEVILS CLUB	MATURE
HAWKINS ISLAND HAWKINS-06 0-02	MAINSTEM 5.0 - 5.0 279m	4 SINGLE A	RUBBLE COBBLE GRAVEL	HIGH HIGH DB, L, OV	PI-A	HEMLOCK	BLUEBERRY DEVILS CLUB	MATURE
HAWKINS ISLAND HAWKINS-06 1-01	TRIBUTARY 1.0 - 1.5 17m	2 SINGLE D	COBBLE GRAVEL RUBBLE	HIGH MEDIUM OD, DB, L, B	PI-A	HEMLOCK	BLUEBERRY SALMONBERRY DEVILS CLUB	MATURE
HAWKINS ISLAND HAWKINS-06 2-01	TRIBUTARY 3.0 - 1.0 73m	2 SINGLE D	COBBLE GRAVEL RUBBLE	HIGH MEDIUM OD, DB, CB, OV	PI-A	HEMLOCK	BLUEBERRY FERNS DEVILS CLUB	MATURE
HAWKINS ISLAND HAWKINS-07 0-01	MAINSTEM 4.0 - 0.5 385m	4 SINGLE C	COBBLE RUBBLE GRAVEL	MEDIUM MEDIUM OD, DB, L, B, CB	PI-A	HEMLOCK SPRUCE	FERNS ALDER GRASSES	MATURE
HAWKINS ISLAND HAWKINS-09 0-01	MAINSTEM 4.0 - 7.0 518m	2 SINGLE D	GRAVEL COBBLE RUBBLE	MEDIUM HIGH DB, L, CB	PI-A	HEMLOCK SPRUCE	SALMONBERRY BLUEBERRY	MATURE
HAWKINS ISLAND HAWKINS-11 0-01	MAINSTEM 2.0 - 3.0 406m	2 SINGLE C	GRAVEL COBBLE RUBBLE	HIGH HIGH DB, L, CB, OV	CH-A, PI-A	SPRUCE HEMLOCK	BLUEBERRY DEVILS CLUB FERNS	MATURE
HAWKINS ISLAND HAWKINS-12 0-01	MAINSTEM 1.0 - 1.0 366m	3 SINGLE C	GRAVEL COBBLE ORGANICS	HIGH HIGH DB, L, CB, OV	PI-A	HEMLOCK	ALDER BLUEBERRY SKUNK CABBAGE	MATURE
HAWKINS ISLAND HAWKINS-16 0-01	MAINSTEM,POND 6.0 - 3.0 68m, 485sqm	1 SINGLE C	GRAVEL COBBLE RUBBLE	NONE NONE CB, OV	PI-A	SPRUCE	GRASSES	MEADOW

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SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: EASTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
HAWKINS ISLAND HAWKINS-17 0-01	MAINSTEM 13 - 5.0 516m	2 SINGLE A	BEDROCK COBBLE BOULDER	MEDIUM HIGH L, B, OV	PI-A	HEMLOCK SPRUCE ALDER	FERNS MOSS GRASSES	MATURE
HENEY RANGE 221-10-10010 1-01	TRIBUTARY 2.0 - 1.0 213m	2 SINGLE D	GRAVEL COBBLE MUD/SILT	LOW HIGH DB, L, CB, OV	CO-J, PI-A	SPRUCE HEMLOCK	ALDER SALMONBERRY FERNS	SHRUBS
HENEY RANGE 221-10-10010 2-01	TRIBUTARY 3.0 - 3.0 369m	1 SINGLE B	GRAVEL MUD/SILT SAND	NONE MEDIUM DB, L, CB, OV	CO-J, DV-U, RB, SC, FL	ALDER	GRASSES	MEADOW
HENEY RANGE HENEY-01 0-01	MAINSTEM 5.0 - 6.0 948m	1 SINGLE D	GRAVEL COBBLE MUD/SILT	LOW LOW CB, OV	CO-J, PI-A, DV-A	HEMLOCK SPRUCE	ALDER WILLOW	MATURE
HENEY RANGE HENEY-01 0-02	MAINSTEM 6.0 - 4.0 527m	3 SINGLE A	COBBLE GRAVEL RUBBLE	MEDIUM HIGH DB, B, CB, OV	CO-J, PI-A, DV-U, CU	HEMLOCK SPRUCE	DEVILS CLUB ALDER BLUEBERRY	MATURE
HENEY RANGE HENEY-02 0-01	MAINSTEM 3.0 - 2.0 247m	1 SINGLE C	GRAVEL SAND MUD/SILT	NONE LOW DB, CB, OV	CO-J	ALDER SPRUCE	GRASSES SKUNK CABBAGE HIGHBUSH CRANBERRY	MEADOW
HENEY RANGE HENEY-02 0-02	MAINSTEM 1.5 - 8.0 359m	2 SINGLE C	GRAVEL COBBLE SAND	HIGH HIGH DB, L, CB, OV	CO-A, CO-J	HEMLOCK SPRUCE	DEVILS CLUB BLUEBERRY SKUNK CABBAGE	MATURE
NELSON BAY 221-10-10170 1-01	TRIBUTARY 4.0 - 3.0 195m	2 SINGLE A	GRAVEL COBBLE RUBBLE	HIGH HIGH DB, L, CB, OV	PI-A	HEMLOCK	DEVILS CLUB ALDER SALMONBERRY	MATURE
PORT GRAVINA COMFORT-01 0-01	MAINSTEM 3.0 - 1.0 408m	2 SINGLE C	GRAVEL COBBLE RUBBLE	HIGH HIGH DB, L, CB, OV	PI-A	HEMLOCK SPRUCE	BLUEBERRY ALDER DEVILS CLUB	MATURE
PORT GRAVINA COMFORT-01 1-01	TRIBUTARY 1.0 - 0.5 36m	5 SINGLE C	GRAVEL COBBLE RUBBLE	HIGH HIGH DB, L, CB, OV	PI-A	HEMLOCK SPRUCE	BLUEBERRY ALDER DEVILS CLUB	MATURE
PORT GRAVINA COMFORT-02 0-01	MAINSTEM 2.0 - 1.0 135m	3 SINGLE B	GRAVEL COBBLE RUBBLE	HIGH HIGH DB, L, CB, OV	PI-A	SPRUCE HEMLOCK	BLUEBERRY SALMONBERRY SKUNK CABBAGE	MATURE

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SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: EASTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
PORT GRAVINA COMFORT-03 0-01	MAINSTEM 2.0 - 1.0 35m	5 SINGLE C	BEDROCK COBBLE RUBBLE	MEDIUM LOW L, B, OV	PI-A	SPRUCE HEMLOCK	ALDER BLUEBERRY GRASSES	SECONDARY
PORT GRAVINA COMFORT-05 0-01	MAINSTEM 6.0 - 1.0 201m	3 SINGLE D	GRAVEL COBBLE RUBBLE	NONE LOW B, OV	PI-A	SPRUCE HEMLOCK	ALDER GRASSES	MEADOW
PORT GRAVINA GRAVINA-03 0-01	MAINSTEM 1.0 - 0.5 52m	1 SINGLE C	RUBBLE COBBLE GRAVEL	LOW LOW DB, B, CB, OV	PI-A	HEMLOCK	ALDER GRASSES	MEADOW
PORT GRAVINA GRAVINA-05 0-01	MAINSTEM 3.0 - 3.0 46m	3 SINGLE C	BOULDER COBBLE GRAVEL	HIGH MEDIUM DB, B, CB,	PI-A	SPRUCE HEMLOCK	ALDER BLUEBERRY FERNS	MATURE
PORT GRAVINA GRAVINA-06 0-01	MAINSTEM 2.0 - 2.0 25m	4 SINGLE D	GRAVEL COBBLE BOULDER	HIGH MEDIUM L, B, OV	PI-A	HEMLOCK SPRUCE	ALDER	MATURE
PORT GRAVINA GRAVINA-07 0-01	MAINSTEM 4.0 - 3.0 46m	3 SINGLE E	COBBLE GRAVEL RUBBLE	MEDIUM MEDIUM L, OV	PI-A	HEMLOCK SPRUCE	ALDER BLUEBERRY GRASSES	MATURE
PORT GRAVINA OLSEN-01 0-01	MAINSTEM 2.0 - 2.0 82m	3 SINGLE C	GRAVEL RUBBLE COBBLE	HIGH HIGH DB, L, CB	PI-A	SPRUCE HEMLOCK	BLUEBERRY MOSS DEVILS CLUB	MATURE
PORT GRAVINA OLSEN-02 0-01	MAINSTEM 3.0 - 2.0 84m	5 SINGLE C	GRAVEL RUBBLE COBBLE	HIGH HIGH OD, DB, CB, OV	CH-A, PI-A	SPRUCE HEMLOCK	SALMONBERRY MOSS FERNS	MATURE
PORT GRAVINA OLSEN-03 0-01	INTERTIDAL no measure 9m	1 SINGLE F	NM	LOW LOW B, OV	PI-A	SPRUCE	ALDER GRASSES	MATURE
PORT GRAVINA OLSEN-04 0-01	LAKE/POND 80 - 80 12645sqm	0 SINGLE D	MUD/SILT ORGANICS SAND	NONE LOW OV	PI-A, ST	SPRUCE	BEACH GRASS GRASSES	MEADOW
PORT GRAVINA OLSEN-04 0-02	MAINSTEM 2.0 - 1.0 183m	1 SINGLE B	COBBLE GRAVEL ORGANICS	LOW HIGH DB, L, CB, OV	PI-A, DV-A, ST	SPRUCE HEMLOCK	ALDER FERNS GRASSES	MATURE

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SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: EASTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
SHEEP BAY SAHLIN-01 0-01	MAINSTEM 12 - 6.0 692m	1 SINGLE D	GRAVEL COBBLE RUBBLE	NONE LOW CB, OV	CH-A, PI-A		ELDERBERRY GRASSES	SHRUBS
SHEEP BAY SAHLIN-01 0-02	MAINSTEM 1.0 - 0.5 349m	1 SINGLE B	GRAVEL SAND ORGANICS	HIGH HIGH OD, DB, CB, OV	SO-A, CH-A, PI-A	HEMLOCK (SCATTERED SPRUCE	ALDER DEVILS CLUB SALMONBERRY	MATURE
SHEEP BAY SAHLIN-01 1-01	TRIBUTARY 5.0 - 3.0 94m	1 SINGLE D	GRAVEL SAND	NONE LOW CB, OV	CO-J, CH-A		GRASSES ELDERBERRY	MEADOW
SHEEP BAY SAHLIN-01 2-01	TRIBUTARY 1.0 - 1.0 87m	1 SINGLE B	GRAVEL COBBLE ORGANICS	HIGH HIGH DB, L, CB, OV	PI-A	SPRUCE (SCATTERED)	ALDER SALMONBERRY FERNS	SHRUBS
SHEEP BAY SAHLIN-01 3-01	TRIBUTARY 5.0 - 1.5 148m	1 SINGLE B	GRAVEL COBBLE	HIGH HIGH OD, DB, CB, OV	SO-A, CH-A, PI-A	SPRUCE (SCATTERED)	ALDER SALMONBERRY WILLOW	SHRUBS
SHEEP BAY SAHLIN-01 4-01	TRIBUTARY 1.0 - 1.0 132m	1 SINGLE B	GRAVEL COBBLE RUBBLE	HIGH HIGH DB, L, CB, OV	PI-A	HEMLOCK SPRUCE	DEVILS CLUB ALDER SALMONBERRY	MATURE
SHEEP BAY SHEEP-01 0-01	LAKE/POND 9.0 - 4.0 98509sqm	0 MULTI-CHANNEL D	GRAVEL COBBLE	NONE LOW CB	CO-A, PI-A		GRASSES	MEADOW
SHEEP BAY SHEEP-01 0-02	MAINSTEM 5.0 - 2.0 390m	1 SINGLE B	GRAVEL ORGANICS COBBLE	LOW HIGH DB, L, CB, OV	PI-A	SPRUCE HEMLOCK	ALDER GRASSES	MEADOW
SHEEP BAY SHEEP-01 0-03	MAINSTEM 2.0 - 0.2 177m	4 SINGLE B	COBBLE GRAVEL RUBBLE	LOW HIGH DB, CB, OV	PI-A	SPRUCE HEMLOCK	WILLOW GRASSES ALDER	MEADOW
SHEEP BAY SHEEP-01 1-01	TRIBUTARY 2.0 - 0.5 98m	1 SINGLE C	GRAVEL SAND ORGANICS	LOW MEDIUM CB, OV	PI-A		GRASSES	MEADOW
SHEEP BAY SHEEP-01 2-01	TRIBUTARY 2.0 - 0.5 23m	1 SINGLE C	GRAVEL SAND ORGANICS	NONE MEDIUM CB, OV	CO-J		GRASSES	MEADOW

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Appendix C. Continued

REGION: EASTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
SHEEP BAY SHEEP-01 3-01	TRIBUTARY 2.0 - 0.5 112m	6 SINGLE C	BOULDER GRAVEL COBBLE	HIGH MEDIUM DB, B, CB, OV	PI-A	SPRUCE HEMLOCK	WILLOW BLUEBERRY DEVILS CLUB	MATURE
SHEEP BAY SHEEP-02 0-01	MAINSTEM 2.5 - 2.5 167m	1 SINGLE C	GRAVEL COBBLE RUBBLE	MEDIUM MEDIUM L, CB, OV	PI-A		ALDER GRASSES FERNS	SECONDARY
SHEEP BAY SHEEP-02 0-02	LAKE/POND 5.0 - 10 4610sqm	0 SINGLE D	MUD/SILT ORGANICS	NONE HIGH OD, L, OV	PI-A		GRASSES EQUISETUM FERNS	MEADOW
SHEEP BAY SHEEP-04 0-01	MAINSTEM 15 - 15 155m	4 SINGLE C	GRAVEL BOULDER COBBLE	NONE LOW L, B	PI-A	HEMLOCK	ALDER	MATURE
SHEEP BAY SHEEP-06 0-01	MAINSTEM 1.5 - 2.0 62m	5 SINGLE E	GRAVEL BOULDER COBBLE	LOW LOW B, OV	PI-A	HEMLOCK	SALMONBERRY DEVILS CLUB GRASSES	MATURE
SHEEP BAY SHEEP-07 0-01	MAINSTEM 20 - 2.0 668m	1 SINGLE D	GRAVEL COBBLE	MEDIUM MEDIUM DB, L, B, CB, OV	PI-A	SPRUCE HEMLOCK	SALMONBERRY ALDER DEVILS CLUB	MATURE
SHEEP BAY SHEEP-07 0-02	MAINSTEM 2.0 - 6.0 183m	2 SINGLE A	GRAVEL COBBLE RUBBLE	MEDIUM MEDIUM DB, L, B, CB, OV	PI-A	HEMLOCK SPRUCE	SALMONBERRY ALDER DEVILS CLUB	MATURE
SHEEP BAY SHEEP-07 1-01	TRIBUTARY 2.0 - 1.0 60m	3 SINGLE C	GRAVEL COBBLE RUBBLE	LOW MEDIUM DB, L, B	PI-A	HEMLOCK SPRUCE	ALDER SALMONBERRY GRASSES	MATURE
SHEEP BAY SHEEP-09 0-01	MAINSTEM 3.0 - 1.5 161m	1 SINGLE C	GRAVEL ORGANICS MUD/SILT	NONE MEDIUM DB, CB, OV	PI-A		GRASSES FERNS	MEADOW
SHEEP BAY SHEEP-09 0-02	MAINSTEM 1.5 - 1.0 277m	3 SINGLE D	COBBLE GRAVEL RUBBLE	HIGH MEDIUM DB, L, CB, OV	PI-A	HEMLOCK SPRUCE	FERNS ALDER SALMONBERRY	MATURE
SHEEP BAY SHEEP-09 0-03	MAINSTEM 0.5 - 0.3 85m	1 SINGLE B	COBBLE GRAVEL RUBBLE	NONE HIGH DB, L, B, CB, OV	PI-A	HEMLOCK	FERNS SKUNK CABBAGE BLUEBERRY	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: EASTERN PWS

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
SHEEP BAY SHEEP-10 0-01	MAINSTEM 4.0 - 6.0 577m	3 SINGLE D	COBBLE RUBBLE GRAVEL	MEDIUM MEDIUM DB, L, B, CB, OV	PI-A	HEMLOCK SPRUCE	DEVILS CLUB ALDER CURRANT	MATURE
SHEEP BAY SHEEP-10 0-02	MAINSTEM 2.0 - 1.5 62m	4 SINGLE A	RUBBLE GRAVEL BOULDER	LOW LOW DB, L, B	PI-A	HEMLOCK	DEVILS CLUB MOSS	MATURE
SIMPSON BAY SIMPSON-05 0-01	MAINSTEM 1.0 - 1.0 69m	2 SINGLE C	COBBLE GRAVEL ORGANICS	LOW HIGH OD, DB, L, CB	CO-J	SPRUCE HEMLOCK	GRASSES FERNS WILLOW	MEADOW
SIMPSON BAY SIMPSON-09 0-01	MAINSTEM 2.0 - 0.5 435m	2 SINGLE B	GRAVEL COBBLE	HIGH HIGH OD, DB, CB, OV	PI-A	SPRUCE HEMLOCK	ALDER SKUNK CABBAGE FERNS	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
CHUGACH PASSAGE CHUGACH-01 0-01	LAKE/POND 30 - 50 4049sqm	0 SINGLE D	MUD/SILT ORGANICS GRAVEL	NONE LOW OD, DB, L, OV	PI-A	SPRUCE	GRASSES ALDER	MATURE
CHUGACH PASSAGE CHUGACH-02 0-01	MAINSTEM 10 - 6.0 186m	1 SINGLE C	GRAVEL SAND COBBLE	MEDIUM MEDIUM OD, DB, CB, OV	CO-J, PI-A, ST	SPRUCE	SALMONBERRY DEVILS CLUB ALDER	MATURE
CHUGACH PASSAGE CHUGACH-02 0-02	MAINSTEM 6.0 - 6.0 454m	1 BRAIDED C	GRAVEL COBBLE SAND	MEDIUM MEDIUM OD, DB, CB, OV	CO-J, PI-A	SPRUCE	ALDER GRASSES SALMONBERRY	SHRUBS
CHUGACH PASSAGE CHUGACH-02 0-03	MAINSTEM 6.0 - 4.0 293m	1 BRAIDED C	GRAVEL COBBLE SAND	MEDIUM MEDIUM OD, DB, CB, OV	CO-J, PI-A	SPRUCE	ALDER DEVILS CLUB SALMONBERRY	MATURE
CHUGACH PASSAGE CHUGACH-02 0-04	MAINSTEM 4.0 - 4.0 111m	3 SINGLE A	COBBLE GRAVEL RUBBLE	MEDIUM MEDIUM B, CB, OV	PI-A	SPRUCE	FERNS DEVILS CLUB ALDER	MATURE
CHUGACH PASSAGE CHUGACH-02 1-01	TRIBUTARY 0.5 - 0.3 63m	1 SINGLE C	MUD/SILT ORGANICS GRAVEL	HIGH MEDIUM OD, DB, CB, OV	CO-J, ST	SPRUCE	FERNS DEVILS CLUB BLUEBERRY	MATURE
CHUGACH PASSAGE CHUGACH-02 2-01	TRIBUTARY 1.5 - 0.5 118m	1 SINGLE C	SAND GRAVEL ORGANICS	MEDIUM MEDIUM OD, DB, CB, OV	CO-J, PI-A	SPRUCE	FERNS DEVILS CLUB GRASSES	MATURE
CHUGACH PASSAGE CHUGACH-04 0-01	TRIBUTARY 2.0 - 0.5 147m	1 SINGLE B	GRAVEL ORGANICS	NONE HIGH CB, OV	CO-J, PI-A, DV-U		GRASSES	MEADOW
CHUGACH PASSAGE CHUGACH-05 0-01	MAINSTEM 3.5 - 1.0 813m	2 MULTI-CHANNEL C	GRAVEL COBBLE	MEDIUM HIGH DB, L, CB, OV	CO-J, SO-J, PI-A	SPRUCE	ALDER GRASSES SALMONBERRY	MATURE
CHUGACH PASSAGE CHUGACH-06 0-01	MAINSTEM 4.0 - 1.0 314m	1 SINGLE C	GRAVEL SAND	NONE HIGH CB, OV	CO-J, PI-A, DV-U		GRASSES	MEADOW
CHUGACH PASSAGE CHUGACH-06 1-01	TRIBUTARY 2.0 - 0.5 33m	1 SINGLE B	GRAVEL	NONE HIGH CB, OV	CO-J, PI-A, DV-U		GRASSES	MEADOW

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks
B undercut rectangular D u-shaped F no bank control

COVER CODES: OD organic debris B boulders L logs
DB dead branches CB cut bank OV overhanging veget.

SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
CHUGACH PASSAGE CHUGACH-06 2-01	TRIBUTARY 0.75 - 0.5 19m	1 SINGLE B	GRAVEL ORGANICS	NONE HIGH CB, OV	PI-A		GRASSES	MEADOW
CHUGACH PASSAGE CHUGACH-06 3-01	TRIBUTARY 0.5 - 0.5 24m	1 SINGLE B	GRAVEL MUD/SILT	LOW HIGH OD, CB, OV	PI-A	SPRUCE	GRASSES SALMONBERRY	MEADOW
DOGFISH BAY 241-40-10300 1-01	INTERTIDAL 3.0 - 1.5 134m	1 SINGLE C	GRAVEL MUD/SILT	NONE LOW DB, CB, OV	CH-A, DV-U, PI-A		GRASSES	MEADOW
DOGFISH BAY 241-40-10300 2-01	INTERTIDAL 2.0 - 3.0 80m	1 SINGLE C	GRAVEL	LOW LOW DB, L, OV	CH-A, PI-A	SPRUCE (SCATTERED)	GRASSES	MATURE
DOGFISH BAY 241-40-10300 3-01	TRIBUTARY 4.0 - 1.5 61m	1 SINGLE C	GRAVEL ORGANICS	LOW MEDIUM DB, L, OV	CH-A, PI-A	SPRUCE	ELDERBERRY GRASSES ALDER	MATURE
DOGFISH BAY 241-40-10300 4-01	TRIBUTARY 1.5 - 4.0 97m	1 SINGLE C	GRAVEL ORGANICS SAND	MEDIUM MEDIUM DB, L, OV	CH-A, PI-A	SPRUCE	SALMONBERRY ALDER	MATURE
DOGFISH BAY 241-40-10300 5-01	TRIBUTARY 8.0 - 8.0 74m	1 SINGLE B	GRAVEL ORGANICS SAND	MEDIUM MEDIUM DB, L, CB, OV	CH-A, PI-A	SPRUCE	SALMONBERRY ELDERBERRY GRASSES	MATURE
DOGFISH BAY 241-40-10300 6-01	TRIBUTARY 9.0 - 2.0 303m	1 SINGLE C	GRAVEL	MEDIUM HIGH DB, L, CB, OV	CH-A, PI-A	SPRUCE	ALDER DEVILS CLUB SALMONBERRY	MATURE
DOGFISH BAY 241-40-10300 A-01	TRIBUTARY 5.0 - 5.0 464m	2 SINGLE D	COBBLE GRAVEL BEDROCK	LOW LOW OD, DB, CB, OV	PI-A	SPRUCE	ALDER DEVILS CLUB SALMONBERRY	SECONDARY
DOGFISH BAY 241-40-10300 B-01	TRIBUTARY 5.0 - 4.0 208m	3 SINGLE E	COBBLE BOULDER GRAVEL	MEDIUM LOW L, B, CB, OV	PI-A	SPRUCE	ALDER DEVILS CLUB SALMONBERRY	SECONDARY
DOGFISH BAY DOGFISH-05 0-01	MAINSTEM 3.0 - 2.5 38m	4 SINGLE C	GRAVEL COBBLE RUBBLE	MEDIUM MEDIUM DB, L	PI-A	SPRUCE	DEVILS CLUB SALMONBERRY FERNS	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
DOGFISH BAY DOGFISH-07 0-01	MAINSTEM 2.5 - 1.0 90m	2 SINGLE C	GRAVEL COBBLE	LOW HIGH DB, L, OV	PI-A	SPRUCE	DEVILS CLUB SALMONBERRY BLUEBERRY	MATURE
DOGFISH BAY DOGFISH-11 0-01	INTERTIDAL 3.0 - 0.5 354m	3 SINGLE B	GRAVEL COBBLE MUD/SILT	LOW HIGH DB, CB, OV	PI-A, DV-U	SPRUCE	ALDER FERNS SALMONBERRY	SECONDARY
ENGLISH BAY 241-30-10500 1-01	TRIBUTARY 10 - 4.0 32m	1 SINGLE C	SAND MUD/SILT ORGANICS	LOW HIGH OD, DB, CB, OV	CO-J		WILLOW SALMONBERRY GRASSES	SHRUBS
ENGLISH BAY 241-30-10500 2-01	TRIBUTARY 8.0 - 3.0 88m	1 SINGLE D	MUD/SILT GRAVEL ORGANICS	MEDIUM MEDIUM OD, DB, CB, OV	CO-J	COTTONWOOD SITKA SPRUCE	WILLOW GRASSES HIGHBUSH CRANBERRY	MATURE
ENGLISH BAY 241-30-10500 3-01	TRIBUTARY 7.0 - 1.0 268m	1 SINGLE C	MUD/SILT ORGANICS GRAVEL	LOW HIGH OD, DB, CB, OV	CO-J, DV-U	COTTONWOOD SPRUCE	WILLOW GRASSES HIGHBUSH CRANBERRY	MATURE
ENGLISH BAY 241-30-10500 A-01	TRIBUTARY 4.0 - 3.0 156m	1 SINGLE C	GRAVEL SAND MUD/SILT	MEDIUM MEDIUM OD, DB, CB, OV	CO-J	SPRUCE COTTONWOOD	ALDER SALMONBERRY DEVILS CLUB	SECONDARY
ENGLISH BAY 241-30-10500 B-01	TRIBUTARY 4.0 - 1.5 548m	1 BRAIDED C	GRAVEL SAND MUD/SILT	HIGH HIGH OD, DB, CB, OV	CO-J	SPRUCE COTTONWOOD	SALMONBERRY WILLOW DEVILS CLUB	SECONDARY
ENGLISH BAY 241-30-10500 C-01	TRIBUTARY 1.5 - 2.0 55m	1 SINGLE B	GRAVEL SAND MUD/SILT	NONE HIGH OD, DB, CB, OV	CO-J, DV-U	SPRUCE	WILLOW GRASSES	MEADOW
ENGLISH BAY 241-30-10500 D-01	TRIBUTARY 2.0 - 2.0 27m	1 SINGLE C	RUBBLE SAND GRAVEL	NONE MEDIUM OD, DB, CB, OV	CO-J, DV-U		GRASSES FERNS	MEADOW
ENGLISH BAY 241-30-10500 E-01	TRIBUTARY 1.0 - 0.5 111m	1 MULTI-CHANNEL B	MUD/SILT ORGANICS	NONE HIGH OD, DB, CB, OV	CO-J, DV-U		GRASSES WILLOW	MEADOW
ENGLISH BAY 241-30-10500 E-02	WETLAND 300 - 500 308747sqm	0 BRAIDED B	MUD/SILT ORGANICS SAND	NONE HIGH OD, CB, OV	CO-J, DV-U		GRASSES WILLOW	MEADOW

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
ENGLISH BAY 241-30-10500 F-01	TRIBUTARY 1.0 - 0.3 44m	1 SINGLE B	MUD/SILT ORGANICS	NONE HIGH OD, DB, CB, OV	CO-J, DV-U		GRASSES WILLOW	MEADOW
ENGLISH BAY 241-30-10500 G-01	TRIBUTARY 5.0 - 5.0 27m	2 SINGLE D	GRAVEL COBBLE SAND	MEDIUM MEDIUM OD, DB, L, CB, OV	CO-J, DV-U	SPRUCE COTTONWOOD	ALDER SALMONBERRY DEVILS CLUB	MATURE
ENGLISH BAY 241-30-10500 H-01	TRIBUTARY 1.0 - 1.0 26m	2 SINGLE C	COBBLE GRAVEL SAND	HIGH MEDIUM OD, DB, CB, OV	CO-J, DV-U	SPRUCE	SALMONBERRY DEVILS CLUB ALDER	SECONDARY
ENGLISH BAY 241-30-10500 I-01	TRIBUTARY 2.0 - 0.5 24m	0 SINGLE B	MUD/SILT ORGANICS RUBBLE	NONE MEDIUM DB, CB, OV	CO-J, DV-U	SPRUCE	GRASSES WILLOW	MEADOW
ENGLISH BAY 241-30-10500 J-01	TRIBUTARY 2.0 - 3.0 28m	1 SINGLE C	GRAVEL MUD/SILT ORGANICS	LOW MEDIUM OD, DB, CB, OV	CO-J	COTTONWOOD ALDER	ALDER FERNS GRASSES	MATURE
PORT CHATHAM 242-10-10230 0-01	MAINSTEM 10 - 6.0 1075m	3 SINGLE D	COBBLE GRAVEL RUBBLE	LOW MEDIUM DB, L, B, CB, OV	PI-A	SPRUCE	ALDER DEVILS CLUB BLUEBERRY	MATURE
PORT CHATHAM 242-10-10230 1-01	TRIBUTARY 1.5 - 1.0 132m	2 SINGLE C	GRAVEL COBBLE BOULDER	NONE MEDIUM OD, B, CB,OV	PI-A	SPRUCE	GRASSES ALDER MOSSBERRY	SHRUBS
PORT CHATHAM 242-10-10230 2-01	TRIBUTARY 2.0 - 2.5 137m	4 SINGLE C	GRAVEL RUBBLE BOULDER	MEDIUM LOW OD, B, CB,OV	PI-A	SPRUCE	ALDER DEVILS CLUB SALMONBERRY	MATURE
PORT CHATHAM 242-10-10230 3-01	TRIBUTARY 2.5 - 3.0 402m	2 SINGLE C	GRAVEL SAND MUD/SILT	HIGH LOW OD, DB, CB, OV	CO-J, PI-A	SPRUCE	ALDER SALMONBERRY GRASSES	MATURE
PORT CHATHAM 242-10-10230 4-01	TRIBUTARY 3.0 - 0.5 302m	1 SINGLE B	GRAVEL COBBLE SAND	MEDIUM MEDIUM OD, DB, CB, OV	PI-A	SPRUCE	GRASSES ALDER FERNS	MATURE
PORT CHATHAM 242-10-10230 5-01	TRIBUTARY 2.0 - 1.0 84m	1 SINGLE B	COBBLE GRAVEL SAND	HIGH LOW DB, CB, OV	PI-A	SPRUCE	SALMONBERRY ALDER FERNS	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks
B undercut rectangular D u-shaped F no bank control

COVER CODES: OD organic debris B boulders L logs
DB dead branches CB cut bank OV overhanging veget.

SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
PORT CHATHAM 242-10-10230 6-01	TRIBUTARY 3.0 - 1.0 200m	1 SINGLE B	GRAVEL SAND MUD/SILT	MEDIUM HIGH OD, DB, CB, OV	PI-A	SPRUCE	ALDER SALMONBERRY DEVILS CLUB	MATURE
PORT CHATHAM CHATHAM-04 0-01	MAINSTEM 6.0 - 1.0 278m	1 SINGLE C	GRAVEL	MEDIUM HIGH DB, CB, OV	PI-A	SPRUCE	SALMONBERRY BLUEBERRY ALDER	MATURE
PORT CHATHAM CHATHAM-04 1-01	TRIBUTARY 2.0 - 2.0 82m	1 SINGLE C	GRAVEL	LOW LOW OD, DB, CB, OV	PI-A	SPRUCE (SCATTERED)	GRASSES SALMONBERRY	MEADOW
PORT CHATHAM CHATHAM-12 0-01	MAINSTEM 1.0 - 1.0 77m	2 SINGLE C	GRAVEL	LOW MEDIUM DB, L, CB, OV	CH-A, PI-A		GRASSES	MEADOW
PORT CHATHAM CHATHAM-13 0-01	MAINSTEM 15 - 5.0 85m	3 SINGLE C	GRAVEL COBBLE RUBBLE	LOW LOW B, OV	PI-A	SPRUCE	ALDER GRASSES DEVILS CLUB	MATURE
PORT DICK 242-42-10460 0-01	MAINSTEM 5.0 - 4.0 1431m	1 BRAIDED C	GRAVEL SAND MUD/SILT	NONE LOW DB, CB, OV	SO-A, PI-A, DV-U	SPRUCE	GRASSES	MEADOW
PORT GRAHAM 241-20-10550 0-01	MAINSTEM 8.0 - 10 1052m	SINGLE			DV-A			
PORT GRAHAM 241-20-10550 1-01	TRIBUTARY 7.0 - 0.3 990m	1 SINGLE B	SAND MUD/SILT GRAVEL	NONE HIGH OD, DB, CB, OV	CO-J, SO-A, DV-A, DV-U, SC		GRASSES WILLOW SALMONBERRY	MEADOW
PORT GRAHAM 241-20-10550 3-01	TRIBUTARY 1.0 - 2.0 280m	1 SINGLE C	MUD/SILT ORGANICS SAND	MEDIUM MEDIUM OD, DB, L, OV	CO-J	COTTONWOOD SPRUCE	WILLOW GRASSES ALDER	SECONDARY
PORT GRAHAM 241-20-10550 3-02	LAKE/POND 10 - 10 2249sqm	0 SINGLE C	ORGANICS MUD/SILT NONE	NONE LOW OV	CO-J	SPRUCE	GRASSES WILLOW MOSS	MUSKEG
PORT GRAHAM 241-20-10550 4-01	TRIBUTARY 3.0 - 2.0 186m	4 SINGLE C	GRAVEL COBBLE SAND	HIGH MEDIUM DB, L, CB, OV	CO-J, DV-U, SC	SPRUCE	ALDER DEVILS CLUB HIGHBUSH CRANBERRY	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
PORT GRAHAM 241-20-10550 5-01	TRIBUTARY 4.0 - 2.0 50m	1 BRAIDED C	MUD/SILT SAND ORGANICS	MEDIUM MEDIUM OD, DB, CB, OV	CO-J	COTTONWOOD SPRUCE	WILLOW GRASSES ALDER	SECONDARY
PORT GRAHAM 241-20-10550 8-01	TRIBUTARY 3.0 - 1.5 168m	1 BRAIDED B	MUD/SILT ORGANICS SAND	NONE HIGH OD, DB, CB, OV	CO-J		GRASSES WILLOW	MEADOW
PORT GRAHAM 241-20-10550 9-01	TRIBUTARY 4.0 - 3.0 52m	6 SINGLE D	RUBBLE COBBLE GRAVEL	MEDIUM MEDIUM DB, L, B, CB, OV	DV-A	SPRUCE COTTONWOOD	ALDER DEVILS CLUB FERNS	MATURE
PORT GRAHAM 241-20-10550 10-01	TRIBUTARY 1.5 - 0.5 460m	1 BRAIDED B	MUD/SILT ORGANICS SAND	MEDIUM HIGH DB, CB, OV	CO-J	SPRUCE	GRASSES WILLOW HIGHBUSH CRANBERRY	MATURE
PORT GRAHAM 241-20-10550 11-01	TRIBUTARY 2.0 - 0.5 137m	0 BRAIDED D	MUD/SILT ORGANICS SAND	NONE HIGH OD, DB, CB	CO-J		GRASSES WILLOW	MEADOW
PORT GRAHAM 241-20-10550-2018 2-01	TRIBUTARY 3.0 - 3.0 391m	1 SINGLE C	GRAVEL MUD/SILT ORGANICS	LOW MEDIUM OD, DB, CB, OV	CO-J, PI-A	SPRUCE	GRASSES WILLOW SALMONBERRY	MEADOW
PORT GRAHAM 241-20-10550-2024 6-01	TRIBUTARY 3.0 - 3.0 45m	1 SINGLE C	GRAVEL COBBLE SAND	MEDIUM MEDIUM DB, L, CB, OV	CO-J, PI-A	SPRUCE COTTONWOOD	WILLOW SALMONBERRY FERNS	MATURE
PORT GRAHAM 241-20-10550-2024 7-01	TRIBUTARY 8.0 - 4.0 598m	2 SINGLE C	GRAVEL COBBLE SAND	MEDIUM MEDIUM OD, DB, CB, OV	CO-J, PI-A, DV-U	SPRUCE COTTONWOOD	WILLOW SALMONBERRY BLUEBERRY	MATURE
PORT GRAHAM 241-20-10550-2024 7-02	TRIBUTARY 4.0 - 3.5 760m	3 SINGLE C	COBBLE GRAVEL RUBBLE	MEDIUM MEDIUM DB, L, B, CB, OV	CO-J, PI-A, DV-A	SPRUCE	DEVILS CLUB ALDER SALMONBERRY	MATURE
ROCKY BAY 242-31-10120 0-01	MAINSTEM 20 - 15 3964m	2 SINGLE E	RUBBLE COBBLE GRAVEL	NONE LOW DB, L,B, OV	CO-A	SPRUCE	ALDER WILLOW GRASSES	MATURE
ROCKY BAY 242-31-10120 0-S1	LAKE/POND 10 - 20 300sqm	0 MULTI-CHANNEL C	MUD/SILT ORGANICS	NONE MEDIUM DB, L, CB, OV	CO-J, SO-A	SPRUCE	ALDER GRASSES HIGHBUSH CRANBERRY	SECONDARY

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
ROCKY BAY 242-31-10120 0-S2	SIDE CHANNEL 7.0 - 10 2837m	0 BRAIDED C	GRAVEL SAND COBBLE	MEDIUM HIGH OD, DB, CB, OV	CO-J, SO-A, PI-A, DV-A	COTTONWOOD SPRUCE	WILLOW ALDER GRASSES	SECONDARY
ROCKY BAY 242-31-10120 5-01	WETLAND 700 - 400 205198sqm	0 BRAIDED B	MUD/SILT SAND ORGANICS	NONE MEDIUM OD, DB, CB, OV	PI-A		GRASSES SEDGES	MEADOW
ROCKY BAY 242-31-10120 6-01	TRIBUTARY 5.0 - 2.0 530m	1 MULTI-CHANNEL C	GRAVEL COBBLE MUD/SILT	HIGH HIGH DB, L, CB, OV	PI-A	SPRUCE	ALDER SALMONBERRY	MATURE
ROCKY BAY 242-31-10120 7-01	TRIBUTARY 5.0 - 1.0 296m	1 SINGLE C	GRAVEL MUD/SILT ORGANICS	NONE HIGH OD, DB, CB, OV	CO-J, PI-A, SC		GRASSES	MEADOW
ROCKY BAY 242-31-10120 8-01	TRIBUTARY 5.0 - 2.0 679m	1 MULTI-CHANNEL C	GRAVEL MUD/SILT ORGANICS	HIGH HIGH OD, DB, CB, OV	CO-J, PI-A		ALDER GRASSES FERNS	SHRUBS
ROCKY BAY 242-31-10120 9-01	TRIBUTARY 1.0 - 1.3 92m	1 SINGLE C	GRAVEL ORGANICS MUD/SILT	HIGH HIGH DB, L, CB, OV	PI-A	SPRUCE	DEVILS CLUB SALMONBERRY FERNS	MATURE
ROCKY BAY 242-31-10120 12-01	LAKE/POND 8.0 - 5.0 1820sqm	0 SINGLE C	MUD/SILT GRAVEL	NONE LOW DB, L, CB, OV	CO-J, SO-A, PI-A, DV-A	SPRUCE COTTONWOOD	FERNS WILLOW SALMONBERRY	SECONDARY
ROCKY BAY 242-31-10120 15-01	TRIBUTARY 3.5 - 1.0 328m	1 SINGLE C	GRAVEL SAND	MEDIUM HIGH OD, DB, CB, OV	CO-J, SO-A, PI-A, DV-U	SPRUCE	ALDER WILLOW ROSES	MATURE
ROCKY BAY 242-31-10120 16-01	TRIBUTARY 10 - 10 414m	2 SINGLE D	COBBLE GRAVEL BOULDER	LOW LOW L, B, OV	CO-J, PI-A	SPRUCE COTTONWOOD	ALDER DEVILS CLUB SALMONBERRY	MATURE
ROCKY BAY 242-31-10120 16-02	TRIBUTARY 10 - 10 378m	2 SINGLE E	BOULDER COBBLE GRAVEL	LOW LOW B, OV	PI-A	SPRUCE	ALDER SALMONBERRY DEVILS CLUB	MATURE
ROCKY BAY 242-31-10120 17-01	TRIBUTARY 1.0 - 1.0 59m	1 SINGLE C	GRAVEL MUD/SILT ORGANICS	HIGH HIGH OD, L, CB, OV	CO-J, PI-A, DV-U	SPRUCE	SALMONBERRY ROSES WILLOW	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix C. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM ID SEGMENT ID	WATERBODY WIDTH (m) LENGTH, AREA	GRADIENT (%) CH.-PATTERN CH.-PROFILE	SUBSTRATE	CANOPY COVER ABUNDANCE IN-STREAM COVER ABUND. IN-STREAM COVER CODES	FISH CODES	VEGETATION (OVERSTORY)	VEGETATION (UNDERSTORY)	GROWTH- TYPE
ROCKY BAY 242-31-10120-3048 0-01	MAINSTEM 7.0 - 4.0 2718m	1 BRAIDED C	GRAVEL COBBLE SAND	MEDIUM MEDIUM DB, L, CB, OV	CO-A, SO-A, CH-A, PI-A, DV-A	SPRUCE COTTONWOOD	ALDER DEVILS CLUB GRASSES	MATURE
ROCKY BAY 242-31-10120-3048 0-02	MAINSTEM 15 - 10 1178m	1 SINGLE A	GRAVEL COBBLE RUBBLE	LOW MEDIUM DB, L, CB	CO-J, PI-A, DV-A, DV-U	SPRUCE COTTONWOOD	ALDER DEVILS CLUB FERNS	MATURE
ROCKY BAY 242-31-10120-3048 0-03	WETLAND 200 - 300 59569sqm	0 SINGLE C	MUD/SILT	NONE HIGH OD, OV	(PI-A)		GRASSES	MEADOW
ROCKY BAY 242-31-10120-3048 0-04	MAINSTEM 15 - 10 1906m	1 BRAIDED C	GRAVEL CORBLE SAND	MEDIUM MEDIUM DB, L, CB, OV	(PI-A)	COTTONWOOD SPRUCE	ALDER DEVILS CLUB GRASSES	MATURE
ROCKY BAY ROCKY-01 0-01	MAINSTEM 8.0 - 4.0 121m	2 SINGLE C	GRAVEL RUBBLE BOULDER	HIGH MEDIUM DB, L, B, CB, OV	PI-A	SPRUCE	DEVILS CLUB BLUEBERRY FERNS	MATURE
ROCKY BAY ROCKY-03 0-01	MAINSTEM 4.0 - 4.5 98m	1 SINGLE C	GRAVEL COBBLE BOULDER	LOW LOW DB, L,B, OV	PI-A	SPRUCE	FERNS DEVILS CLUB BLUEBERRY	MATURE
ROCKY BAY ROCKY-10 0-01	MAINSTEM 2.0 - 1.0 167m	1 SINGLE B	GRAVEL SAND ORGANICS	HIGH HIGH DB, L, CB, OV	PI-A	SPRUCE	DEVILS CLUB SALMONBERRY ALDER	MATURE
ROCKY BAY ROCKY-11 0-01	MAINSTEM 10 - 5.0 276m	2 SINGLE C	GRAVEL COBBLE RUBBLE	MEDIUM HIGH L, B, CB, OV	PI-A	SPRUCE	ALDER DEVILS CLUB SALMONBERRY	MATURE
ROCKY BAY ROCKY-11 0-02	MAINSTEM 6.0 - 5.0 282m	3 SINGLE A	GRAVEL COBBLE RUBBLE	MEDIUM MEDIUM L, B, OV	PI-A	SPRUCE	ALDER DEVILS CLUB FERNS	MATURE
ROCKY BAY ROCKY-13 0-01	INTERTIDAL 30 - 3.0 60m	2 SINGLE D	GRAVEL COBBLE MUD/SILT	NONE LOW L, B	PI-A	SPRUCE	GRASSES	MATURE
ROCKY BAY ROCKY-14 0-01	INTERTIDAL 8.0 - 4.0 63m	1 SINGLE D	COBBLE MUD/SILT	NONE NONE NONE	PI-A	SPRUCE	ALDER	MATURE

CHANNEL PROFILE: A v-notch C rectangular E uneven slope banks COVER CODES: OD organic debris B boulders L logs
B undercut rectangular D u-shaped F no bank control DB dead branches CB cut bank OV overhanging veget.
SUBSTRATE and VEGETATION are listed in order of dominance.

Appendix D. Barriers in anadromous fish streams identified during 1993 surveys.

REGION: WESTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
CHENEGA ISLAND CHENEGA-01 0-02	SPRING n/a 0	CO-J, PI-A, DV-U, ST	THIS SEGMENT TERMINATES IN A SYSTEM OF DEEP POOLS AND FINGERS WITH TERMINAL PONDS CONTAINING THICK ORGANIC SUBSTRATE AND LARGE AMOUNTS OF AQUATIC VEGETATION. ADULTS WERE OBSERVED IN THE LOWER REACH OF THE SEGMENT, WHICH HAD SOME FLOW, AND COHO FRY WERE FOUND THROUGHOUT THE SEGMENT.
CHENEGA ISLAND CHENEGA-01 1-01	LOGJAM 0.50 0	PI-A	THE TRIBUTARY FLOWS THROUGH A MEADOW AND IS FLANKED BY A FRINGE OF TALL WILLOW ON EITHER SIDE, WHICH PROVIDES A HIGH CANOPY COVER.
CHENEGA ISLAND CHENEGA-03 0-01	FALL 1.50 0	PI-A	
ESHAMY BAY ESHAMY-02 0-01	SLIDE 1 0	PI-A	
ESHAMY BAY ESHAMY-04 0-01	FALL 3 0	PI-A, SC	AT A HIGHER FLOW, SALMON COULD ACCESS THIS STREAM. AS OTHER STREAMS SURVEYED IN EARLY AUGUST, THIS STREAM EXHIBITS EXTREMELY LOW FLOW. ALTHOUGH WE SHOCKED AND FOUND NO COHO FRY, THERE ARE EXCELLENT REARING AREAS OF DEEP PONDS, 1-2 FEET WITH CUT BANKS. SPAWNING GRAVEL DOES EXIST BUT IS LIMITED. IN LATE AUGUST, ONLY INTERTIDAL SPAWNING WAS OBSERVED. THE STREAM WIDTH REFLECTS THE WIDTH OF THE CHANNEL, NOT THE INTERTIDAL SPAWNING AREA.
ESHAMY BAY ESHAMY-09 0-01	FALL 1 8	PI-A	
ESHAMY BAY ESHAMY-10 0-01	FALL 1.50 0	PI-A	
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: WESTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
ESHAMY LAKE ESHAMY-13 0-01	SUBSTRATE n/a 30	SO-A, PI-A	ALTHOUGH THE SEGMENT IS PASSABLE TO ADULT SALMON UP TO THE FALLS, SALMON DISTRIBUTION WAS LIMITED TO AREAS OF 1% GRADIENT. THE GRADIENT AND SIZE OF COBBLE GRADUALLY INCREASED TOWARDS THE FALL.
ESHAMY LAKE ESHAMY-17 0-01	NO BARRIER n/a	DV-A, SC	MEADOW WITH SMALL POOLS AT TOP OF STREAM, THE ENTIRE STREAM SUBSTRATE CONSISTS OF DECOMPOSED GRANITE WITH SMALL BOULDER/RUBBLE. THE UPPER MEADOW HAS NO CANOPY BUT THE LOWER HALF IS SHADED BY MATURE TIMBER. LILIES LINE THE MOUTH WHICH IS MADE UP OF A NICE BEACH WITH OPEN AREAS. PLENTY OF WILDLIFE SIGN AT WATERS EDGE.
ESHAMY LAKE ESHAMY-19 0-01	SUBSTRATE n/a 0	PI-A, RB, SC	BARRIER IS A SUDDEN INCREASE IN GRADIENT TO NEARLY 10%; THERE ARE NO FALLS, BUT BOULDERS HEAPED UPON BOULDERS, AND LACK OF SUITABLE SUBSTRATE FROM HERE ON UP. THE SUBSTRATE CONSISTS ENTIRELY OF GRANITE.
ESHAMY LAKE ESHAMY-20 0-01	SUBSTRATE n/a 20	SO-A, DV-U, SC	THE SUBSTRATE IS EXCLUSIVELY GRANITE. LOOKS LIKE PERFECT SPAWNING HABITAT. THE CHANNEL CONSISTS OF DEEP POOLS AND NUMEROUS BAYS. ON 08/27/93, SOCKEYE WERE OBSERVED SPAWNING ALMOST TO NINETY DEGREE BEND TO RIGHT, 20M FROM UPPER EXTENT.
ESHAMY LAKE ESHAMY-21 0-01	SUBSTRATE n/a	SO-A, PI-A, DV-U, SC	ALTHOUGH THIS STREAM IS NEAR ESHAMY 20 AND 19, WHICH HAVE ALL GRANITE SUBSTRATE, THIS STREAM CONTAINS <5% GRANITE. THE SUBSTRATE IS GENERALLY UNSUITABLE FOR SPAWNING. THE BOTTOM 30M ARE NEARLY FLAT, WITH SUITABLE SPAWNING AND REARING HABITAT.
ESHAMY LAKE ESHAMY-22 0-01	FALL 1.50 10	CO-J, SO-A	STREAM FORKS, GRADIENT INCREASES TO >8% IN BOULDER CHANNEL AT EXTENT. VERY LITTLE GRANITE IN STREAM BED.
ESHAMY LAKE ESHAMY-23 0-02	FALL 0.50 0	SO-A	FISH COULD JUMP THE BARRIER BUT THERE IS NO SPAWNING HABITAT ABOVE. SERIOUS FALLS (1M+) BEGIN ~40 YDS UPSTREAM OF THE BARRIER.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: WESTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
ESHAMY LAKE ESHAMY-23 1-01	FALL 0.80 0	SO-A	THE AREA ABOVE THE BARRIER CONSISTS OF SIMILAR HABITAT AS ENCOUNTERED IN THIS SEGMENT WITH ADDITIONAL SHALLOW PONDS. WE SURVEYED ABOVE THE BARRIER AND FOUND NO SALMON, ALTHOUGH ADULT COHO SHOULD BE ABLE TO CLEAR THE FALL. THE PONDS ABOVE PROVIDE EXCELLENT COHO REARING HABITAT.
EVANS ISLAND EVANS-03 0-01	SLIDE 4 0	PI-A	
EVANS ISLAND EVANS-04 0-01	FALL 2 0	PI-A	NUMEROUS LOGS IN STREAM CREATE SHADE AND POOLS. THE BARRIER INFORMATION WAS CHANGED DURING THE RESURVEY IN LATE AUGUST. PINKS WERE OBSERVED IN THE POOL JUST BELOW THE FALL TERMINATING THIS SEGMENT.
EVANS ISLAND EVANS-05 0-01	FALL 1 0	PI-A	NONE
JACKPOT BAY 226-20-16080 0-01	FALL 2.5 0	CO-J, SO-A, DV-A, DV-U	EXTREMELY RUGGED CANYON, LARGE BOULDERS AND BEDROCK-LINED POOLS. TOTAL BLOCKAGE 30-40M DOWNSTREAM FROM LAKE POOLS. FIRST FALLS 4M HIGH. SECOND FALLS DOWNSTREAM 40M. TOTAL BLOCKAGE, FALLS 2-2.5M HIGH, 6-10 FISH HOLDING UP IN POOL BELOW FALLS. EXCELLENT SPAWNING HABITAT. LARGE HEMLOCKS AND SITKA SPRUCE CREATE SHADE.
JACKPOT BAY 226-20-16080 8-03	FALL 1 0	CO-J	NICE STREAM ABOVE 1M FALLS, EXCELLENT SPAWNING GRAVEL 2.5M IN WIDTH. AGE 1+ COHO WERE ELECTROFISHED AT THE BASE OF 1M FALLS.
JACKPOT BAY 226-20-16080 9-02	SPRING n/a 40	CO-J, PI-A	THE SYSTEM IS TERMINATED BY A SERIES OF SMALL WATER VEINS ABOVE THE PONDS WHICH DRAIN INTO THE LAKE. THERE IS EXCELLENT REARING HABITAT THROUGHOUT, ALTHOUGH WE OBSERVED COHO FRY 40M BELOW THE END OF THE DRAINAGE.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: WESTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
JACKPOT BAY 226-20-16080 10-01	FALL 10 40	CO-J	THIS TRIBUTARY CONTAINS GOOD SPAWNING AND REARING HABITAT. THE LAST COHOS WERE OBSERVED AT THE DOWNSTREAM END OF A 1*2M ISLAND, UNDER THE COVER OF WILLOW BRANCHES.
JACKPOT BAY 226-20-16080 11-01	FALL 7 20	CO-J	RESURVEYED 08/27/93: NO ADDITIONAL FISH IN STREAM, ALTHOUGH THERE IS GOOD SPAWNING AND REARING HABITAT.
JACKPOT BAY JACK-01 0-01	LOGJAM 2 0	PI-A	
JACKPOT BAY JACK-02 0-01	FALL 2 20	PI-A	
JACKPOT BAY JACK-05 0-01	LOGJAM 1.50	CH-A, PI-A	
KNIGHT ISLAND DRIER-01 0-01	FALL 0.50 0	PI-A	
KNIGHT ISLAND DRIER-02 0-01	SPRING n/a 10	PI-A	BARRIER IS INTRAGRAVEL FLOW AT MID-TIDE STAGE.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: WESTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
KNIGHT ISLAND DRIER-03 0-01	FALL 1 6	PI-A	
KNIGHT ISLAND DRIER-04 0-01	FALL 7 30	PI-A	
KNIGHT ISLAND DRIER-04 1-01	FALL 1 0	PI-A	THE TRIBUTARY IS TERMINATED BY ROCKS LEANING AGAINST A CAR-SIZED BOULDER. JUST BELOW THE BARRIER THE TRIBUTARY FORMS A 2*3M POOL FILLED WITH PINK SALMON.
KNIGHT ISLAND ISLES-02 0-01	FALL 0.50 5	PI-A	ALTHOUGH THE STREAM IS SURROUNDED BY MATURE FOREST ON A STEEP SLOPE, THE IMMEDIATE STREAM VICINITY IS SURROUNDED BY SECONDARY GROWTH IN AN AVALANCHE CHUTE.
KNIGHT ISLAND ISLES-04 0-01	FALL 1 0	PI-A	THE ANADROMOUS REACH ENDS AT A FALL CREATED BY A LOG THAT IS SUPPPORTING A WALL OF ROCKS. THE HABITAT ABOVE APPEARS UNSUITABLE FOR SPAWNING.
KNIGHT ISLAND ISLES-05 0-01	FALL 1 0	PI-A	
KNIGHT ISLAND ISLES-06 0-01	SLIDE 1 10	PI-A	THE STREAM WIDTH TAKEN IN INTERTIDAL ZONE AT LOW TIDE.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: WESTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
KNIGHT ISLAND ISLES-07 0-01	FALL 0.50 30	PI-A	THE WIDTH OF THE STREAM CHANNEL WAS TAKEN IN ITZ AT LOW TIDE.
KNIGHT ISLAND MARSHA-04 0-01	LOGJAM 0.50 0	PI-A	
KNIGHT ISLAND MARSHA-05 0-01	FALL 0.50 0	PI-A	THIS SEGMENT CONSISTS OF A SMALL STREAM DRAINING FROM A FALL INTO A POND, WHICH DRAINS VIA NUMEROUS TRICKLES THROUGH A WET MEADOW INTO THE MAINSTEM BEFORE JOINING THE INTERTIDAL. AS THE ENTIRE SYSTEM IS VERY SHORT, ALL PORTIONS WERE COMBINED INTO ONE SEGMENT.
KNIGHT ISLAND MARSHA-06 0-01	NO BARRIER n/a	PI-A	NO FISH WERE FOUND WITHIN 100M UPSTREAM OF THE EXTENT, ALTHOUGH THE PINK RUN WAS WELL PAST ITS PEAK.
KNIGHT ISLAND MARSHA-07 0-01	FALL 0.50 0	PI-A	THE BARRIER IS A LOG ACROSS THE CREEK AND UPSTREAM (5M) FROM THAT A .5M FALLS.
LATOUCHE ISLAND 226-50-16384 1-01	SPRING n/a 0	PI-A	ACCORDING TO THE USGS QUAD MAP, THIS TRIBUTARY WAS APPARENTLY PART OF THE ESTUARY BEFORE THE EARTHQUAKE. FOR MAPPING PURPOSES, THE SHORELINE HAS BEEN ALTERED TO FIT THE CONDITIONS ENCOUNTERED DURING THIS SURVEY. THIS TRIBUTARY OFFERS EXCELLENT REARING AND SPAWNING HABITAT, PERHAPS MORE SO THAN THE PREVIOUSLY CATALOGUED MAINSTEM, WHICH WE SURVEYED IN EARLY AUGUST.
LATOUCHE ISLAND LATOUCHE-03 0-02	NO BARRIER n/a	CO-J	THE STREAM CONTINUES ABOVE THE UPPER EXTENT WITHOUT BARRIERS, BUT WE COULD NOT LOCATE ANY COHO. THE ENTIRE SEGMENT AND BEYOND CONTAINS EXCELLENT COHO REARING HABITAT.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: WESTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
LATOUCHE ISLAND LATOUCHE-03 1-01	SLIDE 2 10	CO-J	THIS TRIBUTARY JOINS THE POND. IT CONTAINS QUIET, WELL-COVERED POOLS WITH EXCELLENT REARING HABITAT, UNTIL IT MAKES A 90 DEGREE TURN TO THE EAST AND TERMINATES IN A SERIES OF 1-2M SLIDES, FALLS, AND EARTHEN TUNNELS. A THIN FRINGE OF ALDERS ALONG MOST OF THE STREAM CREATES MEDIUM CANOPY COVER.
LATOUCHE ISLAND LATOUCHE-03 3-01	SPRING n/a 40	CO-J	THIS SEGMENT IS IDENTICAL IN CHARACTER TO 0-02 AND OFFERS EXCELLENT COHO REARING HABITAT. ONLY ONE COHO FRY WAS IDENTIFIED IN THIS SEGMENT.
PADDY BAY 226-20-16010 0-04	SPRING n/a 0	SO-A	THIS SEGMENT HAD NOT BEEN PREVIOUSLY CATALOGUED. WE FOUND SOCKEYE SALMON IN THE LAKE TERMINATING THE SYSTEM.
PADDY BAY 226-20-16010 1-01	LOGJAM not measured 0	PI-A, DV-U	WE OBSERVED NUMEROUS (100-300) PINK SALMON FROM THE HELICOPTER. WE DEPARTED DUE TO BAD WEATHER AND COULD NOT AFFORD TO FOOT-SURVEY. DURING FOOT SURVEYS IN EARLY AUGUST, WE OBSERVED NO FISH BUT FOUND FLAGGING ALONG THE BANKS LABELLED "BEG", BEGINNING "F", BEGINNING "G" AT EACH MAJOR LOG OR FALL. DOCUMENTATION FOR SALMON IN THIS TRIBUTARY MAY EXIST ALREADY, BUT HAS NOT BEEN SUBMITTED TO THE ANADROMOUS WATERS CATALOG YET.
PADDY BAY PADDY-02 0-02	LOGJAM 1 90	CO-J	THE COHO WAS CAPTURED 18M UPSTREAM OF THE SEGMENT BREAK.
PADDY BAY PADDY-03 0-02	FALL 2 30	PI-A	THIS SEGMENT BEGINS AT THE LOCATION OF THE PRE-1964-QUAKE SHORELINE.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: EASTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
BLIGH ISLAND BLIGH-01 0-01	FALL 2.5 150	PI-A	THREE LIVE PINKS AND ONE DEAD PINK WERE FOUND IN THE ITZ IN THE MOUTH OF STREAM. THE STREAM HAS A LARGE DISCHARGE AND IS ~6M WIDE UP TO THE BARRIER. THE BARRIER CONSISTS OF A SERIES OF SLIDES AND FALLS WITH A RISE OF 12 FT. NO SPAWNING HABITAT DUE TO BEDROCK AND SHALE SUBSTRATE, WHICH CONSISTS OF LONG, NARROW SHARDS. THE CANYON IS DEEP AND V SHAPED, AND OPENS INTO A LARGE VALLEY THAT APPEARS TO CONTAIN GOOD COHO REARING HABITAT.
BLIGH ISLAND BLIGH-02 0-02	FALL 2 0	CO-J, PI-A	
BLIGH ISLAND BLIGH-02 1-01	FALL 2 45	CO-J, PI-A	THE BARRIER IS A 2M FALLS. DOWNSTREAM OF THIS BLOCKAGE EXISTS A SERIES OF POOLS WITH 1 FT FALLS. AT THE CURRENT WATER STAGE, PINKS COULD NOT GET OVER THESE FALLS. AT HIGH WATER FLOW, THEY COULD JUMP THE SMALL ONE FOOT FALLS.
BLIGH ISLAND BLIGH-03 0-01	FALL 1	PI-A	THE SEGMENT MEANDERS THROUGH A GOOD COVER OF ALDER TO THE BLOCKAGE OF A MAN-MADE WOODEN FALL. ONE HALF-EATEN PINK SALMON WAS FOUND ON THE SHORE. TWO LAND OTTERS WERE OBSERVED PLAYING BY THE STREAM. PINK SALMON WERE JUMPING OUTSIDE THE STREAM MOUTH. THE SUBSTRATE IS SUITABLE FOR SPAWNING.
EYAK LAKE EYAK-01 0-02	FALL 1.30 0	PI-A	EXCEPTIONALLY CLEAR WATER WITH A LARGE AMOUNT OF EXCELLENT SPAWNING GRAVEL. SIGNS OF PAST LOGGING WITH STUMPS OVER 6' DIAMETER. SEVERAL LIVE TREES ARE OVER 5' DIAMETER AT THE BASE. A METAL PIPE/GATE (GAGING STATION?) IS PRESENT ON UPPER PORTION OF SEGMENT 60M DOWNSTREAM FROM THE UPPER EXTENT. THE SEGMENT HAS LARGE DOWNFALL THROUGHOUT. THE SEGMENT BEGINS WHERE THE BRAIDED STREAM ENTERS THE STEEP CANYON. THE BARRIER IS THE FIRST OF A SERIES OF LARGE FALLS.
HAWKINS ISLAND 228-30-18560 1-02	BEAVERDAM 3 0	PI-A	IT WAS DIFFICULT TO SEE ALL PINK SALMON IN THE DARK POND. PRESUMABLY MORE THAN 8 PINK SALMON WERE PRESENT. THE POND IS SURROUNDED BY DEAD TREES AND SECONDARY GROWTH. A LARGE POND, SHOWN ON THE USGS MAP, IS LOCATED DIRECTLY ABOVE THE BEAVER DAM BARRIER.
HAWKINS ISLAND 228-30-18560 2-01	SPRING n/a 30	PI-A	THIS SEGMENT MEANDERS FROM A SHRUBBY MEADOW THROUGH DENSE SECONDARY GROWTH IN PREVIOUSLY INUNDATED AREAS.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: EASTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
HAWKINS ISLAND 228-30-18560 3-01	SPRING n/a 0	PI-A	THIS TRIBUTARY ENDS IN A 2X3M POND JUST BELOW THE MEADOW ADJACENT TO THE BEAVER POND (SEGMENT 1-02). DEAD PINK SALMON WERE OBSERVED BUT THE NUMBER WAS NOT RECORDED. NO MORE THAN 5 DEAD PINK SALMON WERE OBSERVED.
HAWKINS ISLAND HAWKINS-03 0-01	FALL 3 11	PI-A	
HAWKINS ISLAND HAWKINS-05 0-01	FALL 1 30	PI-A	
HAWKINS ISLAND HAWKINS-06 0-02	NO BARRIER n/a	PI-A	NO BARRIER WAS OBSERVED. THE UPPER EXTENT WAS MARKED WHERE THE LAST FISH WAS LOCATED. ABOVE THAT POINT, THE GRADIENT INCREASES. A SERIES OF SMALL 1 FOOT FALLS (SOME 1.5 FOOT SLIDES) CAN BE FOUND UPSTREAM OF THE UPPER EXTENT. POOR SPAWNING HABITAT WAS FOUND ABOVE THE UPPER EXTENT.
HAWKINS ISLAND HAWKINS-06 1-01	NO BARRIER n/a	PI-A	ALTHOUGH NO OBVIOUS BARRIER WAS FOUND, THE EXTENT WAS DETERMINED BY A SERIES OF 1' STEPS.
HAWKINS ISLAND HAWKINS-06 2-01	NO BARRIER n/a	PI-A	
HAWKINS ISLAND HAWKINS-07 0-01	FALL 1 0	PI-A	
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: EASTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
HAWKINS ISLAND HAWKINS-09 0-01	FALL 8 0	PI-A	
HAWKINS ISLAND HAWKINS-11 0-01	FALL 1 0	CH-A, PI-A	
HAWKINS ISLAND HAWKINS-12 0-01	FALL 1 0	PI-A	
HAWKINS ISLAND HAWKINS-16 0-01	SPRING n/a 0	PI-A	THIS SEGMENT CONSISTS OF A 40M STREAM THAT CONNECTS WITH A SMALL UPPER MEADOW POND. AS THE TOTAL REACH WAS SO SHORT, THE POND WAS INCLUDED IN THE SEGMENT. PINK SALMON WERE FOUND BOTH IN THE STREAM AND POND. EXCELLENT GRAVEL IN STREAM SUBSTRATE. THE TOTAL BARRIER CONSISTS OF SPRINGS 20M ABOVE THE POND. SMALL TRIBUTARY COMING INTO POND. 25 PINKS WERE FOUND TO THE NORTH IN A DRY CHANNEL. APPARENTLY THEY WERE STRANDED DURING A RECORD HIGH TIDE, WHICH OCCURRED TWO DAYS AGO.
HAWKINS ISLAND HAWKINS-17 0-01	FALL 3	PI-A	THE STREAM DRAINS FROM A V-SHAPED CANYON DIRECTLY INTO THE INTERTIDAL. THE CANYON WALLS ARE OVER 50M HIGH. THE SEGMENT HAS A LARGE AMOUNT OF BEDROCK AND SMALLER BOULDERS WITH TRAILING GRAVEL BEDS. THE BARRIER IS 3M FALLS, FOLLOWED BY 10+ M FALLS FURTHER UPSTREAM. PINK SALMON REPEATEDLY ATTEMPED TO SCALE THE BARRIER. FISH WERE HOLDING IN LARGE NUMBERS IN DEEP HOLES BENEATH BEDROCK SLIDES.
HENEY RANGE 221-10-10010 1-01	LOGJAM 1 0	CO-J, PI-A	
HENEY RANGE 221-10-10010 2-01	NO BARRIER n/a	CO-J, DV-U, RB, SC, FL	NO VISIBLE BARRIER TO ANADROMOUS FISH WAS FOUND. THE LAST COHO WERE FOUND IN A POOL JUST BEFORE THE GRADIENT INCREASED AND THE STREAM NARROWED. AT THIS POINT THE SUBSTRATE BECAME PREDOMINANTLY GRAVEL WITH SOME COBBLE. SUITABLE REARING AND SPAWNING HABITAT WAS FOUND ABOVE THIS POINT. EXCELLENT COHO REARING HABITAT WAS FOUND IN MEADOWS WITH DEEP POOLS ABOVE THIS SEGMENT.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: EASTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
HENEY RANGE HENEY-01 0-02	LOGJAM 2 0	CO-J, PI-A, DV-U, CU	SOME WATER FLOWS THROUGH THE LOGJAM, BUT MOST OF THE FLOW IS SUBTERRANEAN AT THIS POINT. WE WALKED ABOUT 200 METERS ABOVE THE LOGJAM, BUT OBSERVED NO FISH.
HENEY RANGE HENEY-02 0-02	BEAVERDAM 1 20	CO-A, CO-J	WE FOUND UNRECOGNIZABLE SALMON REMAINS JUST BELOW THE BARRIER. THE BARRIER IS A BEAVER DAM CONSTRUCTED ENTIRELY FROM WILLOW SAPLINGS DURING THIS SUMMER. ABOVE IS A MEADOW WITH NUMEROUS PONDS, FLANKED BY MATURE GROWTH TOWARDS THE WEST.
NELSON BAY 221-10-10170 1-01	FALL 1 0	PI-A	A SERIES OF HIGH FALLS BEGINS WITHIN 5 METERS OF THE BARRIER.
PORT GRAVINA COMFORT-01 0-01	FALL 0.50 0	PI-A	
PORT GRAVINA COMFORT-01 1-01	FALL 0.50 0	PI-A	
PORT GRAVINA COMFORT-02 0-01	FALL 1 0	PI-A	FROM THE INTERTIDAL ON UP, THE SEGMENT WAS 100% OVERGROWN.
PORT GRAVINA COMFORT-03 0-01	FALL 1	PI-A	

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix D. Continued

REGION: EASTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
PORT GRAVINA COMFORT-05 0-01	SLIDE 0.50 10	PI-A	THE STREAM FLOWS OVER SEVERAL GRASSY SLIDES IN THE UPPER REACH OF THE SEGMENT. AT LOWER WATER LEVELS, PINK SALMON MAY NOT BE ABLE TO ACCESS THE POOLS ABOVE.
PORT GRAVINA GRAVINA-03 0-01	SLIDE 2 0	PI-A	
PORT GRAVINA GRAVINA-05 0-01	FALL 1 5	PI-A	
PORT GRAVINA GRAVINA-06 0-01	FALL 1 0	PI-A	INTERTIDAL SPAWNING WAS ALSO OBSERVED. EXCELLENT SPAWNING HABITAT IN THE STREAM.
PORT GRAVINA GRAVINA-07 0-01	FALL 0.50 0	PI-A	GOOD COHO REARING HABITAT EXISTS IN MEADOWS ABOVE THE WATERFALLS.
PORT GRAVINA OLSEN-01 0-01	FALL 0.50	PI-A	THE STREAM FORKS AT THE UPPER EXTENT. THE TRIB TO THE NORTH HAS FALLS CREATED BY 5M HIGH LOG JAMS. THE STREAM TO THE EAST HAS A STEEP GRADIENT AND IS BLOCKED BY DEBRIS. HALF-EATEN FISH WERE FOUND THROUGHOUT THE SEGMENT.
PORT GRAVINA OLSEN-02 0-01	FALL 0.50 0	CH-A, PI-A	HALF-EATEN FISH WERE FOUND ALONG THE BANKS. THE GRADIENT INCREASES AT THE BARRIER. THE VEGETATION RESEMBLES A RAIN FOREST.

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix D. Continued

REGION: EASTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
PORT GRAVINA OLSEN-03 0-01	SLIDE 1.50 0	PI-A	A 1.5M SLIDE IS BLOCKING THE ENTRANCE TO THE STREAM. PINKS APPEAR TO BE SPAWNING IN THE INTERTIDAL. TWO STREAMS JOIN HERE AT THE INTERTIDAL; BOTH HAVE STEEP GRADIENTS.
PORT GRAVINA OLSEN-04 0-02	FALL 0.50 50	PI-A, DV-A, ST	THE SEGMENT BEGINS ABOVE THE POND. THE WATER FLOW IS FAIRLY HIGH DUE TO RECENT RAINS, BUT IT IS QUESTIONABLE WHETHER FISH COULD SWIM UPSTREAM BEFORE THE RAINS. CUT BANKS AND HEAVY UNDERSTORY PROVIDE AMPLE STREAM COVER.
SHEEP BAY SAHLIN-01 0-02	SPRING n/a 0	SO-A, CH-A, PI-A	PINKS WERE OBSERVED THROUGH THE ENTIRE SEGMENT UP TO THE SPRING WHICH IS THE HEADWATERS. HEAVY VEGETATION OVERHANGS THE STREAM; IT WILL BE DIFFICULT TO SEE THE STREAM FROM HELICOPTER. THIS STREAM IS 2-3 METERS WIDE IN SPOTS ALONG THIS SEGMENT. GOOD RIFFLES AND POOLS.
SHEEP BAY SAHLIN-01 1-01	SPRING n/a 0	CO-J, CH-A	
SHEEP BAY SAHLIN-01 2-01	NO BARRIER n/a	PI-A	
SHEEP BAY SAHLIN-01 3-01	SPRING n/a 0	SO-A, CH-A, PI-A	
SHEEP BAY SAHLIN-01 4-01	SLIDE 0.50 0	PI-A	ON THE WAY UP THE STREAM THERE ARE A NUMBER OF BARRIERS WHICH AT CURRENT FLOW WOULD PRECLUDE PASSAGE OF PINKS. HOWEVER, DURING THE HIGH WATER, THEY WERE ABLE TO ACCESS MORE OF THE TRIBUTARY.

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix D. Continued

REGION: EASTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
SHEEP BAY SHEEP-01 0-03	FALL 0.50 0	PI-A	THIS SEGMENT BEGINS ABOVE THE WOODED AREA, JUST ABOVE WHERE THE STREAM CURVES TO THE SOUTH. THE STREAM CHANNEL BECOMES VERY TWISTED AND NARROW, TO WHERE TWO PINKS CAN BARELY SWIM SIDE BY SIDE. THE OVERSTORY IS SPARSE, CONSISTING OF STUNTED HEMLOCKS AND SPRUCE AT MOST 6' HIGH. THE TOTAL OVERSTORY IS 5% OF THE VEGETATION.
SHEEP BAY SHEEP-01 1-01	FALL 0.50 7	PI-A	
SHEEP BAY SHEEP-01 2-01	FALL 0.50 0	CO-J	
SHEEP BAY SHEEP-01 3-01	FALL 0.50 0	PI-A	
SHEEP BAY SHEEP-02 0-02	SPRING n/a 40	PI-A	
SHEEP BAY SHEEP-04 0-01	FALL 50 0	PI-A	OLD STUMPS FROM LOGGING ~ 50 YEARS AGO BY SIDE OF STREAM.
SHEEP BAY SHEEP-06 0-01	FALL 1 0	PI-A	
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: EASTERN PWS

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
SHEEP BAY SHEEP-07 0-02	FALL 25 0	PI-A	
SHEEP BAY SHEEP-07 1-01	FALL 1.50 10	PI-A	
SHEEP BAY SHEEP-09 0-03	FALL 0.30 0	PI-A	WE OBSERVED 2 DEAD PINKS ABOVE THE BARRIER, BUT SUSPECT THAT THEY HAVE BEEN DRAGGED UP BY OTTERS. STREAM FORKS JUST ABOVE THE FALL; DRAINS FROM 2 NEARBY SPRINGS.
SHEEP BAY SHEEP-10 0-02	LOGJAM 1.0 0	PI-A	THE SEGMENT QUICKLY STEEPENS ABOVE THE BARRIER AND TERMINATES IN SERIES OF HIGH FALLS WITHIN SEVERAL HUNDRED METERS.
SIMPSON BAY SIMPSON-05 0-01	FALL 1 30	CO-J	APPROXIMATELY 10-15 FRY WERE OBSERVED, AND ONE FRY WAS CAPTURED.
SIMPSON BAY SIMPSON-09 0-01	NO BARRIER n/a	PI-A	THE WATER WAS DARK BROWN WITH TANNIC ACID. THE GROWTH SURROUNDING THE STREAM IS MATURE, BUT STUNTED.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
CHUGACH PASSAGE CHUGACH-01 0-01	NO BARRIER n/a	PI-A	ONLY IN THIS SEGMENT LIVE SALMON WERE FOUND.
CHUGACH PASSAGE CHUGACH-02 0-04	SUBSTRATE n/a 0	PI-A	THIS SEGMENT IS CHARACTERIZED BY A STEADILY INCREASING GRADIENT, AND STEEPENING CANYON WALLS. ALTHOUGH PINK SALMON COULD MIGRATE FURTHER UPSTREAM, THEY PETERED OUT THROUGHOUT THE SEGMENT AS THE GRADIENT INCREASED. WE FOUND THE LAST SALMON BELOW A RIFFLE AREA IN THE ONLY BEND IN THE SEGMENT. UPSTREAM, THE AVAILABILITY OF SUITABLE SPAWNING HABITAT DWINDLES TO NOTHING WITHIN 1/4 MILE.
CHUGACH PASSAGE CHUGACH-02 1-01	SPRING n/a 0	CO-J, ST	THIS TRIBUTARY JOINS SEGMENT 0-01 AND CONTAINS EXCELLENT REARING HABITAT FOR COHO SALMON. THE UNDERSTORY IS VERY SPARSE, AND THE STREAM IS COMPLETELY SHADED BY OLD-GROWTH SPRUCE.
CHUGACH PASSAGE CHUGACH-02 2-01	SLIDE 0.30 10	CO-J, PI-A	THE LOWER PORTION OF THIS SEGMENT IS IN CHARACTER IDENTICAL TO TRIBUTARY 1 AND OFFERS EXCELLENT COHO REARING HABITAT. THE GRADIENT INCREASES RAPIDLY TOWARD THE VERY END OF THE SEGMENT TO 4%. ALTHOUGH ADULTS COULD PASS ABOVE THE SERIES OF .3M SLIDES, NONE WERE FOUND IN THE SHALLOW PONDS ABOVE, WHICH ALSO OFFER EXCELLENT REARING HABITAT. I SUSPECT THAT COHO COULD SPAWN ABOVE; HOWEVER, WE FOUND NO COHO FRY ABOVE THIS SEGMENT.
CHUGACH PASSAGE CHUGACH-04 0-01	SPRING n/a 20	CO-J, PI-A, DV-U	THE TRIBUTARY IS .5M WIDE AT UPPER EXTENT AND ~15 INCHES DEEP. IT ORIGINATES FROM THREE SPRINGS. THE WATER IS CLEAR AND COLD.
CHUGACH PASSAGE CHUGACH-05 0-01	SLIDE 2 26	CO-J, SO-J, PI-A	
CHUGACH PASSAGE CHUGACH-06 0-01	FALL 0.50 7	CO-J, PI-A, DV-U	
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
CHUGACH PASSAGE CHUGACH-06 1-01	SPRING n/a 0	CO-J, PI-A, DV-U	
CHUGACH PASSAGE CHUGACH-06 2-01	SPRING n/a 10	PI-A	
CHUGACH PASSAGE CHUGACH-06 3-01	SPRING n/a 30	PI-A	THIS TRIBUTARY RUNS THROUGH A MEADOW WITH SPRUCE TREES ALONG ONE SIDE.
DOGFISH BAY 241-40-10300 1-01	SUBSTRATE n/a 15	CH-A, DV-U, PI-A	THE STREAM FLOWS THROUGH MEADOW WITH GRASS ON ONE BANK AND THE FOREST ALONG THE OTHER. THE SEGMENT IS TIDALLY INFLUENCED.
DOGFISH BAY 241-40-10300 2-01	SPRING n/a 0	CH-A, PI-A	THE TRIBUTARY CLOSELY PARALLELS THE MAINSTEM, AND IS TIDALLY INFLUENCED THROUGHOUT.
DOGFISH BAY 241-40-10300 3-01	SPRING n/a 0	CH-A, PI-A	
DOGFISH BAY 241-40-10300 4-01	SPRING n/a 0	CH-A, PI-A	THIS STREAM IS WITHIN 50M OF TRIBUTARY 5.

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
DOGFISH BAY 241-40-10300 5-01	SPRING n/a 0	CH-A, PI-A	
DOGFISH BAY 241-40-10300 6-01	FALL 1 10	CH-A, PI-A	THE MOUTH OF THIS TRIBUTARY IS DIRECTLY ADJACENT TO A SMALL SLOUGH.
DOGFISH BAY 241-40-10300 A-01	FALL 0.80	PI-A	THE DISCHARGE OF THIS TRIBUTARY IS HIGHER THAN THAT OF THE OTHER STREAMS NEARBY, AND WE ORIGINALLY THOUGHT THAT THIS WAS THE MAINSTEM. ALTHOUGH THE .8M FALL PER SE MAY NOT CONSTITUTE A BARRIER, THE GRADIENT INCREASES SHARPLY ABOVE THIS FALL AND THE REACH SOON TERMINATES IN A SERIES OF INCREASINGLY HIGH FALLS.
DOGFISH BAY 241-40-10300 B-01	FALL 4 60	PI-A	THE TRIBUTARY HAS GOOD WATER FLOW AND IDEAL SPAWNING GRAVEL. FAIRLY RECENT LOGGING (THE BRANCHES ARE STILL ELASTIC) WITHIN 30M OF THE STREAM.
DOGFISH BAY DOGFISH-05 0-01	FALL 0.50 20	PI-A	
DOGFISH BAY DOGFISH-07 0-01	SUBSTRATE n/a 15	PI-A	
DOGFISH BAY DOGFISH-11 0-01	FALL 0.50 30	PI-A, DV-U	THE SEGMENT STARTS OUT IN A TIDALLY INFLUENCED MEADOW AND BEARS NORTHWEST INTO ALDERS AND SECONDARY SPRUCE GROWTH.

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
ENGLISH BAY 241-30-10500 1-01	NO BARRIER n/a	CO-J	
ENGLISH BAY 241-30-10500 2-01	NO BARRIER n/a	CO-J	
ENGLISH BAY 241-30-10500 3-01	SLIDE 1 10	CO-J, DV-U	THIS WAS PREVIOUSLY DESIGNATED SEGMENT 2-01.
ENGLISH BAY 241-30-10500 A-01	NO BARRIER n/a	CO-J	INCREASING GRADIENT AND LACK OF SPAWNING/REARING HABITAT APPEAR TO DETERMINE THE ANADROMOUS REACH. OCCASIONAL HIGH FLOW IS INDICATED BY HEAVILY WASHED OUT AND CUT BANKS.
ENGLISH BAY 241-30-10500 B-01	FALL 1.50 40	CO-J	INCREASING GRADIENT AND LACK OF REARING/SPAWNING HABITAT APPEAR TO DETERMINE THE ANADROMOUS EXTENT OF THIS TRIBUTARY. THE LAST COHO WERE FOUND IN A LARGE POOL BENEATH A FALLEN LOG, JUST BELOW THE 90 DEGREE BEND IN THE TRIB AT WHICH THE GRADIENT STEEPENS TO ~3%.
ENGLISH BAY 241-30-10500 C-01	NO BARRIER n/a	CO-J, DV-U	COHO FRY WERE FOUND 40M FROM MOUTH IN THE MEADOW TO THE NORTH. THIS STREAM IS THICKLY COVERED WITH GRASS AND SMALL WILLOW. THE LAST FISH WERE FOUND JUST BELOW WHERE THE GRADIENT INCREASED TO 2%. IDEAL REARING HABITAT.
ENGLISH BAY 241-30-10500 D-01	SPRING n/a 0	CO-J, DV-U	THIS IS A SMALL TRIBUTARY WITH POTENTIALLY GOOD REARING HABITAT.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
ENGLISH BAY 241-30-10500 E-01	SPRING n/a 0	CO-J, DV-U	THIS STREAM FLOWS THROUGH A LARGE MEADOW AND IS FLANKED ALONG ITS NORTH SIDE BY MATURE SPRUCE WOODS. IT FORMS ONE BOUNDARY OF AN EXTENSIVE WETLAND AREA. FOR NOMINATION PURPOSES, THIS STREAM WAS COMBINED WITH THE WETLAND POLYGON.
ENGLISH BAY 241-30-10500 E-02	NO BARRIER n/a	CO-J, DV-U	THE FISH COUNT IN THIS SEGMENT IS A COMPILATION OF SPOT CHECKS CONDUCTED BY BOTH TEAMS ALONG THE PERIMETER OF THE WETLAND ABOVE LAKE 4. ON THE NORTHWEST END, THE WETLAND IS FLANKED BY TRIB E (SEGMENT E-01). THE PERIMETER OF THE WETLAND ON BOTH SIDES OF THE MAINSTEM WAS DETERMINED BY THE EXTENT OF SMALL WATER VEINS WITHIN 60 FEET OF ONE ANOTHER.
ENGLISH BAY 241-30-10500 F-01	SPRING n/a	CO-J, DV-U	THIS TRIBUTARY DRAINS FROM A SPRING IN THE WOODS INTO THE MEADOW SURROUNDING WETLAND POLYGON E.
ENGLISH BAY 241-30-10500 G-01	NO BARRIER n/a	CO-J, DV-U	THE STREAM HAS HIGH FLOW. NO BARRIER WAS OBSERVED. THE OTHER SURVEY TEAM REPORTED A DRY PORTION IN THE MAINSTEM BELOW, CAUSING A TOTAL BARRIER. CONCEIVABLY THIS IS A TEMPORARY BARRIER, BLOCKING SALMON RUNS DURING CERTAIN YEARS. THE STREAM OFFERS EXCELLENT SPAWNING AND REARING HABITAT.
ENGLISH BAY 241-30-10500 H-01	SPRING n/a 0	CO-J, DV-U	THIS IS A WELL-SHADED TRIBUTARY WITH ADJACENT CLEAR-CUTS. ONE COHO FRY WAS FOUND IN A SMALL POOL. THE STREAM OFFERS GOOD REARING AND SPAWNING HABITAT. IT PARALLELS TRIBUTARY G WITHIN 30M. THE OTHER SURVEY TEAM REPORTED A TOTAL BLOCKAGE IN THE MAINSTEM BELOW: THE CHANNEL WAS DRY FOR SEVERAL METERS. CONCEIVABLY, THIS IS A TEMPORARY BARRIER THAT MAY BLOCK SALMON RUNS DURING CERTAIN YEARS.
ENGLISH BAY 241-30-10500 I-01	SPRING n/a 0	CO-J, DV-U	THIS TRIBUTARY DRAINS FROM SPRINGS IN A MEADOW AND OFFERS GOOD REARING HABITAT. ONE LARGE SPRUCE TREE SHADES THE POOL AT THE BASE OF THE SPRINGS. THE OTHER SURVEY TEAM REPORTED THAT A PORTION OF THE MAINSTEM BELOW WAS DRY, CONSTITUTING A TOTAL BARRIER. CONCEIVABLY THIS IS A TEMPORARY BARRIER THAT MAY BLOCK SALMON RUNS DURING CERTAIN YEARS.
ENGLISH BAY 241-30-10500 J-01	SPRING n/a 0	CO-J	THE TRIBUTARY DRAINS FROM A SMALL, WELL-SHADED POOL TO THE SOUTHEAST INTO THE MAINSTEM. IT OFFERS EXCELLENT COHO REARING HABITAT. 60M BELOW THE MOUTH OF THIS TRIBUTARY, A SCHOOL OF ~50 LARGE (AVERAGE 80MM) COHO WAS OBSERVED UNDER AN OVERHANGING ROOT WAD.

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
PORT CHATHAM 242-10-10230 0-01	FALL 6 0	PI-A	EXTENSION OF CATALOGUED REACH. PINK SALMON WERE OBSERVED THROUGHOUT THE MAINSTEM AND ONLY A FRACTION COULD BE COUNTED.
PORT CHATHAM 242-10-10230 1-01	SPRING n/a	PI-A	
PORT CHATHAM 242-10-10230 2-01	FALL 0.50 0	PI-A	NO LIVE FISH WERE FOUND IN THE STREAM. 40 FRESH CARCASSES WERE FOUND ON THE BANKS THROUGHOUT THE TRIBUTARY.
PORT CHATHAM 242-10-10230 3-01	SPRING n/a 20	CO-J, PI-A	THIS STREAM CONTAINS DEEP, CALM POOLS AND OFFERS EXCELLENT REARING HABITAT FOR COHO FRY.
PORT CHATHAM 242-10-10230 4-01	FALL 0.50 3	PI-A	THE STREAM CONTAINS VERY GOOD SPAWNING SUBSTRATE. ALTHOUGH THE FALL PER SE MAY NOT CONSTITUTE A BARRIER, THE STREAM BECOMES STEEP AND VERY NARROW ABOVE.
PORT CHATHAM 242-10-10230 5-01	SPRING n/a 25	PI-A	THIS TRIBUTARY HAS A DISCHARGE AND CHRACTERISTICS SIMILAR TO 4-01. BOTH JOIN WITHIN 20M OF THE MAINSTEM.
PORT CHATHAM 242-10-10230 6-01	LOGJAM 1 0	PI-A	THIS SEGMENT PARALLELS THE MAINSTEM BEFORE VEERING UP INTO THE HILL.

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
PORT CHATHAM CHATHAM-04 0-01	SUBSTRATE n/a 15	PI-A	THE PINKS ACCESSED THE UPPER PORTION OF THIS SEGMENT WHEN THE WATER WAS MUCH HIGHER THAN IT IS CURRENTLY. 40M DOWNSTREAM OF THE PRESENT UPPER EXTENT THERE IS A .5M FALL THAT IS A TOTAL BLOCKAGE TO PINK SALMON AT THE PRESENT LOW WATER LEVEL.
PORT CHATHAM CHATHAM-04 1-01	SPRING n/a 0	PI-A	
PORT CHATHAM CHATHAM-12 0-01	LOGJAM 0.50 0	CH-A, PI-A	
PORT CHATHAM CHATHAM-13 0-01	SLIDE 2 15	PI-A	
PORT DICK 242-42-10460 0-01	SUBSTRATE n/a 0	SO-A, PI-A, DV-U	THE BARRIER CONSISTS OF AN AREA OF MOSTLY SUBTERRANEAN FLOW BENEATH A LARGE DEBRIS JAM.
PORT GRAHAM 241-20-10550 1-01	NO BARRIER n/a	CO-J, SO-A, DV-A, DV-U, SC	THE TRIBUTARY CONTINUES WITHOUT A VISIBLE BARRIER BEYOND THIS SEGMENT. AT THE UPPER EXTENT IT IS A NARROW TRICKLE, BARELY RECOGNIZABLE UNDER CUT BANKS AND VEGETATION. THE TRIBUTARY FLOWS IN TIGHT MEANDERS THROUGH A MEADOW AND IS FLANKED BY SPRUCE WOODS ON THE SOUTHWEST SIDE.
PORT GRAHAM 241-20-10550 3-02	SPRING n/a 0	CO-J	THIS SEGMENT CONSISTS OF 2 APPROXIMATELY 10 X 10M PONDS. IT IS EXCELLENT COHO REARING HABITAT.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
PORT GRAHAM 241-20-10550 4-01	FALL 2 20	CO-J, DV-U, SC	THIS TRIBUTARY JOINS A SIDE CHANNEL OF PORT GRAHAM RIVER TOGETHER WITH TRIBUTARY 10. TRIB 4 IS THE SOUTHERN, AND SHORTER OF THE TWO TRIBUTARIES.
PORT GRAHAM 241-20-10550 5-01	FALL 2 0	CO-J	THIS TRIBUTARY DRAINS FROM A MEADOW OVER AN EARTHEN FALL. IT JOINS A SIDE CHANNEL OF PORT GRAHAM RIVER SHORTLY BELOW.
PORT GRAHAM 241-20-10550 8-01	NO BARRIER n/a	CO-J	THE WATER IS VERY DARK AND APPEARS TO CONTAIN MUCH TANNIC ACID. IT IS TOO DARK TO OBSERVE FISH WITHOUT ELECTROSHOCKING. ABOVE 8-01, THE STREAM WIDENS IN DEEP, DARK POOLS. WE ONLY FOUND STICKLEBACK IN THIS REACH. THE STREAM DRAINS FROM A LILY POND.
PORT GRAHAM 241-20-10550 9-01	LOGJAM 0.75 15	DV-A	THIS IS A VERY SHORT, STEEP STREAM. SPAWNING HABITAT IS SUITABLE IN THIS SEGMENT.
PORT GRAHAM 241-20-10550 10-01	SPRING n/a	CO-J	THIS SEGMENT WAS FIRST REFERRED TO AS 4-01. IT FLOWS THROUGH STANDS OF STUNTED SPRUCE, OCCASIONALLY MEANDERING THROUGH SMALL, INTERCONNECTED MEADOWS. COHOS OBSERVED IN THIS STREAM APPEARED VERY LARGE.
PORT GRAHAM 241-20-10550 11-01	SPRING n/a 0	CO-J	THIS SEGMENT DRAINS FROM A WET MEADOW INTO THE SAME SIDE CHANNEL AS TRIBUTARY 5. AT HIGH WATER LEVELS, COHO FRY COULD CONCEIVABLY BE DISTRIBUTED THROUGHOUT THE MEADOW IN SMALL WATER VEINS, WHICH WERE DRY AT THIS TIME.
PORT GRAHAM 241-20-10550-2018 2-01	SPRING n/a 0	CO-J, PI-A	

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
PORT GRAHAM 241-20-10550-2024 6-01	NO BARRIER n/a	CO-J, PI-A	
PORT GRAHAM 241-20-10550-2024 7-02	FALL 1.50 0	CO-J, PI-A, DV-A	THIS SEGMENT WAS SURVEYED ON 08/22/93. DOLLY VARDEN IN SPAWNING COLORS WERE FOUND TO JUST BELOW THE TERMINAL FALLS.
ROCKY BAY 242-31-10120 0-01	NO BARRIER n/a	CO-A	TEAM INCLUDES KS. WE SURVEYED APPROXIMATELY 100 METERS, AND EXTENDED THE ANADROMOUS REACH OF THE MAINSTEM BY ~4000 METERS.
ROCKY BAY 242-31-10120 0-S1	SPRING n/a 0	CO-J, SO-A	POND FORMED BY SLOW FLOW AREA IN EASTERNMOST SIDE CHANNEL OF ROCKY RIVER. ON THE NOMINATION FORM, THE POINT LOCATIONS 0-S1 AND 0-S2 WERE COMBINED FOR THE SIDE CHANNEL, AND THE SIDE CHANNEL LENGTH WAS DETERMINED BY GPS (ANNOTATED FOR 0-S1). BOTH REPRESENT TYPICAL STREAM HABITAT WITHIN THE EASTERNMOST SIDE CHANNEL.
ROCKY BAY 242-31-10120 0-S2	NO BARRIER n/a	CO-J, SO-A, PI-A, DV-A	POINT LOCATION IN EASTERNMOST SIDE CHANNEL OF ROCKY RIVER. FOR NOMINATION PURPOSES, BOTH POINT LOCATIONS 0-S1 AND 0-S2 HAVE BEEN COMBINED AS BOTH REPRESENT TYPICAL STREAM HABITAT FOUND WITHIN THE EASTERNMOST SIDE CHANNEL. THE ENTIRE CHANNEL IS APPROXIMATELY 2 MILES LONG.
ROCKY BAY 242-31-10120 5-01	NO BARRIER n/a	PI-A	THIS WETLAND IS LOCATED BETWEEN A ROCKY RIVER SIDE CHANNEL AND TRIBUTARIES 6 AND 7. IT IS A POLYGON OF NUMEROUS WATERVEINS LOCATED IN THE UPPER INTERTIDAL.
ROCKY BAY 242-31-10120 6-01	NO BARRIER n/a	PI-A	STRINGER BRIDGE IS 30M UPSTREAM OF UPPER EXTENT, AT THE EDGE OF THE CLEARCUT. THE STREAM DRAINS THROUGH AN AREA OF THICK UNDERSTORY INTO A GRASSY AREA WITH NUMEROUS DEAD, PREVIOUSLY INUNDATED SPRUCE TREES. THE STREAM CHANNEL APPEARS TO HAVE CHANGED COURSE NUMEROUS TIMES.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
ROCKY BAY 242-31-10120 7-01	SPRING n/a 15	CO-J, PI-A, SC	THE STREAM FLANKS WETLAND 5 TO THE EAST. IT CONTAINS GOOD SPAWNING HABITAT IN FIRST 75+ METERS AND GOOD REARING HABITAT TO THE UPPER EXTENT. LOGGING HAS OCCURRED ON THE BORDERS OF THE MEADOW. NUMEROUS LARGE SNAGS HAVE BEEN LEFT IN THE MEADOW.
ROCKY BAY 242-31-10120 8-01	SPRING n/a 7	CO-J, PI-A	THE STREAM IS THICKLY COVERED WITH SECONDARY VEGETATION, PRIMARILY ALDER, GROWING IN PREVIOUSLY LOGGED AREAS. THE STREAM CROSSES THREE LOGGING ROADS AND TRAVERSES A POND WITH THICK EQUISETUM GROWTH ADJACENT TO THE UPPER LOGGING ROAD. AT THE MOUTH, THE STREAM JOINS THE MAINSTEM VIA A LARGE POOL BY THE ROAD THAT APPEARS TO BE A POPULAR COHO FISHING SPOT.
ROCKY BAY 242-31-10120 9-01	FALL 0.50 15	PI-A	THIS TRIBUTARY WAS PREVIOUSLY DESIGNATED 6-02. IT JOINS TRIBUTARY 6-01 EAST OF WETLAND 5. THERE IS A CLEARCUT BEYOND THE UPPER EXTENT.
ROCKY BAY 242-31-10120 12-01	NO BARRIER n/a	CO-J, SO-A, PI-A, DV-A	SEGMENT 1 IS A LARGE SHALLOW POND WITH SEVERAL DEEP BAYS THAT EXTEND ALMOST TO A SIDE CHANNEL OF ROCKY RIVER. ADULT SOCKEYE AND COHO WERE ONLY IN THE LOWER 30M OF THE SEGMENT ALTHOUGH THE ENTIRE POND IS ACCESSIBLE AND CONTAINS GOOD HABITAT. INCREASED GRADIENT AND COARSER SUBSTRATE ABOVE SEGMENT 1 MAY BE A BARRIER. ABOVE, THE STREAM BECOMES <.5m WIDE, MOST LIKELY IMPASSABLE FOR ADULTS AND UNSUITABLE FOR REARING. BESIDES COTTONWOODS, THE VEGETATION IS SECONDARY ON PREVIOUSLY INUNDATED GROUNDS.
ROCKY BAY 242-31-10120 15-01	FALL 0.25 10	CO-J, SO-A, PI-A, DV-U	THIS TRIBUTARY CONTAINS EXCELLENT COHO REARING HABITAT. THE STREAM DRAINS FROM A SMALL POND, TRAVERSES A CULVERT UNDER THE OLD ROAD, AND FLOWS THROUGH THICK UNDERGROWTH INTO THE MAINSTEM. ON SEVERAL OVERFLIGHTS, A LARGE BULL MOOSE WITH NEARLY WHITE ANTLERS AND TWO COWS WERE OBSERVED IN THE VICINITY OF THIS STREAM.
ROCKY BAY 242-31-10120 16-02	NO BARRIER n/a	PI-A	THIS SEGMENT CONTINUES AT LEAST ONE MORE MILE. THE GRADIENT IS SLIGHTLY HIGHER THAN IN THE LAST SEGMENT, THE SUBSTRATE IS COARSE, AND THE STREAM FLOWS THROUGH A V-SHAPED CANYON. NO BARRIER WAS OBSERVED, AND THE FISH PETERED SLOWLY OUT TOWARD THE END OF THE PREVIOUS SEGMENT.
ROCKY BAY 242-31-10120 17-01	SPRING n/a	CO-J, PI-A, DV-U	WITH THE EXCEPTION OF THE BEGINNING AND END, MOST OF THIS STREAM AVERAGES 1.75-2M IN WIDTH. AT THE EXTENT, THE STREAM FLOWS SUBTERRANEAN. THIS TRIBUTARY WAS PREVIOUSLY DESIGNATED 15-02.
HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.			

Appendix D. Continued

REGION: LOWER KENAI PENINSULA

AREA STREAM SEGMENT	BARRIER TYPE HEIGHT (m) DISTANCE (m)	FISH CODES	COMMENTS
ROCKY BAY 242-31-10120-3048 0-02	SUBSTRATE n/a	CO-J, PI-A, DV-A, DV-U	THERE IS NO VISIBLE BARRIER TO ADULT SALMON OTHER THAN A SLIGHT INCREASE IN GRADIENT AND COARSER SUBSTRATE. WE WALKED APPROXIMATELY 1/2 MILE ABOVE THE EXTENT AND FOUND NO FURTHER FISH. THE STREAM CONTINUES IN THE SAME CHARACTER FOR AT LEAST ONE MORE MILE BEFORE TERMINATING IN 5M WATER FALLS. THE SEGMENTS FROM BARRIER TO MOUTH ARE 0-02, 0-01, 0-03, 0-04, IN ORDER OF SURVEY SEQUENCE.
ROCKY BAY ROCKY-01 0-01	FALL 1 3	PI-A	THE START OF THE SEGMENT IS MARKED BY A LARGE FALLEN LOG ACROSS THE STREAM BED.
ROCKY BAY ROCKY-03 0-01	SLIDE 3 0	PI-A	INTERTIDAL SPAWNING WAS ALSO OBSERVED.
ROCKY BAY ROCKY-10 0-01	NO BARRIER n/a	PI-A	NO INTERTIDAL SPAWNING WAS OBSERVED.
ROCKY BAY ROCKY-11 0-02	SLIDE 1 0	PI-A	THE 1M SLIDE IS FOLLOWED BY A SERIES OF 1M FALLS TERMINATING IN 10M FALLS APPROXIMATELY 50M ABOVE THE UPPER EXTENT.
ROCKY BAY ROCKY-13 0-01	FALL 0.50 25	PI-A	
ROCKY BAY ROCKY-14 0-01	FALL 3 0	PI-A	

HEIGHT is the height of the barrier, DISTANCE the distance from the anadromous reach to the barrier.

Appendix E. Wildlife observations at anadromous fish streams identified during 1993 surveys.

REGION: WESTERN PWS

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
CHENEGA ISLAND	CHENEGA-01	0-01	BEAR		PREDATION
CHENEGA ISLAND	CHENEGA-01	0-02	BEAR	1	TRACKS
ESHAMY LAKE	ESHAMY-13	0-01	BEAR		SCAT
ESHAMY BAY	ESHAMY-02	0-01	BEAR		TRACKS, SCAT
ESHAMY BAY	ESHAMY-02	0-01	CANADA GOOSE	3	2 ADULTS, 1 JUVENILE
ESHAMY BAY	ESHAMY-02	0-01	MAGPIE	4	
ESHAMY BAY	ESHAMY-02	0-01	MINK		TRACKS
ESHAMY BAY	ESHAMY-04	0-01	BEAR		SCAT
ESHAMY BAY	ESHAMY-10	0-01	BEAR		SCAT
ESHAMY LAKE	ESHAMY-17	0-01	CANADA GOOSE		FEATHERS
ESHAMY LAKE	ESHAMY-17	0-01	DEER		MANY TRACKS AT MOUTH
ESHAMY LAKE	ESHAMY-17	0-01	LAND OTTER		SCAT AT MOUTH
ESHAMY LAKE	ESHAMY-17	0-01	MERGANSER	6	FEMALE WITH YOUNG
ESHAMY LAKE	ESHAMY-20	0-01	BLACK BEAR		TRACKS
ESHAMY LAKE	ESHAMY-22	0-01	BEAR		TRAIL AND EXCAVATION
ESHAMY LAKE	ESHAMY-23	1-01	BEAR		PREDATION
EVANS ISLAND	EVANS-04	0-01	STELLER'S JAY	2	VERY VOCAL
JACKPOT BAY	226-20-16080	0-01	BEAR		TRAIL ON BANK
JACKPOT BAY	226-20-16080	8-01	BEAR		TRACKS, SCAT
KNIGHT ISLAND	DRIER-04	0-01	BEAR		SCAT
KNIGHT ISLAND	DRIER-04	1-01	DIPPER	1	
KNIGHT ISLAND	ISLES-06	0-01	BEAR		SCAT
KNIGHT ISLAND	ISLES-06	0-01	OTTER		SCAT
KNIGHT ISLAND	ISLES-07	0-01	BEAR		SCAT
KNIGHT ISLAND	ISLES-07	0-01	OTTER		SCAT
KNIGHT ISLAND	MARSHA-05	0-01	BEAR		SCAT
LATOUCHE ISLAND	LATOUCHE-01	0-01	DEER		SCAT
LATOUCHE ISLAND	LATOUCHE-03	0-01	LAND OTTER		SCAT
LATOUCHE ISLAND	LATOUCHE-03	0-01	LAND OTTER	3	
LATOUCHE ISLAND	LATOUCHE-03	0-01	STELLER'S JAY	1	
LATOUCHE ISLAND	LATOUCHE-03	1-01	SPRUCE GROUSE	4	

Appendix E. Continued

REGION: WESTERN PWS

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
LATOUCHE ISLAND	LATOUCHE-04	0-01	DEER	1	TRACKS
LATOUCHE ISLAND	LATOUCHE-04	0-01	STELLER'S JAY	1	
PADDY BAY	226-20-16010	0-03	BEAR		TRAIL ALONG CREEK
PADDY BAY	226-20-16010	0-03	MINK		TRACKS
PADDY BAY	226-20-16010	0-03	OTTER		TRACKS, PREDATION
PADDY BAY	226-20-16010	1-01	BEAR		SCAT
PADDY BAY	226-20-16010	1-01	STELLER'S JAY	1	
PADDY BAY	PADDY-02	0-01	BEAR		SCAT
PADDY BAY	PADDY-02	0-01	DUCKS, NO ID	6	
PADDY BAY	PADDY-02	0-01	LAND OTTER		SCAT
PADDY BAY	PADDY-02	0-01	YELLOWLEGS	2	
PADDY BAY	PADDY-02	1-01	BEAR		SCAT
PADDY BAY	PADDY-02	1-01	DEER		TRACKS
PADDY BAY	PADDY-03	0-01	BLACK BEAR	1	WALKING ACROSS INTERTIDAL ZONE
PADDY BAY	PADDY-03	0-01	YELLOWLEGS	1	
PADDY BAY	PADDY-03	0-02	BEAR		TRACKS

Appendix E. Continued

REGION: EASTERN PWS

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
BLIGH ISLAND	BLIGH-02	0-01	STELLER'S JAY	1	IN TREE
BLIGH ISLAND	BLIGH-02	0-02	LAND OTTER		TRACKS
BLIGH ISLAND	BLIGH-02	0-02	LAND OTTER	3	
BLIGH ISLAND	BLIGH-03	0-01	LAND OTTER	2	ON BANK
BLIGH ISLAND	BLIGH-03	0-01	STELLER'S JAY	1	IN TREE
EYAK LAKE	EYAK-01	0-01	BEAR		TRACK ON BANK
EYAK LAKE	EYAK-01	0-01	DIPPER	1	ON STREAM
EYAK LAKE	EYAK-01	0-02	BEAR		TRACKS ON BANK
EYAK LAKE	EYAK-01	0-02	DIPPER	2	FLYING UPSTREAM
EYAK LAKE	EYAK-01	0-02	LAND OTTER		TRACKS
HAWKINS ISLAND	228-30-18560	1-01	BEAR		TRAIL
HAWKINS ISLAND	228-30-18560	1-01	OTTER		SCAT
HAWKINS ISLAND	HAWKINS-06	0-01	DEER		TRACKS, SCAT
HAWKINS ISLAND	HAWKINS-06	0-01	KINGFISHER	1	
HAWKINS ISLAND	HAWKINS-06	2-01	BROWN CREEPER	2	
HAWKINS ISLAND	HAWKINS-07	0-01	OTTER		SCAT, PREDATION
HAWKINS ISLAND	HAWKINS-09	0-01	CROW	1	
HAWKINS ISLAND	HAWKINS-09	0-01	DEER		TRACKS
HAWKINS ISLAND	HAWKINS-09	0-01	YELLOWLEGS	1	
HAWKINS ISLAND	HAWKINS-11	0-01	DEER		TRACK
HAWKINS ISLAND	HAWKINS-16	0-01	BALD EAGLE	4	MOUTH OF STREAM
HAWKINS ISLAND	HAWKINS-16	0-01	DEER		TRACKS IN POND
HAWKINS ISLAND	HAWKINS-16	0-01	RAVEN	2	MOUTH OF STREAM
HAWKINS ISLAND	HAWKINS-16	0-01	SEAGULL		NOT COUNTED
HAWKINS ISLAND	HAWKINS-17	0-01	BEAR		SCAT ON BANK
HAWKINS ISLAND	HAWKINS-17	0-01	EAGLE	1	FLEW DOWN STREAM
HENEY RANGE	HENEY-01	0-01	BEAR		TRACKS
HENEY RANGE	HENEY-01	0-01	COYOTE		TRACKS
HENEY RANGE	HENEY-01	0-02	DIPPER	1	
HENEY RANGE	HENEY-01	0-02	STELLER'S JAY	1	
HENEY RANGE	HENEY-02	0-01	BEAR		TRACKS

Appendix E. Continued

REGION: EASTERN PWS

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
HENEY RANGE	HENEY-02	0-01	CANADA GOOSE	*0	
HENEY RANGE	HENEY-02	0-01	COYOTE		TRACKS
HENEY RANGE	HENEY-02	0-01	STELLER'S JAY	1	
HENEY RANGE	HENEY-02	0-02	BEAR		SCAT
HENEY RANGE	HENEY-02	0-02	BEAVER		DAM
NELSON BAY	221-10-10170	1-01	BEAR		TRACKS
NELSON BAY	221-10-10170	1-01	MERGANSER	6	
NELSON BAY	221-10-10170	1-01	RAVEN	2	
NELSON BAY	221-10-10170	1-01	SANDPIPER	2	
NELSON BAY	221-10-10170	1-01	SEAGULL	2	
PORT GRAVINA	COMFORT-02	0-01	BEAR		TRAIL
PORT GRAVINA	COMFORT-03	0-01	BEAR		TRAIL, SCAT
PORT GRAVINA	GRAVINA-03	0-01	BEAR		PREDATION
PORT GRAVINA	GRAVINA-06	0-01	BEAR		SCAT, TRAIL
PORT GRAVINA	GRAVINA-06	0-01	LAND OTTER		SCAT, TRAIL
PORT GRAVINA	GRAVINA-07	0-01	BEAR		TRACKS
PORT GRAVINA	GRAVINA-07	0-01	WOLF		SCAT
PORT GRAVINA	OLSEN-01	0-01	BLACK BEAR		PREDATION
PORT GRAVINA	OLSEN-02	0-01	BLACK BEAR		PREDATION
PORT GRAVINA	OLSEN-03	0-01	BLACK BEAR		PREDATION
PORT GRAVINA	OLSEN-04	0-01	BALD EAGLE	1	IN TREE AT POND
PORT GRAVINA	OLSEN-04	0-01	BLACK BEAR		PREDATION
PORT GRAVINA	OLSEN-04	0-01	CANADA GOOSE	15	SCARED OFF POND
PORT GRAVINA	OLSEN-04	0-01	FROG		ON POND BANK
PORT GRAVINA	OLSEN-04	0-01	KINGFISHER	1	FISHING IN POND
PORT GRAVINA	OLSEN-04	0-01	WIDGEON	50	ON POND
PORT GRAVINA	OLSEN-04	0-02	BLACK BEAR		PREDATION
SHEEP BAY	SAHLIN-01	0-02	BEAR		TRAILS, SCAT, TRACKS
SHEEP BAY	SAHLIN-01	3-01	BEAR		SCAT, TRAILS
SHEEP BAY	SHEEP-01	0-01	BALD EAGLE	1	
SHEEP BAY	SHEEP-01	0-01	CANADA GOOSE	15	IN LAGOON

Appendix E. Continued

REGION: EASTERN PWS

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
SHEEP BAY	SHEEP-01	0-01	COYOTE		SCAT
SHEEP BAY	SHEEP-01	0-01	LAND OTTER		SCAT, NUMEROUS TRAILS
SHEEP BAY	SHEEP-01	0-01	SNIPE	1	
SHEEP BAY	SHEEP-01	0-02	BEAR		SCAT, PREDATION
SHEEP BAY	SHEEP-01	0-02	LAND OTTER		TRAIL, SCAT, PREDATION, TOOTH-M.
SHEEP BAY	SHEEP-01	0-02	MARSH HAWK	1	
SHEEP BAY	SHEEP-01	0-02	SNIPE	1	
SHEEP BAY	SHEEP-04	0-01	BEAR		PREDATION
SHEEP BAY	SHEEP-07	0-01	SPRUCE GROUSE	2	
SHEEP BAY	SHEEP-07	0-02	OTTER		FISH PREDATION
SHEEP BAY	SHEEP-09	0-02	OTTER		TRAMPELED AREA
SHEEP BAY	SHEEP-09	0-02	SPRUCE GROUSE	1	
SHEEP BAY	SHEEP-09	0-03	OTTER		TRACKS, PREDATION
SHEEP BAY	SHEEP-10	0-01	BROWN BEAR	1	TRACKS BY MOUTH
SIMPSON BAY	SIMPSON-09	0-01	STELLER'S JAY	1	

Appendix E. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
CHUGACH PASSAGE	CHUGACH-01	0-01	BLACK BEAR		SCATTERED TRASH W. TOOTH-MARKS
CHUGACH PASSAGE	CHUGACH-01	0-01	KINGFISHER	1	
CHUGACH PASSAGE	CHUGACH-01	0-01	OTTER		TRACKS
CHUGACH PASSAGE	CHUGACH-01	0-02	BALD EAGLE	1	
CHUGACH PASSAGE	CHUGACH-01	0-02	BEAR		TRAIL
CHUGACH PASSAGE	CHUGACH-02	0-01	OTTER		SCAT
CHUGACH PASSAGE	CHUGACH-02	0-01	SQUIRREL	1	
CHUGACH PASSAGE	CHUGACH-02	0-01	YELLOW WARBLER	1	
CHUGACH PASSAGE	CHUGACH-02	2-01	CHICKADEE	2	
CHUGACH PASSAGE	CHUGACH-02	2-01	DIPPER	2	
CHUGACH PASSAGE	CHUGACH-04	0-01	COYOTE		TRACKS
CHUGACH PASSAGE	CHUGACH-04	0-01	MOUNTAIN GOAT	2	NANNY AND KID ON MOUNTAIN ABOVE
CHUGACH PASSAGE	CHUGACH-04	0-01	VOLE	2	
CHUGACH PASSAGE	CHUGACH-05	0-01	BLACK BEAR	1	ON MOUNTAIN ABOVE TRIBUTARY
CHUGACH PASSAGE	CHUGACH-06	0-01	LAND OTTER		TRACKS
CHUGACH PASSAGE	CHUGACH-06	0-01	MOUNTAIN GOAT		ON MOUNTAIN SIDE ABOVE STREAM
CHUGACH PASSAGE	CHUGACH-06	0-01	SQUIRREL, RED	1	
CHUGACH PASSAGE	CHUGACH-06	1-01	BALD EAGLE	1	
CHUGACH PASSAGE	CHUGACH-06	1-01	BLACK BEAR		SCAT
CHUGACH PASSAGE	CHUGACH-06	1-01	VOLE		TRAILS
DOGFISH BAY	241-40-10300	0-01	DIPPER	2	ON LOG IN STREAM
DOGFISH BAY	241-40-10300	0-01	VARIED THRUSH	1	
DOGFISH BAY	241-40-10300	1-01	BLACK BEAR		SCAT
DOGFISH BAY	241-40-10300	3-01	BLACK BEAR		SCAT, TRACKS
DOGFISH BAY	241-40-10300	4-01	BLACK BEAR		TRACKS
DOGFISH BAY	241-40-10300	4-01	RED SQUIRREL	1	
DOGFISH BAY	241-40-10300	5-01	BLACK BEAR	1	TRACKS, BEAR SIGHTED FROM AIR
DOGFISH BAY	241-40-10300	5-01	DIPPER	1	
DOGFISH BAY	241-40-10300	6-01	BLACK BEAR		TRACKS
DOGFISH BAY	241-40-10300	A-01	BLACK BEAR		SCAT AND PREDATION
DOGFISH BAY	241-40-10300	B-01	DIPPER	3	

Appendix E. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
DOGFISH BAY	241-40-10300	B-01	STELLER'S JAY	1	FOLLOWED US 1/4 MILE DOWNSTREAM
DOGFISH BAY	DOGFISH-07	0-01	BLACK BEAR		SCAT
DOGFISH BAY	DOGFISH-07	0-01	COYOTE		SCAT
DOGFISH BAY	DOGFISH-07	0-01	PINE GROSBEAK	1	
DOGFISH BAY	DOGFISH-07	0-01	SQUIRREL, RED	1	
DOGFISH BAY	DOGFISH-11	0-01	COYOTE		TRACKS
DOGFISH BAY	DOGFISH-11	0-01	STELLER'S JAY	1	
ENGLISH BAY	241-30-10500	1-01	MOOSE		TRACKS
ENGLISH BAY	241-30-10500	2-01	MOOSE		HIDE AND GUTS (KILLED BY HUMAN)
ENGLISH BAY	241-30-10500	2-01	RED SQUIRREL	2	
ENGLISH BAY	241-30-10500	3-01	GREAT BLUE HERON	1	
ENGLISH BAY	241-30-10500	3-01	MOOSE		TRACKS, SCAT
ENGLISH BAY	241-30-10500	A-01	MOOSE		TRACKS
ENGLISH BAY	241-30-10500	B-01	BEAR		SCAT
ENGLISH BAY	241-30-10500	B-01	COYOTE		TRACKS
ENGLISH BAY	241-30-10500	B-01	MOOSE		TRACKS
ENGLISH BAY	241-30-10500	C-01	COYOTE		YIPPING IN WOODS
ENGLISH BAY	241-30-10500	D-01	YELLOWLEGS	1	
ENGLISH BAY	241-30-10500	E-02	COYOTE	2	BARKING NEARBY
ENGLISH BAY	241-30-10500	E-02	MOOSE		TRACKS
ENGLISH BAY	241-30-10500	H-01	MOOSE		TRACKS ON STREAM
PORT CHATHAM	242-10-10230	0-01	BEAR		PREDATION
PORT CHATHAM	242-10-10230	2-01	BLACK BEAR		PREDATION
PORT CHATHAM	242-10-10230	2-01	OTTER		TRAILS
PORT CHATHAM	242-10-10230	3-01	OTTER		TRAILS
PORT CHATHAM	242-10-10230	4-01	BLACK BEAR		SCAT
PORT CHATHAM	242-10-10230	4-01	OTTER		TRAILS
PORT CHATHAM	242-10-10230	4-01	WOODPECKER	1	PROBABLY DOWNING
PORT CHATHAM	242-10-10230	5-01	BLACK BEAR		SCAT
PORT CHATHAM	242-10-10230	6-01	BEAR		SCAT
PORT CHATHAM	242-10-10230	6-01	MOOSE		SCAT

Appendix E. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
PORT CHATHAM	242-10-10230	6-01	STELLER'S JAY	1	
PORT CHATHAM	CHATHAM-04	0-01	BLACK BEAR		SCAT, TRACKS
PORT CHATHAM	CHATHAM-04	1-01	BLACK BEAR		TRACKS
PORT CHATHAM	CHATHAM-04	1-01	VARIED THRUSH	1	
PORT CHATHAM	CHATHAM-12	0-01	BLACK BEAR		SCAT
PORT CHATHAM	CHATHAM-13	0-01	BLACK BEAR		SCAT
PORT CHATHAM	CHATHAM-13	0-01	DIPPER	1	
PORT DICK	242-42-10460	0-01	BLACK BEAR		TRACKS
PORT DICK	242-42-10460	0-01	MOOSE		TRACKS
PORT DICK	242-42-10460	0-01	SQUIRREL, RED	2	
PORT GRAHAM	241-20-10550	1-01	DIPPER	1	
PORT GRAHAM	241-20-10550	1-01	MOOSE		TRACKS
PORT GRAHAM	241-20-10550	1-01	SPRUCE GROUSE	1	
PORT GRAHAM	241-20-10550	4-01	BEAR		SCAT
PORT GRAHAM	241-20-10550	4-01	MOOSE		TRACKS
PORT GRAHAM	241-20-10550	5-01	MOOSE		TRACKS
PORT GRAHAM	241-20-10550	8-01	MOOSE	1	MALE
PORT GRAHAM	241-20-10550	10-01	MOOSE	2	COW AND CALF
PORT GRAHAM	241-20-10550-2018	2-01	BLACK BEAR		SCAT
PORT GRAHAM	241-20-10550-2018	2-01	MOOSE		TRACKS
ROCKY BAY	242-31-10120	0-S2	MOOSE		SCAT, TRACKS
ROCKY BAY	242-31-10120	5-01	BALD EAGLE	4	
ROCKY BAY	242-31-10120	5-01	RAVEN	6	
ROCKY BAY	242-31-10120	5-01	SEAGULL	12	
ROCKY BAY	242-31-10120	5-01	SEAL	2	FEEDING JUST OUTSIDE MOUTH
ROCKY BAY	242-31-10120	6-01	BEAR		TRACKS
ROCKY BAY	242-31-10120	6-01	COYOTE		TRACKS
ROCKY BAY	242-31-10120	6-01	DIPPER	1	
ROCKY BAY	242-31-10120	6-01	KINGFISHER	1	
ROCKY BAY	242-31-10120	6-01	MOOSE		TRACKS
ROCKY BAY	242-31-10120	6-01	RAVEN	1	

Appendix E. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
ROCKY BAY	242-31-10120	6-01	SQUIRREL, RED	1	
ROCKY BAY	242-31-10120	7-01	BEAR		TRACKS
ROCKY BAY	242-31-10120	7-01	LAND OTTER		TRAIL, TRACKS, SCAT
ROCKY BAY	242-31-10120	7-01	MOOSE		TRACKS
ROCKY BAY	242-31-10120	8-01	BLACK BEAR		TRACKS
ROCKY BAY	242-31-10120	8-01	MOOSE		SCAT
ROCKY BAY	242-31-10120	8-01	SNOWSHOE HARE		SCAT
ROCKY BAY	242-31-10120	8-01	SQUIRREL, RED	3	
ROCKY BAY	242-31-10120	9-01	BEAR		TRACKS, SCAT
ROCKY BAY	242-31-10120	12-01	COYOTE		TRACKS
ROCKY BAY	242-31-10120	12-01	MOOSE		TRACKS
ROCKY BAY	242-31-10120	15-01	BLACK BEAR		SCAT
ROCKY BAY	242-31-10120	15-01	DIPPER	1	
ROCKY BAY	242-31-10120	15-01	MOOSE		TRACKS, SCAT
ROCKY BAY	242-31-10120	15-01	MOOSE		BROWSED WILLOW
ROCKY BAY	242-31-10120	15-01	STELLER'S JAY	1	
ROCKY BAY	242-31-10120	16-01	DIPPER		
ROCKY BAY	242-31-10120	16-01	MOOSE		TRACKS
ROCKY BAY	242-31-10120	16-02	DIPPER	1	
ROCKY BAY	242-31-10120	17-01	MOOSE	1	FEMALE
ROCKY BAY	242-31-10120	17-01	MOOSE	1	MALE
ROCKY BAY	242-31-10120-3048	0-01	BLACK BEAR	1	OBSERVED AT 25M
ROCKY BAY	242-31-10120-3048	0-01	DIPPER	1	
ROCKY BAY	242-31-10120-3048	0-01	KINGFISHER	1	
ROCKY BAY	242-31-10120-3048	0-01	MOOSE		TRACKS, SCAT
ROCKY BAY	242-31-10120-3048	0-01	SQUIRREL, RED	1	
ROCKY BAY	242-31-10120-3048	0-02	DIPPER	2	
ROCKY BAY	242-31-10120-3048	0-02	HARLEQUIN DUCK	2	FEMALE FLIERS
ROCKY BAY	242-31-10120-3048	0-02	MOOSE		TRACKS, SCAT
ROCKY BAY	ROCKY-01	0-01	BALD EAGLE	1	
ROCKY BAY	ROCKY-01	0-01	DIPPER	1	

Appendix E. Continued

REGION: LOWER KENAI PENINSULA

LOCATION	STREAM ID	SEGMENT	SPECIES	COUNT	COMMENTS
ROCKY BAY	ROCKY-03	0-01	BEAR		TRACKS
ROCKY BAY	ROCKY-03	0-01	LAND OTTER		TRACKS
ROCKY BAY	ROCKY-10	0-01	BEAR		TRACKS, SCAT
ROCKY BAY	ROCKY-10	0-01	DIPPER	1	
ROCKY BAY	ROCKY-11	0-01	BALD EAGLE	4	
ROCKY BAY	ROCKY-11	0-01	BLACK BEAR		SCAT
ROCKY BAY	ROCKY-11	0-01	DIPPER	4	
ROCKY BAY	ROCKY-11	0-01	KITTIWAKE	6	
ROCKY BAY	ROCKY-11	0-01	MERGANSER	2	
ROCKY BAY	ROCKY-11	0-01	MOOSE		SCAT
ROCKY BAY	ROCKY-11	0-01	WINTER WREN	1	
ROCKY BAY	ROCKY-13	0-01	BLACK BEAR		SCAT
ROCKY BAY	ROCKY-13	0-01	CANADA GOOSE		SCAT, FEATHERS
ROCKY BAY	ROCKY-14	0-01	BLACK BEAR		TRACKS
ROCKY BAY	ROCKY-14	0-01	STELLER'S JAY	1	
PORT GRAHAM	241-20-10550-2024	7-01	BLACK BEAR		PREDATION
PORT GRAHAM	241-20-10550-2024	7-01	MOOSE	1	LARGE BULL
PORT GRAHAM	241-20-10550	2-01	BLACK BEAR		SCAT
PORT GRAHAM	241-20-10550	2-01	MOOSE		SCAT, TRACKS

Appendix F1. Segment Data Form

STREAM HABITAT ASSESSMENT 1993 – SEGMENTS

STREAM: _____ SEGMENT: _____ DATE: __/__/93 TEAM: _____

ANADROMOUS: y n WIDTH (m): ____-____ LENGTH (m): _____ GPS DATE: __/__/ DIGITIZE: y n

WATERBODY: mainstem tributary lake/pond wetland intertidal other : _____

FISH					WILDLIFE		
SPECIES	STAGE (A J U)	COUNT	METHOD (E V D)	COMMENTS	SPECIES	COUNT	COMMENTS

GRADIENT(%): _____ CHANNEL PROFILE:  A B C D E F

CHANNEL PATTERN: single multi braided

STREAM SUBSTRATE : (rank three most predominant types) BEDROCK ___ BOULDER ___ RUBBLE ___ COBBLE ___
GRAVEL ___ SAND ___ MUD/SILT ___ ORGANICS ___ OTHER: _____

STREAM COVER TYPE: ORGANIC DEBRIS ___ DEAD BRANCHES/TWIGS ___ LOGS ___ BOULDERS ___
CUT BANK ___ OVERHANGING VEGET. ___ OTHER: _____

STREAM COVER ABUNDANCE: none low medium high

RIPARIAN VEGETATION (three most abundant plants in order of dominance) within 20m of the banks:

OVERSTORY: _____ _____ _____
UNDERSTORY: _____ _____ _____

CANOPY ABOVE STREAM: none low medium high

GROWTH: mature secondary shrubs meadow muskeg intertidal

TOTAL BARRIER? y n BARRIER TO SPECIES: _____ adults juveniles

TYPE: fall slide beaverdam logjam spring substrate HEIGHT (m): ___ DIST. FROM UPPER EXTENT (m): ___

PHOTO ROLL(s): _____ VIDEO TAPE(s): _____

FRAME	DESCRIPTION	DATE	DESCRIPTION

Substrate: Bedrock (solid) Boulder >1' Rubble 6–12" Cobble 2–6" Gravel .1–2" Sand <.1"
(Please enter comments on the other side)

Appendix F2. Stream Data Form

STREAM HABITAT ASSESSMENT 1993 – STREAMS

STREAM: _____ QUAD: _____ STAGE: H M L

LANDOWNER: Chenega CAC Eyak Tatitlek Pt. Graham English Bay (circle one)

DATE(s): _____ UTM ZONE: _____

GPS FILES: _____

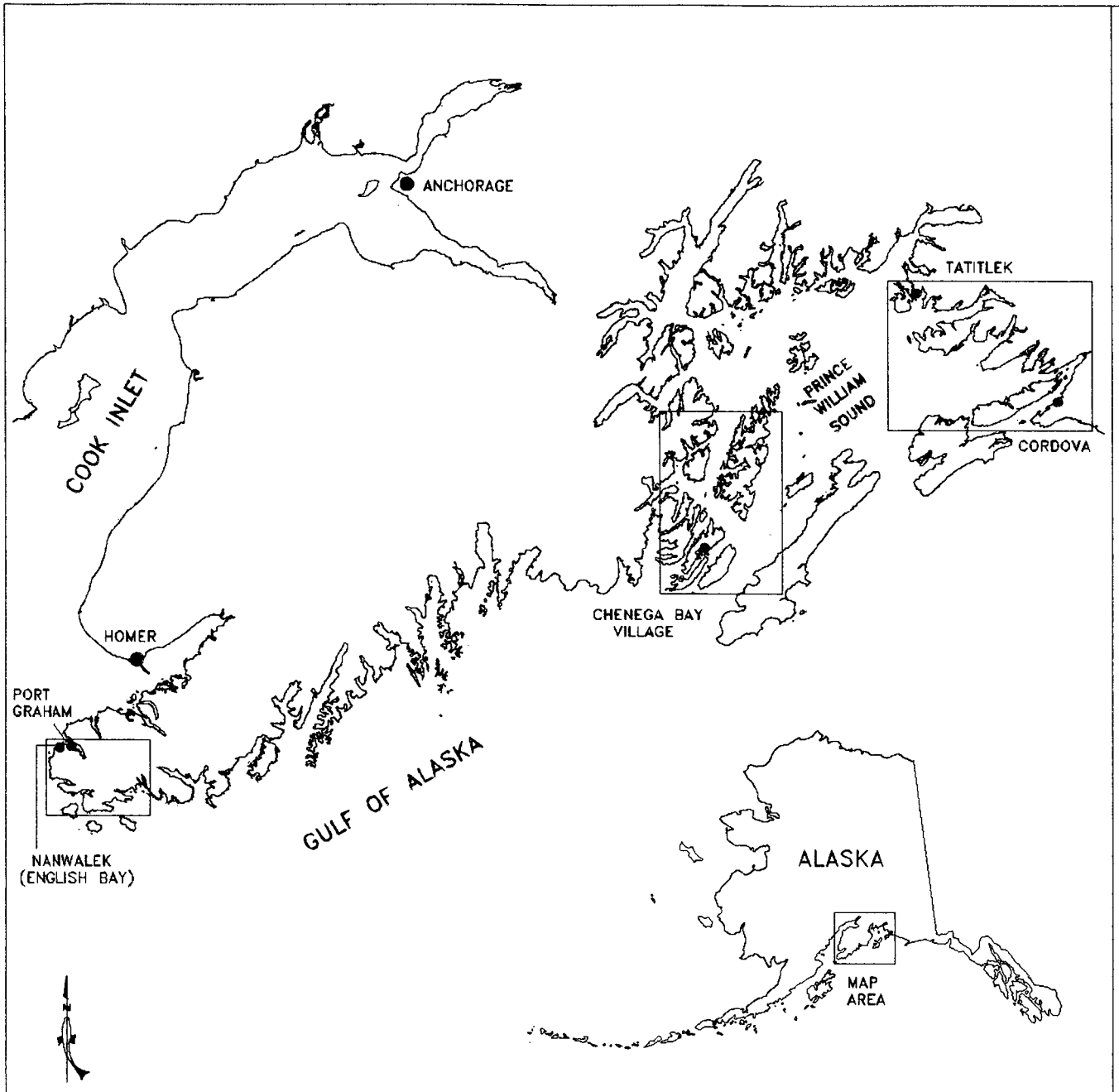
SKETCH (indicate UTM zones, if not uniform throughout the stream)

PHOTO ROLL(s): _____ VIDEO TAPE(s): _____

FRAME	DESCRIPTION	DATE	

(Please enter comments on the other side)

Maps



MAP A

STREAM HABITAT ASSESSMENT

PROJECT R-51

STUDY AREA OVERVIEW

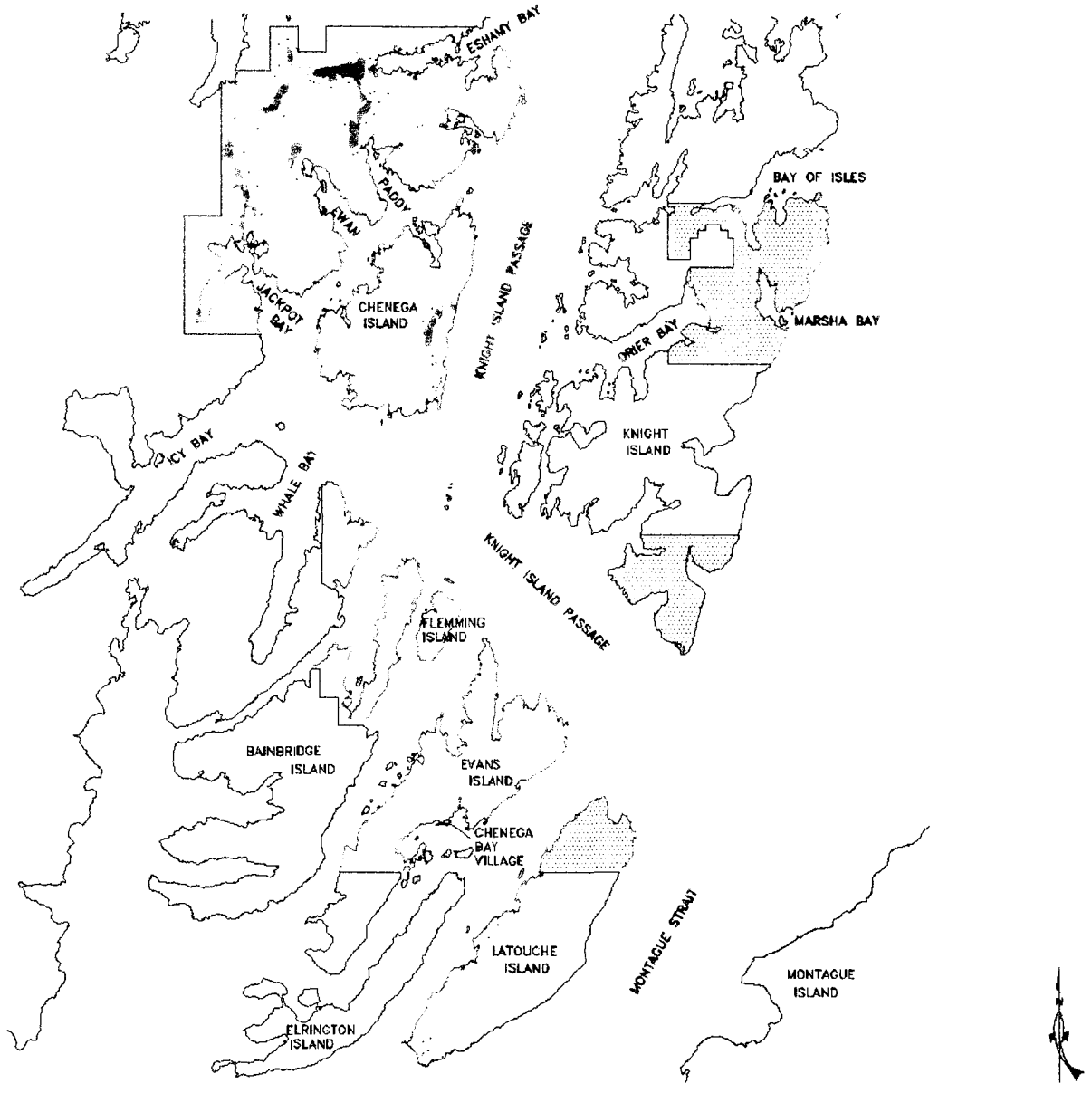
SCALE

10 50 100

100 km

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

January 20, 1994



MAP 1

STREAM HABITAT ASSESSMENT

PROJECT R-51

WESTERN PRINCE WILLIAM SOUND SURVEYS

LEGEND

- SURVEYED LAKE/STREAM SYSTEMS
- SHORELINE RECONNAISSANCE
- UPLANDS RECONNAISSANCE
- CHUGACH ALASKA CORPORATION LANDS
- CHENEGA CORPORATION LANDS

SCALE

1 10

20 km

STATE OF ALASKA
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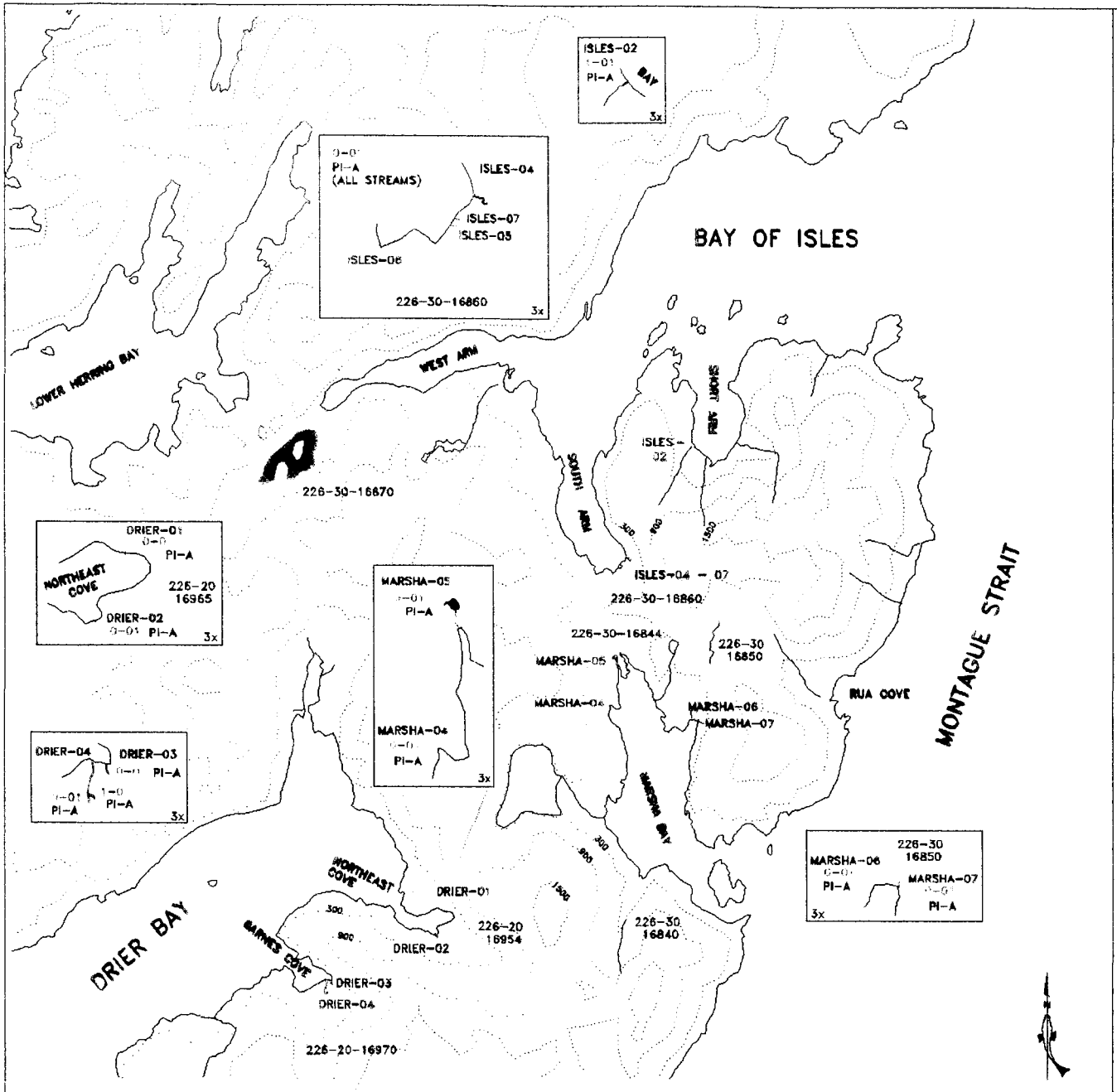
Habitat and Restoration Division

December 29, 1993



MAP 1-1

STREAM HABITAT ASSESSMENT

PROJECT R-51

MARSHA BAY, DRIER BAY AND BAY OF ISLES

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)
- FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO	DV-U	DOLLY VARDEN
SO-A	ADULT SOCKEYE	RB	RAINBOW TROUT
SO-J	JUV. SOCKEYE	ST	STICKLEBACK
PI-A	ADULT PINK	SC	SCULPIN
CH-A	ADULT CHUM	FL	JUV. FLOUNDER
CU	CUTTHROAT TROUT		

SCALE

1000 2000

3000 m

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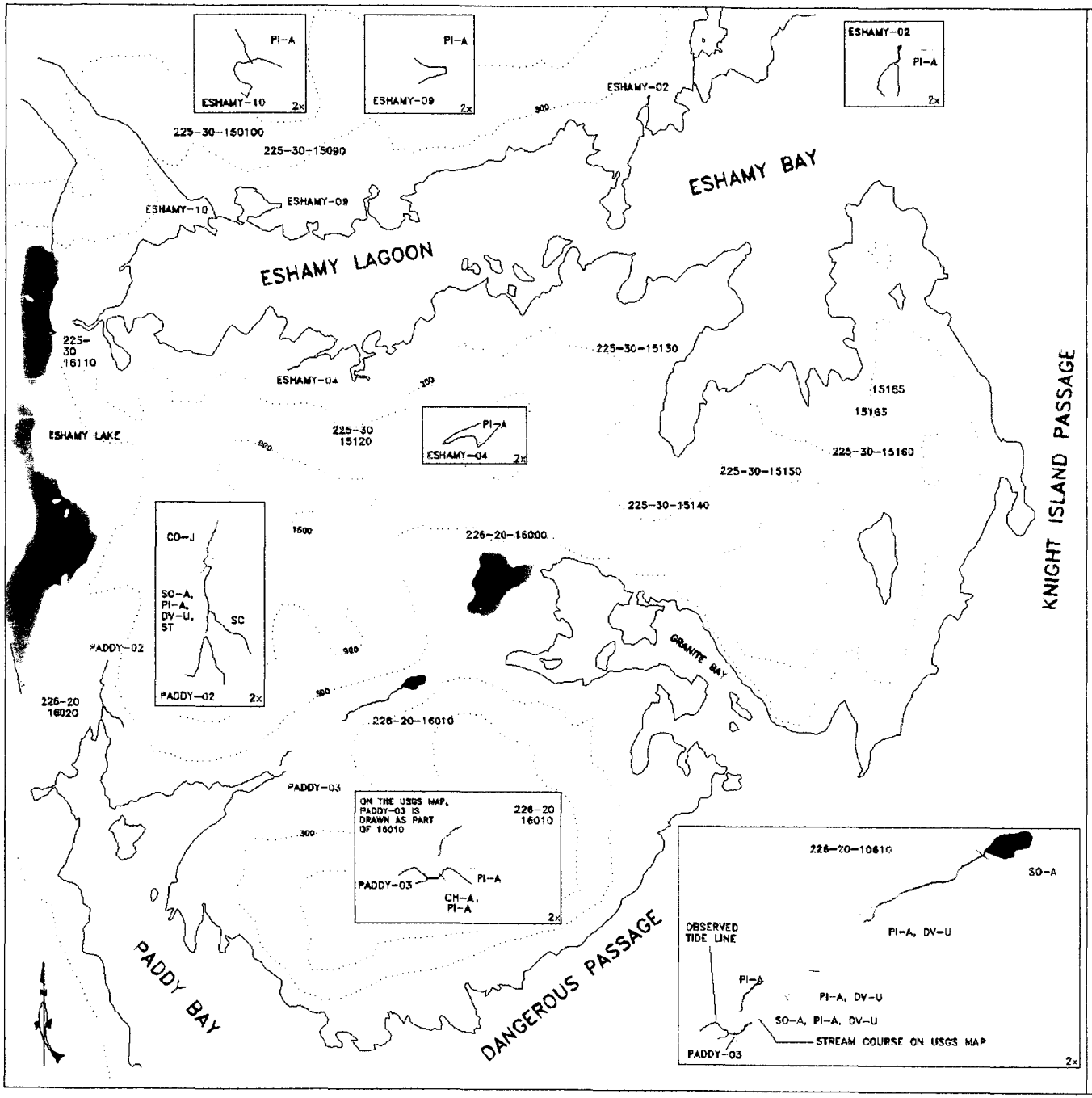
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 1-2

STREAM HABITAT ASSESSMENT

PROJECT R-51

ESHAMY LAGOON AND PADDY BAY

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-- STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

SCALE

1000 2000

3000 m

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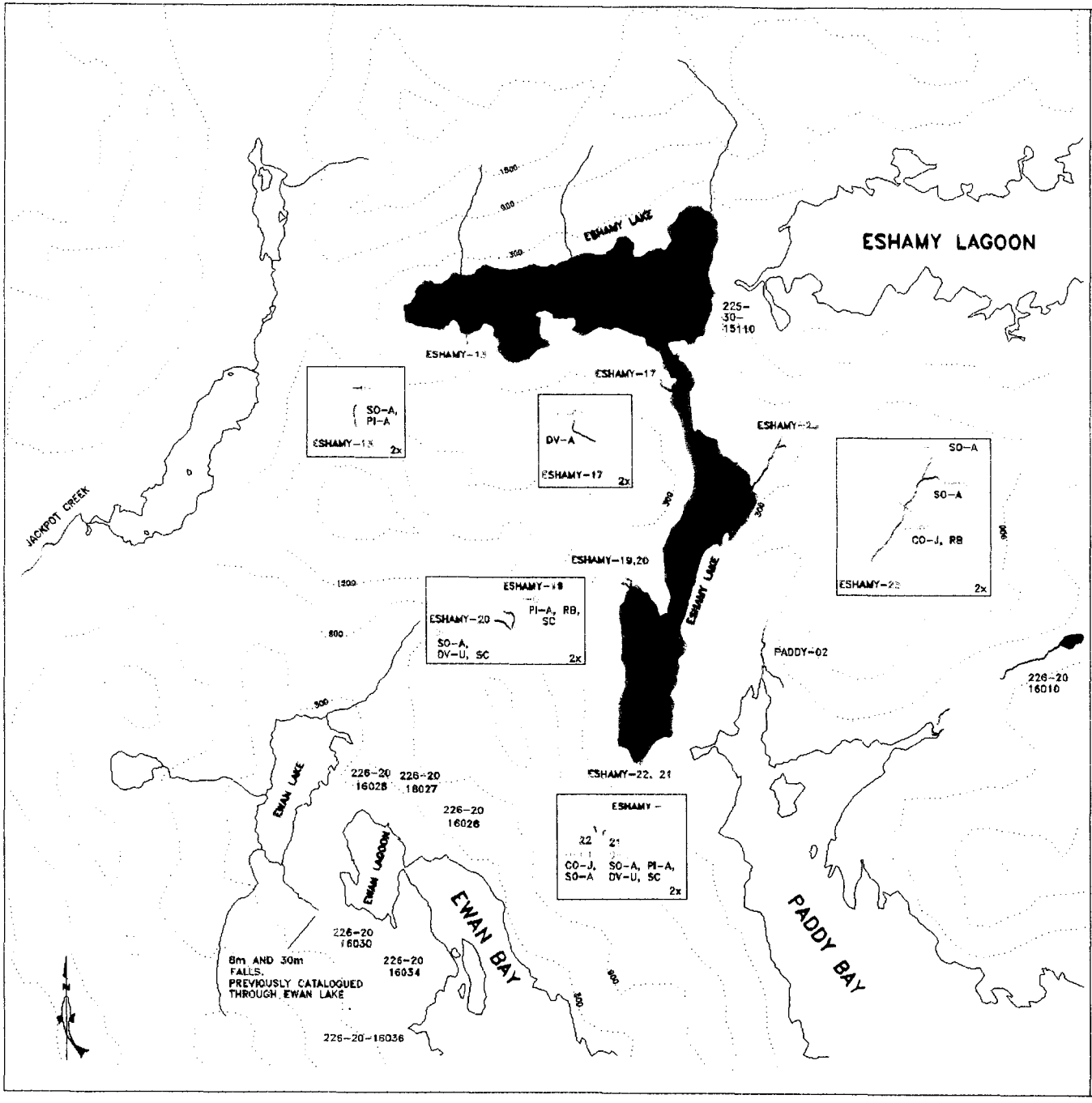
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 1-3

STREAM HABITAT ASSESSMENT

PROJECT R-51

ESHAMY LAKE AND EWAN BAY

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- 1-0 SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

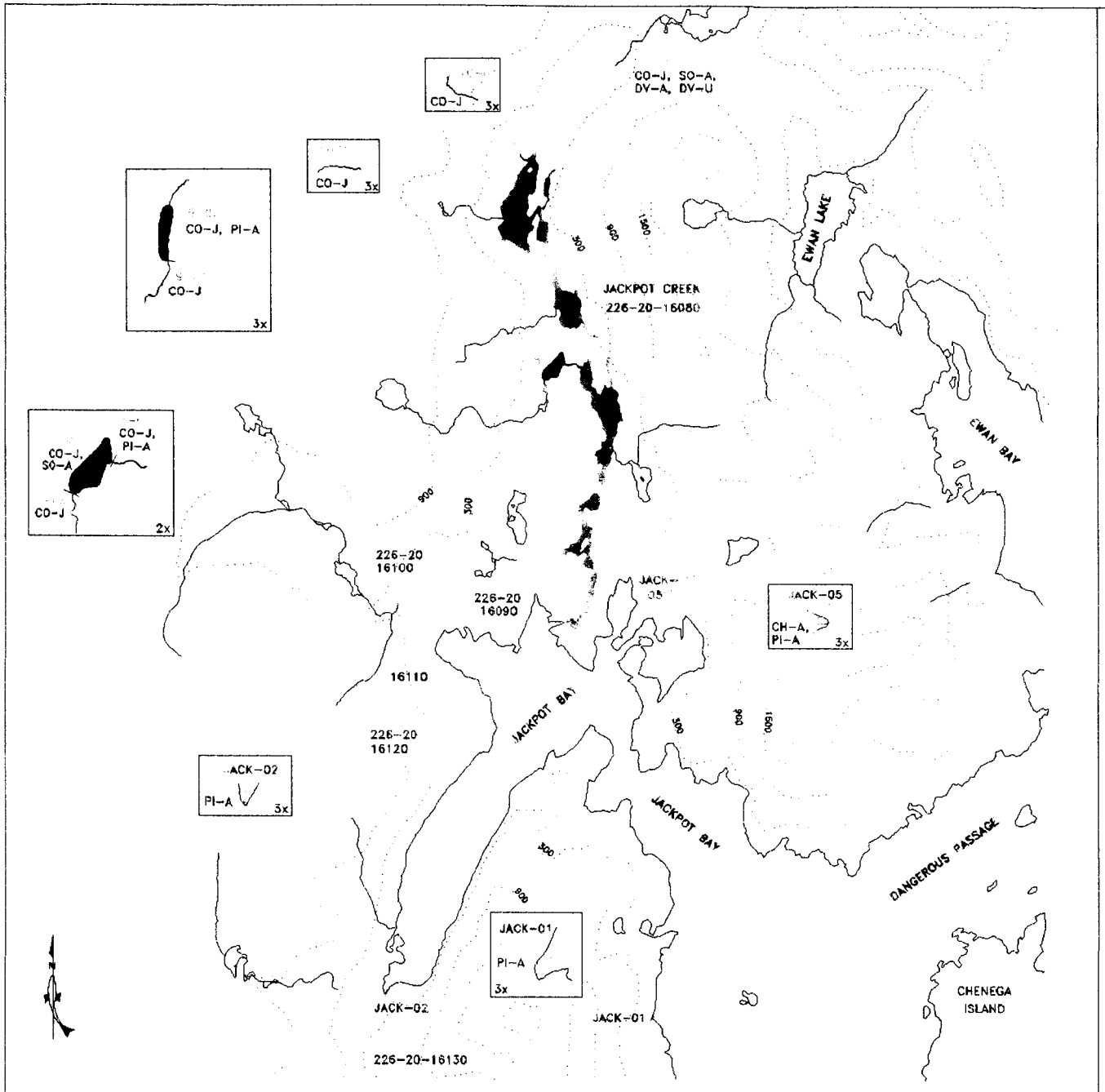
SCALE

1000 2000

3000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 1- 4

STREAM HABITAT ASSESSMENT

PROJECT R-51

JACKPOT CREEK AND BAY

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

SCALE

1000 2000

3000 m

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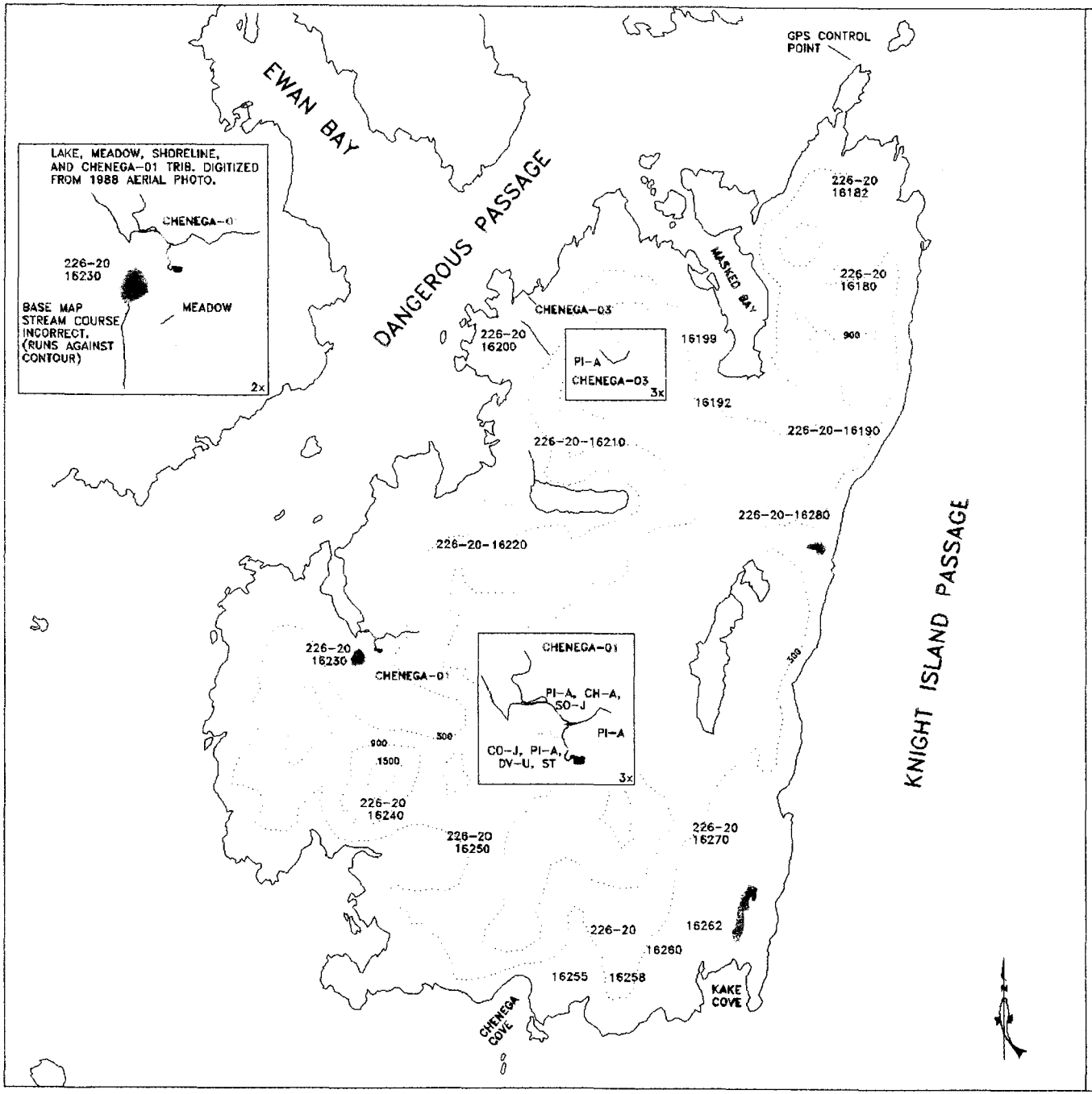
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 1-5

STREAM HABITAT ASSESSMENT

PROJECT R-51

CHENEGA ISLAND

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR- STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

SCALE

1000 2000
3000 m

STATE OF ALASKA
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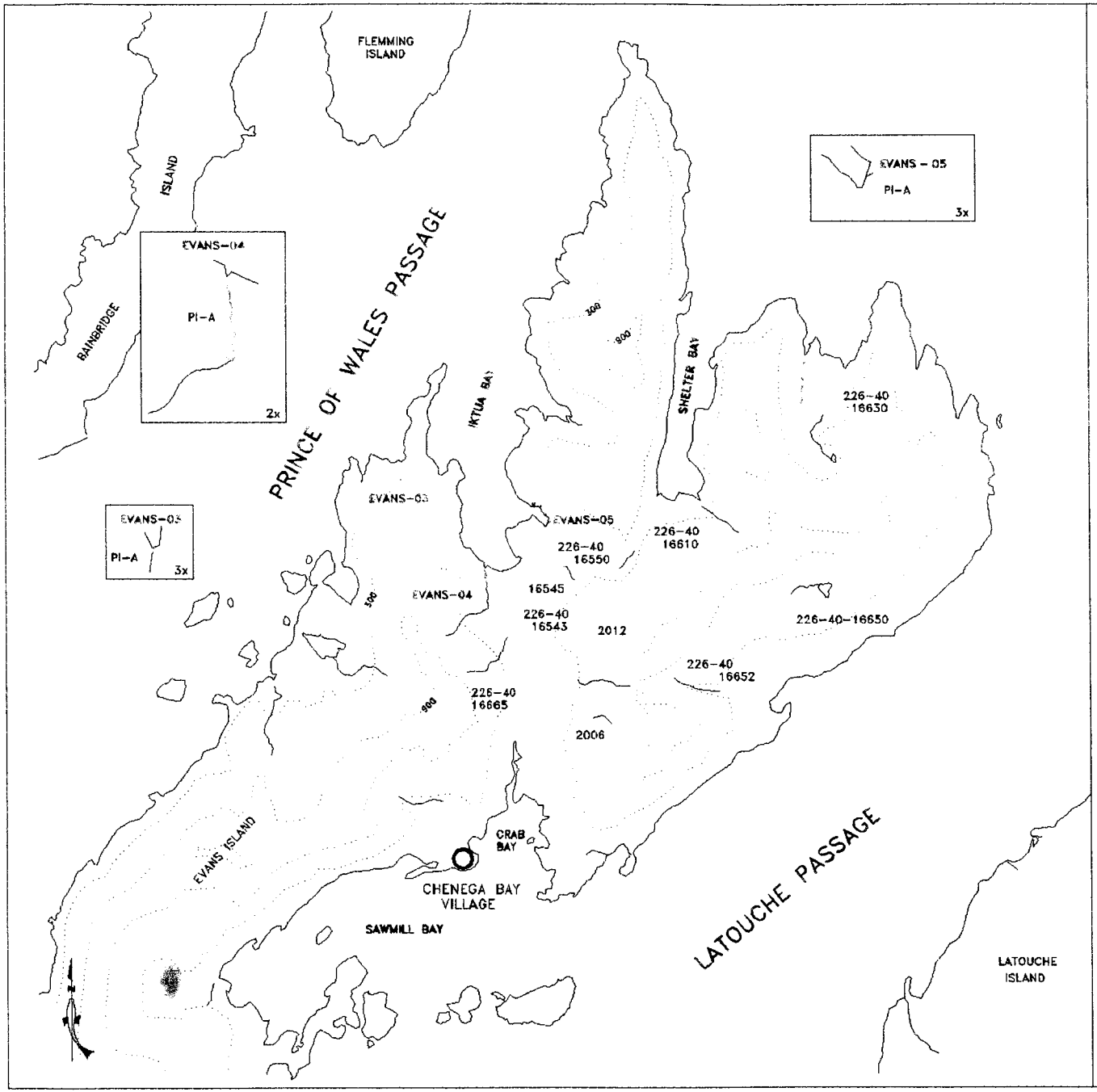
Habitat and Restoration Division

December 29, 1993



MAP 1-6

STREAM HABITAT ASSESSMENT

PROJECT R-51

EVANS ISLAND

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR- STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

SCALE

1000 2000

3000 m

STATE OF ALASKA
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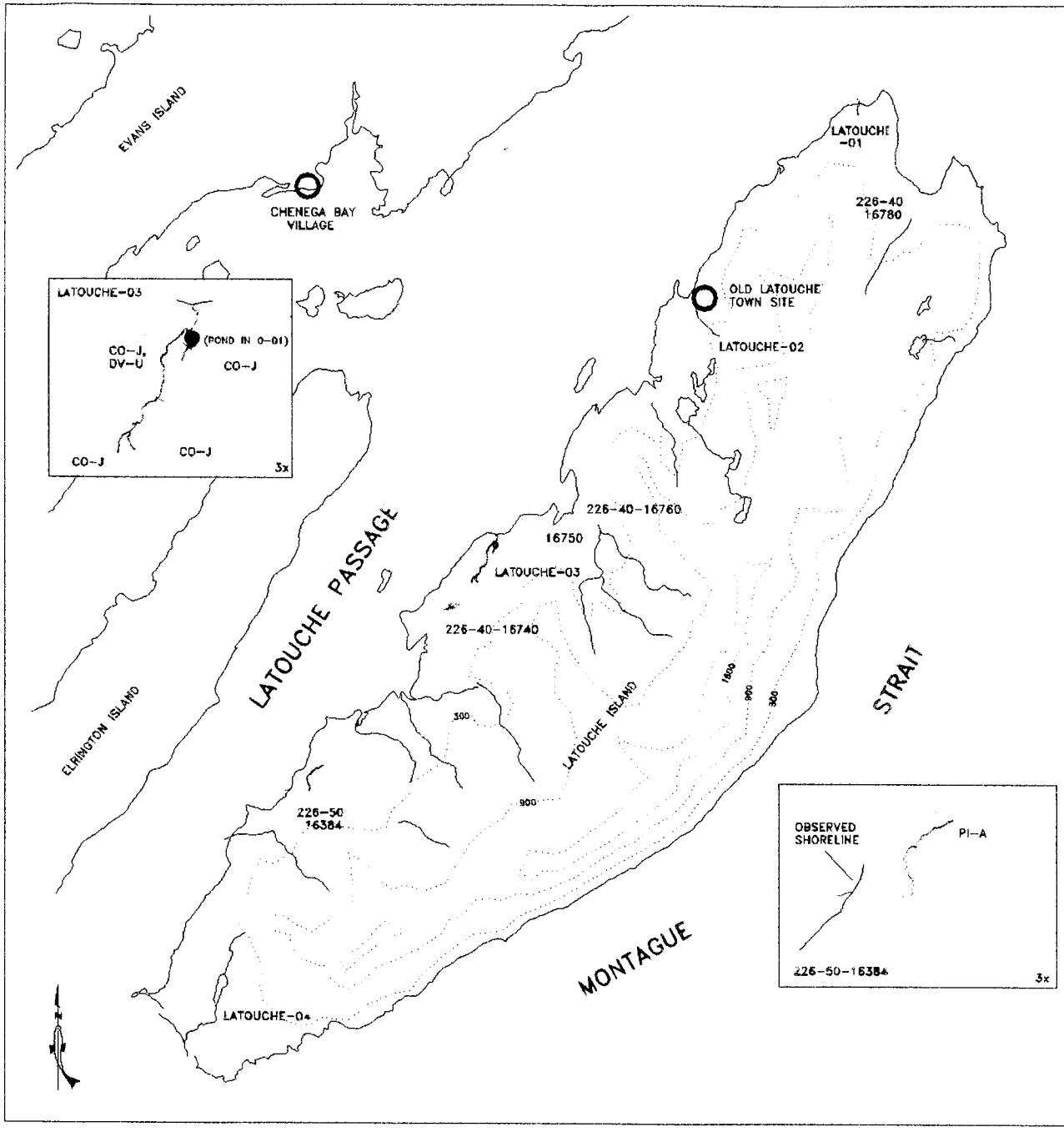
Habitat and Restoration Division

December 29, 1993



MAP 1-7

STREAM HABITAT ASSESSMENT

PROJECT R-51

LATOUCHE ISLAND

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-> STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)
- FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

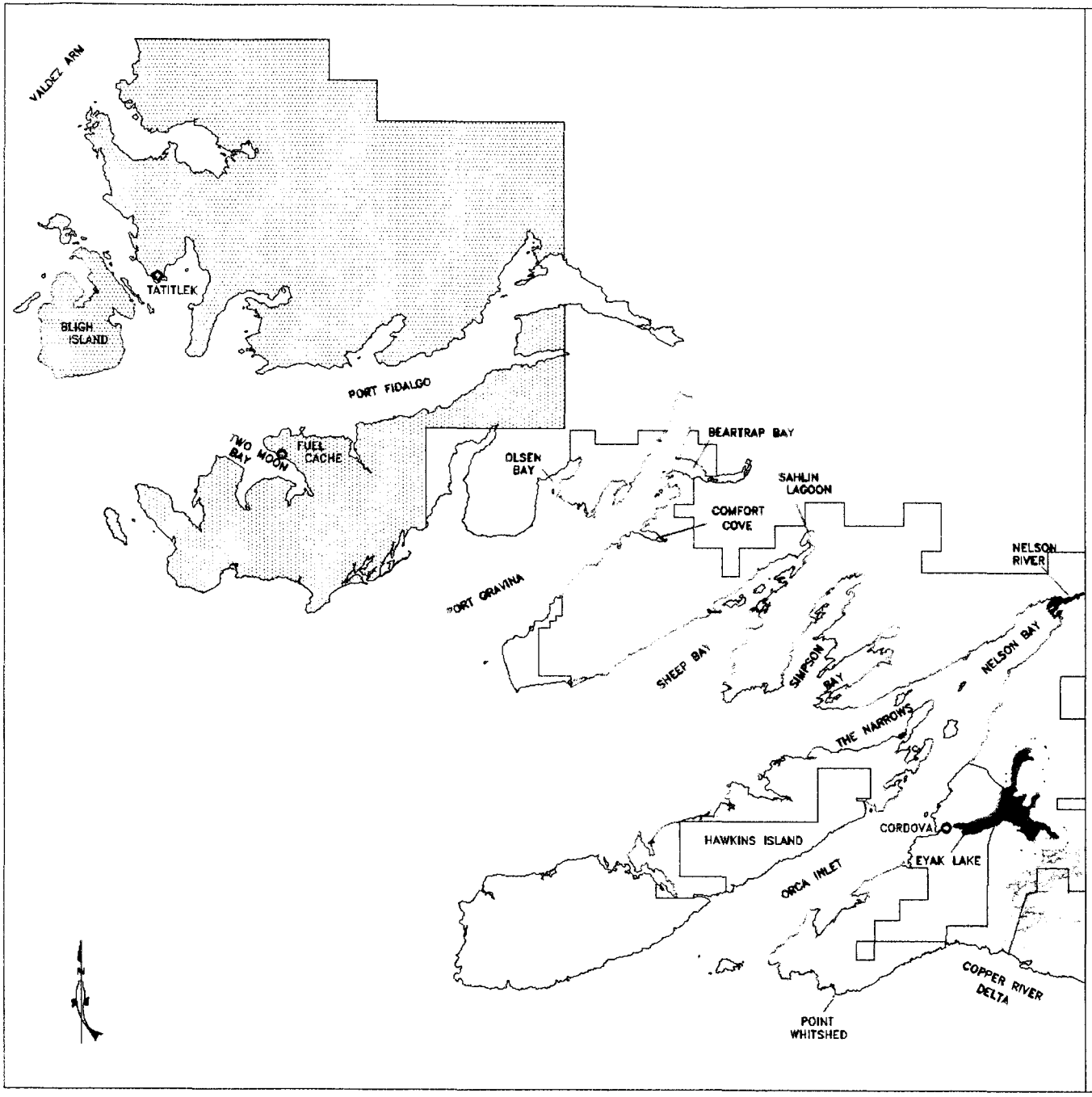
SCALE

1000 3000

5000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 2

STREAM HABITAT ASSESSMENT

PROJECT R-51

EASTERN PRINCE WILLIAM SOUND SURVEYS

LEGEND

- SURVEYED LAKE/STREAM SYSTEMS
- SHORELINE RECONNAISSANCE
- UPLANDS RECONNAISSANCE
- EYAK CORPORATION LANDS
- TATITLEK CORPORATION LANDS

SCALE

1 10

20 km

STATE OF ALASKA
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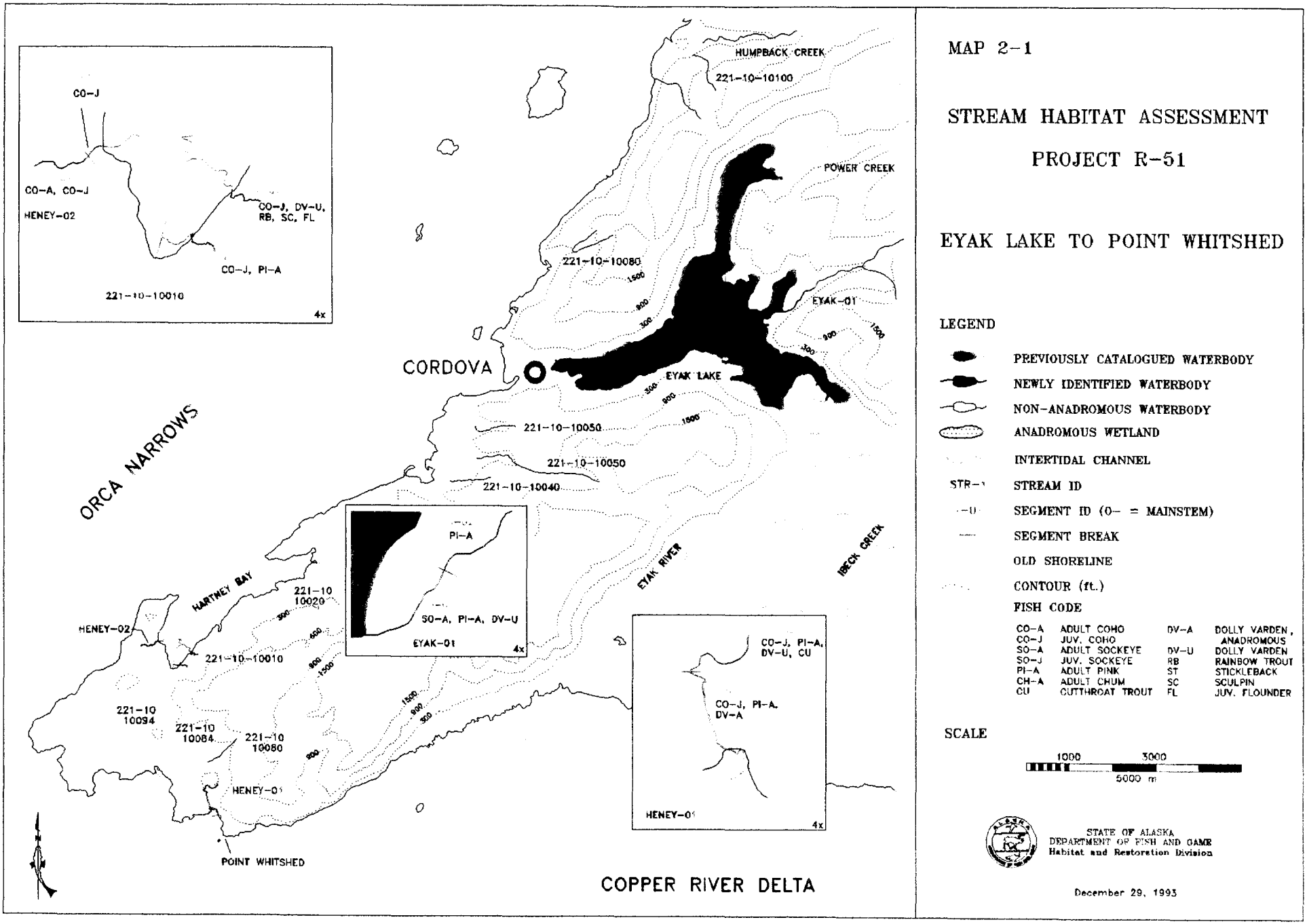
Habitat and Restoration Division

December 29, 1993



MAP 2-1

STREAM HABITAT ASSESSMENT

PROJECT R-51

EYAK LAKE TO POINT WHITSHED

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- -0 SEGMENT ID (0- = MAINSTEM)
- — SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

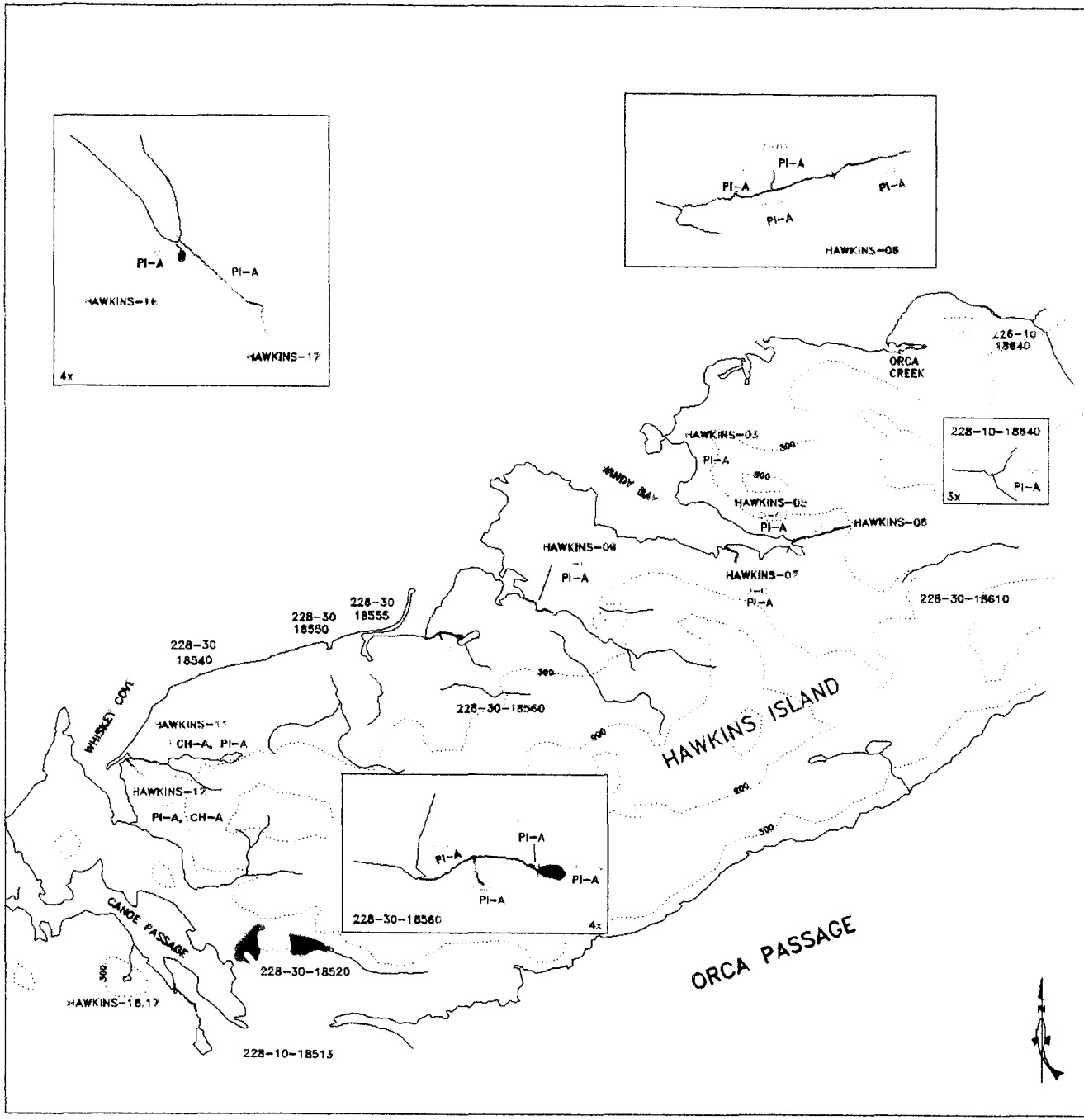
SCALE

1000 3000

5000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 2-2

STREAM HABITAT ASSESSMENT

PROJECT R-51

HAWKINS ISLAND

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR- STREAM ID
- -0- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

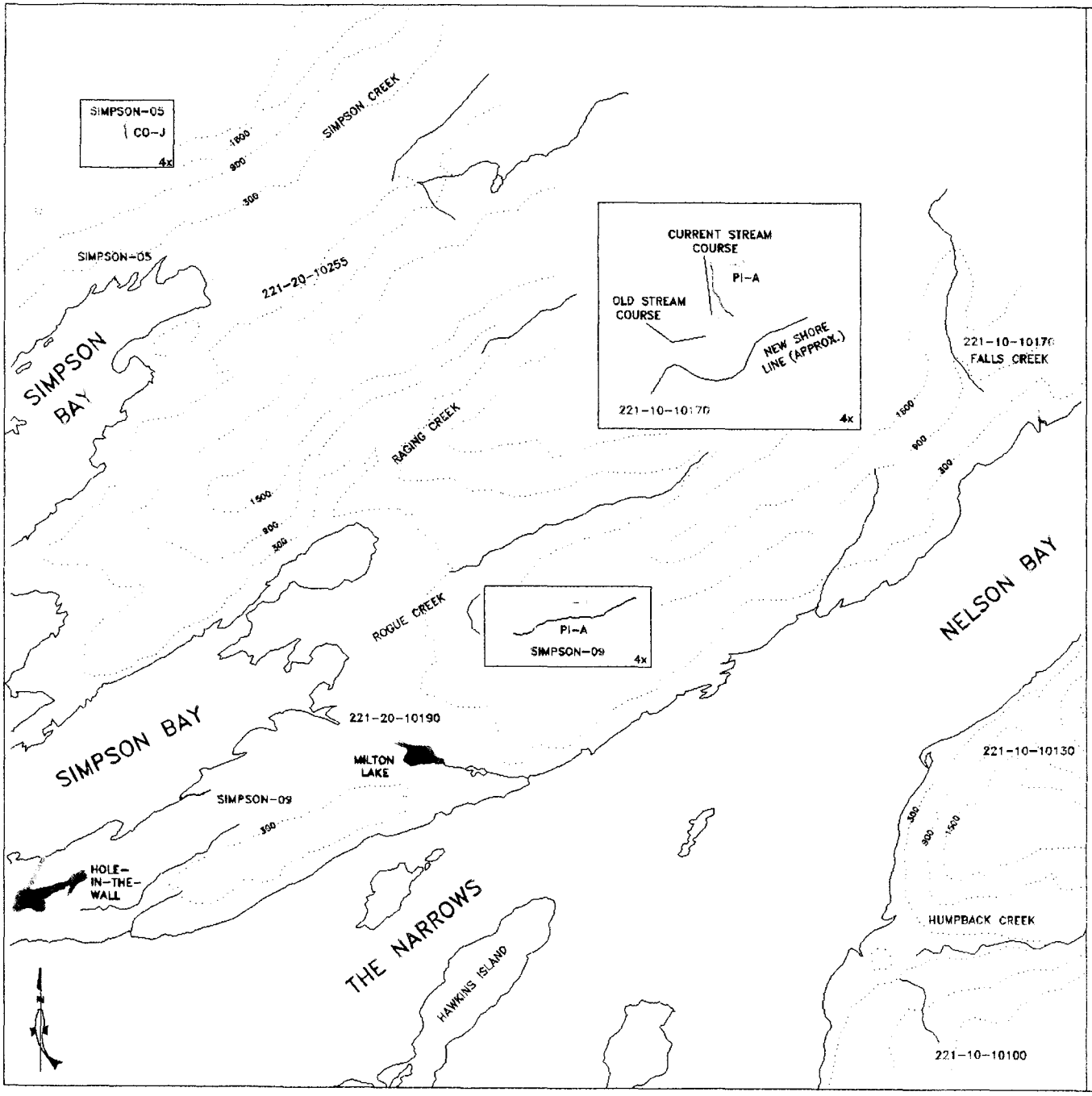
SCALE 1/2000

1000 2000

3000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 2-3

STREAM HABITAT ASSESSMENT

PROJECT R-51

NELSON BAY TO SIMPSON BAY

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- A-01 SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

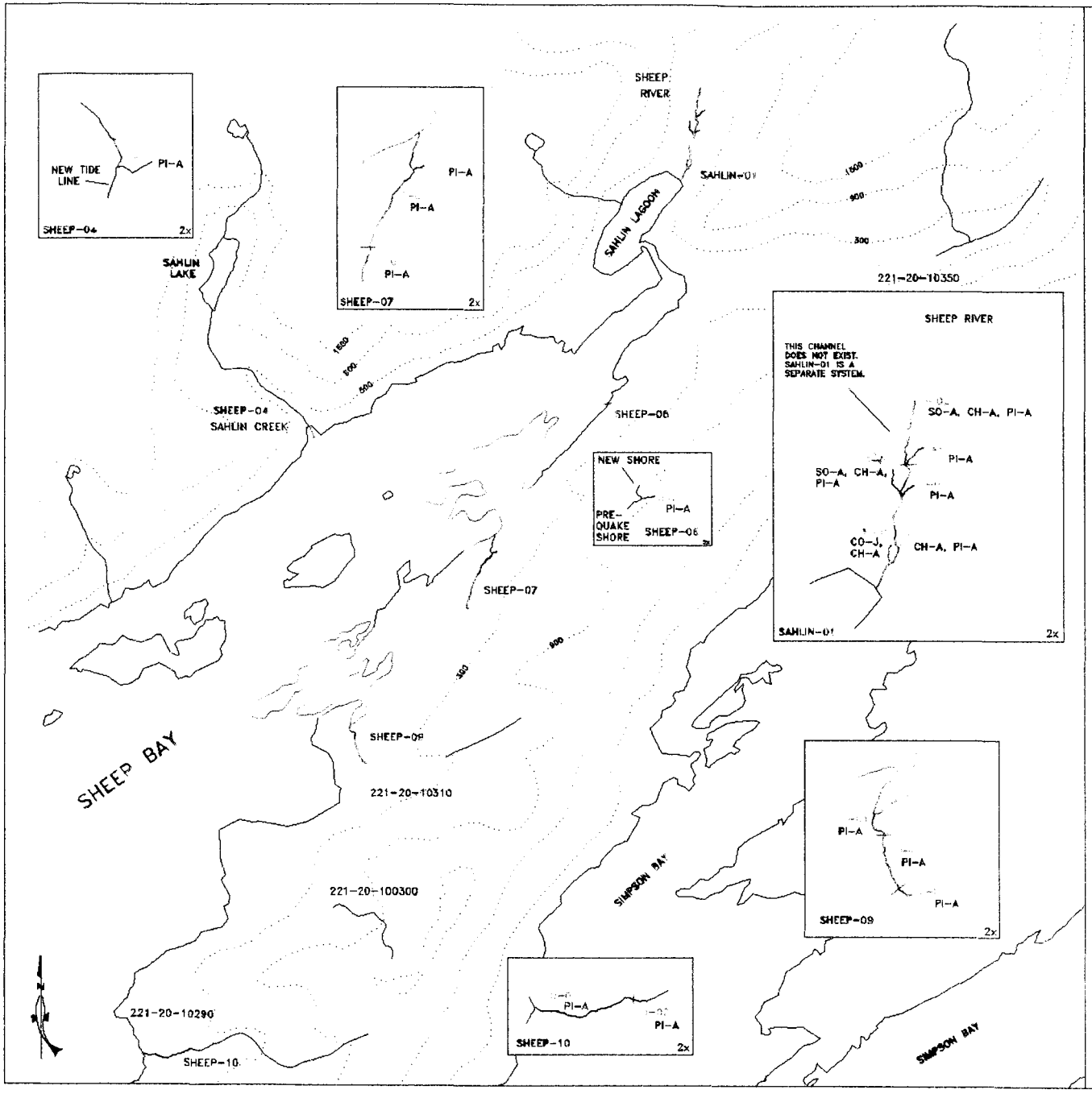
SCALE

100 1000

2000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 2-4

STREAM HABITAT ASSESSMENT

PROJECT R-51

NORTH AND EAST SHEEP BAY

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- 1-0 SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- GPS SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

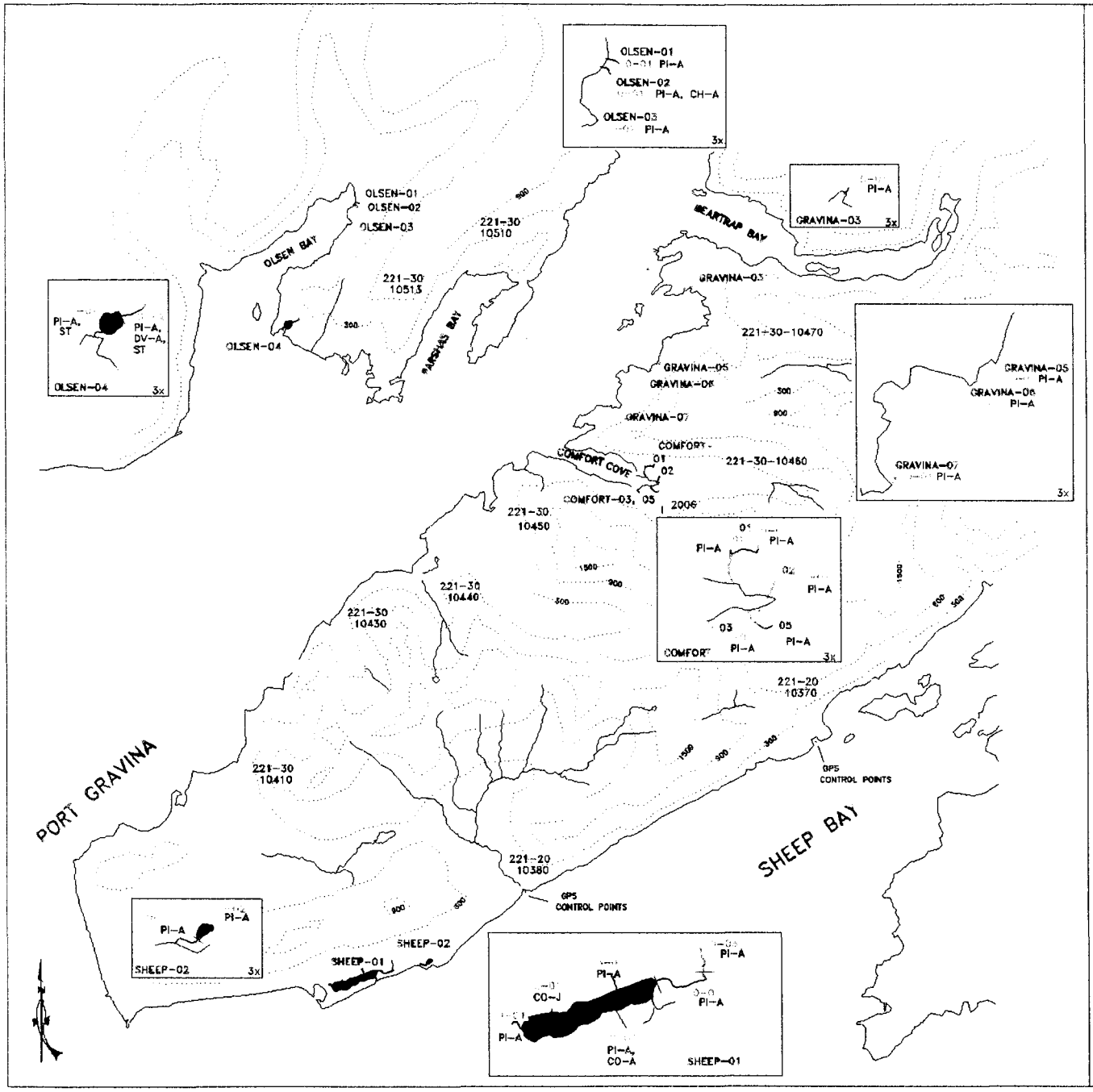
SCALE

1000 0 2000

5000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 23, 1993



MAP 2-5

STREAM HABITAT ASSESSMENT

PROJECT R-51

WEST SHEEP BAY, PORT GRAVINA, OLSEN BAY AND COMFORT COVE

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- -01 SEGMENT ID (0- = MAINSTEM)
- — SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO	DV-U	DOLLY VARDEN
SO-A	ADULT SOCKEYE	RB	RAINBOW TROUT
SO-J	JUV. SOCKEYE	ST	STICKLEBACK
PI-A	ADULT PINK	SC	SCULPIN
CH-A	ADULT CHUM	FL	JUV. FLOUNDER
CU	CUTTHROAT TROUT		

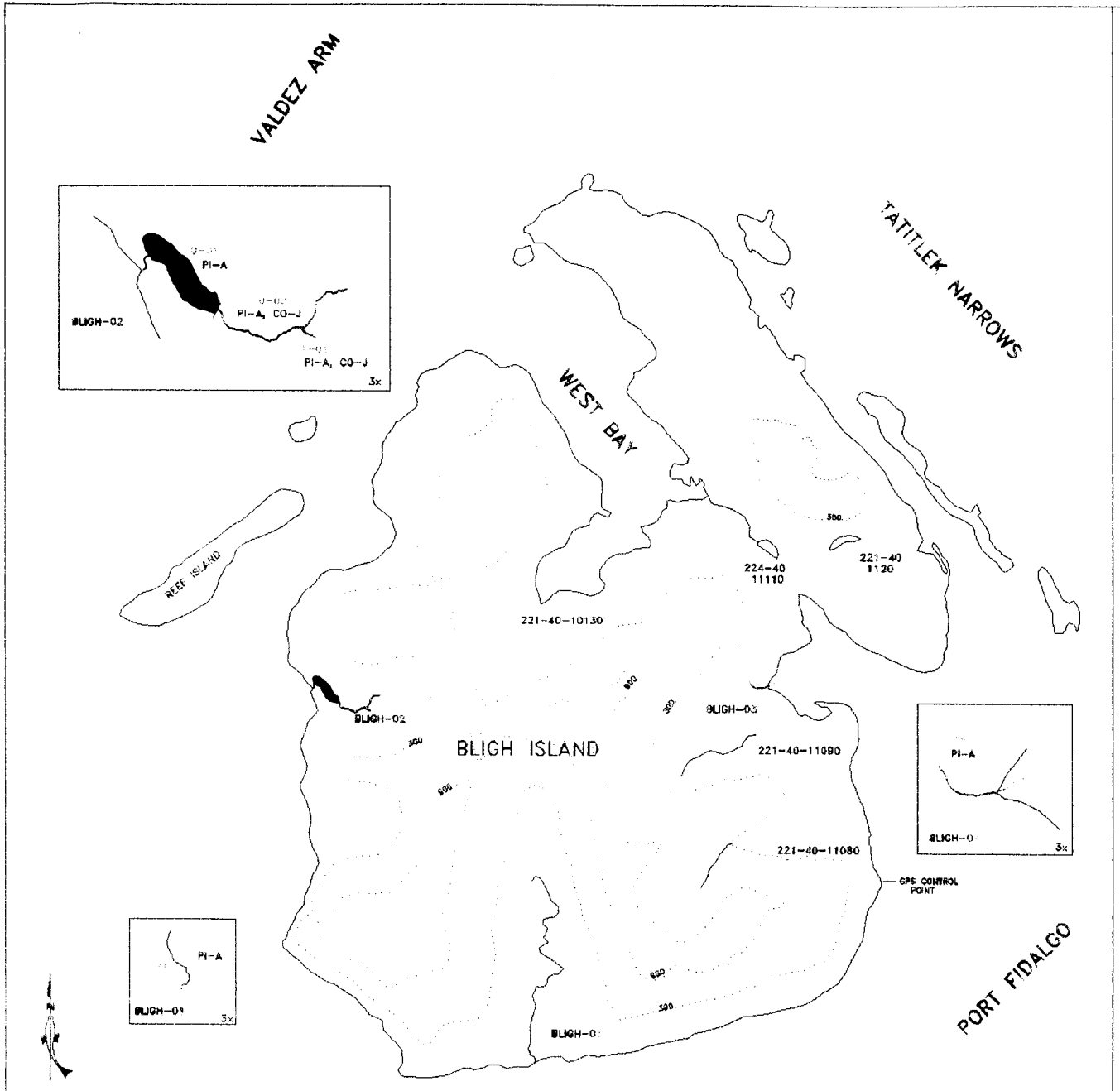
SCALE

1000 3000

5000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 2-6

STREAM HABITAT ASSESSMENT

PROJECT R-51

BLIGH ISLAND

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-- STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

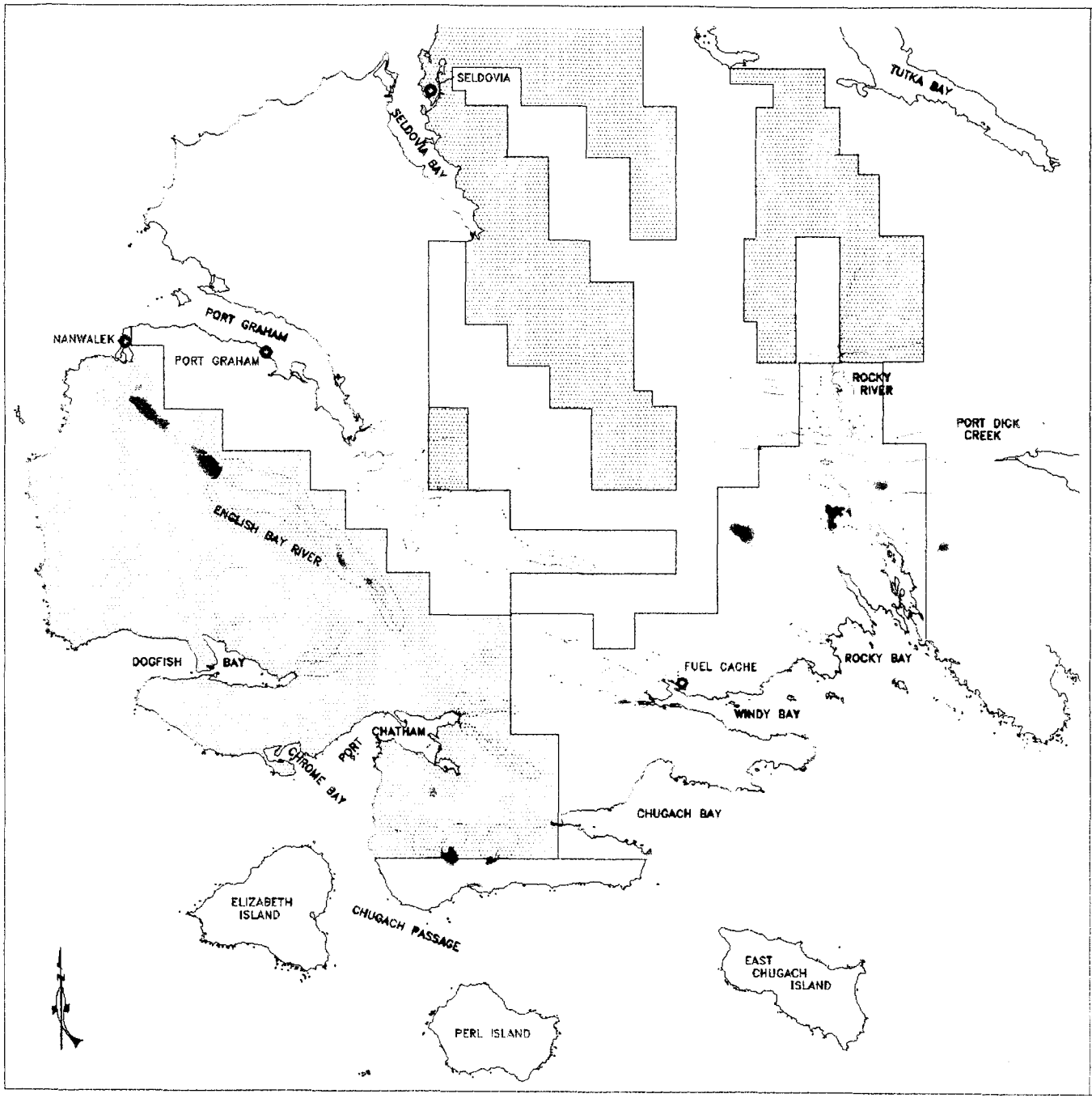
SCALE

1000 2000

3000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 3

STREAM HABITAT ASSESSMENT

PROJECT R-51

LOWER KENAI PENINSULA SURVEYS

LEGEND

- SURVEYED LAKE/STREAM SYSTEMS
- SHORELINE RECONNAISSANCE
- UPLANDS RECONNAISSANCE
- PORT GRAHAM COPRPORATION LANDS
- ENGLISH BAY CORPORATION LANDS
- SELDOVIA CORPORATION LANDS

SCALE

1 5

10 km

STATE OF ALASKA
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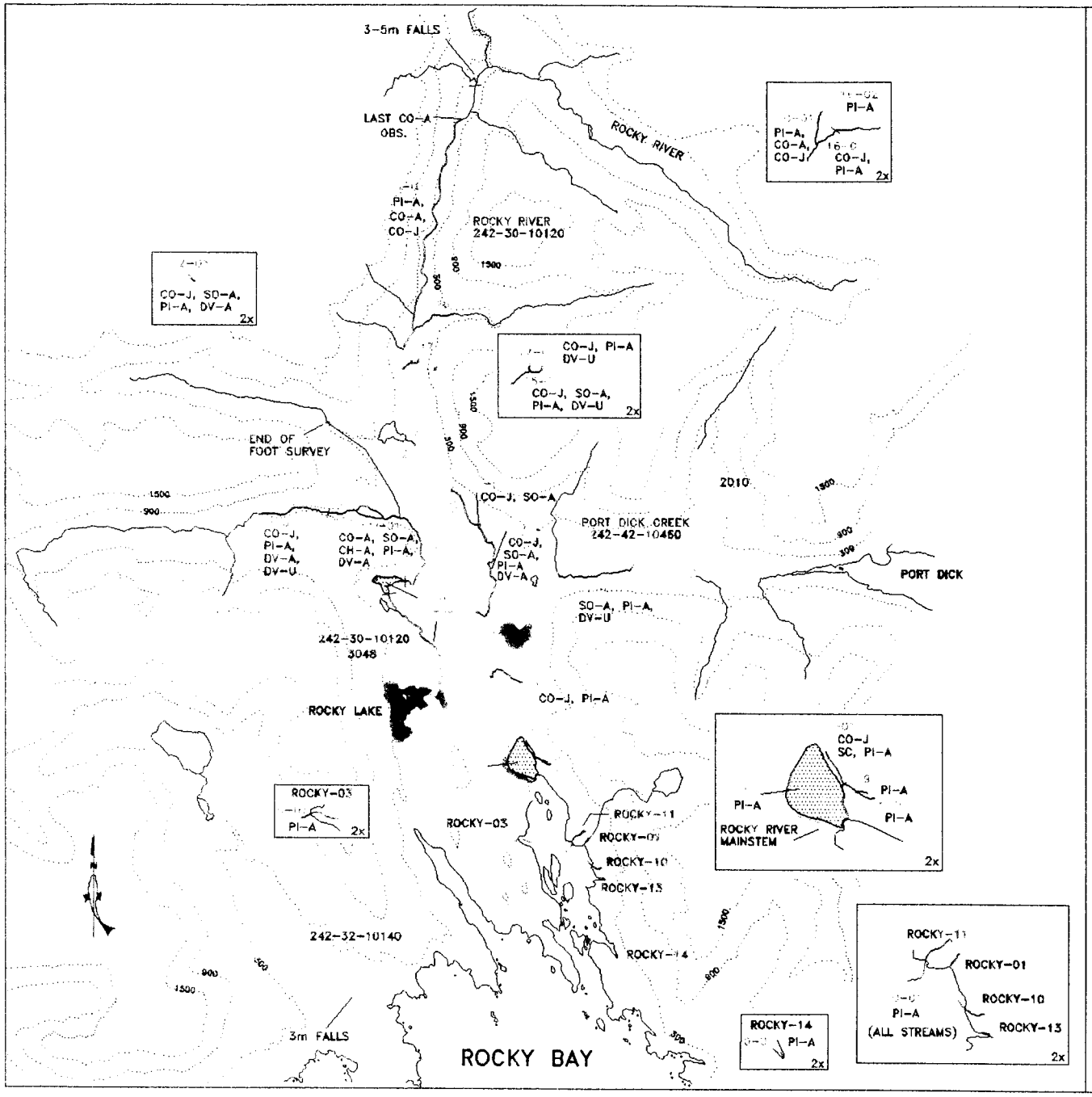
Habitat and Restoration Division

December 22, 1997



MAP 3-1

STREAM HABITAT ASSESSMENT

PROJECT R-51

ROCKY RIVER SYSTEM AND PORT DICK CREEK

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR- STREAM ID
- -1- SEGMENT ID (0- = MAINSTEM)
- — SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO	DV-U	DOLLY VARDEN
SO-A	ADULT SOCKEYE	RB	RAINBOW TROUT
SO-J	JUV. SOCKEYE	ST	STICKLEBACK
PI-A	ADULT PINK	SC	SCULPIN
CH-A	ADULT CHUM	FL	JUV. FLOUNDER
CU	CUTTHROAT TROUT		

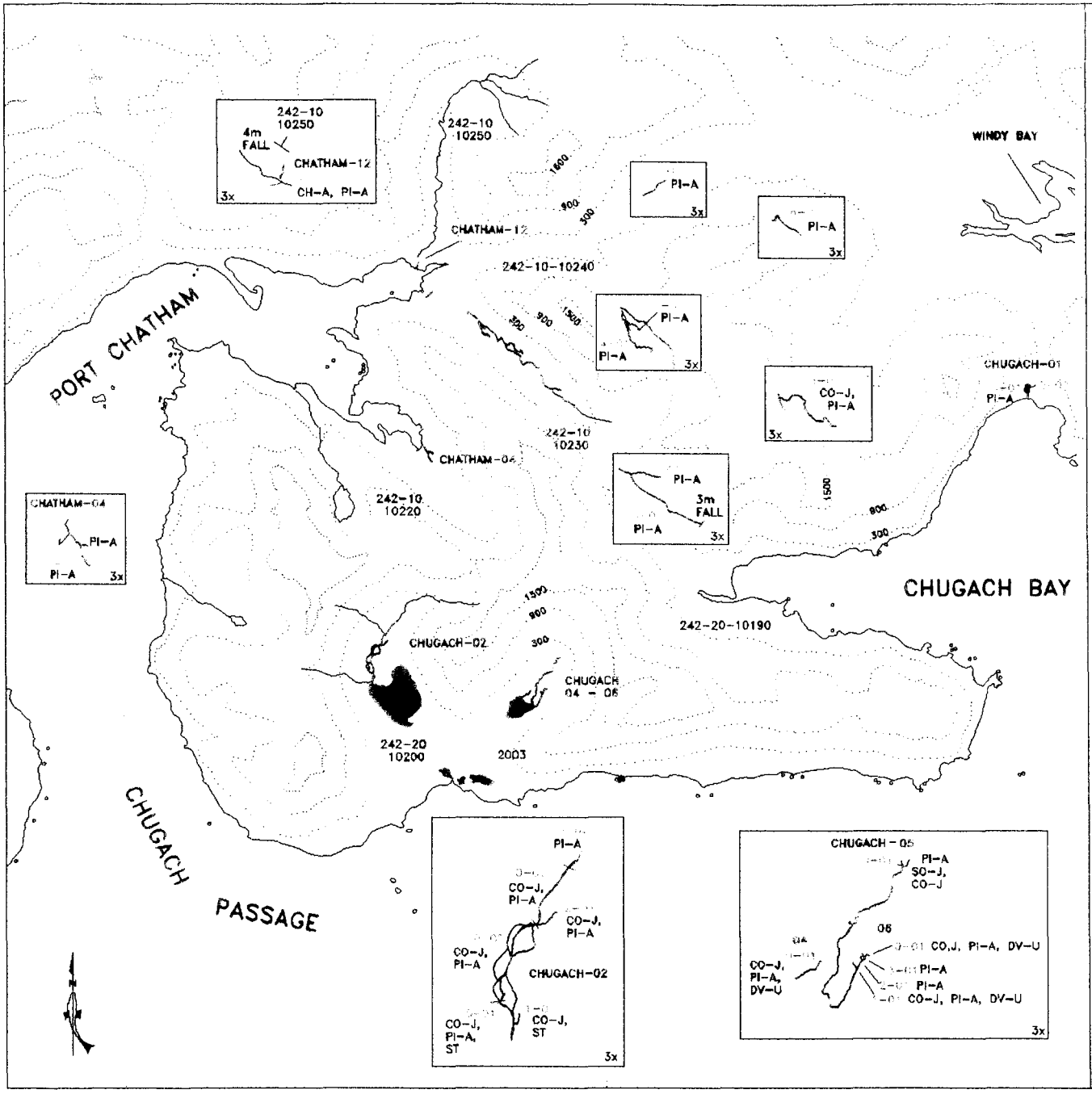
SCALE

1000 3000

5000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 3-2

STREAM HABITAT ASSESSMENT

PROJECT R-51

CHUGACH BAY TO PORT CHATHAM

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

SCALE

1000 2000

3000 m

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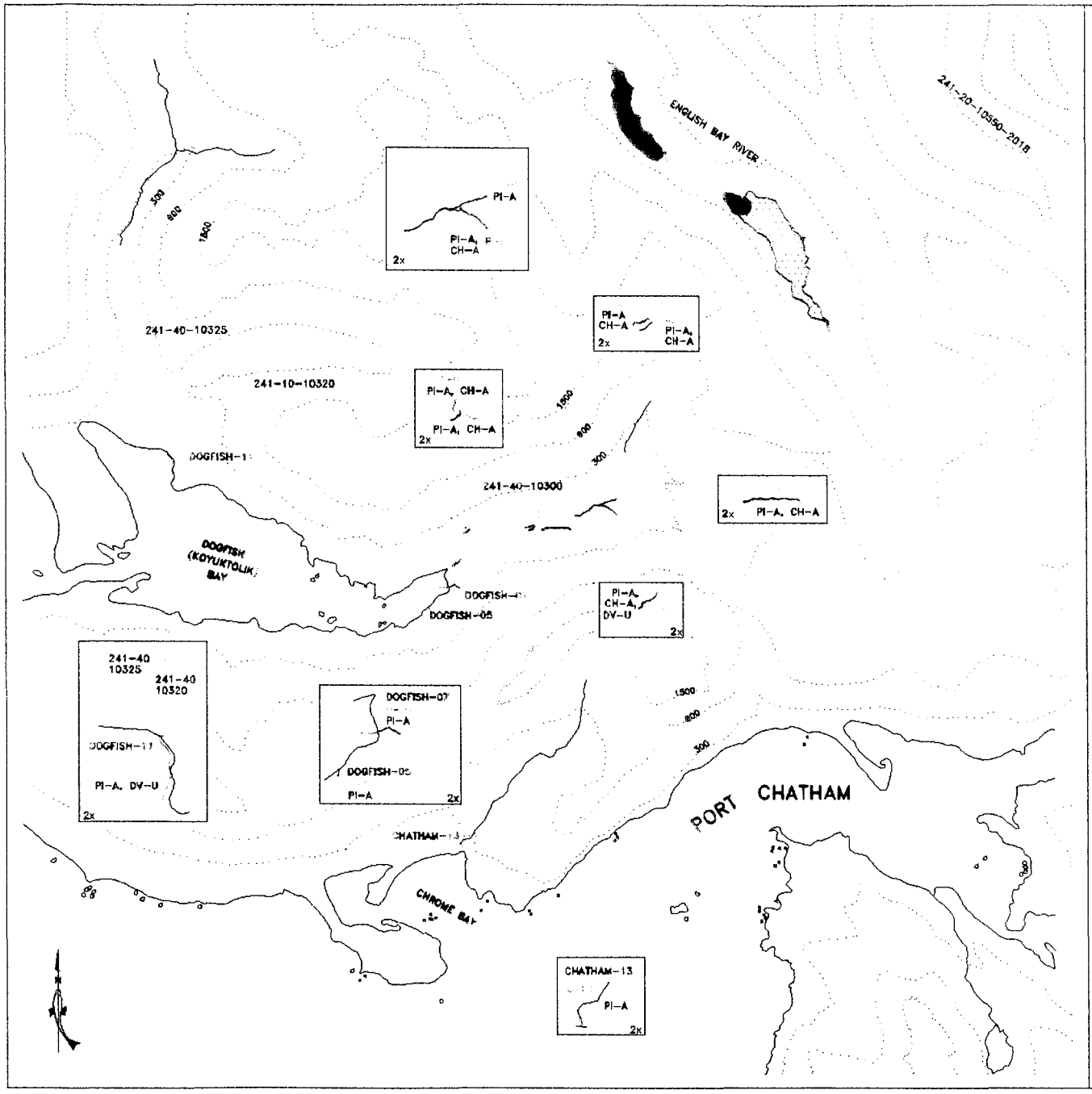
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 3-3

STREAM HABITAT ASSESSMENT

PROJECT R-51

CHROME BAY TO DOGFISH BAY

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-1 STREAM ID
- -1- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

SCALE

1000 2000

3000 m

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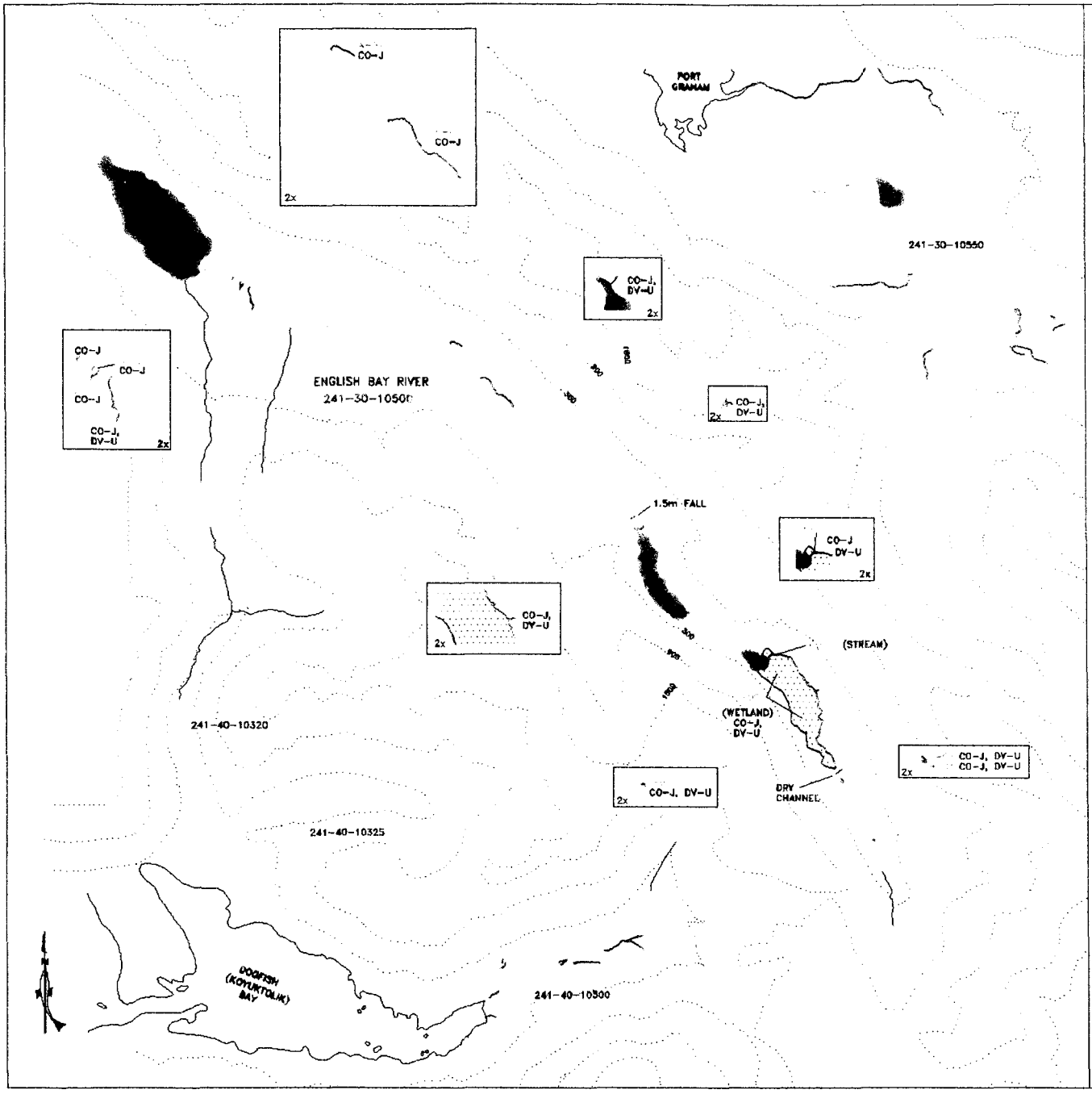
DEPARTMENT OF FISH AND GAME
Habitat and Restoration Division

December 29, 1993



MAP 3-4

STREAM HABITAT ASSESSMENT

PROJECT R-51

ENGLISH BAY RIVER

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR- STREAM ID
- ..... SEGMENT ID (0- = MAINSTEM)
- — SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

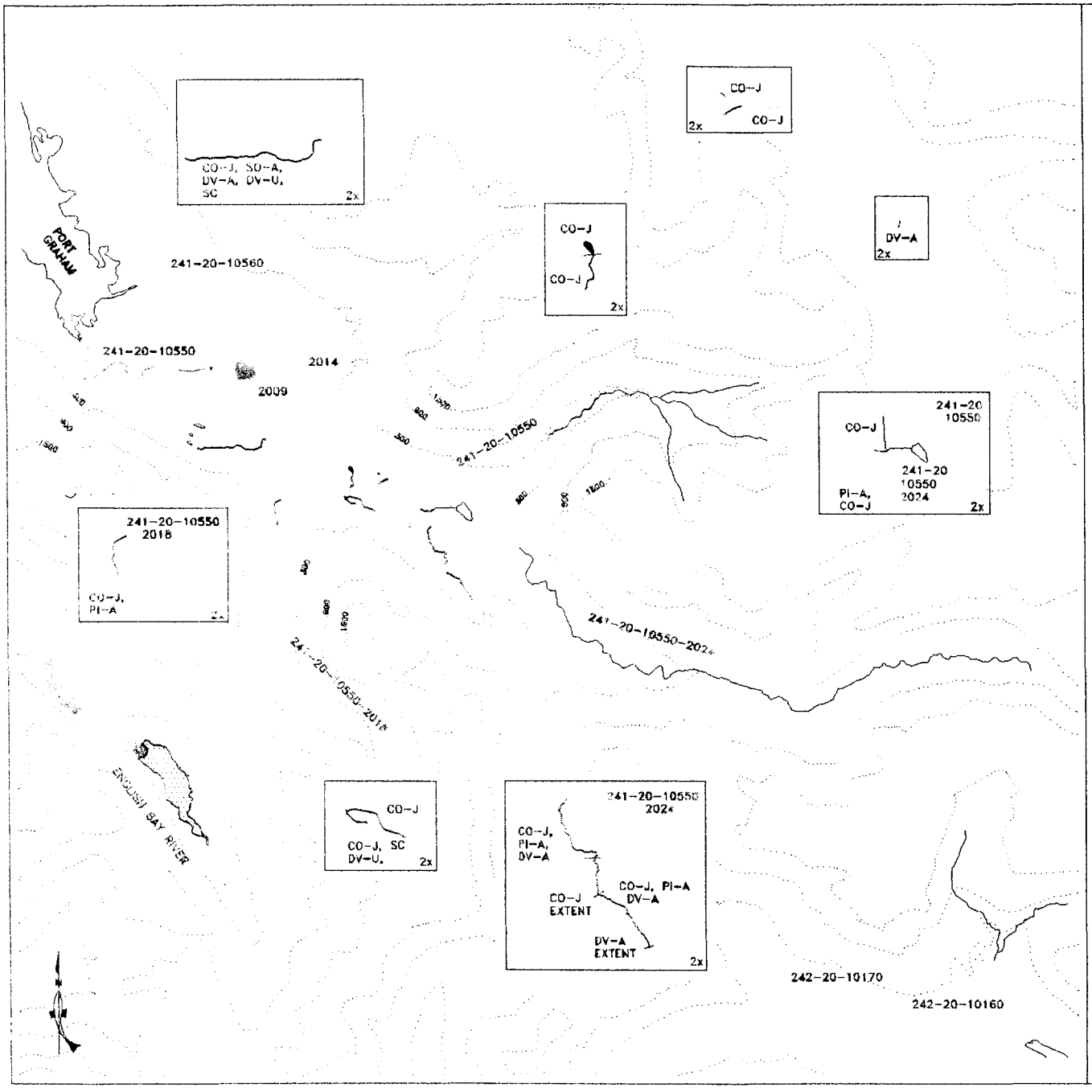
SCALE

1000 2000

3000 m

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME

December 29, 1993



MAP 3-5

STREAM HABITAT ASSESSMENT

PROJECT R-51

PORT GRAHAM RIVER SYSTEM

LEGEND

- PREVIOUSLY CATALOGUED WATERBODY
- NEWLY IDENTIFIED WATERBODY
- NON-ANADROMOUS WATERBODY
- ANADROMOUS WETLAND
- INTERTIDAL CHANNEL
- STR-- STREAM ID
- SEGMENT ID (0- = MAINSTEM)
- SEGMENT BREAK
- OLD SHORELINE
- CONTOUR (ft.)

FISH CODE

CO-A	ADULT COHO	DV-A	DOLLY VARDEN, ANADROMOUS
CO-J	JUV. COHO		
SO-A	ADULT SOCKEYE	DV-U	DOLLY VARDEN
SO-J	JUV. SOCKEYE	RB	RAINBOW TROUT
PI-A	ADULT PINK	ST	STICKLEBACK
CH-A	ADULT CHUM	SC	SCULPIN
CU	CUTTHROAT TROUT	FL	JUV. FLOUNDER

SCALE

1000 2000

3000 m

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Habitat and Restoration Division

December 29, 1993