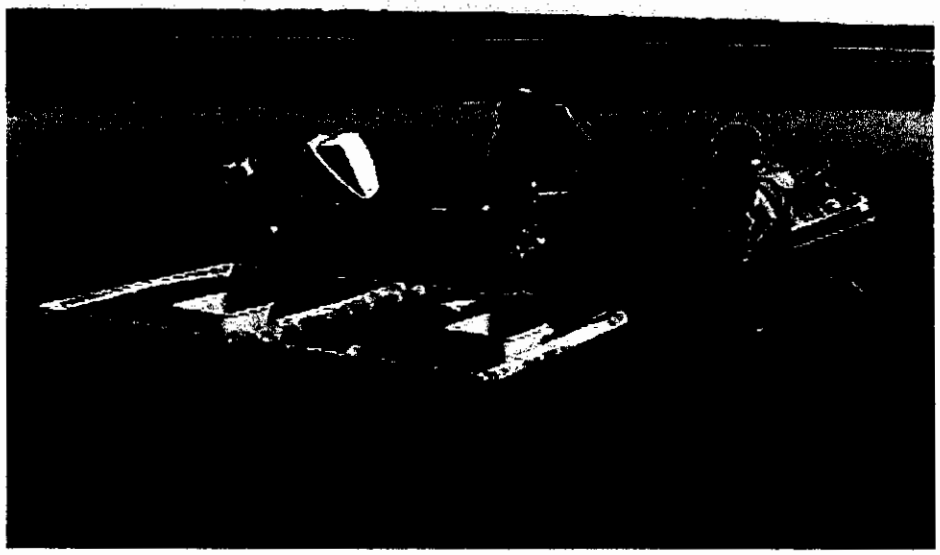
Colville Delta Fish Habitat Study 1995-1996

Final Data Report

October 31, 1997



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COLVILLE DELTA FISH HABITAT STUDY
1995-1996

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EXECUTIVE SUMMARY

The 1995-1996 fish studies consisted of sampling a variety of fish habitats in and around the potential development area and pipeline corridor for the proposed Alpine Oilfield within the Colville Delta. Habitats sampled included both major and minor river channels and five lake types. Lakes were classified based on the potential for fish access and survival. Sampling was primarily conducted with fyke nets and gill nets during the summer and gill nets during the fall.

Perched lakes within the delta portion of the study area exceeded 2 m in water depth, thus providing the opportunity for fish to overwinter. Tapped lakes were less than 2 m deep, thus diminishing chances for successful overwintering. Several deep areas within the Sakoonang Channel that provided some opportunity for overwintering were identified, but the channel becomes saline in winter and successful overwintering would depend on winter water suitability.

Most of the fish within the Sakoonang Channel and associated tapped lakes were young-of-the-year or juveniles, few mature fish were caught. Fish within the Sakoonang Channel appeared to be moving downstream towards Harrison Bay during the early summer study period (July 8 to August 5), with a return migration near the end of August. In mid-summer, few fish remained in the river channel and tapped lakes, with most being young-of-the-year.

River channel and tapped lake habitats produced similar species composition, although broad whitefish were more abundant in tapped lakes than in channels.

Perched lakes contained least cisco, broad whitefish, Alaska blackfish and ninespine stickleback, with sporadic catches of other species commonly caught within the delta.

Least cisco populations in low perched lakes exhibited growth patterns similar to the anadromous population found in channels, while those in high perched lakes exhibited a wide range of growth rates. Approximately 42% of the high perched lakes contained fast-growing least cisco, 15% contained stunted populations, with the remaining lakes exhibiting growth rates similar to the anadromous

population.

Male least cisco from populations inhabiting both high and low perched lakes had higher survival rates than males in the anadromous population. This finding was based on a higher average age and greater percentage of males in perched lake populations as compared to the anadromous population.

The Miluveach and Kachemach rivers within the pipeline corridor provided spawning for arctic grayling and feeding areas for both grayling and round whitefish.

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INTRODUCTION

ARCO Alaska Inc. has proposed to develop an oil field development within the Colville Delta. Field development would lead to the crossing of delta channels and lakes with ice roads and pipelines. Water would be withdrawn from lakes to support both industrial and domestic needs.

During review of both exploration and development permits, information will be required on the biological sensitivity of delta channels and lakes. Lakes of interest include both lakes connected to river channels during the open water period, often called tapped lakes, and lakes isolated from regular connection with the river, called perched lakes. Perched lakes often lack well-defined connections, however, some are of such low elevation that river water floods them every spring during break-up, while others are flooded infrequently during unusually high water. Perched lakes with depths greater than 2 m often support fish populations while the most critical use of tapped lakes is by anadromous fish that use these lakes for feeding during the summer.

The most critical use of delta channels is by anadromous fish that move into these channels in the fall and remain through the winter. Fish also use the channels to move between the various habitats used at different seasons. A substantial body of information exists for the major channels of the Colville Delta (Kogl and Schell 1974, Bendock and Burr 1986, George and Kovalsky 1986, Fawcett et al. 1986, Moulton et al. 1992). These areas support substantial fisheries in the fall and fish use of these channels is well documented. Less information is available for the minor channels that lie between the Main (Kupigruak) Channel on the east and the Nechelik (Nigliq) Channel on the west.

The study was designed to provide physical and biological information on these habitat types to understand their use by various fish species. In addition, the results of the survey can be used, in concert with previous surveys within the area, to direct any future investigations that may be needed.

The objectives of the study are to document fish presence and habitat use in both minor delta channels

and lakes. Lakes include both isolated and tapped lakes that have not been previously surveyed. Selected lakes include those that may be included in, or used to support, an eventual field development.

METHODS

Sampling Methods

The study consisted of 3 sampling periods, two during the summer, July 8 to August 4, 1995 and August 2 to 28, 1996, and a third after ice formation, October 28 to November 6, 1995. During summer, fyke nets were the primary sampling gear used in river channels and tapped lakes. Fyke nets were also used in other lake types during 1995, but were replaced by gill nets in 1996. During 1995, fyke nets were supplemented with minnow traps, set lines and seining. In fall 1995, gill nets were the only gear utilized. During 1995-1996, information was collected from 83 lakes and 13 river channel stations within the Colville Delta, with additional observations from the Miluveach and Kachemach rivers (Figures 1-4).

The lake numbering system used for the study contains several pieces of information, including the code of the initial sampler and the year of sampling. The codes are as follows:

Sampler Code:

MC = McElderry and Craig (1981); sampling in 1979

B = Bendock and Burr (1986); sampling in 1985

L = Lobdell; water quality sampling in 1991-1995

M = Moulton; fish sampling in 1991-1996

First Two Numerals:

Year of Initial Sampling

(if Moulton sampled a lake previously sampled by Bendock, then the Bendock lake number is used)

Last Two Numerals:

Numbers from 01 to 99 used to identify the individual lake sampled within a given year.

For McElderry and Craig (1981) and Bendock and Burr (1986) sites, the number reported by the original investigator is placed behind the sampler code and year. River channel stations are identified by the initial letter C, as in C9501.

Fyke nets used during the 1995-1996 sampling had an opening 0.9 m deep by 1.1 m wide, the trap end was 4.9 m long, made of 9.5 mm mesh. The wings (5 m long) and lead (15 m long) were made of 12.7 mm mesh. The fyke nets were placed along the edge of lakes where depths permitted, usually the entire lead was not used because of steep bottom contours. In 1995, two baited minnow traps and a set line with 15 baited hooks were set in each lake near the fyke net. The gear was fished overnight, unless weather prevented access.

In 1995, three long-term fyke net stations in the Sakoonang Channel (C9501) and connected tapped lakes (M9521 and M9523) were fished from July 8 to August 4. At these stations, the fyke nets were set to utilize the full length of the lead. In 1996, three fyke net stations were fished from August 2 to 28. One fyke net (C9603) was again fished in the Sakoonang Channel near C9501 and two fyke nets (C9601 and C9602) were fished in the channel connecting tapped lake L9278 to the river.

The variable mesh gill nets used in the 1995 fall and 1996 summer sampling consisted of a set of two nets, each with three 1.8 m (6 ft) x 6.1 m (20 ft) panels. One net contained small meshes: 25 mm (1.00"), 32 mm (1.25"), and 41 mm (1.63"), the other net contained large meshes: 52 mm (2.06"), 70 mm (2.75") and 89 mm (3.50"). The nets were set in pairs at each sample location. During fall sampling, the nets were fished overnight. During summer, the gill nets were typically fished for 2 to 6 hours and were constantly monitored to ensure that waterfowl would not become entangled. Two sets of nets were typically fished in each lake during summer to increase fishing effort.

Seining was conducted in two small tundra streams along the proposed pipeline route -- the Miluveach and Kachemach rivers. The streams were surveyed visually and samples were taken when fish were sighted. A limited amount of additional seining was conducted within some of the lakes within the

study area, but the seine was relatively inefficient in the lakes because of steep bottom contours near the shore.

Catches were separated by gear type, and mesh size if appropriate, and enumerated by species; fork lengths were taken for all specimens except ninespine stickleback and fourhorn sculpin. Duration of each set was recorded to allow calculation of catch rates. Subsamples of coregonines and arctic grayling were retained for more detailed examination. For retained specimens, the fish were re-measured under controlled conditions and weight to the nearest 0.1 gram was also recorded. Sex and stage of maturity were obtained. For mature non-spawning females and pre-spawning females and males, the gonads were removed and weighed to the nearest 0.1 gram. Otoliths were removed from all retained specimens to determine age-length relationships and were read using the break-and-burn technique.

Bathymetric transects of each sampled lake were measured during the summer using an Eagle SupraPro depth sounder for depth measurements and either a Garmin 100 or Magellan Trailblazer GPS for positioning. Salinity or conductivity was measured at each of the sampling locations. During the summer, conductivity was measured at the surface of each lake. During the fall, a conductivity or salinity profile in 0.5 m increments was measured at the beginning or end of each set using a YSI Model 33 salinity/conductivity meter.

Analysis Methods

A habitat classification was used to analyze catch results. Habitats used in the analysis were: 1) major channels, 2) minor channels, 3) tapped lakes, 4) frequent flooding perched lakes, 5) infrequent-flooding perched lakes, 6) drainage lakes, and 7) tundra lakes. Major channel habitat is composed primarily of the main Colville River between the Itkillik River and the mouths of the Kupigruak and East channels, and the Nigliq Channel. These channels convey most of the flow during the summer and hold substantial volumes of water during the winter.

Numerous minor distributary channels lace the delta. In total, these minor channels convey a

substantial amount of water during the spring, but have very low to no flow during the summer. Because of the low summer flow and shallow water, these channels warm rapidly and provide abundant rearing habitat.

Tapped lakes have year-round connecting channels that fish can pass through during the summer. The connecting channel is usually the drainage path for the lake, hence most of these lakes are shallow, typically less than 2 m deep.

Perched lakes often lack well-defined connections, however, some are of such low elevation that river water floods them every spring during break-up, while others are flooded infrequently during unusually high water. In this report, frequent flooding perched lakes are termed low perched lakes, while those flooding infrequently are termed high perched lakes.

Drainage lakes are connected to streams that drain into the Colville River or its tributaries. One complex of drainage lakes occurs within the delta, but they are more common along the potential pipeline corridor between the Colville River and the Kuparuk Field facilities. The degree a lake is connected to the river channel determines the suite of species able to utilize the available habitat.

Tundra lakes are relatively shallow (typically less than 2 m deep) thaw lakes not within the influence of the Colville River. The lakes are too shallow to support fish through the winter and lack connecting channels or wetlands that would allow predictable immigration or emigration.

The amount of available habitat by classification within the Colville Delta was determined by digitizing the area represented by each habitat type on aerial photographs obtained on July 23, 1983. Each habitat feature (lake or channel segment) between the Nechelik and main Colville River channels was assigned a classification based on the criteria used to describe each habitat type, then the area of each feature was measured. Lakes east of the main Colville River are not included in the totals, thus the sampled tundra lakes and a number of sampled perched and drainage lakes are absent from the analysis of habitat quantity.

RESULTS AND DISCUSSION

Physical Measurements

Water depths were obtained from 80 lakes during the 1995-1996 sampling. Maximum depths ranged from 0.7 to 7.4 meters. Most lakes (62 of 80) were greater than 2.0 meters deep, with the distribution of depths as follows:

Depths (meters)	Number of Lakes
0-2.0	18
2.1-3.0	18
3.1-4.0	26
4.1-5.0	10
5.1-6.0	3
6.1-7.0	3
7.1-8.0	2
Total:	80

The 80 lakes measured for water depth in 1995-1996 brings the total number of lakes with depth information to 160. Lakes less than 2.0 meters deep were either tapped lakes within the delta or tundra lakes east of the Colville River. Most of the perched lakes within the delta were in excess of 2.0 meters deep (Figure 5).

Flow in the Sakoonang Channel had ceased when the summer sampling was initiated on July 8 in 1995 and August 2 in 1996. The channel was under tidal influence during the sampling periods

except for a 3 day period in 1995 when high water caused by rainstorms overtopped the upstream end of the channel.

Most of the Sakoonang Channel was less than 2 meters deep during the summer, indicating little potential for overwintering. Several areas deeper than 2.0 meters were found, however, indicating some areas for potential overwintering (Figure 6). A maximum depth of 8.0 meters was observed in the channel connecting lake L9278 to the river channel. Sampling at deep areas along the Sakoonang Channel in November revealed elevated salinity (8-9 ‰ by Nov 4, 1995), indicating upstream movement of marine water by that time.

Conductivity, measured in 73 lakes, tended to be low. Thirty-two, or 44%, had conductivity less than 100 µmho/cm, with an additional 34% between 100-199 µmho/cm. High conductivity was measured in two perched lakes (Lake M9522: 3020 µmho/cm; Lake M9623: 2500 µmho/cm) and one tapped lake (Lake L9278: 3580 µmho/cm), indicating marine influence.

Habitat Availability

There is an estimated 15,000 hectares of potential fish-bearing habitat within the Colville Delta (Table 1.) River channels and associated tapped lakes account for 75% of aquatic habitat within the Colville Delta, with major channels comprising almost half of the total aquatic habitat. The remaining 25% is almost all perched lakes, with most being infrequently flooded during high spring flows.

Biological Observations

Catch Summary

Seventeen fish species were caught during the 1995-1996 sampling effort, accounting for a total of 47,587 fish, with the majority (44,929) captured by fyke net during the summer (Table 2). Over 60% of the captured fish were ninespine stickleback. Whitefish, cisco and arctic grayling

accounted for 32% of the remaining catch (or 83% of the catch excluding sticklebacks). Least cisco and broad whitefish were caught in similar abundance during the summer, followed by round whitefish. Least cisco were the dominant species in the fall sampling. Minnow traps, set lines and seines were relatively ineffective, with few fish and species captured.

Fish Occurrence in River Channels and Tapped Lakes. Fifteen fish species were caught within the Sakoonang Channel and associated tapped lakes. Catches were dominated by least cisco and broad whitefish, with round whitefish and humpback whitefish also common (Tables 2 and 3). Catches in both habitats were similar in composition, although broad whitefish outnumbered least cisco in tapped lakes, while least cisco were more numerous in the river channel samples. Young-of-the-year rainbow smelt were often present in tapped lakes and channels draining from tapped lakes.

Fish appeared to be leaving the Sakoonang Channel during the July 8 to August 4, 1995 sampling period. Catch rates tended to be highest during the early portion of the sampling period, with declining catch rates as sampling progressed (Figure 7). Catches of broad whitefish and least cisco increased in late July and early August, these increased catches were primarily young-of-the-year (Figure 8). By early August, few of the dominant species were being caught in the study area (Figures 8 to 11).

There was another increase in catch rates for least cisco and broad whitefish in late August (Figure 7). These catches were medium-sized fish as well as young-of-the-year and was likely the beginning of the return migration from coastal waters. Catches during this period included species not seen earlier, such as arctic cisco and Dolly Varden char, which was further evidence that the increased catches represented the late summer return from coastal feeding areas.

Catches during the entire sampling period were dominated by juveniles of all species. Few mature fish of any species were caught, with most being ages 0 and 1. This pattern is similar to that observed in 1985, when sampling in the major channels of the Colville River revealed a downstream movement of broad whitefish and least cisco through July into early August, then a

return movement from mid August to early September (Fawcett et al. 1986).

Fish Occurrence in Perched Lakes. Low perched lakes were restricted to the delta region, while high perched lakes occurred throughout the delta and to the east of the Colville River (Figures 2-4). Ninespine stickleback were the most abundant species caught in perched lakes during summer fyke net sampling, often being very abundant. Least cisco dominated the non-stickleback catch, followed by broad whitefish and Alaska blackfish (Table 3). Excluding sticklebacks, least cisco were 96% of the summer fyke net catch and 46% of the summer gill net catch in low perched lakes, 50% (fyke net) to 70% (gill net) in high perched lakes during summer and 96% in both lake types during gill netting in the fall (Table 3). Broad whitefish were 35% and 26% of the summer gill net catch in low and high perched lakes, respectively, but were rarely caught by fyke net in these lakes. Few other species were captured.

Fish Occurrence in Drainage Lakes. Drainage lakes occurred along the eastern shore of the main Colville River. Arctic grayling were the dominant species, comprising 52% of the fyke net catch in 1995 and 68% of the gill net catch in 1996. Much of this dominance was caused by high catches in two lakes, however, arctic grayling were taken in 7 of the 14 drainage lakes sampled. Other abundant species included least cisco and Alaska blackfish, with round whitefish, humpback whitefish and broad whitefish also caught. These lakes were connected to the Colville River via small creeks, thus facilitating movements into and out of the lakes by any freshwater fish species found in the river system.

Fish Occurrence in Tundra Lakes. Ninespine stickleback were the only species caught in tundra lakes east of the Colville River, being caught in 6 of 8 tundra lakes sampled with fyke net in 1995. None were taken in 8 tundra lakes sampled by gill net in 1996 because the meshes were too large to capture this species.

Fish Occurrence in Tundra Streams. Fish caught within the Miluveach and Kachemach rivers included arctic grayling, round whitefish, slimy sculpin and ninespine stickleback. Arctic grayling within the Miluveach River included young-of-the-year (27-36 mm) and larger juveniles (90-174

mm) (Figure 12). Adult grayling were not observed. Round whitefish in the Miluveach River ranged between 164-243 mm; again, adults were not observed. These findings are consistent with those reported in Moulton (1980), who reported the same species in similar size ranges from a survey conducted in July 1980. Young-of-the-year and juvenile arctic grayling, slimy sculpin and ninespine stickleback were the only species caught in the Kachemach River.

Many adult arctic grayling were captured in lake MC7904, a 249 hectare lake connected to the Kachemach River by a long tributary. In July 1996, 18 adult grayling were caught in 5.3 hours of gill netting, for a catch rate of 81 fish per day. It is likely that many adult grayling entered the lake to feed after spawning. Arctic grayling were abundant when this lake was initially sampled in 1979, but the size range was not reported (McElderry and Craig 1980).

Growth and Maturity Patterns

Riverine Populations. Age-length relationships of broad whitefish, humpback whitefish and least cisco caught by fyke net in the Sakoonang Channel were generally similar to those observed in 1985 over the entire age range (Figure 13). Closer examination of the younger ages indicated that growth in recent years has been more rapid than that observed in 1985 (Figure 14). Since the growth difference is observed in all three species, it is unlikely to be an artifact of sample size or procedure. The 1985 samples were collected from the main channels, while the 1995 samples were from the Sakoonang Channel. It is possible that the difference in habitat could account for much of the observed difference in growth rate, since the Sakoonang Channel, characterized by shallow, low velocity water, would warm more rapidly than the deep main channels and could promote more rapid growth. The differences in habitat could influence both food supply and growing conditions.

Few of the fish captured within river channels or tapped lakes associated with the Sakoonang Channel during the summer or fall had reached maturity. Less than 1.5% of the least cisco had reached the length of first maturity (250 mm), while less than 0.5% of the broad whitefish and humpback whitefish were large enough to mature. In contrast, mature fish were commonly

caught in main channels. For example, during fall sampling in the main Colville River, 87% of the least cisco captured by gill net were mature, along with 22% of the broad whitefish and 38% of the humpback whitefish. Some of this difference is caused by the time of sampling, because most of the larger fish are feeding in the coastal region during the summer and return to the river in late summer to overwinter.

Lacustrine Populations. Least cisco from lakes demonstrated a variety of growth patterns, depending on the type of lake inhabited. Populations in low perched lakes showed growth similar to that seen in the anadromous population associated with river channels (Figure 15). This pattern could result from the introduction of fish of various sizes during break-up. An alternative explanation would be that the annual flooding creates similar productivity or feeding conditions across the low perched lakes.

Least cisco populations in high perched lakes demonstrate a variety of growth patterns, from growth rates much lower to rates much higher than the anadromous population, with a range of all possibilities between the extremes (Figures 15 and 16). The growth pattern within a lake showed variability similar to that seen within the anadromous and low perched lakes. These differences in growth rates between lakes have previously been described in Moulton (1994), who classified the various populations as normal, large or stunted based on growth characteristics. Based on this classification, 12 of 26 evaluated high perched lakes throughout the delta contained normal, 8 contained large and 6 contained stunted least cisco. Two low perched lakes near the mouth of the Itkillik River also contained stunted populations. There was no obvious geographical separation of the different forms; all were spread throughout the delta, with the various forms sometimes occurring in adjacent lakes (Figure 17).

Reproductive activity was readily apparent within lacustrine populations of least cisco. Pre-spawning least cisco were caught in 4 of the 9 low perched lakes and 16 of 25 high perched lakes within the delta or along the east bank of the Colville River. Within high perched lakes, over 53% of the captured least cisco were mature and 23% were in pre-spawning or spawning condition.

Male least cisco outnumbered females in both low and high perched lakes (62% and 60% males, respectively). Conversely, males were only 35% of the catch from the anadromous population (Table 4). Males in perched lakes had a longer life span than males from the anadromous population, averaging in excess of 9.5 years, compared to 6.7 years for anadromous males. Females from all populations averaged between 8.1 and 8.9 years. Few anadromous males (12%) exceeded age 10, compared to over 50% of the males from high perched lakes (Table 4). The pattern indicates that lake residence is more benign, at least for males, than the annual migration between coastal regions and river channels undertaken by the anadromous population.

Fyke Net Mortality Rates

Sampling mortality was calculated by species for the long term sets at river channel and tapped lake stations. Mortality was highest in rainbow smelt (33.9% in 1995, nearly 100% in 1996), which primarily consisted of larvae (Table 5). Only one rainbow smelt was greater than 85 mm long, with 79% at 60 mm or less. The second highest mortality was observed in juvenile arctic flounder (less than 40 mm), at 28.3% in 1996.

Gear Effectiveness

The effectiveness of the fyke nets in lakes within the Colville Delta was evaluated to assess the validity of the findings based on that gear type. The perched lakes within the delta often had steep bottom contours near shore, which restricted the locations where fyke nets could be set. There was often low confidence in fyke net sets, particularly when catches were low. To test the effectiveness of the fyke nets, eight lakes that had no or low catches of least cisco in the fyke nets were re-sampled in the fall with gill nets. One lake that had produced high catches of least cisco during the summer was also re-sampled.

The comparison of gill net to fyke net catches confirmed that the fyke nets were relatively ineffective at catching ciscoes and whitefish in lakes with steep nearshore contours (Table 6). The

fyke nets, however, were more effective at catching smaller species, such as Alaska blackfish, slimy sculpin and ninespine stickleback. Least cisco were caught by gill net in four of the five lakes in which none were caught during the summer. Overall catch rates of least cisco and broad whitefish were an order of magnitude greater in gill nets than in fyke nets. There was only one lake, L9313, that produced least cisco during the summer, but failed to yield any to the gill nets.

CONCLUSIONS

1. Perched lakes within the delta portion of the 1995-96 study area exceeded 2 m in water depth, thus providing the opportunity for fish to overwinter. Tapped lakes were less than 2 m deep, thus diminishing chances for successful overwintering. Several deep areas within the Sakoonang Channel that provided some opportunity for overwintering were identified, but successful overwintering would depend on winter water suitability. It is likely these areas are used only by species tolerant of high salinity, such as arctic cisco, rainbow smelt, fourhorn sculpin and arctic flounder.

2. Few mature fish were captured within the Sakoonang Channel, the catches were dominated by young-of-the-year and juveniles for most species.

3. Fish within the Sakoonang Channel appeared to be moving downstream towards Harrison Bay during the early summer study period (July 8 to August 5). By mid-summer few fish remained in the river channel and tapped lakes, with most of the remaining fish being young-of-the-year.

4. The upstream movement of fish returning from coastal feeding areas occurred during late August.

5. River channel and tapped lake habitats produced similar species composition, although broad whitefish were more abundant in tapped lakes than in channels.

6. Perched lakes contained mostly least cisco, broad whitefish, Alaska blackfish and ninespine

stickleback, with sporadic catches of other species commonly caught within the delta.

7. Least cisco populations in low perched lakes exhibited growth patterns similar to the anadromous population found in channels, while those in high perched lakes exhibited a wide range of growth rates.

8. Male least cisco from populations inhabiting perched lakes have higher survival rates than males in the anadromous population.

9. The Miluveach and Kachemach rivers are spawning areas for arctic grayling and provide feeding areas for both grayling and round whitefish.

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Table 1. Abundance of potential fish-bearing habitat within the Colville Delta (between and including the Nechelik Channel and Main Channel downstream from the Itkillik River).

Habitat Type	Delta-Wide Surface Area (hectares)	Number of Lakes	Average Area (hectares)	Percent of Total Area
Channels				
Major	7,089			47.2%
Minor	1,968			13.1%
Lakes				
Tapped	2,214	39	57	14.7%
Perched	3,579	141	25	23.8%
Frequent Flooding	1,482	30	49	9.9%
Infrequent Flooding	2,097	111	19	13.9%
Drainage	184	4	46	1.2%
Lake Totals	5,977	184	32	39.8%
Total Water Surface:	15,033			

Source: Aerial Photographs, July 23, 1983

Table 2. Species caught during 1995-1996 sampling by season and habitat.

Summer 1995-1996 Fyke Net Samples

Species	Major Channel	Minor Channel	Tapped Lake	Low Perched Lake[1]	High Perched Lake[1]	Drainage Lake	Total
Least cisco	--	3,713	1,962	226	48	30	5,979
Arctic cisco	--	16	0	2	0	0	18
Broad whitefish	--	3,722	2,328	0	16	1	6,067
Humpback whitefish	--	396	320	1	0	2	719
Round whitefish	--	855	579	0	1	6	1,441
Dolly Varden char	--	3	0	0	0	0	3
Arctic grayling	--	59	32	0	1	53	145
Rainbow smelt	--	1,287	183	0	0	0	1,470
Burbot	--	32	8	0	0	0	40
Northern pike	--	0	0	0	0	0	0
Alaska blackfish	--	2	0	5	16	9	32
Longnose sucker	--	38	52	0	2	0	92
Arctic flounder	--	128	0	0	0	0	128
Fourhorn sculpin	--	286	74	1	0	0	361
Slimy sculpin	--	0	0	0	4	0	4
Threespine stickleback	--	4	1	0	0	0	5
Ninespine stickleback	--	409	801	1,061	25,998	156	28,425
Total Catch:	Not	10,950	6,340	1,296	26,086	257	44,929
Number of Species:	Sampled	15	11	6	8	7	15

Table 2. Species caught during 1995-1996 sampling by season and habitat (continued).

Summer 1996 and Fall 1995 Gill Net Samples

	Major Channel		Minor Channel		Tapped Lake		Low Perched Lake[1]		High Perched Lake		Drainage Lake		
Species	Summer 1996	Fall 1995	Summer 1996	Fall 1995	Summer 1996	Fall 1995	Summer 1996	Fall 1995	Summer 1996	Fall 1995	Summer 1996	Fall 1995	Gear Total
Least cisco	--	46	--	5	0	--	44	24	135	331	0	--	585
Arctic cisco	--	4	--	3	0	--	0	0	0	0	0	--	7
Broad whitefish	--	9	--	24	21	--	33	1	49	8	9	--	154
Humpback whitefish	--	8	--	0	1	--	0	0	0	0	0	--	9
Round whitefish	--	2	--	0	4	--	7	0	6	0	0	--	19
Dolly Varden char	--	0	--	0	0	--	0	0	0	0	0	--	0
Arctic grayling	--	11	--	0	1	--	0	0	0	0	19	--	31
Rainbow smelt	--	0	--	0	0	--	0	0	0	0	0	--	0
Burbot	--	7	--	0	0	--	0	0	0	0	0	--	7
Northern pike	--	0	--	0	0	--	3	0	1	0	0	--	4
Alaska blackfish	--	0	--	0	0	--	8	0	0	3	0	--	11
Longnose sucker	--	2	--	0	0	--	0	0	0	0	0	--	2
Arctic flounder	--	0	--	0	0	--	0	0	0	0	0	--	0
Fourhorn sculpin	--	10	--	1	1	--	0	0	0	0	0	--	12
Slimy sculpin	--	0	--	0	0	--	0	0	0	0	0	--	0
Threespine stickleback	--	0	--	0	0	--	0	0	0	0	0	--	0
Ninespine stickleback	--	0	--	0	0	--	0	0	0	0	0	--	0
Total Catch:	Not	99	Not	33	28	Not	95	25	191	342	28	Not	841
Number of Species:	Sampled	9	Sampled	4	5	Sampled	56	2	4	3	2	Sampled	11

1 low perched lake = perched lake likely to be flooded on an annual basis, often with a high water channel;
high perched lake = perched lake flooded on less than an annual basis, no obvious high water channel.

Table 3. Species composition from project area habitats during 1995-96 (excluding sticklebacks).

Summer Fyke Net: Percent of Catch

Species	Major Channel	Minor Channel	Tapped Lake	Low[1] Perched Lake	High[1] Perched Lake	Drainage Lake
Least cisco	--	35.2	35.4	96.2	54.5	29.7
Arctic cisco	--	0.2	0.0	0.9	0.0	0.0
Broad whitefish	--	35.3	42.0	0.0	18.2	1.0
Humpback whitefish	--	3.8	5.8	0.4	0.0	2.0
Round whitefish	--	8.1	10.5	0.0	1.1	5.9
Dolly Varden char	--	0.0	0.0	0.0	0.0	0.0
Arctic grayling	--	0.6	0.6	0.0	1.1	52.5
Rainbow smelt	--	12.2	3.3	0.0	0.0	0.0
Burbot	--	0.3	0.1	0.0	0.0	0.0
Northern pike	--	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	--	0.0	0.0	2.1	18.2	8.9
Longnose sucker	--	0.4	0.9	0.0	2.3	0.0
Arctic flounder	--	1.2	0.0	0.0	0.0	0.0
Fourhorn sculpin	--	2.7	1.3	0.4	0.0	0.0
Slimy sculpin	--	0.0	0.0	0.0	4.5	0.0
Total Catch: (excluding sticklebacks)	Not Sampled	10,541	5,539	235	88	101

Summer Gill Net: Percent of Catch

Species	Major Channel	Minor Channel	Tapped Lake	Low Perched Lake	High Perched Lake	Drainage Lake
Least cisco	--	--	0.0	46.3	70.7	0.0
Arctic cisco	--	--	0.0	0.0	0.0	0.0
Broad whitefish	--	--	75.0	34.7	25.7	32.1
Humpback whitefish	--	--	3.6	0.0	0.0	0.0
Round whitefish	--	--	14.3	7.4	3.1	0.0
Dolly Varden char	--	--	0.0	0.0	0.0	0.0
Arctic grayling	--	--	3.6	0.0	0.0	67.9
Rainbow smelt	--	--	0.0	0.0	0.0	0.0
Burbot	--	--	0.0	0.0	0.0	0.0
Northern pike	--	--	0.0	3.2	0.5	0.0
Alaska blackfish	--	--	0.0	8.4	0.0	0.0
Longnose sucker	--	--	0.0	0.0	0.0	0.0
Arctic flounder	--	--	0.0	0.0	0.0	0.0
Fourhorn sculpin	--	--	3.6	0.0	0.0	0.0
Slimy sculpin	--	--	0.0	0.0	0.0	0.0
Total Catch:	Not Sampled	Not Sampled	28	95	191	28

Table 3. Species composition from project area habitats during 1995-96 (continued).

Fall Gill Net: Percent of Catch

Species	Major Channel	Minor Channel	Tapped Lake	Low Perched Lake	High Perched Lake	Drainage Lake
Least cisco	9.1	72.7	--	4.0	2.3	--
Arctic cisco	8.1	0.0	--	0.0	0.0	--
Broad whitefish	2.0	0.0	--	0.0	0.0	--
Humpback whitefish	46.5	15.2	--	96.0	96.8	--
Round whitefish	4.0	9.1	--	0.0	0.0	--
Dolly Varden char	11.1	0.0	--	0.0	0.0	--
Arctic grayling	0.0	0.0	--	0.0	0.0	--
Rainbow smelt	7.1	0.0	--	0.0	0.0	--
Burbot	0.0	0.0	--	0.0	0.9	--
Northern pike	2.0	0.0	--	0.0	0.0	--
Alaska blackfish	0.0	0.0	--	0.0	0.0	--
Longnose sucker	10.1	3.0	--	0.0	0.0	--
Arctic flounder	0.0	0.0	--	0.0	0.0	--
Fourhorn sculpin						
Slimy sculpin						
Total Catch:	99	33	Not Sampled	25	342	Not Sampled

[1] low perched lake = perched lake likely to be flooded on an annual basis, often with a high water channel; high perched lake = perched lake flooded on less than an annual basis, no obvious high water channel.

Table 4. Comparison of least cisco sex composition and survival in lakes and channels of the Colville River delta, 1995-1996.

	Female			Male		
Population Parameter	Value	Standard Deviation	Sample Size	Value	Standard Deviation	Sample Size
Percent Composition						
Anadromous Population						
(River Channels+Tapped Lakes)	64.7%		123	35.3%		67
Low Perched Lakes	34.8%		63	65.2%		118
High Perched Lakes	41.4%		391	58.6%		553
Mean Age (>=age 3)						
Anadromous Population						
(River Channels+Tapped Lakes)	8.63	4.14	115	6.66	3.38	58
Low Perched Lakes	8.11	5.26	63	9.58	4.63	116
High Perched Lakes	8.59	4.06	367	9.71	4.26	517
Percent >age 10						
Anadromous Population						
(River Channels+Tapped Lakes)	26.0%		123	11.9%		67
Low Perched Lakes	27.0%		63	44.1%		118
High Perched Lakes	36.3%		391	47.4%		553

Table 5. Fyke net mortality rate in river channels and tapped lakes during summer 1995-1996, Colville Delta.

	1995			1996		
Species	Number Captured	Number Found Dead in Net	Percent Mortality	Number Captured	Number Found Dead in Net	Percent Mortality
Least cisco	2,192	82	3.7%	2,325	57	2.5%
Arctic cisco	0	0	--	16	0	0.0%
Broad whitefish	3,256	79	2.4%	2,791	14	0.5%
Humpback whitefish	477	13	2.7%	221	7	3.2%
Round whitefish	1,067	10	0.9%	396	0	0.0%
Dolly Varden char	0	0	--	3	0	0.0%
Arctic grayling	86	1	1.2%	5	0	0.0%
Rainbow smelt[1]	242	82	33.9%	1,066	1,038	97.4%
Burbot	18	0	0.0%	21	0	0.0%
Alaska blackfish	2	0	0.0%	0	0	--
Longnose sucker	73	0	0.0%	16	0	0.0%
Arctic flounder	1	0	0.0%	127	36	28.3%
Threespine stickleback	1	0	0.0%	3	0	0.0%

[1] a minimum of 1,000 rainbow smelt larvae were caught in one set on Aug 27, 1996; all were assumed to be mortalities.

Table 6. Comparison of catches from fyke nets and gill nets in Colville Delta lakes, 1995-1996.

	Fyke Nets (Summer 95)			Gill Nets (Fall 95)			Gill Nets (Summer 96)		
Lake	Effort (days)	Species	Catch per Day	Effort (days)	Species	Catch per Day	Effort (days)	Species	Catch per Day
L9279	2.90	Ninespine stickleback	3,386.0	0.92	None	0.0			
L9281	2.82	Ninespine stickleback	201.5	0.87	Least cisco	60.8			
					Alaska blackfish	2.3			
L9310	1.61	Least cisco	0.6	0.94	Least cisco	27.5			
		Alaska blackfish	2.5		Broad whitefish	2.1			
		Slimy sculpin	1.9						
		Ninespine stickleback	106.5						
L9311	2.06	Ninespine stickleback	242.0	0.88	Least cisco	42.3			
					Broad whitefish	1.1			
L9312	1.83	Broad whitefish	0.5	0.92	Least cisco	67.6			
		Alaska blackfish	0.5		Broad whitefish	5.5			
		Slimy sculpin	0.5						
		Ninespine stickleback	10.9						
L9313	1.84	Least cisco	2.7	0.86	None	0.0			
		Alaska blackfish	3.3						
		Ninespine stickleback	39.2						
L9316	0.70	Least cisco	28.7	0.93	Least cisco	25.8			
		Alaska blackfish	2.9		Broad whitefish	1.1			
		Ninespine stickleback	106.0						
L9342	2.57	Least cisco	0.4	0.98	Least cisco	58.0			
		Ninespine stickleback	361.5		Alaska blackfish	1.0			
M9321	0.89	Ninespine stickleback	246.5	0.97	Least cisco	99.5			

Table 6. Comparison of catches from fyke nets and gill nets in Colville Delta lakes, 1995-1996.

	Fyke Nets (Summer 95)			Gill Nets (Fall 95)			Gill Nets (Summer 96)		
Lake	Effort (days)	Species	Catch per Day	Effort (days)	Species	Catch per Day	Effort (days)	Species	Catch per Day
B8533	0.99	Least cisco	3.0				0.24	Least cisco	12.3
		Ninespine stickleback	1,703.7					Broad whitefish	8.2
								Round whitefish	16.5
B8534	0.85	Least cisco	73.8				0.22	Least cisco	27.9
		Alaska blackfish	1.2						
		Ninespine stickleback	983.4						
L9280	0.84	Least cisco	4.7				0.23	Least cisco	26.3
		Ninespine stickleback	79.3					Broad whitefish	4.4
L9321	0.93	Least cisco	5.4				0.24	Least cisco	8.3
		Ninespine stickleback	128.5					Broad whitefish	37.6
L9334	1.01	Least cisco	2.0				0.24	Least cisco	41.7
		Humpback whitefish	2.0					Broad whitefish	12.5
		Arctic grayling	4.0					Round whitefish	4.2
		Ninespine stickleback	61.6						
Total:	21.84	Least cisco	4.8	8.26	Least cisco	43.0	1.17	Least cisco	23.2
		Broad whitefish	0.0		Broad whitefish	1.1		Broad whitefish	12.9
		Humpback whitefish	0.1		Humpback whitefish	0.0		Humpback whitefish	0.0
		Round whitefish	0.0		Round whitefish	0.0		Round whitefish	4.3
		Arctic grayling	0.2		Arctic grayling	0.0		Arctic grayling	0.0
		Alaska blackfish	0.6		Alaska blackfish	0.4		Alaska blackfish	0.0
		Slimy sculpin	0.2		Slimy sculpin	0.0		Slimy sculpin	0.0
		Ninespine stickleback	693.9		Ninespine stickleback	0.0		Ninespine stickleback	0.0

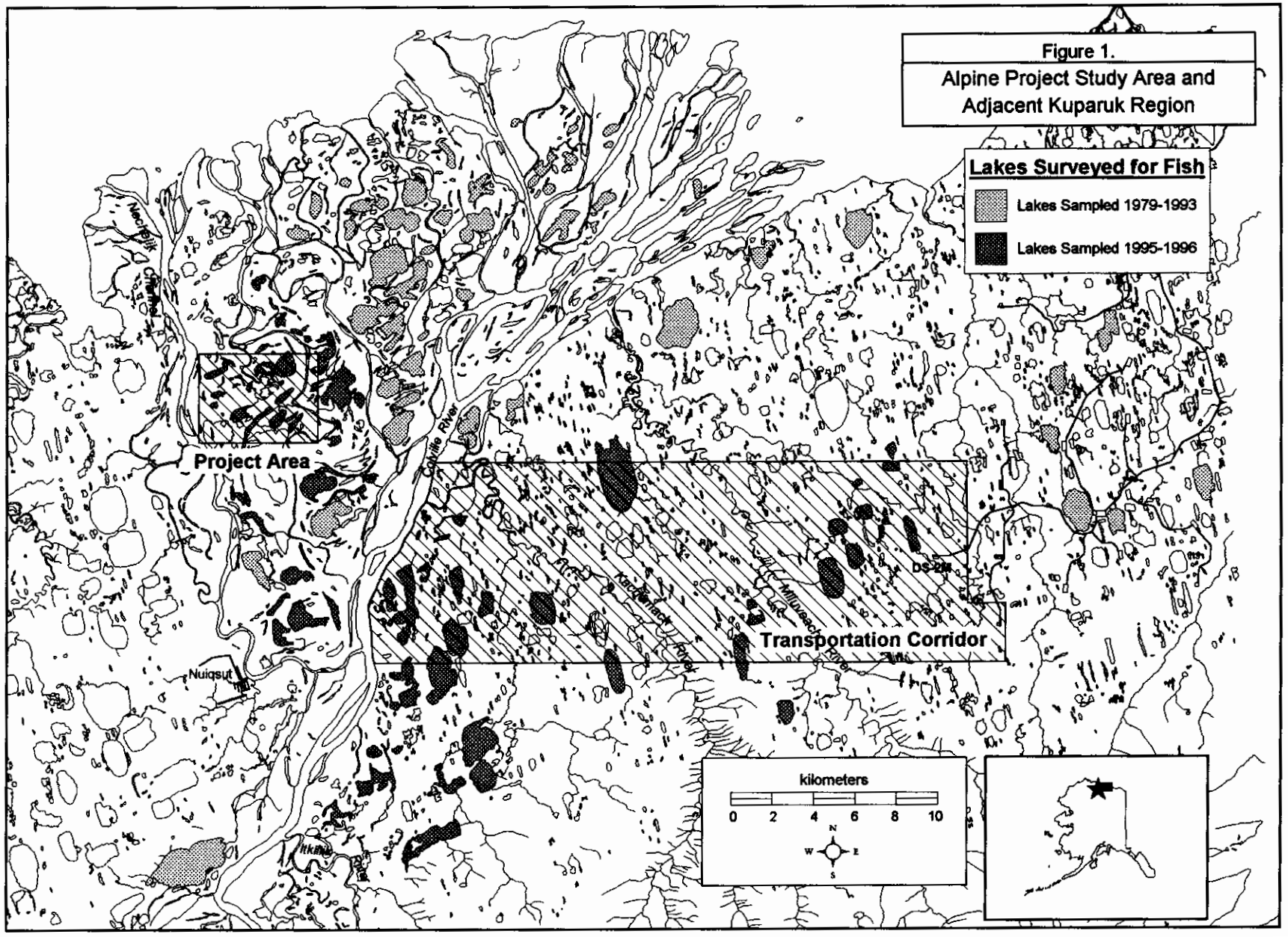

Figure 1.
Alpine Project Study Area and Adjacent Kuparuk Region

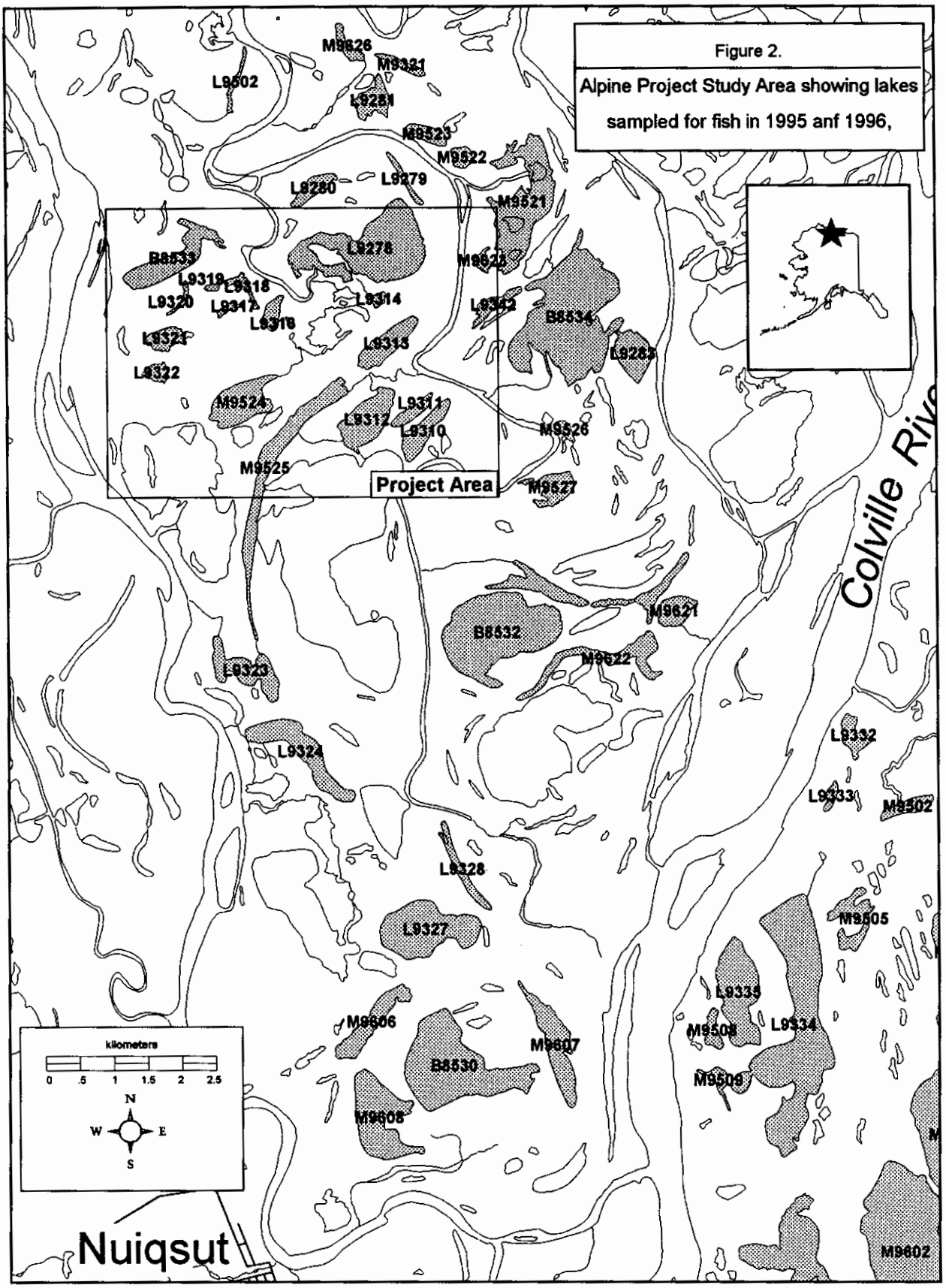
Figure 2.
Alpine Project Study Area showing lakes sampled for fish in 1995 anf 1996,
Project Area
Colville Rive
Nuiqsut
kilometers
0 .5 1 1.5 2 2.5
N
W
E
S
M9626
M9621
L9502
L9281
M9523
M9522
L9280
L9279
M9521
B8533
L9278
M9620
L9319
L9318
L9320
L9317
L9314
L9342
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L9321
L9315
L9283
L9322
M9524
L9311
L9312
L9310
M9526
M9525
M9527
M9621
B8532
M9622
L9323
L9324
L9332
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M9502
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L9334
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B8530
M9509
M9608
M9602

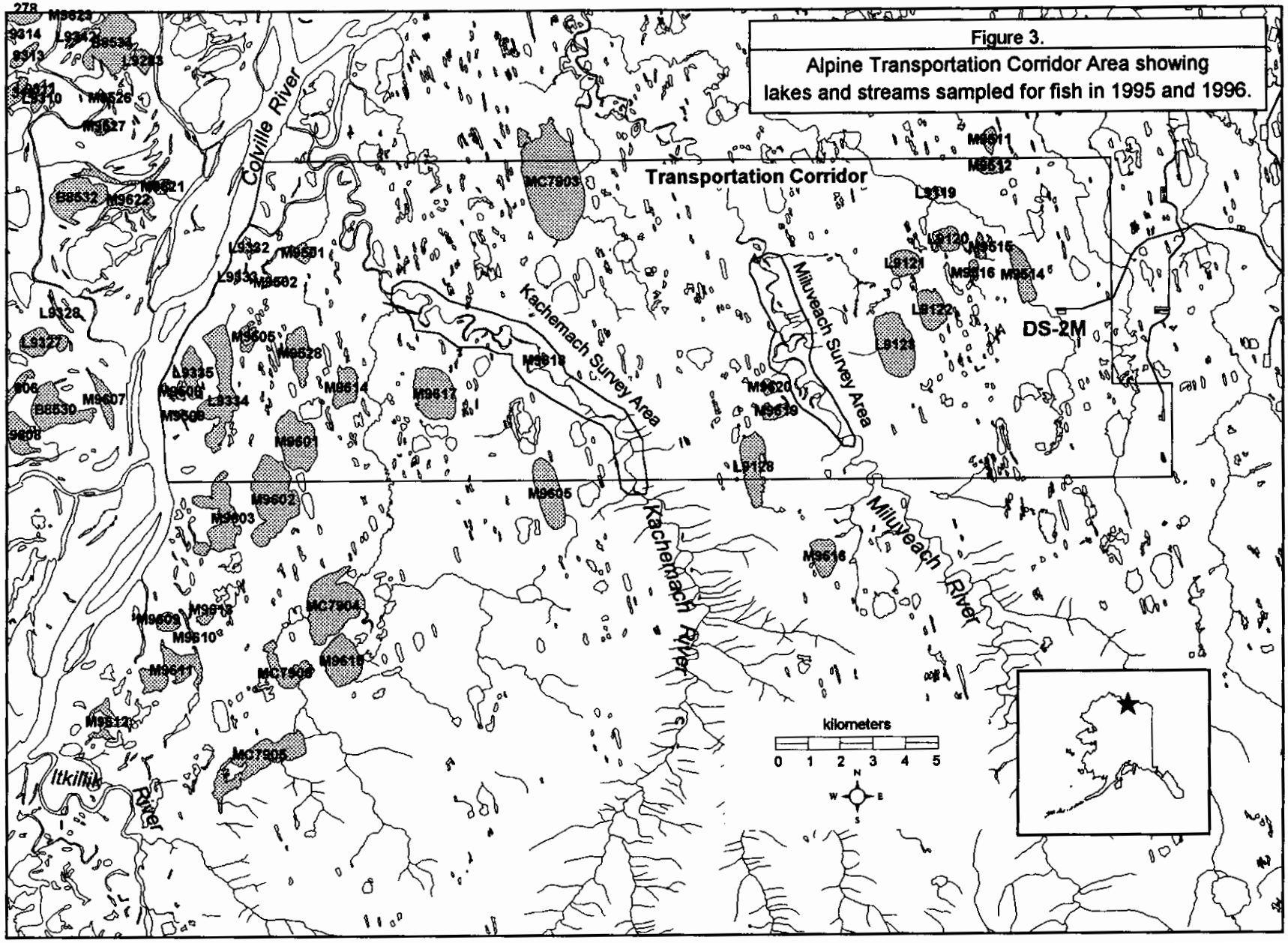

Figure 3.
Alpine Transportation Corridor Area showing lakes and streams sampled for fish in 1995 and 1996.

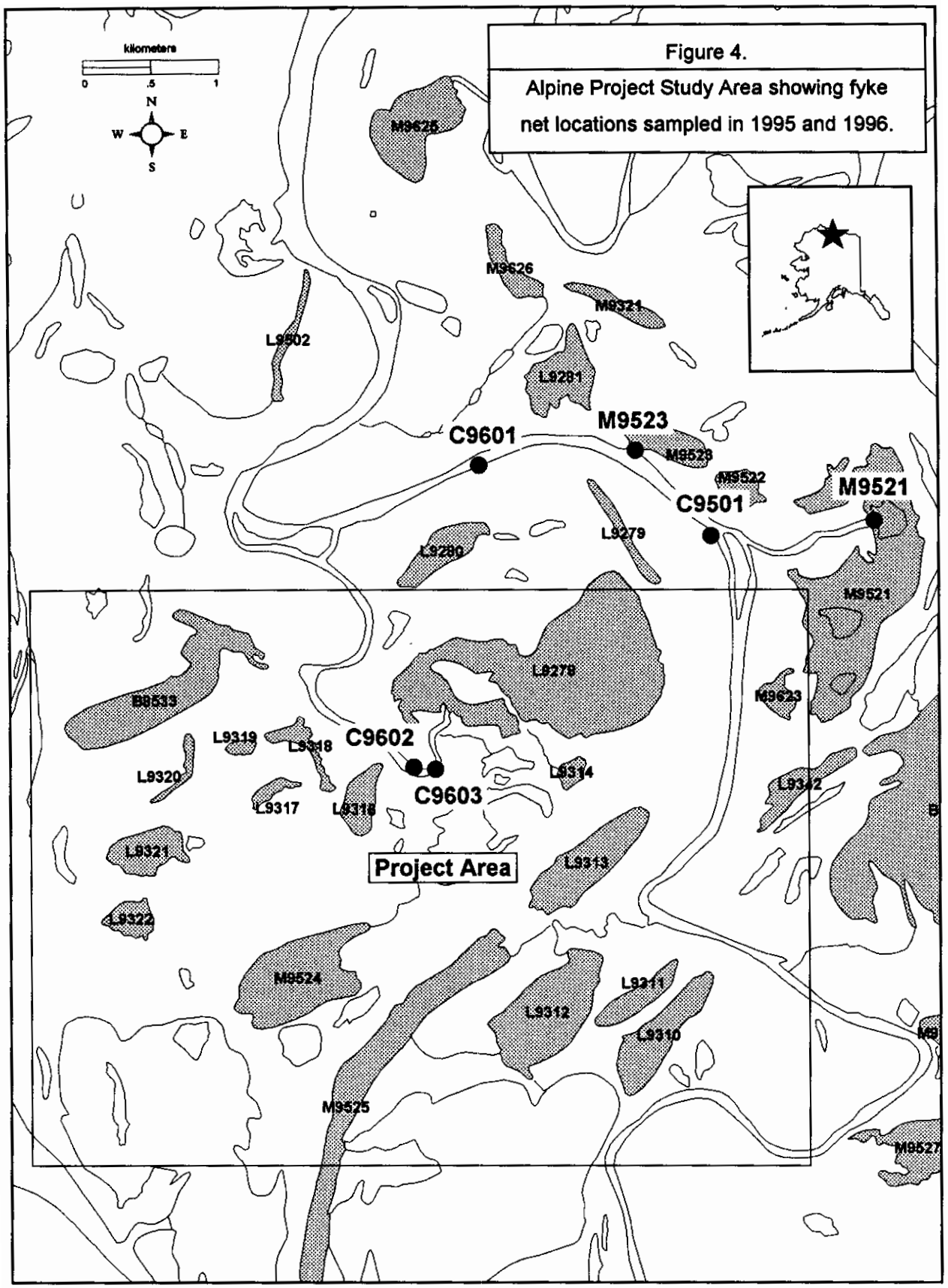

Figure 4.

Alpine Project Study Area showing fyke net locations sampled in 1995 and 1996.

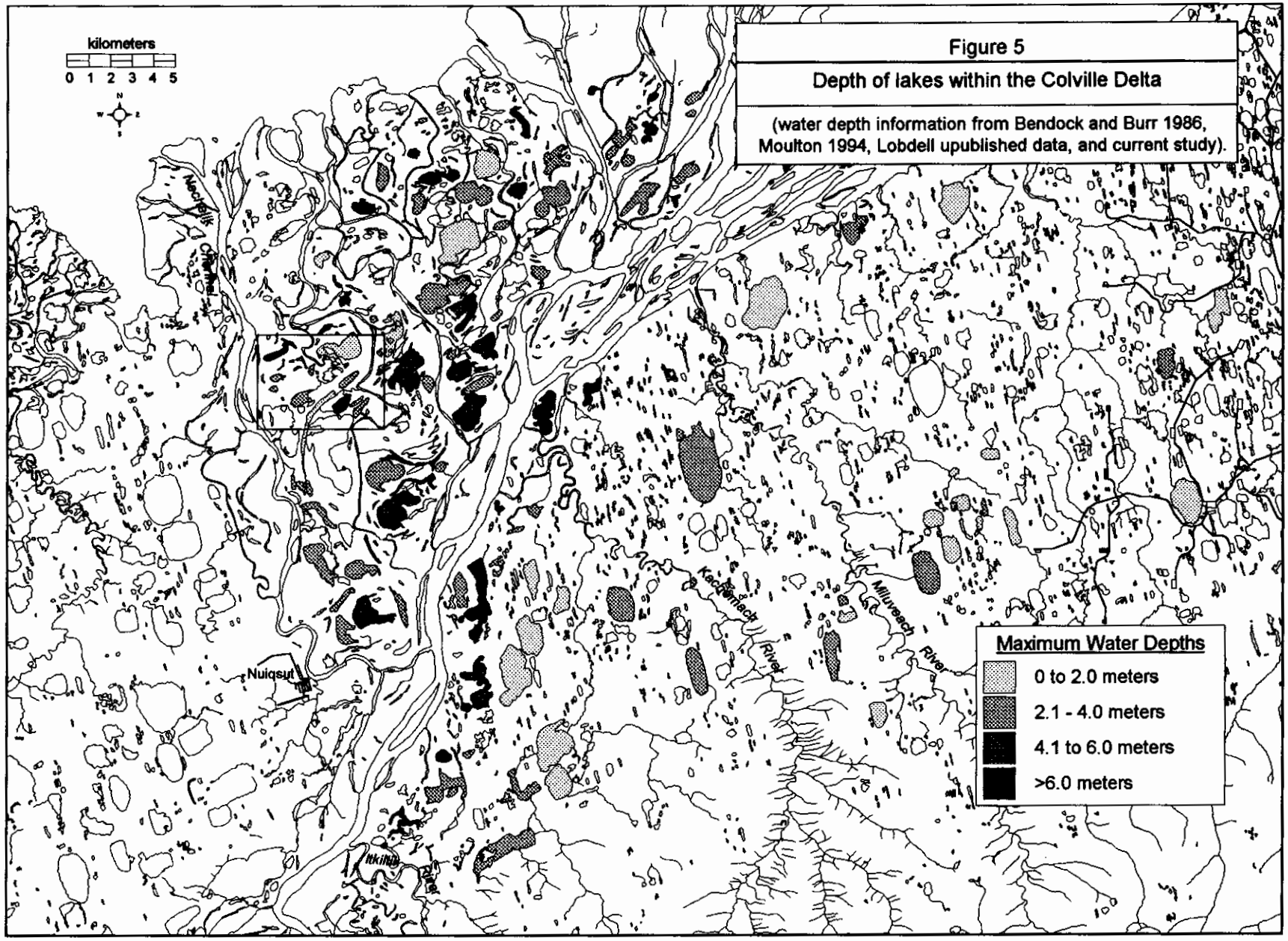

Figure 5

Depth of lakes within the Colville Delta

(water depth information from Bendock and Burr 1986, Moulton 1994, Lobdell upublished data, and current study).

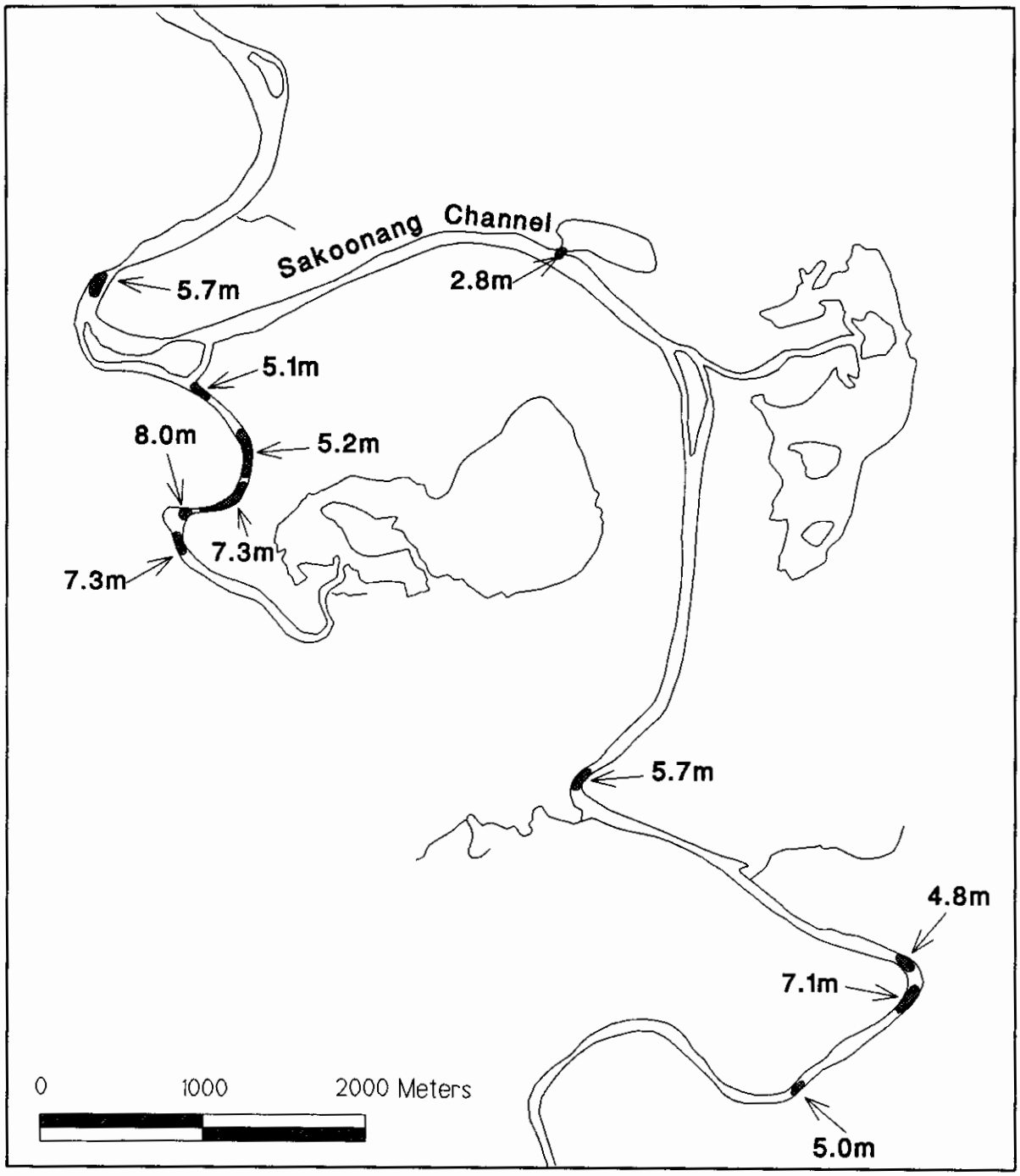

Figure 6. Location of potential wintering sites within the Sakoonang Channel, where water depths exceed 2.0 m.

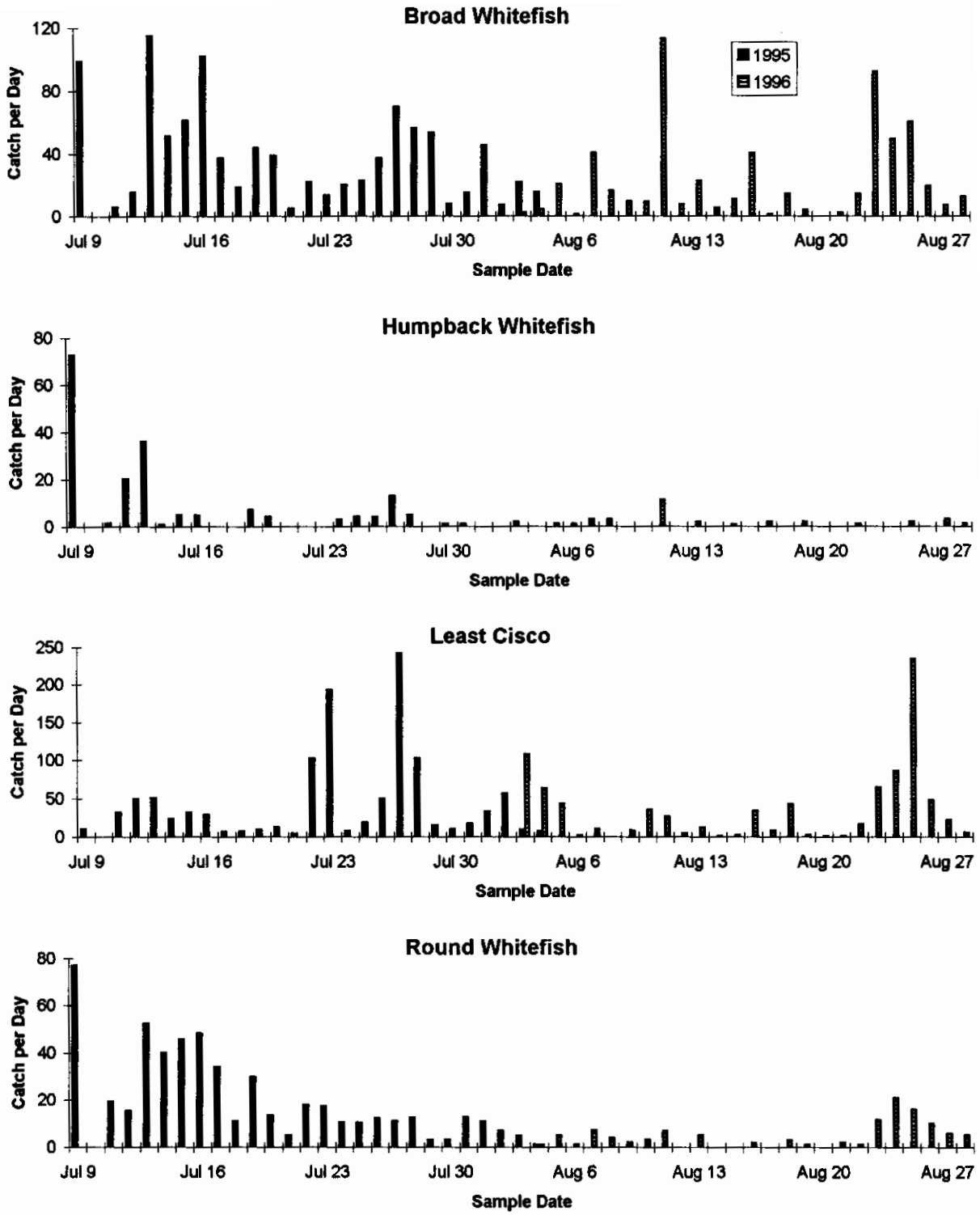

Figure 7. Catch rate (in fish per 24 hours) for dominant species captured at Sakoonang Channel stations, 1995-1996.

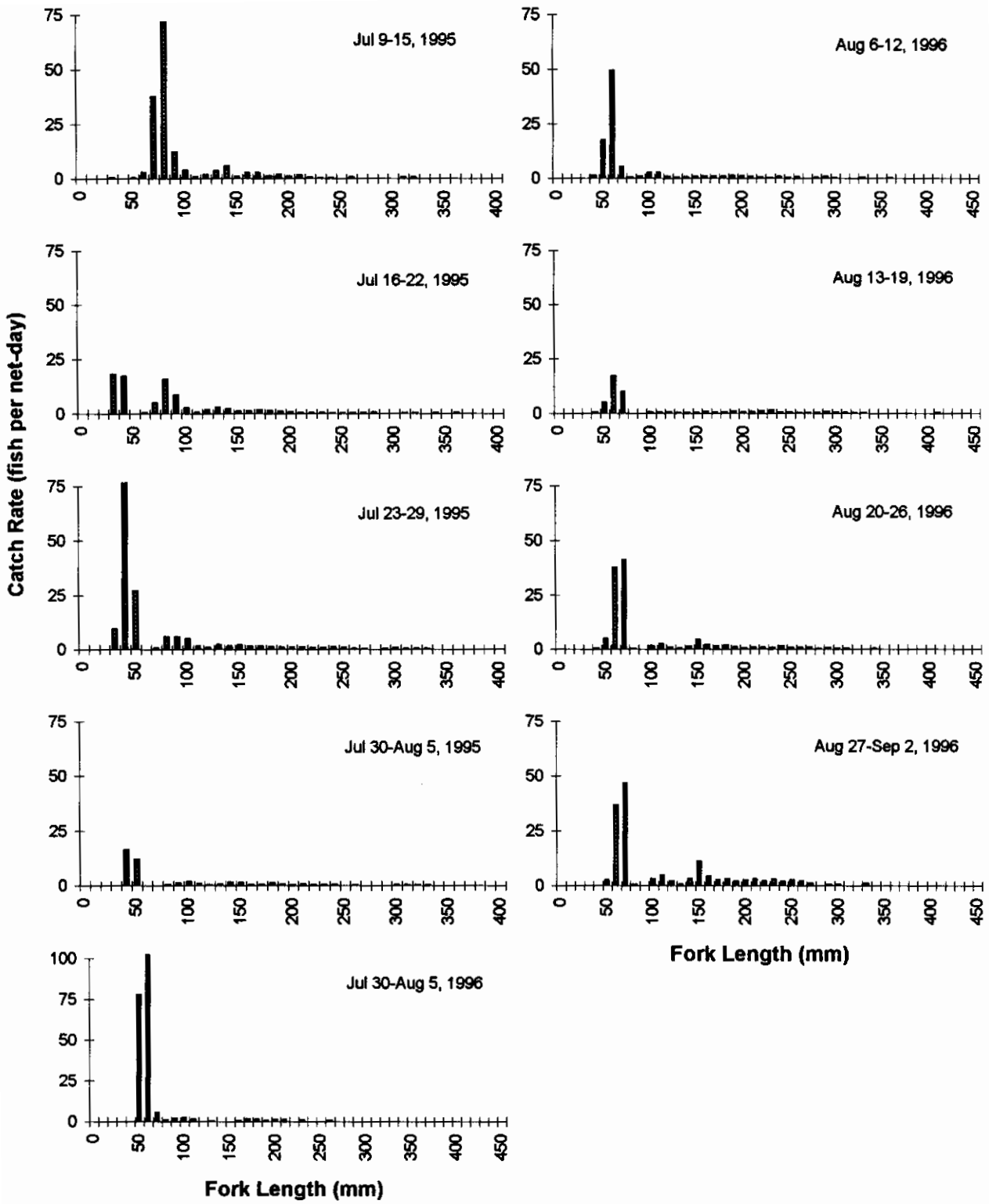

Figure 8. Length frequency of least cisco captured during fyke net sampling in the Sakoonang Channel, Colville Delta, 1995 and 1996.

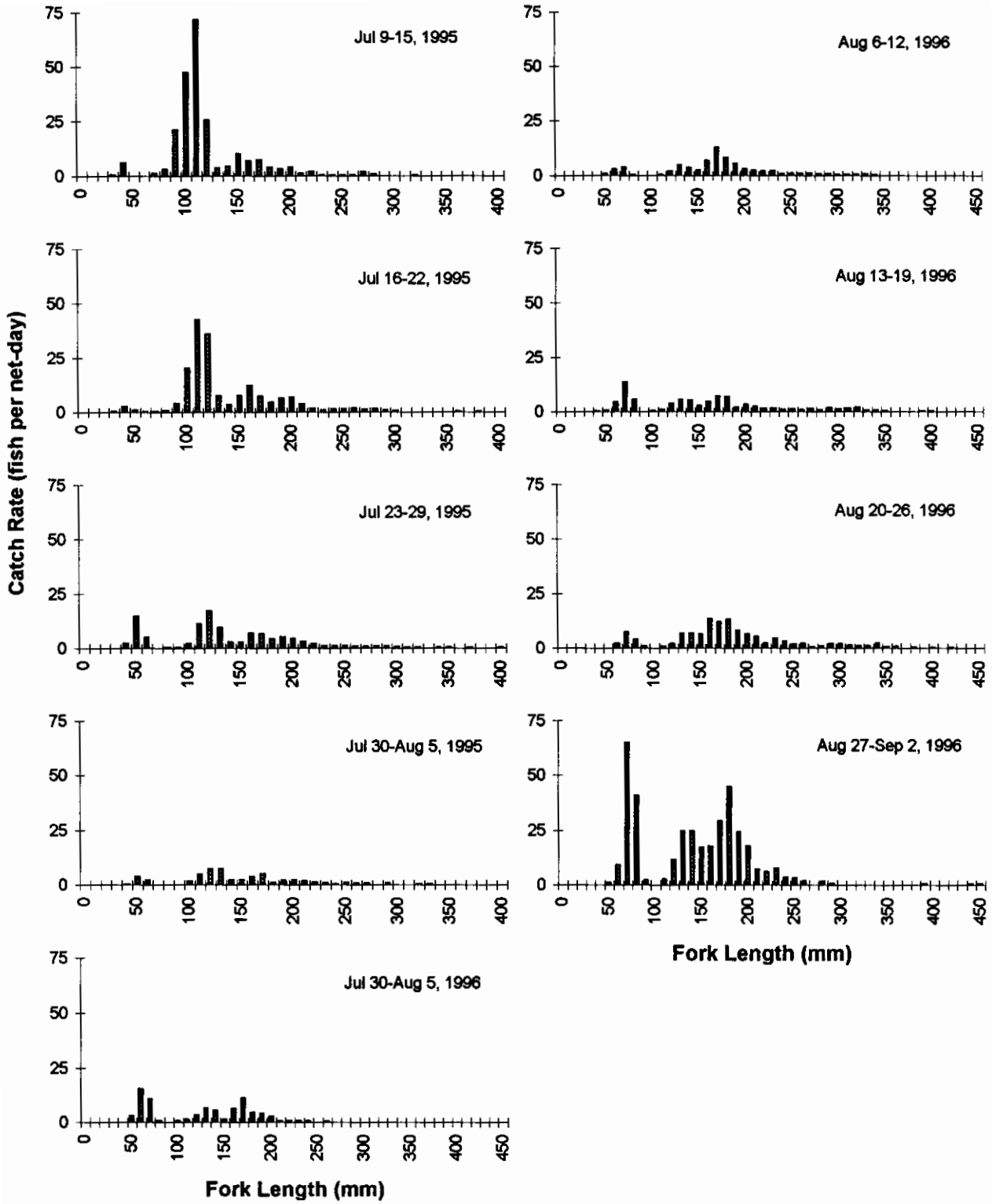

Figure 9. Length frequency of broad whitefish captured during fyke net sampling in the Sakoonang Channel, Colville Delta, 1995 and 1996.

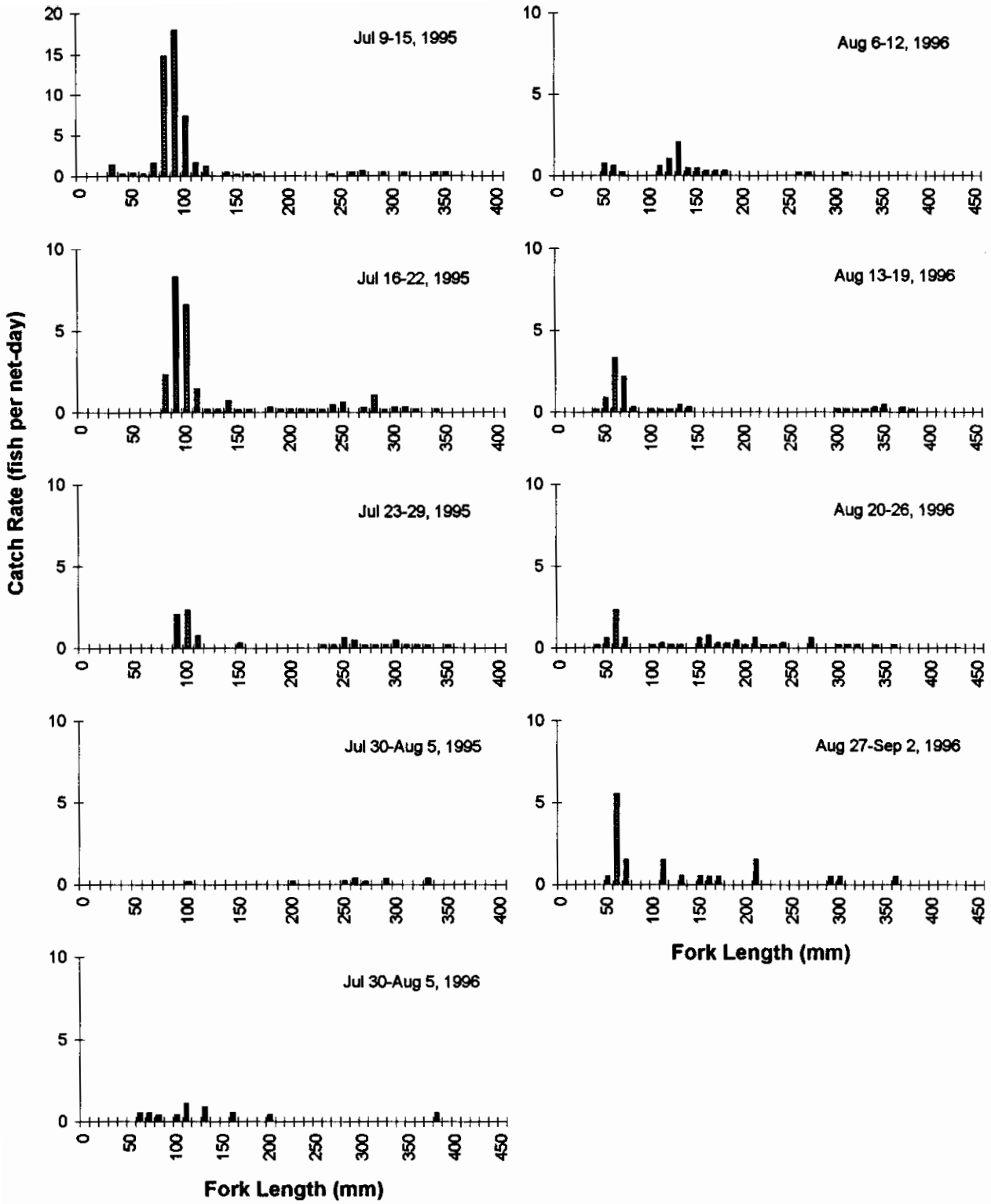

Figure 10. Length frequency of humpback whitefish captured during fyke net sampling in the Sakoonang Channel, Colville Delta, 1995 and 1996.

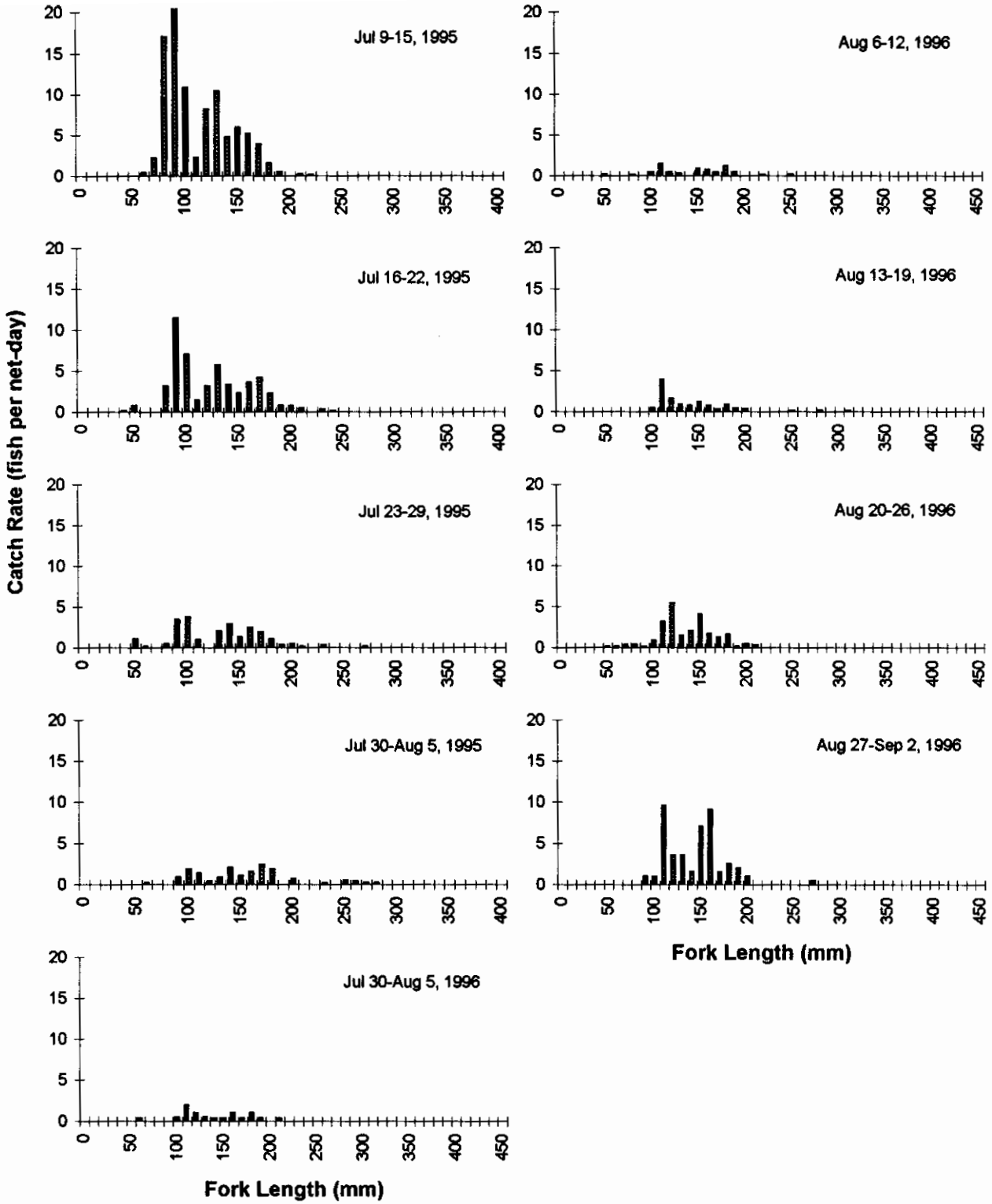

Figure 11. Length frequency of round whitefish captured during fyke net sampling in the Sakoonang Channel, Colville Delta, 1995 and 1996.

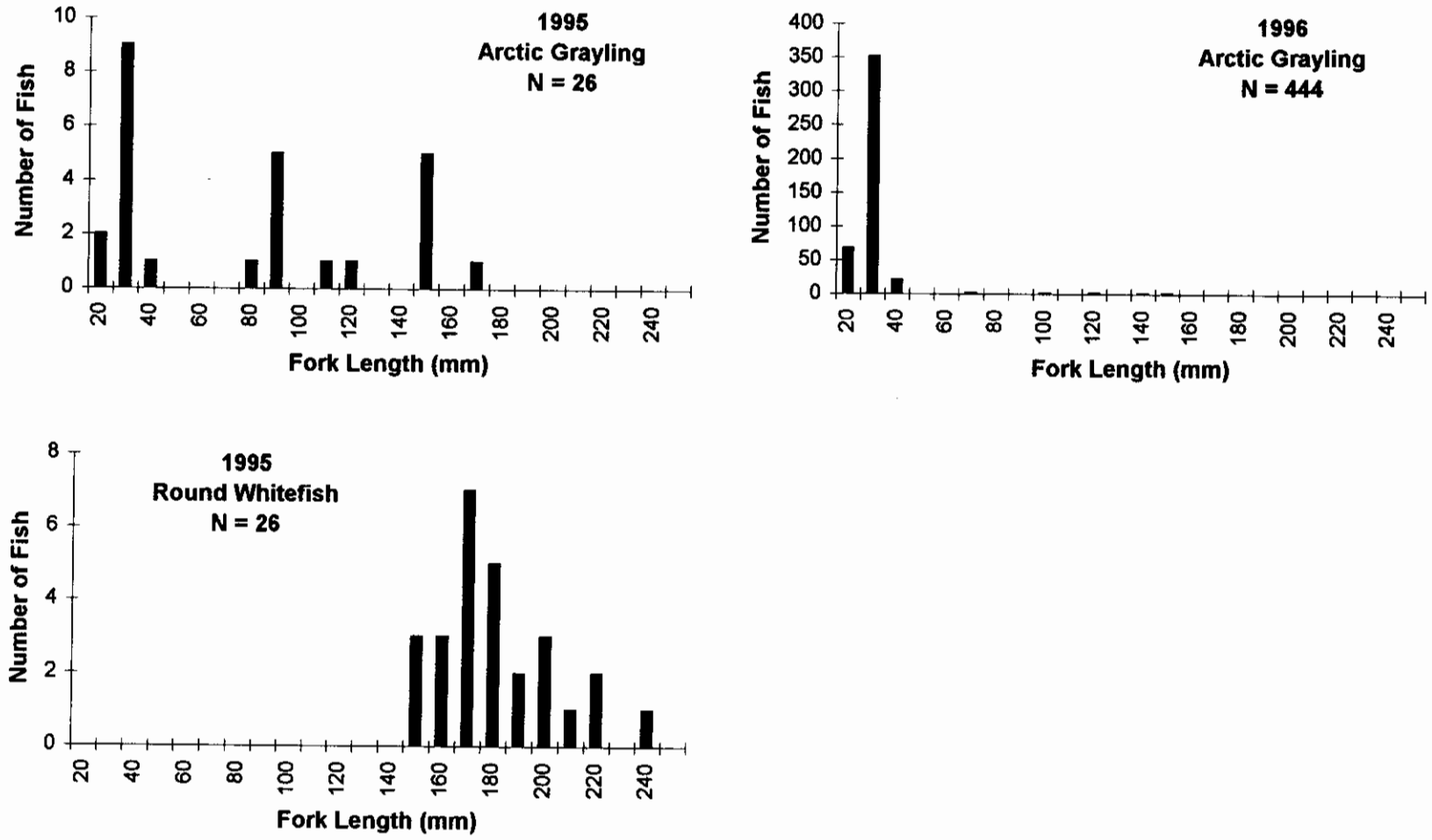

Figure 12. Length frequencies of arctic grayling and round whitefish caught during 1995 and 1996 sampling in the Miluveach and Kachemach rivers (sampling dates = Aug 4, 1995 and July 23-24, 1996).

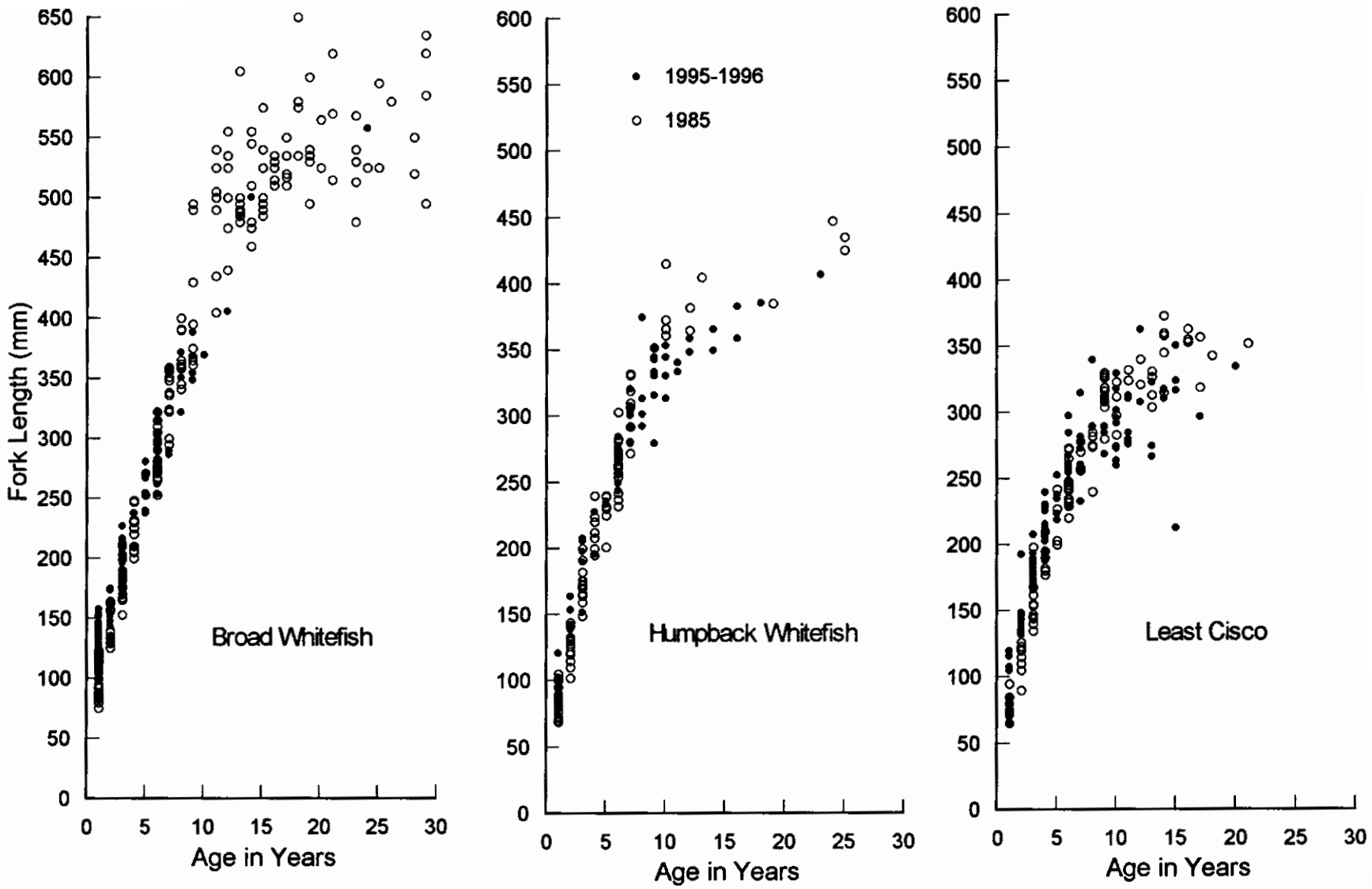

Figure 13. Length vs age scatter plots for broad whitefish, humpback whitefish and least cisco caught in river channels and tapped lakes in the Colville Delta, 1985 and 1995-96 (solid dots = 1995-96, open dots = 1985).

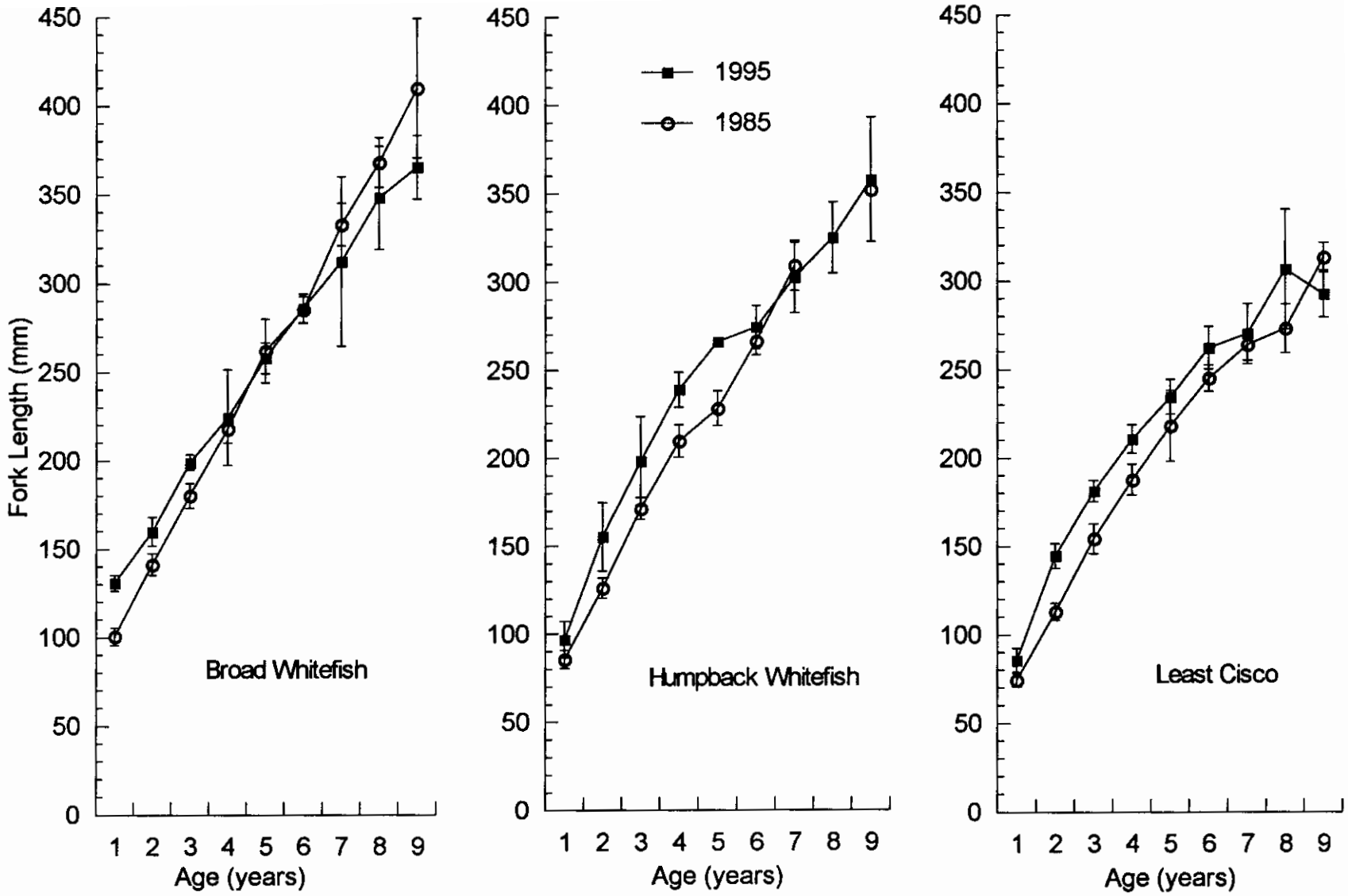

Figure 14. Mean length at age for age 1 to 9 broad whitefish, humpback whitefish and least cisco caught in river channels and tapped lakes in the Colville Celta, 1985 and 1995 (vertical bars = 1 standard deviation; 1985 data from Fawcett et al. 1986).

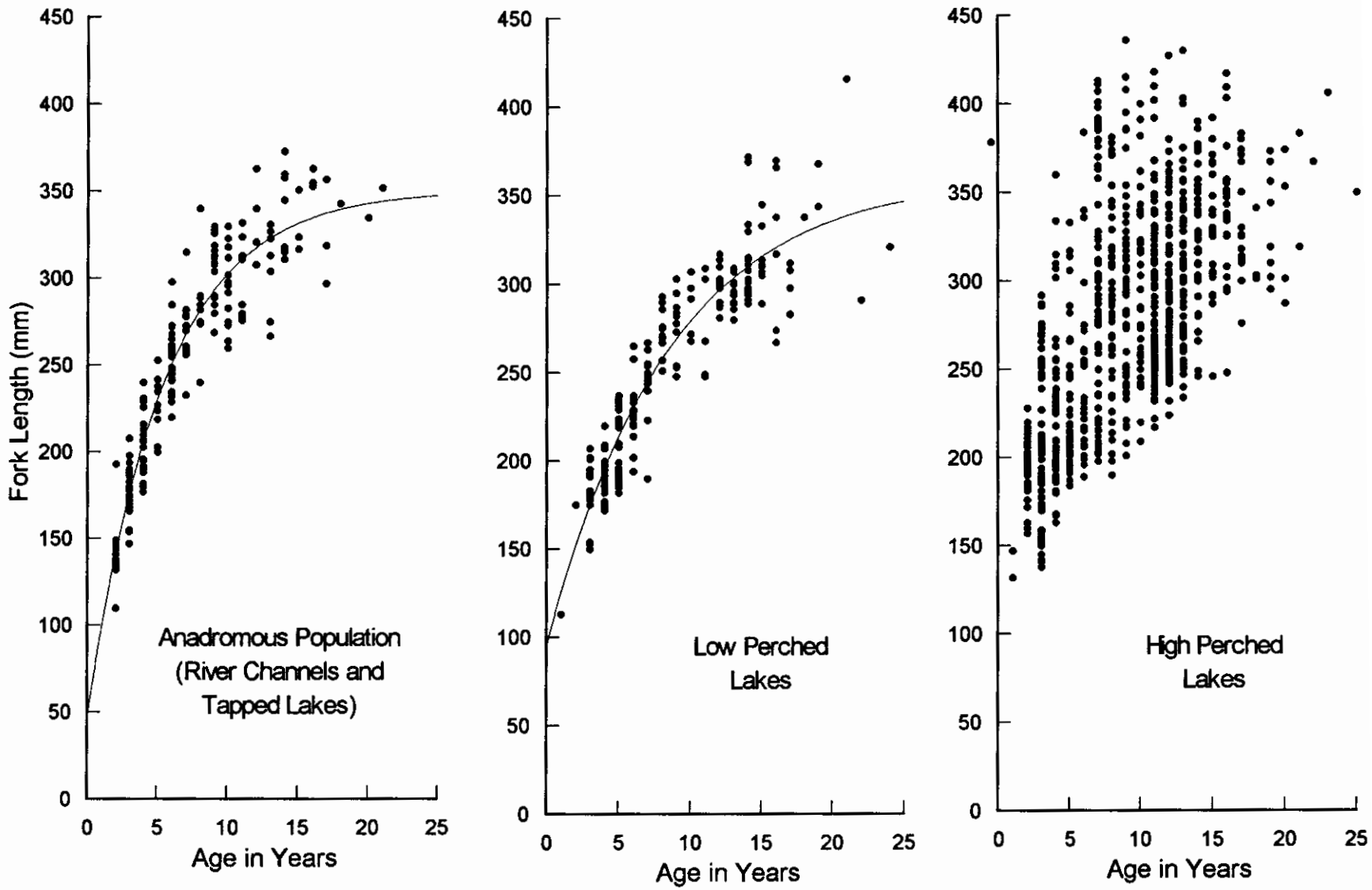

Figure 15. Comparison of growth for least cisco caught in various Colville Delta habitats.

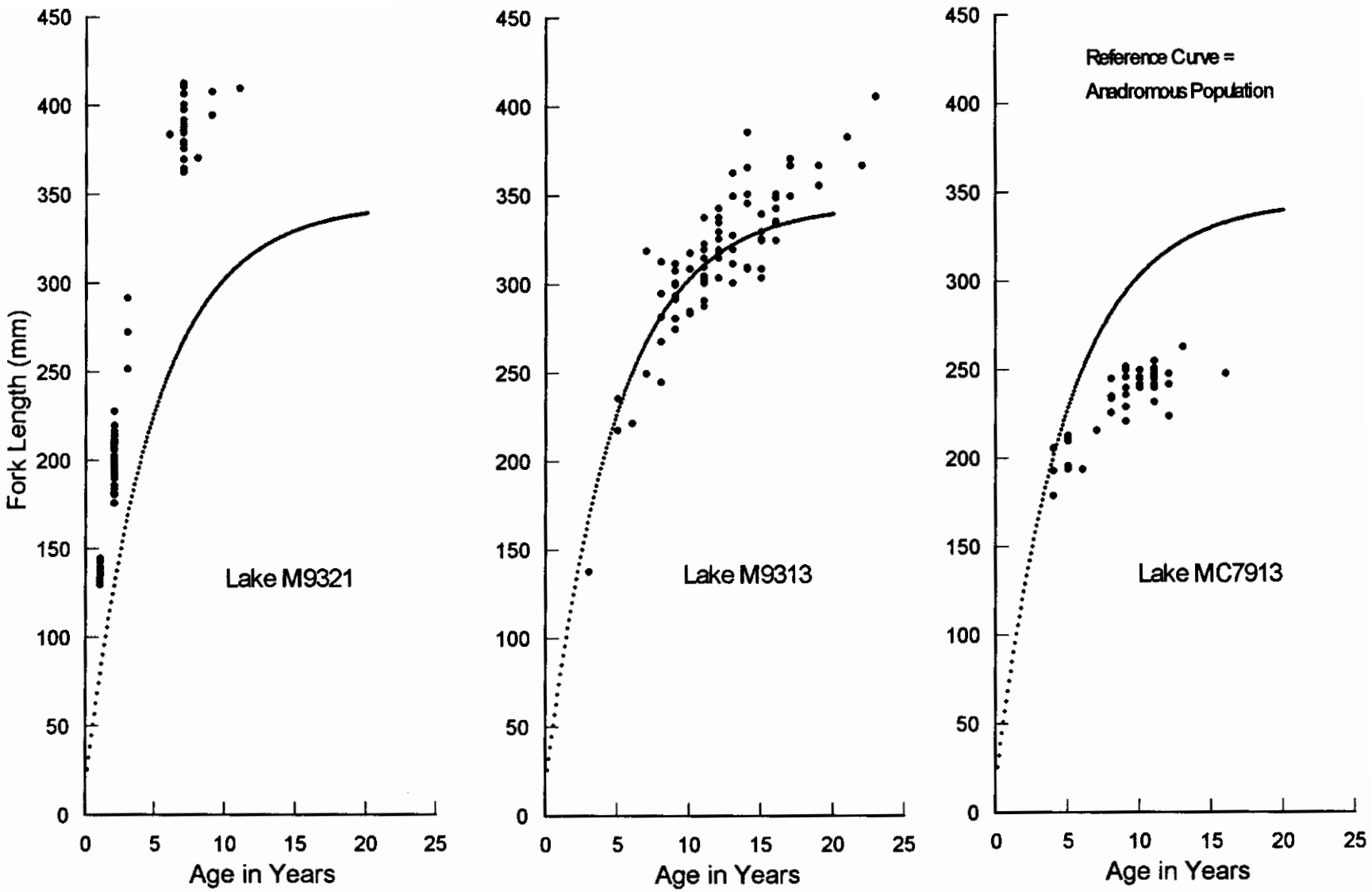

Figure 16. Examples of growth variablility in least cisco from high perched lakes.

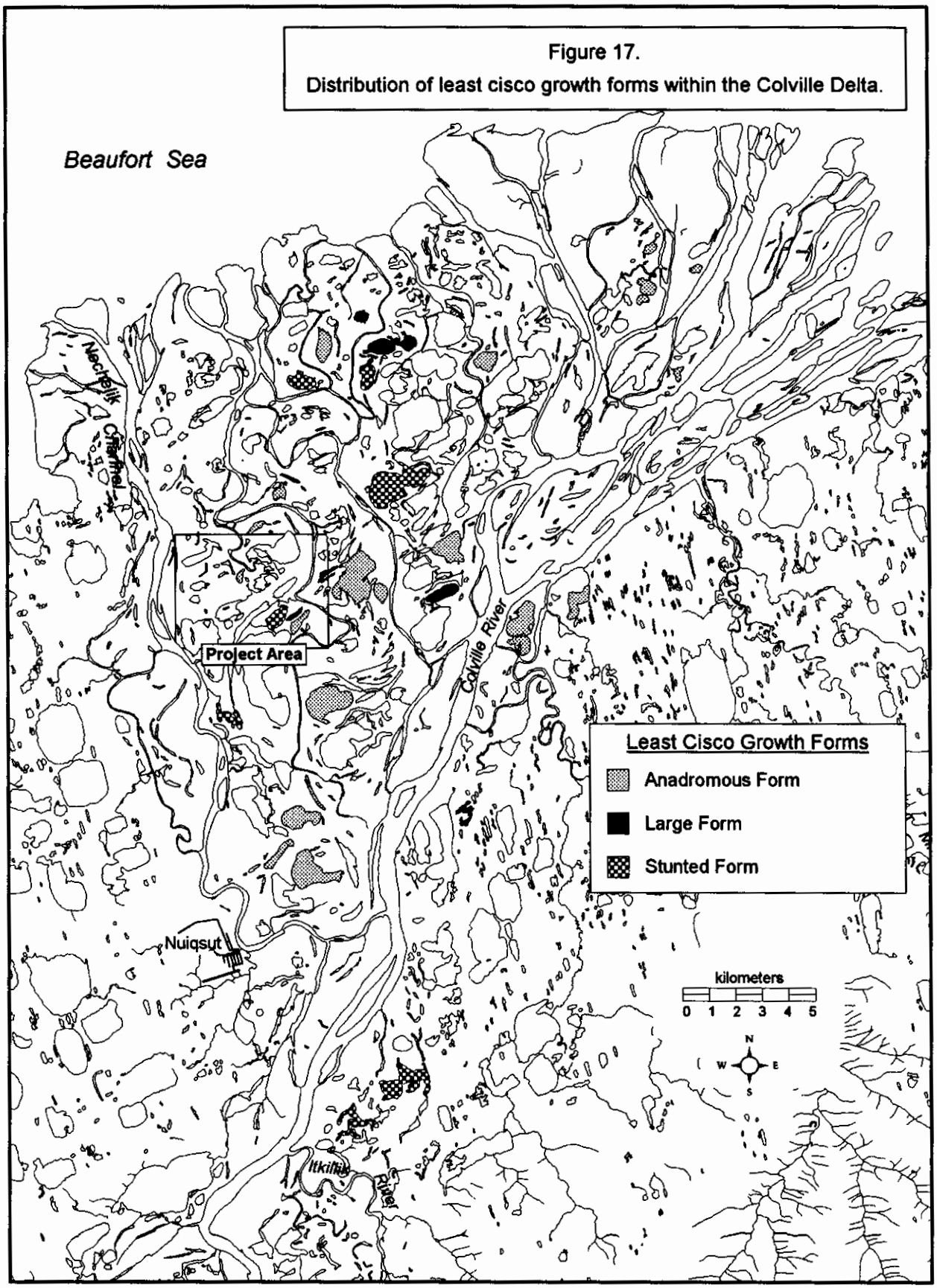

Figure 17.
Distribution of least cisco growth forms within the Colville Delta.

APPENDIX TABLES

Appendix Table 1. Catch by fyke net at each station sampled during 1995-96 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

Appendix Table 2. CPUE (in fish per 24 hours) by fyke net at each station sampled (data are CPUE by station, date and hours of effort).

Appendix Table 3. Catch by gill net at each sampled station during 1995-96 sampling in the Colville Delta.

Appendix Table 4. CPUE (in fish per 24 hours) by gill net at each sampled station during 1995-96 sampling in the Colville Delta.

Appendix Table 5. Catch by minnow traps at each sampled station during 1995 summer sampling in the Colville Delta (two minnow traps set overnight)

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Appendix Table 8. Humpback whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Appendix Table 10. Length frequency of least cisco at perched, drainage and miscellaneous tapped lakes during 1995-96 (F = fyke net, G = gill net).

Appendix Table 11. Length frequency of broad whitefish at perched, drainage and miscellaneous tapped lakes during 1995-96.

Appendix Table 12. Length frequency of Arctic grayling at perched and drainage lakes during 1995-96.

Appendix Table 13. Fyke net effort (in hours) at continuous sampling stations in the Sakoonang Channel (C9501, C9601) and tapped lakes (M9521, M9523, C9602 and C9603), Colville Delta 1995-96.

Appendix Table 14. Fyke net and gill net effort (in hours) at various habitats in the Colville Delta during 1995-96.

Appendix Table 15. Minnow trap effort (in hours) at various habitats in the Colville Delta during 1995.

Appendix Table 16. Set line effort (in hours) and seine effort (in number of hauls) at various habitats in the Colville Delta during 1995.

Appendix Table 17. Water temperature and conductivity at continuously sampled stations in the Sakoonang Channel and tapped lakes in the Colville Delta, 1995-96.

Appendix Table 18. Water temperature and conductivity at Colville Delta lakes surveyed in summer, 1995-96.

Appendix Table 19. Water temperature and conductivity at Colville Delta lakes surveyed in fall, 1995.

Appendix Table 20. Water temperature, conductivity and salinity at Colville Delta river channel stations surveyed in fall, 1995.

Appendix Table 21. Mean length at age for least cisco caught by fyke net from river channels and tapped lakes during summer 1995.

Appendix Table 22. Mean length at age for broad whitefish caught by fyke net from river channels and tapped lakes during summer 1995.

Appendix Table 23. Mean length at age for humpback whitefish caught by fyke net from river channels and tapped lakes during summer 1995.

Appendix Table 24. Mean length at age for round whitefish caught by fyke net from river channels and tapped lakes during summer 1995.

Appendix Table 1. Catch by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

	C9501																
Species	7/9/95	7/10/95	7/11/95	7/12/95	7/13/95	7/14/95	7/15/95	7/16/95	7/17/95	7/18/95	7/19/95	7/20/95	7/21/95	7/22/95	7/23/95	7/24/95	7/25/95
Broad whitefish	68	0	4	18	86	55	62	104	38	17	44	37	5	23	12	21	22
Humpback whitefish	50	0	1	24	27	1	5	5	0	0	7	4	0	0	0	3	4
Round whitefish	53	0	13	18	39	43	46	49	35	10	30	13	5	19	16	11	10
Least cisco	7	0	21	58	38	25	32	29	6	6	9	12	4	108	179	8	18
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	3	0	11	7	4	4	5	6	5	1	1	1	1	1	1	0	0
Dolly Varden char	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	8
Burbot	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Longnose sucker	4	0	0	1	2	2	0	0	3	0	1	1	0	0	0	3	1
Arctic flounder	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	1	0	0	0	0	4	0	0	0	2	2	50	0	2	1	1	0
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	3	0	6	11	22	30	32	37	11	12	13	3	11	2	8	5	7
Threespine stickleback	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	189	0	56	138	218	165	183	230	98	48	108	121	26	155	217	55	71
Effort (hrs):	16.5	14.8	16.1	28.4	18.0	25.8	24.3	24.5	24.8	22.2	24.2	23.0	24.3	25.4	22.3	25.1	23.4

	C9501										Station
Species	7/26/95	7/27/95	7/28/95	7/29/95	7/30/95	7/31/95	8/1/95	8/2/95	8/3/95	8/4/95	Total
Broad whitefish	36	70	58	51	7	14	46	7	23	14	942
Humpback whitefish	4	13	5	0	1	1	0	0	2	0	157
Round whitefish	12	11	13	3	3	12	11	7	5	1	488
Least cisco	48	243	106	14	9	16	33	57	10	7	1,103
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	2	0	0	0	1	0	0	54
Dolly Varden char	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	4	3	13	6	1	2	22	2	0	1	65
Burbot	0	2	2	0	2	0	0	0	1	1	10
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	2
Longnose sucker	0	0	2	0	0	0	1	0	1	0	22
Arctic flounder	0	0	0	0	0	0	0	0	0	0	1
Fourhorn sculpin	0	1	0	1	1	1	0	0	4	0	71
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	7	1	5	9	5	3	2	3	0	0	248
Threespine stickleback	0	0	0	0	0	0	0	0	0	0	0
Total:	111	344	204	86	29	49	115	77	46	24	3,163
Effort (hrs):	23.4	24.2	24.9	22.9	22.8	22.8	24.4	24.2	25.5	22.3	620.7

Appendix Table 1. Catch by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

	M9521																
Species	7/9/95	7/10/95	7/11/95	7/12/95	7/13/95	7/14/95	7/15/95	7/16/95	7/17/95	7/18/95	7/19/95	7/20/95	7/21/95	7/22/95	7/23/95	7/24/95	7/25/95
Broad whitefish	31	66	12	61	58	53	52	58	124	9	56	24	15	45	16	19	19
Humpback whitefish	19	27	4	15	1	5	4	6	13	0	7	9	2	25	3	2	0
Round whitefish	12	22	5	12	3	12	21	24	13	7	6	8	3	8	2	7	4
Least cisco	138	296	29	79	9	15	24	12	118	10	34	6	10	84	67	33	47
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1	0	0
Dolly Varden char	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	0	3	6	1	4	13	2	6	0	7	4	5	32	4	0	1
Burbot	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	1	3	2	1	0	3	3	4	4	1	1	0	1	0	0	0
Arctic flounder	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	0	1	0	0	2	1	5	6	1	1	3	0	0	0	3	0
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	9	14	9	13	1	13	10	11	8	1	10	9	13	20	12	7	4
Threespine stickleback	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	209	426	66	188	74	105	128	121	293	33	123	64	48	216	105	71	75
Effort (hrs):	18.2	23.0	25.1	23.1	24.3	24.0	23.8	24.2	24.6	23.5	23.8	24.2	24.0	24.0	24.0	24.4	24.0

	M9521										Station
Species	7/26/95	7/27/95	7/28/95	7/29/95	7/30/95	7/31/95	8/1/95	8/2/95	8/3/95	8/4/95	Total
Broad whitefish	29	16	54	132	35	32	7	21	22	5	1,071
Humpback whitefish	1	1	4	0	0	3	1	0	0	0	152
Round whitefish	5	6	4	0	6	6	4	1	7	3	211
Least cisco	79	56	70	180	9	18	23	2	7	7	1,462
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	3	2	0	0	0	0	0	0	0	0	10
Dolly Varden char	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	0	1	24	3	1	4	1	8	0	130
Burbot	0	0	0	0	1	0	0	0	0	0	2
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	0	1	1	0	1	1	1	0	1	30
Arctic flounder	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	2	1	1	3	4	5	4	6	5	54
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	10	8	12	12	29	6	2	0	1	0	244
Threespine stickleback	0	0	0	0	0	1	0	0	0	0	1
Total:	127	91	147	350	86	72	47	30	51	21	3,367
Effort (hrs):	23.2	24.2	25.3	23.0	23.7	23.6	24.7	24.3	25.4	22.0	641.3

Appendix Table 1. Catch by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

	M9523																
Species	7/13/95	7/14/95	7/15/95	7/16/95	7/17/95	7/18/95	7/19/95	7/20/95	7/21/95	7/22/95	7/23/95	7/24/95	7/25/95	7/26/95	7/27/95	7/28/95	7/29/95
Broad whitefish	15	78	232	212	93	35	22	41	41	192	14	10	50	33	48	27	7
Humpback whitefish	8	12	34	32	19	5	6	8	10	13	0	1	3	7	1	4	1
Round whitefish	31	50	76	45	18	12	8	6	16	21	0	1	5	15	18	9	5
Least cisco	8	14	71	12	24	24	30	17	9	23	1	2	10	11	19	159	2
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	2	1	11	0	2	1	0	0	0	0	0	0	0	0	0	1	0
Dolly Varden char	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	0	0	0	0	1	3	9	2	3	0	0	1	4	2	0	0
Burbot	0	1	0	0	0	0	2	0	0	0	0	0	1	0	1	0	1
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Longnose sucker	1	1	0	4	3	3	2	4	1	0	0	1	0	1	0	0	0
Arctic flounder	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	2	0	0	0	5	2	3	1	0	1	0	0	0	0	0	1	0
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	8	7	44	8	8	0	12	20	20	13	9	4	6	8	0	5	0
Threespine stickleback	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	75	164	468	313	172	83	88	106	99	266	24	19	76	79	89	206	16
Effort (hrs):	16.7	22.5	23.3	24.5	25.7	22.7	24.2	23.2	24.1	25.0	22.9	24.8	23.5	23.3	24.2	25.5	23.6

	M9523						Station
Species	7/30/95	7/31/95	8/1/95	8/2/95	8/3/95	8/4/95	Total
Broad whitefish	2	2	4	3	17	40	1,218
Humpback whitefish	0	0	0	0	0	2	166
Round whitefish	0	4	2	4	10	11	367
Least cisco	7	13	0	9	6	7	478
Arctic cisco	0	0	0	0	0	0	0
Arctic grayling	0	0	0	1	2	1	22
Dolly Varden char	0	0	0	0	0	0	0
Rainbow smelt	0	8	0	0	9	11	53
Burbot	0	0	0	0	0	0	6
Alaska blackfish	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	1	0	22
Arctic flounder	0	0	0	0	0	0	0
Fourhorn sculpin	0	1	1	2	1	0	20
Slimy sculpin	0	0	0	0	0	0	0
Ninespine stickleback	1	1	0	0	0	2	176
Threespine stickleback	0	0	0	0	0	0	0
Total:	10	29	7	19	46	74	2,528
Effort (hrs):	22.9	22.8	24.4	24.2	25.4	22.0	541.3

Appendix Table 1. Catch by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

	C9601																
Species	8/3/96	8/4/96	8/5/96	8/6/96	8/7/96	8/8/96	8/9/96	8/10/96	8/11/96	8/12/96	8/13/96	8/14/96	8/15/96	8/16/96	8/17/96	8/18/96	8/19/96
Broad whitefish	2	4	20	1	39	16	9	9	112	7	22	5	11	40	1	14	4
Humpback whitefish	0	0	1	1	3	3	0	0	11	0	2	0	1	0	2	0	2
Round whitefish	0	1	5	1	7	4	2	3	7	0	5	0	0	2	0	3	1
Least cisco	91	61	42	2	10	0	8	36	26	5	12	1	2	33	8	42	2
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dolly Varden char	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	0	0	0	0	0	0	0	0	0	0	18	6	1	0	0	0
Burbot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic flounder	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0
Fourhorn sculpin	0	1	1	1	2	2	1	2	1	4	1	5	0	7	2	6	1
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Threespine stickleback	0	2	2	1	0	0	0	0	1	0	0	0	0	1	0	1	0
Total:	93	69	71	7	61	25	21	50	158	16	43	31	20	84	13	66	10
Effort (hrs):	20.3	23.1	23.5	22.8	23.3	24.2	23.9	24.2	23.8	23.8	23.8	23.6	24.6	24.0	23.9	23.9	24.1

	C9601									Station
Species	8/20/96	8/21/96	8/22/96	8/23/96	8/24/96	8/25/96	8/26/96	8/27/96	8/28/96	Total
Broad whitefish	0	2	14	88	49	60	19	7	12	567
Humpback whitefish	0	0	1	0	0	2	0	3	1	33
Round whitefish	0	2	1	11	21	16	10	6	5	113
Least cisco	1	1	16	62	86	233	48	22	5	855
Arctic cisco	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	0	0	1	1
Dolly Varden char	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	5	1	1	0	0	1	3	1000	150	1,186
Burbot	0	0	0	0	0	1	0	0	1	2
Alaska blackfish	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	0	0	1	0	1	2
Arctic flounder	0	68	7	1	1	4	0	6	2	93
Fourhorn sculpin	1	11	5	12	11	11	5	14	8	115
Slimy sculpin	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	0	0	0	0	0	0	0	0	0	0
Threespine stickleback	4	31	6	6	7	2	0	1	1	66
Total:	11	116	51	180	175	330	86	1059	187	3,033
Effort (hrs):	24.2	24.2	23.8	23.0	24.0	23.9	24.2	24.2	23.3	615.6

Appendix Table 1. Catch by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

	C9602																
Species	8/3/96	8/4/96	8/5/96	8/6/96	8/7/96	8/8/96	8/9/96	8/10/96	8/11/96	8/12/96	8/13/96	8/14/96	8/15/96	8/16/96	8/17/96	8/18/96	8/19/96
Broad whitefish	0	6	74	12	21	4	28	18	33	25	31	18	7	24	5	29	8
Humpback whitefish	0	1	4	2	1	2	3	0	3	4	2	1	0	2	1	2	0
Round whitefish	0	1	0	0	0	0	2	0	1	2	0	1	0	1	0	1	0
Least cisco	0	230	24	10	4	6	27	34	45	104	13	4	6	17	6	13	4
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dolly Varden char	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	2	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0
Burbot	0	0	0	1	0	0	0	0	0	0	1	0	1	0	1	0	1
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Arctic flounder	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	0	1	1	1	0	0	0	1	0	2	0	0	2	1	0	3
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Threespine stickleback	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0
Total:	0	241	104	28	27	14	60	53	83	136	49	24	16	46	14	45	16
Effort (hrs):	20.3	23.4	23.8	22.6	23.4	24.1	23.8	24.3	24.0	23.7	23.7	24.3	24.4	24.2	23.9	23.9	24.1

	C9602									Station
Species	8/20/96	8/21/96	8/22/96	8/23/96	8/24/96	8/25/96	8/26/96	8/27/96	8/28/96	Total
Broad whitefish	5	2	5	12	19	28	19	46	219	698
Humpback whitefish	0	0	0	2	1	0	0	4	6	41
Round whitefish	0	0	0	1	1	0	0	12	8	31
Least cisco	32	2	16	21	14	25	24	15	111	807
Arctic cisco	0	0	0	0	0	0	0	1	1	2
Arctic grayling	0	0	0	1	0	0	0	0	0	1
Dolly Varden char	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	0	0	0	0	0	0	0	0	5
Burbot	0	0	0	0	0	0	1	0	1	7
Alaska blackfish	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	0	0	1	0	0	2
Arctic flounder	0	3	0	0	0	0	0	0	0	4
Fourhorn sculpin	3	6	0	2	2	1	1	2	3	32
Slimy sculpin	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	1	0	0	0	0	0	0	0	0	3
Threespine stickleback	3	7	16	3	0	0	0	0	2	34
Total:	44	20	37	42	37	54	46	80	351	1,667
Effort (hrs):	24.0	24.4	23.7	23.3	24.0	24.1	24.1	24.5	23.3	617.2

Appendix Table 1. Catch by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

	C9603																
Species	8/4/96	8/5/96	8/6/96	8/7/96	8/8/96	8/9/96	8/10/96	8/11/96	8/12/96	8/13/96	8/14/96	8/15/96	8/16/96	8/17/96	8/18/96	8/19/96	8/20/96
Broad whitefish	20	54	9	18	9	13	49	21	19	0	11	25	60	18	158	80	11
Humpback whitefish	1	3	0	3	2	1	3	5	3	11	4	4	13	6	13	22	0
Round whitefish	4	7	0	2	0	2	3	0	8	4	3	9	6	0	25	1	1
Least cisco	57	123	16	128	21	65	63	5	7	3	4	6	7	3	138	9	1
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Dolly Varden char	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Rainbow smelt	0	0	0	0	1	0	0	0	0	0	10	1	9	2	1	2	0
Burbot	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2	0
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Arctic flounder	0	0	0	0	0	0	0	0	0	3	0	2	2	3	2	0	11
Fourhorn sculpin	0	0	1	0	3	0	0	0	3	1	1	1	4	0	3	1	2
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Threespine stickleback	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	12
Total:	83	188	26	152	36	81	119	32	41	22	33	49	104	32	340	118	38
Effort (hrs):	25.2	22.7	22.2	23.4	24.1	24.0	24.2	24.1	23.9	23.6	27.4	21.1	24.2	23.7	23.9	24.2	23.9

	C9603								Station
Species	8/21/96	8/22/96	8/23/96	8/24/96	8/25/96	8/26/96	8/27/96	8/28/96	Total
Broad whitefish	7	37	41	78	158	179	84	356	1,504
Humpback whitefish	2	3	4	3	13	33	7	6	165
Round whitefish	1	16	4	14	11	49	27	26	222
Least cisco	0	6	12	47	21	76	54	76	947
Arctic cisco	0	0	0	0	0	7	3	4	14
Arctic grayling	0	1	0	0	0	0	1	0	3
Dolly Varden char	0	0	0	0	0	0	1	1	3
Rainbow smelt	0	0	1	0	2	1	1	0	31
Burbot	1	1	0	1	3	0	0	1	13
Alaska blackfish	0	0	0	0	0	0	0	0	0
Longnose sucker	0	1	0	2	0	4	1	2	12
Arctic flounder	0	2	0	1	3	0	1	0	19
Fourhorn sculpin	4	3	1	5	1	3	24	7	66
Slimy sculpin	0	0	0	0	0	0	0	0	0
Ninespine stickleback	0	0	0	0	0	0	0	1	1
Threespine stickleback	13	23	7	0	0	0	1	2	49
Total:	28	93	70	151	212	352	205	482	3,049
Effort (hrs):	24.6	23.6	23.3	23.9	24.1	24.0	23.8	24.1	573.4

Appendix Table 1. Catch by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

Mixed Lake Types

	Low Perched Lakes					High Perched Lakes											
	B8534	L9283	L9314	L9316	M9524	L9279	L9280	L9281	L9281	L9281	L9310	L9310	L9311	L9311	L9312	L9312	L9313
Species	7/19/95	7/19/95	7/16/95	7/15/95	7/18/95	7/28/95	7/12/95	7/11/95	7/27/95	7/28/95	7/13/95	7/26/95	7/13/95	7/25/95	7/14/95	7/26/95	7/14/95
Broad whitefish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Humpback whitefish	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Round whitefish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Least cisco	63	11	0	20	132	0	4	0	0	0	0	1	0	0	0	0	5
Arctic cisco	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alaska blackfish	1	2	0	2	0	0	0	0	0	0	3	1	0	0	1	0	6
Longnose sucker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0
Ninespine stickleback	840	0	40	74	107	10	67	560	4	5	130	41	460	39	10	10	63
Total:	904	13	40	96	243	10	71	560	4	5	136	43	460	39	13	10	74
Effort (hrs):	20.5	20.9	21.7	16.7	21.2	17.6	20.3	25.6	21.0	21.1	18.3	20.3	22.6	26.9	23.9	20.0	23.3

	High Perched Lakes																
	B8533	L9279	L9317	L9317	L9318	L9319	L9320	L9321	L9322	L9342	L9342	L9342	M9321	L9332	L9333	L9279	M9505
Species	7/17/95	7/11/95	7/16/95	7/17/95	7/14/95	7/15/95	7/16/95	7/18/95	7/23/95	7/12/95	7/13/95	7/24/95	7/17/95	7/19/95	7/20/95	7/27/95	7/25/95
Broad whitefish	0	0	0	0	1	0	0	0	0	0	0	0	0	0	13	0	0
Humpback whitefish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Round whitefish	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Least cisco	3	0	0	3	2	0	0	5	5	0	0	1	0	0	1	0	8
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Alaska blackfish	0	0	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	1680	9758	1155	140	2420	860	6320	120	0	0	860	68	220	140	222	68	72
Total:	1683	9758	1156	144	2423	860	6323	125	5	0	860	69	220	142	236	68	80
Effort (hrs):	23.7	28.0	23.3	23.6	24.2	17.1	22.1	22.4	44.9	19.9	23.2	18.5	21.4	22.8	23.4	24.1	119.5

Appendix Table 1. Catch by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta (data are number of fish by station, date and hours of effort).

	High Perched Lakes									Drainage Lakes							Tapped
	M9509	M9512	M9514	M9515	M9516	L9120	L9121	L9122	M9528	L9334	M9501	M9502	MC7903	MC7903	L9119	L9123	L9278
Species	7/25/95	8/3/95	8/3/95	8/4/95	8/4/95	8/1/95	8/1/95	7/31/95	8/4/95	7/21/95	7/20/95	7/20/95	7/30/95	7/30/95	8/3/95	7/31/95	7/15/95
Broad whitefish	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	31
Humpback whitefish	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Round whitefish	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	1
Least cisco	3	0	0	0	0	0	0	0	0	2	1	27	0	0	0	0	20
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	0	0	0	4	43	4	0	0	2	0	0
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	4	5	0	0	0
Longnose sucker	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	385	4	18	0	0	16	9	17	5	62	0	39	8	3	44	0	5
Total:	391	4	18	0	0	16	9	17	5	70	49	72	12	8	46	0	59
Effort (hrs):	94.8	52.2	46.0	19.1	16.2	21.5	22.3	23.1	18.5	24.2	22.7	20.3	21.2	21.0	52.2	22.4	24.3

Appendix Table 2. Catch per day by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta.

	C9501																
Species	7/9/95	7/10/95	7/11/95	7/12/95	7/13/95	7/14/95	7/15/95	7/16/95	7/17/95	7/18/95	7/19/95	7/20/95	7/21/95	7/22/95	7/23/95	7/24/95	7/25/95
Broad whitefish	98.8	0.0	6.0	15.2	114.7	51.1	61.2	101.9	36.8	18.4	43.5	38.6	4.9	21.7	12.9	20.1	22.5
Humpback whitefish	72.7	0.0	1.5	20.3	36.0	0.9	4.9	4.9	0.0	0.0	6.9	4.2	0.0	0.0	0.0	2.9	4.1
Round whitefish	77.0	0.0	19.4	15.2	52.0	39.9	45.4	48.0	33.9	10.8	29.7	13.6	4.9	17.9	17.3	10.5	10.2
Least cisco	10.2	0.0	31.3	49.0	50.7	23.2	31.6	28.4	5.8	6.5	8.9	12.5	3.9	102.0	193.1	7.7	18.4
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	4.4	0.0	16.4	5.9	5.3	3.7	4.9	5.9	4.8	1.1	1.0	1.0	1.0	0.9	1.1	0.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	0.0	0.0	0.0	0.8	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.2
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0
Longnose sucker	5.8	0.0	0.0	0.8	2.7	1.9	0.0	0.0	2.9	0.0	1.0	1.0	0.0	0.0	0.0	2.9	1.0
Arctic flounder	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	1.5	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	2.2	2.0	52.2	0.0	1.9	1.1	1.0	0.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	4.4	0.0	9.0	9.3	29.3	27.9	31.6	36.2	10.7	13.0	12.9	3.1	10.8	1.9	8.6	4.8	7.2
Threespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	274.6	0.0	83.6	116.6	290.7	153.3	180.5	225.3	95.0	52.0	106.9	126.3	25.6	146.4	234.1	52.6	72.8
Effort (hrs):	16.5	14.8	16.1	28.4	18.0	25.8	24.3	24.5	24.8	22.2	24.2	23.0	24.3	25.4	22.3	25.1	23.4

	C9501									
Species	7/26/95	7/27/95	7/28/95	7/29/95	7/30/95	7/31/95	8/1/95	8/2/95	8/3/95	8/4/95
Broad whitefish	36.9	69.5	55.9	53.4	7.4	14.7	45.2	6.9	21.6	15.1
Humpback whitefish	4.1	12.9	4.8	0.0	1.1	1.1	0.0	0.0	1.9	0.0
Round whitefish	12.3	10.9	12.5	3.1	3.2	12.6	10.8	6.9	4.7	1.1
Least cisco	49.2	241.3	102.1	14.7	9.5	16.8	32.4	56.4	9.4	7.6
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	2.1	0.0	0.0	0.0	1.0	0.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	4.1	3.0	12.5	6.3	1.1	2.1	21.6	2.0	0.0	1.1
Burbot	0.0	2.0	1.9	0.0	2.1	0.0	0.0	0.0	0.9	1.1
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	1.9	0.0	0.0	0.0	1.0	0.0	0.9	0.0
Arctic flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	1.0	0.0	1.0	1.1	1.1	0.0	0.0	3.8	0.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	7.2	1.0	4.8	9.4	5.3	3.2	2.0	3.0	0.0	0.0
Threespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	113.8	341.6	196.5	90.1	30.5	51.5	113.0	76.2	43.3	25.9
Effort (hrs):	23.4	24.2	24.9	22.9	22.8	22.8	24.4	24.2	25.5	22.3

Appendix Table 2. Catch per day by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta.

	M9521																
Species	7/9/95	7/10/95	7/11/95	7/12/95	7/13/95	7/14/95	7/15/95	7/16/95	7/17/95	7/18/95	7/19/95	7/20/95	7/21/95	7/22/95	7/23/95	7/24/95	7/25/95
Broad whitefish	40.8	68.9	11.5	63.4	57.2	53.0	52.5	57.6	121.1	9.2	56.4	23.8	15.0	45.0	16.0	18.7	19.0
Humpback whitefish	25.0	28.2	3.8	15.6	1.0	5.0	4.0	6.0	12.7	0.0	7.0	8.9	2.0	25.0	3.0	2.0	0.0
Round whitefish	15.8	23.0	4.8	12.5	3.0	12.0	21.2	23.8	12.7	7.1	6.0	7.9	3.0	8.0	2.0	6.9	4.0
Least cisco	181.5	308.9	27.7	82.1	8.9	15.0	24.3	11.9	115.2	10.2	34.2	6.0	10.0	84.0	67.0	32.4	47.0
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	0.0	0.0	2.9	6.2	1.0	4.0	13.1	2.0	5.9	0.0	7.0	4.0	5.0	32.0	4.0	0.0	1.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	1.0	2.9	2.1	1.0	0.0	3.0	3.0	3.9	4.1	1.0	1.0	0.0	1.0	0.0	0.0	0.0
Arctic flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	0.0	1.0	0.0	0.0	2.0	1.0	5.0	5.9	1.0	1.0	3.0	0.0	0.0	0.0	2.9	0.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	11.8	14.6	8.6	13.5	1.0	13.0	10.1	10.9	7.8	1.0	10.1	8.9	13.0	20.0	12.0	6.9	4.0
Threespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	274.8	444.5	63.1	195.5	73.0	105.0	129.3	120.2	286.0	33.7	123.9	63.6	48.0	216.0	105.0	69.8	75.0
Effort (hrs):	18.2	23.0	25.1	23.1	24.3	24.0	23.8	24.2	24.6	23.5	23.8	24.2	24.0	24.0	24.0	24.4	24.0

	M9521									
Species	7/26/95	7/27/95	7/28/95	7/29/95	7/30/95	7/31/95	8/1/95	8/2/95	8/3/95	8/4/95
Broad whitefish	30.0	15.9	51.3	137.7	35.5	32.6	6.8	20.8	20.8	5.5
Humpback whitefish	1.0	1.0	3.8	0.0	0.0	3.1	1.0	0.0	0.0	0.0
Round whitefish	5.2	6.0	3.8	0.0	6.1	6.1	3.9	1.0	6.6	3.3
Least cisco	81.8	55.6	66.5	187.8	9.1	18.3	22.4	2.0	6.6	7.6
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	3.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	0.0	0.0	1.0	25.0	3.0	1.0	3.9	1.0	7.6	0.0
Burbot	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.1
Arctic flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	2.0	1.0	1.0	3.0	4.1	4.9	4.0	5.7	5.5
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	10.4	7.9	11.4	12.5	29.4	6.1	1.9	0.0	0.9	0.0
Threespine stickleback	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Total:	131.6	90.4	139.7	365.2	87.2	73.3	45.7	29.7	48.2	22.9
Effort (hrs):	23.2	24.2	25.3	23.0	23.7	23.6	24.7	24.3	25.4	22.0

Appendix Table 2. Catch per day by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta.

	M9523																
Species	7/13/95	7/14/95	7/15/95	7/16/95	7/17/95	7/18/95	7/19/95	7/20/95	7/21/95	7/22/95	7/23/95	7/24/95	7/25/95	7/26/95	7/27/95	7/28/95	7/29/95
Broad whitefish	21.5	83.2	238.6	207.7	87.0	37.1	21.8	42.5	40.9	184.3	14.7	9.7	51.1	33.9	47.7	25.4	7.1
Humpback whitefish	11.5	12.8	35.0	31.3	17.8	5.3	6.0	8.3	10.0	12.5	0.0	1.0	3.1	7.2	1.0	3.8	1.0
Round whitefish	44.4	53.3	78.2	44.1	16.8	12.7	7.9	6.2	15.9	20.2	0.0	1.0	5.1	15.4	17.9	8.5	5.1
Least cisco	11.5	14.9	73.0	11.8	22.4	25.4	29.8	17.6	9.0	22.1	1.0	1.9	10.2	11.3	18.9	149.6	2.0
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	2.9	1.1	11.3	0.0	1.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	0.0	0.0	0.0	0.0	0.0	1.1	3.0	9.3	2.0	2.9	0.0	0.0	1.0	4.1	2.0	0.0	0.0
Burbot	0.0	1.1	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	1.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	1.4	1.1	0.0	3.9	2.8	3.2	2.0	4.1	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0
Arctic flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	2.9	0.0	0.0	0.0	4.7	2.1	3.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	11.5	7.5	45.3	7.8	7.5	0.0	11.9	20.7	19.9	12.5	9.4	3.9	6.1	8.2	0.0	4.7	0.0
Threespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	107.5	174.9	481.4	306.6	160.8	87.9	87.4	109.8	98.7	255.4	25.1	18.4	77.6	81.3	88.4	193.9	16.3
Effort (hrs):	16.7	22.5	23.3	24.5	25.7	22.7	24.2	23.2	24.1	25.0	22.9	24.8	23.5	23.3	24.2	25.5	23.6

	M9523					
Species	7/30/95	7/31/95	8/1/95	8/2/95	8/3/95	8/4/95
Broad whitefish	2.1	2.1	3.9	3.0	16.1	43.6
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	2.2
Round whitefish	0.0	4.2	2.0	4.0	9.4	12.0
Least cisco	7.3	13.7	0.0	8.9	5.7	7.6
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	1.0	1.9	1.1
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	0.0	8.4	0.0	0.0	8.5	12.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.9	0.0
Arctic flounder	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	1.1	1.0	2.0	0.9	0.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	1.0	1.1	0.0	0.0	0.0	2.2
Threespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0
Total:	10.5	30.6	6.9	18.9	43.4	80.7
Effort (hrs):	22.9	22.8	24.4	24.2	25.4	22.0

Appendix Table 2. Catch per day by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta.

	C9601																
Species	8/3/96	8/4/96	8/5/96	8/6/96	8/7/96	8/8/96	8/9/96	8/10/96	8/11/96	8/12/96	8/13/96	8/14/96	8/15/96	8/16/96	8/17/96	8/18/96	8/19/96
Broad whitefish	2.4	4.2	20.4	1.1	40.3	15.9	9.0	8.9	112.8	7.0	22.2	5.1	10.8	40.1	1.0	14.0	4.0
Humpback whitefish	0.0	0.0	1.0	1.1	3.1	3.0	0.0	0.0	11.1	0.0	2.0	0.0	1.0	0.0	2.0	0.0	2.0
Round whitefish	0.0	1.0	5.1	1.1	7.2	4.0	2.0	3.0	7.0	0.0	5.0	0.0	0.0	2.0	0.0	3.0	1.0
Least cisco	107.4	63.4	42.9	2.1	10.3	0.0	8.0	35.7	26.2	5.0	12.1	1.0	2.0	33.1	8.0	42.1	2.0
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.3	5.9	1.0	0.0	0.0	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic flounder	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	1.0	1.0	1.1	2.1	2.0	1.0	2.0	1.0	4.0	1.0	5.1	0.0	7.0	2.0	6.0	1.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Threespine stickleback	0.0	2.1	2.0	1.1	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0
Total:	109.8	71.7	72.5	7.4	63.0	24.8	21.1	49.6	159.1	16.1	43.3	31.5	19.6	84.2	13.0	66.2	10.0
Effort (hrs):	20.3	23.1	23.5	22.8	23.3	24.2	23.9	24.2	23.8	23.8	23.8	23.6	24.6	24.0	23.9	23.9	24.1

	C9601								
Species	8/20/96	8/21/96	8/22/96	8/23/96	8/24/96	8/25/96	8/26/96	8/27/96	8/28/96
Broad whitefish	0.0	2.0	14.1	91.8	49.0	60.2	18.9	6.9	12.3
Humpback whitefish	0.0	0.0	1.0	0.0	0.0	2.0	0.0	3.0	1.0
Round whitefish	0.0	2.0	1.0	11.5	21.0	16.1	9.9	5.9	5.1
Least cisco	1.0	1.0	16.1	64.7	86.0	233.8	47.7	21.8	5.1
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	5.0	1.0	1.0	0.0	0.0	1.0	3.0	989.7	154.3
Burbot	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0
Arctic flounder	0.0	67.5	7.0	1.0	1.0	4.0	0.0	5.9	2.1
Fourhorn sculpin	1.0	10.9	5.0	12.5	11.0	11.0	5.0	13.9	8.2
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Threespine stickleback	4.0	30.8	6.0	6.3	7.0	2.0	0.0	1.0	1.0
Total:	10.9	115.2	51.4	187.8	175.0	331.1	85.4	1048.1	192.3
Effort (hrs):	24.2	24.2	23.8	23.0	24.0	23.9	24.2	24.2	23.3

Appendix Table 2. Catch per day by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta.

	C9602																
Species	8/3/96	8/4/96	8/5/96	8/6/96	8/7/96	8/8/96	8/9/96	8/10/96	8/11/96	8/12/96	8/13/96	8/14/96	8/15/96	8/16/96	8/17/96	8/18/96	8/19/96
Broad whitefish	0.0	6.2	74.8	12.8	21.5	4.0	28.2	17.8	33.0	25.4	31.4	17.8	6.9	23.8	5.0	29.1	8.0
Humpback whitefish	0.0	1.0	4.0	2.1	1.0	2.0	3.0	0.0	3.0	4.1	2.0	1.0	0.0	2.0	1.0	2.0	0.0
Round whitefish	0.0	1.0	0.0	0.0	0.0	0.0	2.0	0.0	1.0	2.0	0.0	1.0	0.0	1.0	0.0	1.0	0.0
Least cisco	0.0	235.9	24.3	10.6	4.1	6.0	27.2	33.5	45.0	105.5	13.2	3.9	5.9	16.9	6.0	13.0	4.0
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	0.0	2.1	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Burbot	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	1.0	0.0	1.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic flounder	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	0.0	1.0	1.1	1.0	0.0	0.0	0.0	1.0	0.0	2.0	0.0	0.0	2.0	1.0	0.0	3.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	0.0	1.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Threespine stickleback	0.0	0.0	0.0	1.1	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Total:	0.0	247.2	105.1	29.8	27.7	14.0	60.4	52.3	83.0	137.9	49.7	23.7	15.7	45.7	14.0	45.2	15.9
Effort (hrs):	20.3	23.4	23.8	22.6	23.4	24.1	23.8	24.3	24.0	23.7	23.7	24.3	24.4	24.2	23.9	23.9	24.1

	C9602								
Species	8/20/96	8/21/96	8/22/96	8/23/96	8/24/96	8/25/96	8/26/96	8/27/96	8/28/96
Broad whitefish	5.0	2.0	5.1	12.4	19.0	27.9	18.9	45.1	226.1
Humpback whitefish	0.0	0.0	0.0	2.1	1.0	0.0	0.0	3.9	6.2
Round whitefish	0.0	0.0	0.0	1.0	1.0	0.0	0.0	11.8	8.3
Least cisco	32.0	2.0	16.2	21.7	14.0	24.9	23.9	14.7	114.6
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0
Arctic grayling	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rainbow smelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Arctic flounder	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	3.0	5.9	0.0	2.1	2.0	1.0	1.0	2.0	3.1
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Threespine stickleback	3.0	6.9	16.2	3.1	0.0	0.0	0.0	0.0	2.1
Total:	44.0	19.6	37.5	43.4	37.0	53.8	45.8	78.4	362.3
Effort (hrs):	24.0	24.4	23.7	23.3	24.0	24.1	24.1	24.5	23.3

Appendix Table 2. Catch per day by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta.

	C9603																
Species	8/4/96	8/5/96	8/6/96	8/7/96	8/8/96	8/9/96	8/10/96	8/11/96	8/12/96	8/13/96	8/14/96	8/15/96	8/16/96	8/17/96	8/18/96	8/19/96	8/20/96
Broad whitefish	19.0	57.2	9.7	18.4	9.0	13.0	48.5	20.9	19.1	0.0	9.6	28.5	59.4	18.3	158.6	79.2	11.0
Humpback whitefish	1.0	3.2	0.0	3.1	2.0	1.0	3.0	5.0	3.0	11.2	3.5	4.6	12.9	6.1	13.0	21.8	0.0
Round whitefish	3.8	7.4	0.0	2.0	0.0	2.0	3.0	0.0	8.0	4.1	2.6	10.2	5.9	0.0	25.1	1.0	1.0
Least cisco	54.2	130.2	17.3	131.2	20.9	65.1	62.4	5.0	7.0	3.1	3.5	6.8	6.9	3.0	138.5	8.9	1.0
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Rainbow smelt	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	8.8	1.1	8.9	2.0	1.0	2.0	0.0
Burbot	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.0	0.0	0.0	2.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Arctic flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	2.3	2.0	3.0	2.0	0.0	11.0
Fourhorn sculpin	0.0	0.0	1.1	0.0	3.0	0.0	0.0	0.0	3.0	1.0	0.9	1.1	4.0	0.0	3.0	1.0	2.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Threespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	12.0
Total:	78.9	199.1	28.2	155.8	35.9	81.1	117.8	31.9	41.1	22.4	28.9	55.8	102.9	32.5	341.2	116.8	38.1
Effort (hrs):	25.2	22.7	22.2	23.4	24.1	24.0	24.2	24.1	23.9	23.6	27.4	21.1	24.2	23.7	23.9	24.2	23.9

	C9603							
Species	8/21/96	8/22/96	8/23/96	8/24/96	8/25/96	8/26/96	8/27/96	8/28/96
Broad whitefish	6.8	37.7	42.2	78.3	157.5	179.0	84.6	354.8
Humpback whitefish	2.0	3.1	4.1	3.0	13.0	33.0	7.0	6.0
Round whitefish	1.0	16.3	4.1	14.0	11.0	49.0	27.2	25.9
Least cisco	0.0	6.1	12.3	47.2	20.9	76.0	54.4	75.7
Arctic cisco	0.0	0.0	0.0	0.0	0.0	7.0	3.0	4.0
Arctic grayling	0.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0
Dolly Varden char	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0
Rainbow smelt	0.0	0.0	1.0	0.0	2.0	1.0	1.0	0.0
Burbot	1.0	1.0	0.0	1.0	3.0	0.0	0.0	1.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	1.0	0.0	2.0	0.0	4.0	1.0	2.0
Arctic flounder	0.0	2.0	0.0	1.0	3.0	0.0	1.0	0.0
Fourhorn sculpin	3.9	3.1	1.0	5.0	1.0	3.0	24.2	7.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Threespine stickleback	12.7	23.4	7.2	0.0	0.0	0.0	1.0	2.0
Total:	27.3	94.6	72.0	151.5	211.3	352.0	206.4	480.3
Effort (hrs):	24.6	23.6	23.3	23.9	24.1	24.0	23.8	24.1

Appendix Table 2. Catch per day by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta.

Mixed Lake Types

	Low Perched Lakes					High Perched Lakes											
	B8534	L9283	L9314	L9316	M9524	L9279	L9280	L9281	L9281	L9281	L9310	L9310	L9311	L9311	L9312	L9312	L9313
Species	7/19/95	7/19/95	7/16/95	7/15/95	7/18/95	7/28/95	7/12/95	7/11/95	7/27/95	7/28/95	7/13/95	7/26/95	7/13/95	7/25/95	7/14/95	7/26/95	7/14/95
Broad whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Least cisco	73.8	12.6	0.0	28.7	149.7	0.0	4.7	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	5.1
Arctic cisco	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	1.2	2.3	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	3.9	1.2	0.0	0.0	1.0	0.0	6.2
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	1.0	0.0	0.0
Ninespine stickleback	983.4	0.0	44.3	106.0	121.3	13.6	79.3	524.7	4.6	5.7	170.5	48.6	488.1	34.8	10.1	12.0	64.8
Total:	1058.3	14.9	44.3	137.6	275.5	13.6	84.1	524.7	4.6	5.7	178.4	51.0	488.1	34.8	13.1	12.0	76.1
Effort (hrs):	20.5	20.9	21.7	16.7	21.2	17.6	20.3	25.6	21.0	21.1	18.3	20.3	22.6	26.9	23.9	20.0	23.3

	High Perched Lakes																
	B8533	L9279	L9317	L9317	L9318	L9319	L9320	L9321	L9322	L9342	L9342	L9342	M9321	L9332	L9333	L9279	M9505
Species	7/17/95	7/11/95	7/16/95	7/17/95	7/14/95	7/15/95	7/16/95	7/18/95	7/23/95	7/12/95	7/13/95	7/24/95	7/17/95	7/19/95	7/20/95	7/27/95	7/25/95
Broad whitefish	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
Least cisco	3.0	0.0	0.0	3.1	2.0	0.0	0.0	5.4	2.7	0.0	0.0	1.3	0.0	0.0	1.0	0.0	1.6
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
Alaska blackfish	0.0	0.0	1.0	1.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	1703.7	8364.0	1192.3	142.5	2400.0	1208.2	6878.9	128.5	0.0	0.0	890.9	88.1	246.5	147.2	227.2	67.8	14.5
Total:	1706.7	8364.0	1193.3	146.5	2403.0	1208.2	6882.2	133.8	2.7	0.0	890.9	89.4	246.5	149.3	241.5	67.8	16.1
Effort (hrs):	23.7	28.0	23.3	23.6	24.2	17.1	22.1	22.4	44.9	19.9	23.2	18.5	21.4	22.8	23.4	24.1	119.5

Appendix Table 2. Catch per day by fyke net at each station sampled during 1995-1996 summer sampling in the Colville Delta.

	High Perched Lakes									Drainage Lakes							Tapped
	M9509	M9512	M9514	M9515	M9516	L9120	L9121	L9122	M9528	L9334	M9501	M9502	MC7903	MC7903	L9119	L9123	L9278
Species	7/25/95	8/3/95	8/3/95	8/4/95	8/4/95	8/1/95	8/1/95	7/31/95	8/4/95	7/21/95	7/20/95	7/20/95	7/30/95	7/30/95	8/3/95	7/31/95	7/15/95
Broad whitefish	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	30.6
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	1.2	0.0	0.0	0.0	0.0	1.0
Least cisco	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.1	32.0	0.0	0.0	0.0	0.0	19.8
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	45.5	4.7	0.0	0.0	0.9	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	5.7	0.0	0.0	0.0
Longnose sucker	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slimy sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ninespine stickleback	97.4	1.8	9.4	0.0	0.0	17.8	9.7	17.6	6.5	61.6	0.0	46.2	9.0	3.4	20.2	0.0	4.9
Total:	99.0	1.8	9.4	0.0	0.0	17.8	9.7	17.6	6.5	69.5	51.9	85.3	13.6	9.1	21.1	0.0	58.3
Effort (hrs):	94.8	52.2	46.0	19.1	16.2	21.5	22.3	23.1	18.5	24.2	22.7	20.3	21.2	21.0	52.2	22.4	24.3

Appendix Table 3. Catch by gill net at each lake sampled during fall 1995 and summer 1996 in the Colville Delta (data are number of fish by lake, date and hours of effort).

Catch at each sampled station during 1995 fall sampling in the Colville Delta.

	River Channel							Low Perched	High Perched Lakes							
Species	C9504 10/31/95	C9505 11/4/95	C9506 11/4/95	C9510 10/29/95	C9511 10/30/95	C9512 10/30/95	C9513 10/31/95	L9316 11/6/95	L9279 11/5/95	L9281 11/5/95	L9310 11/3/95	L9311 11/2/95	L9312 11/2/95	L9313 11/1/95	L9342 11/3/95	M9321 11/6/95
Broad whitefish	24	0	0	5	2	0	2	1	0	0	2	1	5	0	0	0
Humpback whitefish	0	0	0	3	1	1	3	0	0	0	0	0	0	0	0	0
Round whitefish	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Least cisco	4	1	0	0	6	15	25	24	0	53	26	37	62	0	57	96
Arctic cisco	1	2	0	0	1	0	3	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	2	0	9	0	0	0	0	0	0	0	0	0	0
Burbot	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0
Northern pike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alaska blackfish	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0
Longnose sucker	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	1	0	0	6	0	3	1	0	0	0	0	0	0	0	0	0
Total:	30	3	0	19	13	33	34	25	0	55	28	38	67	0	58	96
Effort (hrs):	20.3	22.8	20.5	26.5	20.8	24.7	21.1	22.3	22.0	21.0	22.7	20.8	21.7	20.7	23.7	23.1

Catch at each sampled lake during 1996 summer sampling in the Colville Delta.

	Low Perched Lakes									High Perched Lakes				
Species	B8530 7/25/96	B8532 7/31/96	B8534 8/9/96	L9324 7/21/96	M9522 8/3/96	M9608 7/25/96	M9610 7/22/96	M9611 7/22/96	M9622 7/31/96	B8533 8/12/96	L9280 8/10/96	L9313 8/8/96	L9321 8/11/96	L9323 7/21/96
Broad whitefish	4	6	0	3	0	4	7	7	2	2	1	0	9	3
Humpback whitefish	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Round whitefish	0	0	0	6	0	0	1	0	0	4	0	0	0	1
Least cisco	5	14	6	0	0	7	6	4	2	3	6	0	2	50
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burbot	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pike	0	0	0	0	0	0	2	1	0	0	0	0	0	0
Alaska blackfish	6	0	0	0	0	0	2	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	15	20	6	9	0	11	18	12	4	9	7	0	11	54
Effort (hrs):	2.4	7.9	10.1	11.5	11.3	2.6	5.5	9.4	6	11.8	11.3	9.1	11.5	5.5

Appendix Table 3. Catch by gill net at each lake sampled during fall 1995 and summer 1996 in the Colville Delta (data are number of fish by lake, date and hours of effort).

Catch at each sampled lake during 1996 summer sampling in the Colville Delta.

	High Perched Lakes										Drainage Lakes			
	L9327	L9328	L9502	M9606	M9607	M9609	M9612	M9613	M9623	M9626	L9334	M9603	M9603	M9621
Species	Jul 20	Jul 20	Aug 14	Jul 19	Jul 19	Jul 22	Jul 25	Jul 26	Aug 13	Aug 16	Jul 24	Jul 17	Jul 27	Jul 31
Broad whitefish	2	5	0	11	1	3	4	8	0	0	3	0	0	0
Humpback whitefish	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Round whitefish	0	0	0	0	0	0	1	0	0	0	1	0	0	1
Least cisco	15	6	0	17	1	0	33	0	0	2	10	2	9	1
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Burbot	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pike	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	17	11	0	28	2	4	38	8	0	2	14	2	10	2
Effort (hrs):	11.3	9.8	11.0	13.2	11.8	5.5	11.8	11.8	12.5	7.9	11.3	8.2	10.8	6.0

	Drainage Lakes			Tundra Lakes									Tapped Lk
	MC7904	MC7905	MC7906	L9128	M9601	M9602	M9605	M9614	M9615	M9617	M9618	M9619	M9625
Species	7/28/96	7/28/96	7/23/96	7/18/96	7/17/96	7/26/96	7/18/96	7/27/96	7/28/96	7/29/96	7/30/96	7/30/96	8/15/96
Broad whitefish	9	0	0	0	0	0	0	0	0	0	0	0	21
Humpback whitefish	0	0	0	0	0	0	0	0	0	0	0	0	1
Round whitefish	0	0	0	0	0	0	0	0	0	0	0	0	4
Least cisco	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic cisco	0	0	0	0	0	0	0	0	0	0	0	0	0
Arctic grayling	18	0	1	0	0	0	0	0	0	0	0	0	1
Burbot	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern pike	0	0	0	0	0	0	0	0	0	0	0	0	0
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Longnose sucker	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourhorn sculpin	0	0	0	0	0	0	0	0	0	0	0	0	1
Total:	27	0	1	0	0	0	0	0	0	0	0	0	28
Effort (hrs):	5.3	12.7	11.5	4.8	4.1	10.6	4.3	12.7	3.8	11.0	12.0	11.3	8.4

Appendix Table 4. Catch per day (CPUE) by gill net at each lake sampled during fall 1995 and summer 1996 in the Colville Delta.

CPUE at each sampled station during 1995 fall sampling in the Colville Delta.

	River Channel							Low Perched	High Perched Lakes							
	C9504	C9505	C9506	C9510	C9511	C9512	C9513	L9316	L9279	L9281	L9310	L9311	L9312	L9313	L9342	M9321
Species	10/31/95	11/4/95	11/4/95	10/29/95	10/30/95	10/30/95	10/31/95	11/6/95	11/5/95	11/5/95	11/3/95	11/2/95	11/2/95	11/1/95	11/3/95	11/6/95
Broad whitefish	28.4	0.0	0.0	4.5	2.3	0.0	2.3	1.1	0.0	0.0	2.1	1.2	5.5	0.0	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	2.7	1.2	1.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.9	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Least cisco	4.7	1.1	0.0	0.0	6.9	14.6	28.4	25.8	0.0	60.6	27.5	42.6	68.7	0.0	57.6	99.6
Arctic cisco	1.2	2.1	0.0	0.0	1.2	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	1.8	0.0	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burbot	0.0	0.0	0.0	0.0	3.5	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	1.0	0.0
Longnose sucker	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	1.2	0.0	0.0	5.4	0.0	2.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	35.5	3.2	0.0	17.2	15.0	32.1	38.6	26.9	0.0	62.9	29.6	43.8	74.2	0.0	58.6	99.6
Effort (hrs):	20.3	22.8	20.5	26.5	20.8	24.7	21.1	22.3	22.0	21.0	22.7	20.8	21.7	20.7	23.7	23.1

CPUE at each sampled lake during 1996 summer sampling in the Colville Delta.

	Low Perched Lakes									High Perched Lakes				
	B8530	B8532	B8534	L9324	M9522	M9608	M9610	M9611	M9622	B8533	L9280	L9313	L9321	L9323
Species	7/25/96	7/31/96	8/9/96	7/21/96	8/3/96	7/25/96	7/22/96	7/22/96	7/31/96	8/12/96	8/10/96	8/8/96	8/11/96	7/21/96
Broad whitefish	40.0	18.2	0.0	6.3	0.0	36.9	30.5	17.9	8.0	4.1	2.1	0.0	18.8	13.1
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Round whitefish	0.0	0.0	0.0	12.5	0.0	0.0	4.4	0.0	0.0	8.1	0.0	0.0	0.0	4.4
Least cisco	50.0	42.5	14.3	0.0	0.0	64.6	26.2	10.2	8.0	6.1	12.7	0.0	4.2	218.2
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	8.7	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	60.0	0.0	0.0	0.0	0.0	0.0	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	150.0	60.8	14.3	18.8	0.0	101.5	78.5	30.6	16.0	18.3	14.9	0.0	23.0	235.6
Effort (hrs):	2.4	7.9	10.1	11.5	11.3	2.6	5.5	9.4	6	11.8	11.3	9.1	11.5	5.5

Appendix Table 4. Catch per day (CPUE) by gill net at each lake sampled during fall 1995 and summer 1996 in the Colville Delta.

CPUE at each sampled lake during 1996 summer sampling in the Colville Delta.

	High Perched Lakes										Drainage Lakes			
	L9327	L9328	L9502	M9606	M9607	M9609	M9612	M9613	M9623	M9626	L9334	M9603	M9603	M9621
Species	Jul 20	Jul 20	Aug 14	Jul 19	Jul 19	Jul 22	Jul 25	Jul 26	Aug 13	Aug 16	Jul 24	Jul 17	Jul 27	Jul 31
Broad whitefish	4.2	12.2	0.0	20.0	2.0	13.1	8.1	16.3	0.0	0.0	6.4	0.0	0.0	0.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.1	0.0	0.0	4.0
Least cisco	31.9	14.7	0.0	30.9	2.0	0.0	67.1	0.0	0.0	6.1	21.2	5.9	20.0	4.0
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern pike	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	36.1	26.9	0.0	50.9	4.1	17.5	77.3	16.3	0.0	6.1	29.7	5.9	22.2	8.0
Effort (hrs):	11.3	9.8	11.0	13.2	11.8	5.5	11.8	11.8	12.5	7.9	11.3	8.2	10.8	6.0

	Drainage Lakes			Tundra Lakes									Tapped Lk
	MC7904	MC7905	MC7906	L9128	M9601	M9602	M9605	M9614	M9615	M9617	M9618	M9619	M9625
Species	7/28/96	7/28/96	7/23/96	7/18/96	7/17/96	7/26/96	7/18/96	7/27/96	7/28/96	7/29/96	7/30/96	7/30/96	8/15/96
Broad whitefish	40.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0
Humpback whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Round whitefish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.4
Least cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic cisco	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arctic grayling	81.5	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Burbot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern pike	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alaska blackfish	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Longnose sucker	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fourhorn sculpin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Total:	122.3	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0
Effort (hrs):	5.3	12.7	11.5	4.8	4.1	10.6	4.3	12.7	3.8	11.0	12.0	11.3	8.4

Appendix Table 5. Catch by minnow traps at each sampled station during 1995 summer sampling in the Colville Delta (two minnow traps set overnight)

Species	C9501 7/12/95	L9278 7/15/95	L9279 7/10/95	L9280 7/12/95	L9281 7/10/95	L9281 7/11/95	L9282 7/19/95	L9283 7/19/95	L9310 7/13/95	L9311 7/13/95	L9312 7/14/95	L9313 7/14/95	L9313 7/15/95	L9314 7/16/95	L9315 7/17/95	L9316 7/15/95	L9317 7/16/95
Alaska blackfish	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Ninespine stickleback	0	0	0	5	147	1	0	45	2	0	1	0	9	2	15	0	3
Total:	0	0	0	5	148	2	1	45	2	0	3	0	9	2	15	0	3

Species	L9318 7/14/95	L9319 7/15/95	L9320 7/16/95	L9321 7/18/95	L9322 7/23/95	L9342 7/12/95	M9321 7/17/95	M9501 7/20/95	M9502 7/20/95	M9503 7/19/95	M9504 7/20/95	M9505 7/25/95	M9506 7/21/95	M9507 7/21/95	M9509 7/25/95	M9510 7/30/95	M9512 8/3/95
Alaska blackfish	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	3	0
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ninespine stickleback	0	2	7	3	2	6	0	0	0	3	5	1	0	3	29	0	0
Total:	0	3	8	3	4	6	0	0	0	3	5	1	0	3	29	3	0

Species	M9513 8/3/95	M9514 8/3/95	M9515 8/4/95	M9516 8/4/95	M9517 8/1/95	M9518 8/1/95	M9519 7/31/95	M9520 7/31/95	M9521 7/12/95	M9524 7/18/95	M9525 7/18/95	M9528 8/4/95	Gear Total
Alaska blackfish	0	0	0	0	0	0	0	0	0	0	0	0	10
Slimy sculpin	0	0	0	0	0	0	0	0	0	0	0	0	2
Ninespine stickleback	0	0	0	0	0	0	0	0	0	4	33	0	328
Total:	0	0	0	0	0	0	0	0	0	4	33	0	340

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.
(Stations C9501, M9521, M9523, C9601, C9602, C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets																
	C9501 7/9/95	C9501 7/10/95	C9501 7/11/95	C9501 7/12/95	C9501 7/13/95	C9501 7/14/95	C9501 7/15/95	C9501 7/16/95	C9501 7/17/95	C9501 7/18/95	C9501 7/19/95	C9501 7/20/95	C9501 7/21/95	C9501 7/22/95	C9501 7/23/95	C9501 7/24/95	C9501 7/25/95
30				1										28	38		
40											1		2	72	134	6	13
50					1											2	
60	1		2	4	2												
70			3	27	8	3	8	5		1							
80	1		7	18	9	3	12	5			1	2		3	1		1
90	2		3	3	1	3	3	4	1		2	3		3	1		
100	1			1	1		2		1			3					
110							1	1									
120			1				1	3		2	1	1			1		
130	1		3	1	5	3	1	3		1				1	1		
140					7	3	2	2	2	1		2			2		
150						4								1			
160				2		3	1	1							1		
170				1	3	1		1	1		2						
180								1									
190						2	1	1			1		1				1
200			1							1	1		1				
210			1														1
220																	
230					1			1									
240																	
250									1			1					
260	1																
270																	
280																	
290																	
300																	
310								1									1
320																	
330																	1
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410																	
420																	
430																	
440																	
450																	
Total:	7	0	21	58	38	25	32	29	6	6	9	12	4	108	179	8	18
Effort (hrs):	16.52	14.83	16.08	28.42	18.00	25.83	24.33	24.50	24.75	22.17	24.25	23.00	24.33	25.42	22.25	25.08	23.42

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	C9501 7/26/95	C9501 7/27/95	C9501 7/28/95	C9501 7/29/95	C9501 7/30/95	C9501 7/31/95	C9501 8/1/95	C9501 8/2/95	C9501 8/3/95	C9501 8/4/95	M9521 7/9/95	M9521 7/10/95	M9521 7/11/95	M9521 7/12/95	M9521 7/13/95	M9521 7/14/95	M9521 7/15/95
30		4															
40	12	156	72	5	3	7	3	25	1	4							
50	3	30	19	4	1	2	5	24									
60											2	3	1				
70											44	85	10	27	3	2	4
80	5	10	1				1			1	85	181	10	31	1	6	11
90	5	14	3		1	2	1		1		6	18	3	14	2	2	2
100	9	8	2	1	1	2	3	1	1				1	1		1	1
110		4	1			1		2				1	1	1			
120	1	1					1			1			1		1		2
130	3	1	3	1			1			1							
140	2	2					6	1							1	2	1
150		2		2			1		2					1			
160	1	4	1		1				1								
170	1	2	1		1		2					2		1			
180			1				2	2	1			1				1	1
190	3	1					1	1	1		1	2	1		1		
200	1	1							1								
210		1					3					2	1				
220					1												1
230							1										1
240	1	1	1	1		1	1									1	
250																	
260			1				1										
270																	
280																	
290																	
300	1	1						1									
310						1											
320																	
330									1								
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410																	
420																	
430																	
440																	
450																	
Total:	48	243	106	14	9	16	33	57	10	7	138	295	29	78	9	15	24
Effort (hrs):	23.42	24.17	24.92	22.92	22.83	22.83	24.42	24.25	25.50	22.25	18.25	23.00	25.08	23.08	24.33	24.00	23.75

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	M9521 7/16/95	M9521 7/17/95	M9521 7/18/95	M9521 7/19/95	M9521 7/20/95	M9521 7/21/95	M9521 7/22/95	M9521 7/23/95	M9521 7/24/95	M9521 7/25/95	M9521 7/26/95	M9521 7/27/95	M9521 7/28/95	M9521 7/29/95	M9521 7/30/95	M9521 7/31/95	M9521 8/1/95
30	1	52				3	24	13	3	2	4			3			
40		5		5		3	20	44	14	34	57	37	50	103	5	10	15
50									1			9	13	60	3	7	8
60	1	1	1														
70	1	12		2	1		6	1		1	1		1				
80	3	32	8	6	1	2	20	5	3	4		6	2	2			
90	1	7		5	2		8	2	4	2	3	1	1	2			
100		1		2	1	1	1		3			2	1	2			
110		1						2			1		1	1			
120				1					1								
130	2	2		1		1	1		1	1	1						
140	1	2					1			1		1		1	1		
150		1							1				1	3			
160	1			3							1			1			
170			1	2			1		1		2			1			
180		1			1						1			1			
190	1								1		1						
200																	
210				1							1						
220							1			1							
230				1							2						
240										1							
250											1						
260											1					1	
270				1							1						
280				1													
290											1						
300																	
310							1										
320				1													
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410																	
420																	
430																	
440																	
450																	
Total:	12	117	10	32	6	10	84	67	33	47	79	56	70	180	9	18	23
Effort (hrs):	24.17	24.58	23.50	23.83	24.17	24.00	24.00	24.00	24.42	24.00	23.17	24.17	25.25	23.00	23.67	23.58	24.67

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets M9521 8/2/95	M9521 8/3/95	M9521 8/4/95	M9523 7/13/95	M9523 7/14/95	M9523 7/15/95	M9523 7/16/95	M9523 7/17/95	M9523 7/18/95	M9523 7/19/95	M9523 7/20/95	M9523 7/21/95	M9523 7/22/95	M9523 7/23/95	M9523 7/24/95	M9523 7/25/95	M9523 7/26/95
30									5	12							
40		1	5						3	8						1	
50	1	2	2														
60				1													
70				1	1	7	1	5									
80					5	34	3	9	4	2	1	3	4				
90						6	1	1	7	4	6	1	3		1		
100		1			1	5	1		3		1		3				2
110							1						1				
120					1	1	1				1	1					
130						3	1	2			3		1				1
140				2	1	5	2	2									
150		2						2			1		3				1
160				2	1	1		1			1		1				
170					1	2	1			1	1		1			1	1
180		1			2				1	1	2	1		1		1	1
190				1								1	1				
200						2							2			2	2
210					1	1				1							1
220						1										2	
230																	
240									1	1							1
250															1		
260				1									2				
270																	
280								2									
290																1	
300																	1
310						2										1	
320	1					1						1				1	
330																	
340												1					
350																	
360													1				
370																	
380																	
390																	
400																	
410																	
420																	
430																	
440																	
450																	
Total:	2	7	7	8	14	71	12	24	24	30	17	9	23	1	2	10	11
Effort (hrs):	24.25	25.42	22.00	16.75	22.50	23.33	24.50	25.67	22.67	24.17	23.17	24.08	25.00	22.92	24.83	23.50	23.33

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets									Gill Nets						
	M9523 7/27/95	M9523 7/28/95	M9523 7/29/95	M9523 7/30/95	M9523 7/31/95	M9523 8/1/95	M9523 8/2/95	M9523 8/3/95	M9523 8/4/95	C9504 10/31/95	C9505 11/4/95	C9506 11/4/95	C9510 10/29/95	C9511 10/30/95	C9512 10/30/95	C9513 10/31/95
30																
40	6	105		4	9		4	1								
50	1	47		3	4		5	2	1							
60																
70																
80																
90		1							1							
100	3									1						
110								1								
120																1
130	1								1							
140		1														
150	2								2							
160																
170																
180	1	1							1	1						2
190										1						1
200	1															1
210		1	1								1					1
220	1															2
230		1	1												1	
240	1								1	1						
250	2														2	
260														1	1	5
270														3	2	3
280																5
290														1	3	2
300		1													1	
310													1	1	3	1
320		1						1								
330								1							1	1
340																
350															1	
360																
370																
380																
390																
400																
410																
420																
430																
440																
450																
Total:	19	159	2	7	13	0	9	6	7	4	1	0	1	6	15	25
Effort (hrs):	24.00	25.50	23.58	22.92	22.75	24.42	24.17	25.42	22.00	20.29	22.79	20.54	26.54	20.79	24.71	21.12

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	C9601 8/3/96	C9601 8/4/96	C9601 8/5/96	C9601 8/6/96	C9601 8/7/96	C9601 8/9/96	C9601 8/10/96	C9601 8/11/96	C9601 8/12/96	C9601 8/13/96	C9601 8/14/96	C9601 8/15/96	C9601 8/16/96	C9601 8/17/96	C9601 8/18/96	C9601 8/19/96	C9601 8/20/96
30																	
40				1		1	1										
50	45	14	4	1	1	3	16	1	1				1		1		
60	43	45	26		3	2	35	4	2	1			7	3	23		
70			3				5	2		3		1	13	4	18		
80	1		1														
90	1		2		2		1										
100	1		1		2		1	2	1	1							
110		1	2			1	1	3									
120								1									
130			1							1							
140						1		1									
150								1					1				
160		1						2		2			2				
170			2					4									
180					1		1			2							
190								1		1						1	
200					1		1	2									
210																	
220								1		1			1				
230							1				1		2				
240																	
250																1	
260			1					1									1
270													1				
280													1				
290																	
300													2				
310													1				
320																	
330												1	1				
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410														1			
420																	
430																	
440																	
450																	
Total:	91	61	43	2	10	8	63	26	4	12	1	2	33	8	42	2	1
Effort (hrs):	20.3	23.1	23.5	22.8	23.3	23.9	24.2	23.8	23.8	23.8	23.6	24.6	24.0	23.9	23.9	24.1	24.2

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																	
	C9602 8/13/96	C9602 8/14/96	C9602 8/15/96	C9602 8/16/96	C9602 8/17/96	C9602 8/18/96	C9602 8/19/96	C9602 8/20/96	C9602 8/21/96	C9602 8/22/96	C9602 8/23/96	C9602 8/24/96	C9602 8/25/96	C9602 8/26/96	C9602 8/27/96	C9602 8/28/96	C9603 8/4/96	C9603 8/5/96
30																		
40		2																
50	1		1	1	1	1		12		2			1	2		2	33	41
60		2	2	7	3	3		13	1	7	4	3	12	11	2	35	21	75
70			2	4		3		6	1	6	14	4	8	7	7	54		6
80																		
90																	1	
100			1													1	1	1
110					1							3	1		1			
120	1													1		1		
130																		
140	1															1		
150	1													1		3		
160															1	3		
170						1					1					3		
180				1								1				2	1	
190	1			1			1							1				
200							1									2		1
210	2					2						1	1					
220	1			1		1												
230	1			2			1						1					
240					1									1	2			
250	2							1		1		1				1		
260	1			1							1					2		
270											1				1			
280																		
290	1					1							1					
300						1	1					1				1		
310				1														
320																		
330															1			
340																		
350																		
360																		
370																		
380																		
390																		
400																		
410																		
420																		
430																		
440																		
450																		
Total:	13	4	6	19	6	13	4	32	2	16	21	14	25	24	15	111	57	124
Effort (hrs):	23.7	24.3	24.4	24.2	23.9	23.9	24.1	24.0	24.4	23.7	23.3	24.0	24.1	24.1	24.5	23.3	25.2	22.7

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	C9603 8/6/96	C9603 8/7/96	C9603 8/8/96	C9603 8/9/96	C9603 8/10/96	C9603 8/11/96	C9603 8/12/96	C9603 8/13/96	C9603 8/14/96	C9603 8/15/96	C9603 8/16/96	C9603 8/17/96	C9603 8/18/96	C9603 8/19/96	C9603 8/20/96	C9603 8/22/96	C9603 8/23/96
30																	
40		1		2		1							1				1
50	7	24	6	24	8	1				1	1	1	25	1			2
60	2	97	12	32	23		1			3	2	1	61	1	1	6	1
70	1	3	1	1			1	1			1	1	16				5
80																	
90	1	1				1											
100			2	5				1									
110	4				1	1	2						1	1			
120	1				1			1					1				
130				1			1										
140																	
150		1															
160					1		1							1			
170																	
180		1			1								1				1
190							1			1							
200											1			1			
210											1						
220														1			1
230									2								
240									1				1				
250																	
260																	1
270										1							
280														1			
290						1			1					2			
300																	
310																	
320											1						
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410																	
420																	
430																	
440																	
450																	
Total:	16	128	21	65	35	5	7	3	4	6	7	3	107	9	1	6	12
Effort (hrs):	22.2	23.4	24.1	24.0	24.2	24.1	23.9	23.6	27.4	21.1	24.2	23.7	23.9	24.2	23.9	23.6	23.3

Appendix Table 6. Least cisco length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets				
	C9603 8/24/96	C9603 8/25/96	C9603 8/26/96	C9603 8/27/96	C9603 8/28/96
30					
40					
50	2			1	1
60	27	10	3	7	22
70	10	1		12	11
80					1
90					
100			6	3	
110		1	6	4	3
120	1		2		3
130			2		1
140			7	2	3
150		3	26	9	8
160	2	1	8	2	2
170	1		3		2
180	3	2	1	1	3
190			2	1	2
200			2	1	2
210			1	2	2
220				3	1
230		1		1	4
240	1		3		2
250			1	2	1
260		1			2
270			1	1	
280					
290		1	1	1	
300					
310			1		
320					
330				1	
340					
350					
360					
370					
380					
390					
400					
410					
420					
430					
440					
450					
Total:	47	21	76	54	76
Effort (hrs):	23.9	24.1	24.0	23.8	24.1

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.
(Stations C9501, M9521, M9523, C9601, C9602, C9603 are fyke net catches, others are gill net catches)

Fork	Fyke Nets												
Length	C9501	C9501	C9501	C9501	C9501	C9501	C9501	C9501	C9501	C9501	C9501	C9501	C9501
(mm)	7/9/95	7/10/95	7/11/95	7/12/95	7/13/95	7/14/95	7/15/95	7/16/95	7/17/95	7/18/95	7/19/95	7/20/95	7/21/95
30													
40					7	2	3	1	1	1	3	2	1
50											2	1	
60													
70	3												
80	3				2	1	1						
90	15			4	14	6	3	1	1				1
100	21		1	6	21	11	20	10	6	1	5	2	
110	20			1	18	18	14	41	6	2	6	8	1
120	3			1	8	10	10	24	6		3	3	
130				1	1		1	3			1	3	
140	1		1	1	2	1	1	4		1		3	
150	1			2	7	3	4	2	4	1	1	2	1
160					1		2	7	5	1	4	1	
170				1	5	3	1	1	2	1	4	2	
180	1			1				2		3	4	1	
190			2				2	6	2	1	1	1	
200								1	2	2	8		1
210									1		1	3	
220												1	
230													
240													
250								1					
260									1				
270													
280									1	2		1	
290										1			
300												2	
310													
320													
330													
340													
350													
360											1		
370													
380													
390													
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	68	0	4	18	86	55	62	104	38	17	44	36	5
Effort (h	16.52	14.83	16.08	28.42	18.00	25.83	24.33	24.50	24.75	22.17	24.25	23.00	24.33

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets												
	C9501 7/22/95	C9501 7/23/95	C9501 7/24/95	C9501 7/25/95	C9501 7/26/95	C9501 7/27/95	C9501 7/28/95	C9501 7/29/95	C9501 7/30/95	C9501 7/31/95	C9501 8/1/95	C9501 8/2/95	C9501 8/3/95
30													
40		1		1	2	1		1					
50		2	6	2	7	20	16	31	1	5	10		2
60					1	15	9	9	2		2	2	4
70													
80													
90	1												
100	1		1		2	2	4			1	2		
110	8	2	1	5	4	7	7			2	2	1	2
120	6	1		2	6	12	11	3	3	1	5		3
130	2	1		1	3	4	4	5		3	8	1	1
140			1		1	3	2				1	1	1
150	1			1	1	1	3				2		
160	1	1		1	3	2				1	5	1	2
170	2	4	3	1		1				1	2	1	2
180			1	2	1		2	1					
190			1	1							1		2
200	1		1	1	2			1	1		2		
210				1							1		1
220			3	1							1		
230						1					1		
240				2									
250			1		1								2
260													
270						1							
280					1								
290			1		1								1
300			1										
310													
320													
330											1		
340													
350													
360													
370													
380													
390													
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	23	12	21	22	36	70	58	51	7	14	46	7	23
Effort (h	25.42	22.25	25.08	23.42	23.42	24.17	24.92	22.92	22.83	22.83	24.42	24.25	25.50

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets												
	C9501 8/4/95	M9521 7/9/95	M9521 7/10/95	M9521 7/11/95	M9521 7/12/95	M9521 7/13/95	M9521 7/14/95	M9521 7/15/95	M9521 7/16/95	M9521 7/17/95	M9521 7/18/95	M9521 7/19/95	M9521 7/20/95
30													
40													
50	1												
60	1												1
70			1									1	
80		2	5		1							1	
90		2	8		3	1	2	9		6			
100		2	6	2	7	6	7	19	8	6		4	
110	1	16	23	3	12	12	20	14	8	29	1	3	12
120	3	3	9		4	10	15	7	11	16	1	6	6
130					1	1	2	1	2	3		4	1
140	2		2	2	2	1				2	1	3	
150	1	1	4		4	10	2		1	9	1		3
160	1	1	1	1	5	3	1	1	8	6	1	10	1
170	3	1	2	1	3	4			8	10	1	1	
180		2			3	3	1		3	5		2	
190		1	2		4	3			1	9		3	
200	1		2	1	7			1	4	5	1	4	
210						2	2		1	5		7	
220				1	1					1		2	
230			1							2		2	
240						1			1			2	
250					1				1	3			
260					1					2			
270				1	1		1		1	3	2	1	
280													
290										1			
300													
310													
320					1								
330													
340													
350													
360													
370													
380													
390													
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	14	31	66	12	61	57	53	52	58	123	9	56	24
Effort (hr	22.25	18.25	23.00	25.08	23.08	24.33	24.00	23.75	24.17	24.58	23.50	23.83	24.17

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets												
	M9521 7/21/95	M9521 7/22/95	M9521 7/23/95	M9521 7/24/95	M9521 7/25/95	M9521 7/26/95	M9521 7/27/95	M9521 7/28/95	M9521 7/29/95	M9521 7/30/95	M9521 7/31/95	M9521 8/1/95	M9521 8/2/95
30		1											
40	1	2	1		3								
50	1	2	3		2	2			2	1			
60													
70													
80	1				1								
90		3											
100	1	9	1	1				1	2	3			1
110	1	4		2	1	3	1	10	18	4	4	1	2
120	7	7	4	1	1	7	1	9	29	5	6	1	
130	2		3	2	1	3	1	8	19	2	5		5
140				1	1		1	2	3	1			
150		3		1	1	3	2	1	1	2	2	1	1
160		3	3	2	1	5	1	5	12		4	1	2
170		2		2	1	4	1	1	16	5	2	1	4
180		1					1	3	4	2	2		
190		4	1	2	1	1	2	1	6	1	2	1	1
200				1	1	1	1	4	4	2	2		1
210		2					3	3	6	2			2
220				2				2	4	1			
230									2	2	1		
240				1									1
250							1	2	1				1
260		1			1			1	1		1		
270					1					2		1	
280	1				1								
290											1		
300													
310													
320					1								
330													
340													
350													
360													
370													
380													
390													
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	15	44	16	18	19	29	16	53	130	35	32	7	21
Effort (h	24.00	24.00	24.00	24.42	24.00	23.17	24.17	25.25	23.00	23.67	23.58	24.67	24.25

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets												
	M9521 8/3/95	M9521 8/4/95	M9523 7/13/95	M9523 7/14/95	M9523 7/15/95	M9523 7/16/95	M9523 7/17/95	M9523 7/18/95	M9523 7/19/95	M9523 7/20/95	M9523 7/21/95	M9523 7/22/95	M9523 7/23/95
30					1								
40					10	3		1	1	1			2
50											1		3
60													
70					1								
80				1		1	1	1					
90			1	5	20	7	4		2			1	
100	1		3	14	52	38	18	2	4	2	6	18	
110	1		7	26	84	72	28	6	4	11	3	43	2
120	2		1	8	25	50	14	7	1	12	3	69	2
130	1	3		1	5	7	5		3	3	2	10	1
140	1				5	3		2				5	
150	1		2	3	5	7	2	3	2	1		8	
160	2		1	4	6	9	4	2	3	1	10	8	1
170		1		7	3	5	1	2		3	3	2	
180	1			3	2	1	1	1		2	1	3	1
190	1				2	3	2	5		1	2	3	
200	1			3	2	3	3			2	2	8	
210	3				1		3				1	2	1
220	2	1		3	1	1	1	1		1		4	
230								1					1
240							2				2	1	
250							1		1			2	
260	1						2	1	1		4		
270	1				3							1	
280					2					1		3	
290	2					1					1	1	
300							1						
310													
320	1												
330													
340													
350													
360													
370													
380						1							
390													
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	22	5	15	78	230	212	93	35	22	41	41	192	14
Effort (h	25.42	22.00	16.75	22.50	23.33	24.50	25.67	22.67	24.17	23.17	24.08	25.00	22.92

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork	Fyke Nets												Gill Nets
Length	M9523	M9523	M9523	M9523	M9523	M9523	M9523	M9523	M9523	M9523	M9523	M9523	C9504
(mm)	7/24/95	7/25/95	7/26/95	7/27/95	7/28/95	7/29/95	7/30/95	7/31/95	8/1/95	8/2/95	8/3/95	8/4/95	10/31/95
30													
40	1		2	1								1	
50		3	1		1						1		
60												1	
70													
80													
90		1											
100												1	
110			1	7	3	2			1		3	5	
120		3	4	12	10				2	1	1	9	3
130		2	5	2	1			1			2	12	9
140				3	1		1				1	3	8
150		2	2						1		2		4
160		2	2	3	2						2	1	
170	1	5		2	1	1		1		1	2	3	
180		6	1	2	3								
190		7	4	5	2	1						2	
200	1	5	2	3	2	1					2		
210		3	3	1									
220				2	1		1					1	
230		1				1							
240		2	2										
250				1							1	1	
260		1		1						1			
270		1	1	1									
280	1	3											
290	1	2	1	1									
300	1		1										
310	1			1									
320													
330													
340	1												
350	1	1											
360													
370	1					1							
380													
390													
400			1										
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	10	50	33	48	27	7	2	2	4	3	17	40	24
Effort (h	24.83	23.50	23.33	24.00	25.50	23.58	22.92	22.75	24.42	24.17	25.42	22.00	20.29

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

(Stations C9601-C9603 are fyke net catches, others are gill nets)

Fork	Gill Nets						Fyke Nets						
Length	C9505	C9506	C9510	C9511	C9512	C9513	C9601	C9601	C9601	C9601	C9601	C9601	C9601
(mm)	11/4/95	11/4/95	10/29/95	10/30/95	10/30/95	10/31/95	8/3/96	8/4/96	8/5/96	8/6/96	8/7/96	8/8/96	8/9/96
30													
40													
50								2			1		
60							2			1			
70									2				
80													
90													
100									1				
110													
120								1	1				1
130									1			1	
140									3		2		
150						1			1			1	
160									2		2	2	2
170								1	4		6	2	1
180									2		1	3	1
190									3		1	1	
200											3	1	
210											2		
220											2		1
230											5		
240											3		
250											2		
260									1			2	
270			1								1	1	2
280											3	1	
290				2							1		1
300											1		
310			1								1		
320												1	
330											2		
340													
350			1										
360						1							
370													
380													
390													
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500			1										
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	0	0	4	2	0	2	2	4	21	1	39	16	9
Effort (h	22.79	20.54	26.54	20.79	24.71	21.12	20.3	23.1	23.5	22.8	23.3	24.2	23.9

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

(Stations C9601-C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets												
	C9601 8/10/96	C9601 8/11/96	C9601 8/12/96	C9601 8/13/96	C9601 8/14/96	C9601 8/15/96	C9601 8/16/96	C9601 8/17/96	C9601 8/18/96	C9601 8/19/96	C9601 8/21/96	C9601 8/22/96	C9601 8/23/96
30													
40													
50													
60									2				
70	1	1				1	1		2				2
80									1				
90													
100													
110													1
120		1					1		1				
130	1	2		1									5
140	2	2		4								2	2
150	1	5		1					1				6
160	11	12	1	1			1				1	5	14
170	14	25	4	2			2		3	1			13
180	8	22		4	1		2		1	1			21
190	5	10	1	1		1						3	9
200	2	11				1	1				1	4	4
210	2	5	1				3						4
220		4			1		1						4
230	1	2		1		1	2		1				2
240		2		1		1			1				
250		1				1	2						1
260	1	1			1		3						
270		1			1	1	5						
280						2	2						
290		1		2			4	1					
300						1	1		1				
310		1					3			1			
320		1		3			4			1			
330		1			1		1						
340		1											
350													
360													
370													
380													
390							1						
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	49	112	7	21	5	10	40	1	14	4	2	14	88
Effort (h	24.2	23.8	23.8	23.8	23.6	24.6	24.0	23.9	23.9	24.1	24.2	23.8	23.0

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

(Stations C9601-C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets												
	C9601 8/24/96	C9601 8/25/96	C9601 8/26/96	C9601 8/27/96	C9601 8/28/96	C9602 8/4/96	C9602 8/5/96	C9602 8/6/96	C9602 8/7/96	C9602 8/8/96	C9602 8/9/96	C9602 8/10/96	C9602 8/11/96
30													
40													
50													1
60	1					1	2						
70	1	1		1	4		2		1		4		
80	2	1	1	1	1		1						
90													
100													
110			1				3	1					
120			1				3	1			2		
130	4	1	2		1	2	4	1		1	2	2	6
140	4	4		1	1	1	4		3		4	1	2
150	5	7		1			2		1		1	2	1
160	5	3	2				10	2	5	1	2	1	1
170	2	6	5		1	1	19	2	2		2	4	8
180	13	8	1		2		9	2	2	1		3	4
190	4	5	1	1		1	7	1	3		3	2	2
200	1	4			1		4					1	1
210	3	1					1		1		1		2
220							1		1		1	1	1
230	3	3					1		2		1	1	2
240		1		1	1		1						
250	1	2	1								2		1
260		4								1			
270								1					
280		1											
290		2									1		
300		1											
310		1	2					1					
320											1		
330		2											
340		2	1										
350													
360			1										
370													
380													
390													
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	49	60	19	6	12	6	74	12	21	4	27	18	32
Effort (h	24.0	23.9	24.2	24.2	23.3	23.4	23.8	22.6	23.4	24.1	23.8	24.3	24.0

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

(Stations C9601-C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets												
	C9602 8/12/96	C9602 8/13/96	C9602 8/14/96	C9602 8/15/96	C9602 8/16/96	C9602 8/17/96	C9602 8/18/96	C9602 8/19/96	C9602 8/20/96	C9602 8/21/96	C9602 8/22/96	C9602 8/23/96	C9602 8/24/96
30													
40													
50													
60				1			2				1		
70	5			2	5		4	1	2			2	2
80						2	2					1	
90													
100							1						
110	1	1		1									
120	1	3	1		3		2						
130		2	2				5				2	3	
140	2	2	1				3				1	1	2
150	1	1			1		4	1	1			1	1
160	1		4	1	1		2		1			1	1
170	4	6	2	1	3		1			1			1
180	3	5	3		1	1	1	2			1		3
190	2	1		1	3	1		1		1		1	2
200	1	3			4			1				1	
210	1	2					1						
220	2	2	1		1		1					1	
230		1	1					2					1
240					1				1				
250													1
260													
270													
280													
290		1			1								
300													
310		1	1										
320			2										
330	1				1								
340						1							
350													
360													
370													
380													
390													
400													
410													
420													
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	25	31	18	7	25	5	29	8	5	2	5	12	14
Effort (h	23.7	23.7	24.3	24.4	24.2	23.9	23.9	24.1	24.0	24.4	23.7	23.3	24.0

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

(Stations C9601-C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets												
	C9602 8/25/96	C9602 8/26/96	C9602 8/27/96	C9602 8/28/96	C9603 8/4/96	C9603 8/5/96	C9603 8/6/96	C9603 8/7/96	C9603 8/8/96	C9603 8/9/96	C9603 8/10/96	C9603 8/11/96	C9603 8/12/96
30													
40													
50				1	3	1	1	1		1			
60			1	9	9	18	2	5	3	4	2	1	1
70			8	53	3	15	3	1	2	4	1		3
80		1	5	31							1		
90		1	1	1									
100													
110													
120	1	1	2	5		3		2	1	1	1	1	1
130	2			16	3	5		3	2	1	1	6	3
140		2	3	11		5	1			1	1	2	
150	3	2	2	9			1			1		1	
160	2	1	5	13		4						3	
170		1	4	18	3	1		4			1	4	4
180	3	4	4	22		1					1	2	3
190	2	1	5	7				2	1			1	1
200	1	1	1	6	1	1							1
210	1	2	2	3			1						
220	1	1	1	3									
230		1	2	1									
240	3			3									
250	1			2									
260				2								1	
270													1
280	2												
290	1			1									1
300	1												
310	1												
320	1												
330													
340	2												
350													
360													
370													
380													
390													
400													
410													
420													
430													
440				1									
450				1									
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	28	19	46	219	22	54	9	18	9	13	9	22	19
Effort (h	24.1	24.1	24.5	23.3	25.2	22.7	22.2	23.4	24.1	24.0	24.2	24.1	23.9

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

(Stations C9601-C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets												
	C9603 8/13/96	C9603 8/14/96	C9603 8/15/96	C9603 8/16/96	C9603 8/17/96	C9603 8/18/96	C9603 8/19/96	C9603 8/20/96	C9603 8/21/96	C9603 8/22/96	C9603 8/23/96	C9603 8/24/96	C9603 8/25/96
30													
40	1												
50				2		1	1						
60				2	3	10	11	2		3	3		
70	2	1	3	15	7	34	17		2	6	2	4	2
80				6	5	17	6	2	1	1	5	4	2
90											1	1	
100													
110						3	1						
120	1		2	4		4	4	1				1	1
130	4	1	4	4	1	7	7		1	4	2	2	9
140	3	1	2	1		16	4	1		1	1	5	6
150		1		2		6	2			1	1	3	3
160	2	1	2	4		7	6	1		5	2	6	14
170	1	2	3	4		15	3	1	1	7	2	5	16
180	3		3	3		10	5	2	1	1	4	5	11
190			1			2	3			2	2	5	8
200	5		1		1	3	2		1	1	2	4	11
210	2	1		2		3	2			2	1	5	11
220				1		1				1			5
230	1			1			1			1		4	12
240				1			1			1		4	8
250			1	2		2						1	5
260				1							2	5	2
270		1		1									1
280						1						1	1
290		1		1							1	2	6
300	5											4	5
310	1	1	1	1			1				1	2	1
320	2		1	1				1					5
330											1	1	2
340	1				1		2				1	1	6
350							1				1		2
360											2	1	1
370													
380													1
390													
400				1								1	
410													
420												1	
430													
440													
450													
460													
470													
480													
490													
500													
510													
520													
530													
540													
550													
560													
570													
580													
590													
600													
Total:	34	11	24	60	18	142	80	11	7	37	37	78	157
Effort (h	23.6	27.4	21.1	24.2	23.7	23.9	24.2	23.9	24.6	23.6	23.3	23.9	24.1

Appendix Table 7. Broad whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets C9603 8/26/96	C9603 8/27/96	C9603 8/28/96
30			
40			
50			1
60	5	2	6
70	23	13	50
80	6	5	38
90	2		2
100			
110	2	1	4
120	6	2	14
130	10	7	25
140	14	3	30
150	10	7	15
160	29	1	16
170	22	10	25
180	13	8	53
190	10	8	27
200	9	7	20
210	6	4	5
220	2	2	6
230	4	1	11
240	3		2
250			4
260	1	1	
270			
280		2	1
290			
300	1		
310			
320			
330			
340	1		
350			
360			
370			
380			
390			1
400			
410			
420			
430			
440			
450			
460			
470			
480			
490			
500			
510			
520			
530			
540			
550			
560			
570			
580			
590			
600			
Total:	179	84	356
Effort (h	24.0	23.8	24.1

Appendix Table 8. Humpback whitefish length frequency by date and station - 1995 river channel and tapped lakes.
(Stations C9501, M9521, M9523, C9601, C9602, C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets																
	C9501 7/9/95	C9501 7/10/95	C9501 7/11/95	C9501 7/12/95	C9501 7/13/95	C9501 7/14/95	C9501 7/15/95	C9501 7/16/95	C9501 7/17/95	C9501 7/18/95	C9501 7/19/95	C9501 7/20/95	C9501 7/21/95	C9501 7/22/95	C9501 7/23/95	C9501 7/24/95	C9501 7/25/95
30			1	6													
40				1													
50	1			1													
60	1																
70	3				1		1										
80	23			6	16		2				1						
90	19			6	7		2	2			4	2				1	1
100	2			2	3			3			1	1					
110												1					
120																	
130																	
140																	
150																	1
160																	
170																	
180																	
190																	
200											1						
210																	
220																	
230																	1
240	1																
250																	
260																	
270						1											
280																1	
290																	1
300																1	
310																	
320																	
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410																	
420																	
Total:	50	0	1	22	27	1	5	5	0	0	7	4	0	0	0	3	4
Effort (hrs):	16.52	14.83	16.08	28.42	18.00	25.83	24.33	24.50	24.75	22.17	24.25	23.00	24.33	25.42	22.25	25.08	23.42

Appendix Table 8. Humpback whitefish length frequency by date and station - 1995 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	C9501 7/26/95	C9501 7/27/95	C9501 7/28/95	C9501 7/29/95	C9501 7/30/95	C9501 7/31/95	C9501 8/1/95	C9501 8/2/95	C9501 8/3/95	C9501 8/4/95	M9521 7/9/95	M9521 7/10/95	M9521 7/11/95	M9521 7/12/95	M9521 7/13/95	M9521 7/14/95	M9521 7/15/95
30													1				
40																	
50																	
60																	
70											1		1				
80											4	4	1	7		2	
90	2	5	2								7	14	1	6		3	2
100	2	4	2								4	3		1			2
110		2	1								2	1					
120											1	3		1			
130																	
140																	
150		1													1		
160												1					
170												1					
180																	
190																	
200						1											
210																	
220																	
230																	
240																	
250																	
260									1								
270																	
280																	
290									1								
300																	
310																	
320		1															
330					1												
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410																	
420																	
Total:	4	13	5	0	1	1	0	0	2	0	19	27	4	15	1	5	4
Effort (hrs):	23.42	24.17	24.92	22.92	22.83	22.83	24.42	24.25	25.50	22.25	18.25	23.00	25.08	23.08	24.33	24.00	23.75

Appendix Table 8. Humpback whitefish length frequency by date and station - 1995 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	M9521 7/16/95	M9521 7/17/95	M9521 7/18/95	M9521 7/19/95	M9521 7/20/95	M9521 7/21/95	M9521 7/22/95	M9521 7/23/95	M9521 7/24/95	M9521 7/25/95	M9521 7/26/95	M9521 7/27/95	M9521 7/28/95	M9521 7/29/95	M9521 7/30/95	M9521 7/31/95	M9521 8/1/95
30																	
40																	
50																	
60																	
70																	
80	3			3			2										
90	1	2		1	3	2	12	3									
100	1	10		1	3		9				1		4				1
110					2		2		1			1					
120																	
130					1												
140																	
150				1													
160																	
170																	
180	1																
190																	
200																	
210																	
220																	
230																	
240																	
250																	
260																1	
270																1	
280		1		1													
290																	
300																	
310																	
320																	
330																1	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410									1								
420																	
Total:	6	13	0	7	9	2	25	3	2	0	1	1	4	0	0	3	1
Effort (hrs):	24.17	24.58	23.50	23.83	24.17	24.00	24.00	24.00	24.42	24.00	23.17	24.17	25.25	23.00	23.67	23.58	24.67

Appendix Table 8. Humpback whitefish length frequency by date and station - 1995 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	M9521 8/2/95	M9521 8/3/95	M9521 8/4/95	M9523 7/13/95	M9523 7/14/95	M9523 7/15/95	M9523 7/16/95	M9523 7/17/95	M9523 7/18/95	M9523 7/19/95	M9523 7/20/95	M9523 7/21/95	M9523 7/22/95	M9523 7/23/95	M9523 7/24/95	M9523 7/25/95	M9523 7/26/95
30																	
40																	
50																	
60																	
70				1													
80				1	5	5	3	2	1	1							
90				5	2	12	16	5	3	2	3						
100					4	8	7	3		1	2	2	2				1
110					1	2	3	1			1						
120				1							1						
130																	
140						1		2		2		1					
150																	
160								1									
170																	
180												1					
190								1									
200																	
210												1					
220												1					
230												1					
240									1				2				
250								1				2	1				2
260						1										3	
270						1							2				1
280								1				1	3				
290						1		1									
300							1				1						2
310						1							2				
320							1										
330																	1
340						1		1									
350						1									1		
360																	
370																	
380																	
390																	
400																	
410																	
420																	
Total:	0	0	0	8	12	34	31	19	5	6	8	10	12	0	1	3	7
Effort (hrs):	24.25	25.42	22.00	16.75	22.50	23.33	24.50	25.67	22.67	24.17	23.17	24.08	25.00	22.92	24.83	23.50	23.33

Appendix Table 8. Humpback whitefish length frequency by date and station - 1995 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets									Gill Nets						
	M9523 7/27/95	M9523 7/28/95	M9523 7/29/95	M9523 7/30/95	M9523 7/31/95	M9523 8/1/95	M9523 8/2/95	M9523 8/3/95	M9523 8/4/95	C9504 10/31/95	C9505 11/4/95	C9506 11/4/95	C9510 10/29/95	C9511 10/30/95	C9512 10/30/95	C9513 10/31/95
30																
40																
50																
60																
70																
80																
90																
100		2														
110																
120																1
130																
140																
150																
160																
170																
180																
190															1	
200																
210																
220																
230																1
240			1													
250		2							1							
260																
270													1			
280																
290									1							
300													1			
310	1															
320																
330																
340																
350														1		1
360																
370																
380													1			
390																
400																
410																
420																
Total:	1	4	1	0	0	0	0	0	2	0	0	0	3	1	1	3
Effort (hrs):	24.00	25.50	23.58	22.92	22.75	24.42	24.17	25.42	22.00	20.29	22.79	20.54	26.54	20.79	24.71	21.12

Appendix Table 8. Humpback whitefish length frequency by date and station - 1996 river channel and lakes.

Fork Length (mm)	Fyke Nets																
	C9601 8/5/96	C9601 8/6/96	C9601 8/7/96	C9601 8/8/96	C9601 8/10/96	C9601 8/11/96	C9601 8/13/96	C9601 8/15/96	C9601 8/17/96	C9601 8/19/96	C9601 8/22/96	C9601 8/25/96	C9601 8/27/96	C9601 8/28/96	C9602 8/4/96	C9602 8/5/96	C9602 8/6/96
30																	
40									1								
50								1		1	1						
60												2	1				
70									1	1				1			
80	1																
90																	
100	1																
110			2	1			1								1	2	
120		1	1														
130				1	2	6							1			1	
140					1	1	1										
150						1							1				
160						1											
170						1											
180						1											
190																	
200																1	
210																	
220																	
230																	
240																	
250																	
260																	1
270				1													
280																	
290																	
300																	
310																	1
320																	
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
410																	
420																	
Total:	2	1	3	3	3	11	2	1	2	2	1	2	3	1	1	4	2
Effort (hrs):	23.5	22.8	23.3	24.2	24.2	23.8	23.8	24.6	23.9	24.1	23.8	23.9	24.2	23.3	23.4	23.8	22.6

Appendix Table 8. Humpback whitefish length frequency by date and station - 1996 river channel and lakes.

(Stations C9601-C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets																	
	C9602 8/7/96	C9602 8/8/96	C9602 8/9/96	C9602 8/11/96	C9602 8/12/96	C9602 8/13/96	C9602 8/14/96	C9602 8/16/96	C9602 8/17/96	C9602 8/18/96	C9602 8/23/96	C9602 8/24/96	C9602 8/27/96	C9602 8/28/96	C9603 8/4/96	C9603 8/5/96	C9603 8/7/96	C9603 8/8/96
30																		
40																		
50			1			1				1				1			1	2
60		1							1		2		2	1		1	2	
70		1												1		1		
80																		
90																		
100																		
110														2				
120			1					1										
130	1		1	1		1		1							1			
140					1													
150				1	1													
160					1											1		
170					1													
180				1														
190																		
200																		
210														1				
220																		
230																		
240																		
250																		
260																		
270																		
280																		
290																		
300							1					1	1					
310																		
320																		
330																		
340																		
350																		
360													1					
370																		
380										1						1		
390																		
400																		
410																		
420																		
Total:	1	2	3	3	4	2	1	2	1	2	2	1	4	6	1	4	3	2
Effort (hrs):	23.4	24.1	23.8	24.0	23.7	23.7	24.3	24.2	23.9	23.9	23.3	24.0	24.5	23.3	25.2	22.7	23.4	24.1

Appendix Table 8. Humpback whitefish length frequency by date and station - 1996 river channel and lakes.

(Stations C9601-C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets																	
	C9603 8/9/96	C9603 8/11/96	C9603 8/12/96	C9603 8/13/96	C9603 8/14/96	C9603 8/15/96	C9603 8/16/96	C9603 8/17/96	C9603 8/18/96	C9603 8/19/96	C9603 8/21/96	C9603 8/22/96	C9603 8/23/96	C9603 8/24/96	C9603 8/25/96	C9603 8/26/96	C9603 8/27/96	C9603 8/28/96
30																		
40																1		
50			1	1		1							1			2		
60	1			4	1		7	4	6		2	2	2	1	3	2	3	4
70				2	1		3	2	4	1			1	2		1	1	
80									2									
90																		
100							1									1		
110			1									1				1		1
120		4														1		
130		1	1			1										1		
140				1														
150															1	3		
160																5	1	
170																2	1	
180																2		
190																3		
200															1			
210															1	3	1	1
220																1		
230															1			
240															1	1		
250																		
260																		
270															1	3		
280																		
290																		1
300																		
310							1								1			
320						1									1			
330				1														
340					1	1									1			
350				1	1		1											
360															1			
370				1						1								
380																		
390																		
400																		
410																		
420																		
Total:	1	5	3	11	4	4	13	6	12	2	2	3	4	3	13	33	7	7
Effort (hrs):	24.0	24.1	23.9	23.6	27.4	21.1	24.2	23.7	23.9	24.2	24.6	23.6	23.3	23.9	24.1	24.0	23.8	24.1

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.
(Stations C9501, M9521, M9523, C9601, C9602, C9603 are fyke net catches, others are gill net catches)

Fork Length (mm)	Fyke Nets																
	C9501 7/9/95	C9501 7/10/95	C9501 7/11/95	C9501 7/12/95	C9501 7/13/95	C9501 7/14/95	C9501 7/15/95	C9501 7/16/95	C9501 7/17/95	C9501 7/18/95	C9501 7/19/95	C9501 7/20/95	C9501 7/21/95	C9501 7/22/95	C9501 7/23/95	C9501 7/24/95	C9501 7/25/95
30																	
40														1			
50														3	1	1	1
60																	
70			2		3	1											
80	16		3	3	7	7	7	4	6		2						1
90	8		2	3	19	15	13	18	5	1	9	3		8		1	1
100			2		1	5	4	5	7		3	3	1	2	1	1	1
110				1	1		1	2			1						
120	8		1		3	4	5	2	1		2						
130	6		1	4	1	2	3	4	4	2	1	3		3	2	1	1
140	2			2	2	1	1		5	2	1	1			2	1	2
150	3		1	1		3	4	1			3	2			2	1	
160	7				1	3	5	2	2	3	3		1	1	5	2	1
170	2			2		1	2	4	3		2		1	1	3	1	
180	1			1				1	1	2	2	1				2	
190				1			1	2									1
200									1				2				
210						1		3									
220																	
230											1						
240								1									
250																	
260																	
270																	1
280																	
290																	
300																	
310																	
320																	
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
Total:	53	0	12	18	38	43	46	49	35	10	30	13	5	19	16	11	10
Effort (hrs):	16.52	14.83	16.08	28.42	18.00	25.83	24.33	24.50	24.75	22.17	24.25	23.00	24.33	25.42	22.25	25.08	23.42

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	C9501 7/26/95	C9501 7/27/95	C9501 7/28/95	C9501 7/29/95	C9501 7/30/95	C9501 7/31/95	C9501 8/1/95	C9501 8/2/95	C9501 8/3/95	C9501 8/4/95	M9521 7/9/95	M9521 7/10/95	M9521 7/11/95	M9521 7/12/95	M9521 7/13/95	M9521 7/14/95	M9521 7/15/95
30																	
40																	
50	1		2														
60								1									
70																	
80											2	5				1	4
90	1	2	4				1				2	5	1	2	1	4	8
100	1	1	2	2				1	1		1	1		1		2	3
110	1	1	1			1	1	1									1
120						1					1	1	2	1		1	2
130		1	1			1					2	5	2	2	1		
140	4	1	1			1	2		1		1	2		1			1
150	1	2				1										3	
160	2		1			1	1			1	1	2				1	
170		1	1			5	1	1	1		2			2			1
180		2				2	2	1	1					2			1
190															1		
200				1			1		1								
210	1																
220												1					
230								1									
240																	
250							2										
260						1											
270																	
280								1									
290																	
300																	
310																	
320																	
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
Total:	12	11	13	3	3	12	11	7	5	1	12	22	5	11	3	12	21
Effort (hrs):	23.42	24.17	24.92	22.92	22.83	22.83	24.42	24.25	25.50	22.25	18.25	23.00	25.08	23.08	24.33	24.00	23.75

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	M9521 7/16/95	M9521 7/17/95	M9521 7/18/95	M9521 7/19/95	M9521 7/20/95	M9521 7/21/95	M9521 7/22/95	M9521 7/23/95	M9521 7/24/95	M9521 7/25/95	M9521 7/26/95	M9521 7/27/95	M9521 7/28/95	M9521 7/29/95	M9521 7/30/95	M9521 7/31/95	M9521 8/1/95
30																	
40																	
50												1					
60																	
70																	
80	1																
90	5	5			1	1	2	1	2	1	1		2				1
100	1		1		2		1		2	1	1				1	1	1
110		1							1			1			1	1	
120	1		1	1	2												
130	2	1			1	1	3				1	1	1				
140	3		2			1	1	1							1	2	
150	3	2	1							1	1				2		
160	2		1	1	1							1				1	
170	2	2	1	1	1		1		1			2				1	1
180	2	2		2					1		1				1		
190																	
200	1									1			1				
210																	
220																	
230				1													
240																	
250																	1
260																	
270																	
280																	
290																	
300																	
310																	
320																	
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
Total:	23	13	7	6	8	3	8	2	7	4	5	6	4	0	6	6	4
Effort (hrs):	24.17	24.58	23.50	23.83	24.17	24.00	24.00	24.00	24.42	24.00	23.17	24.17	25.25	23.00	23.67	23.58	24.67

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	M9521 8/2/95	M9521 8/3/95	M9521 8/4/95	M9523 7/13/95	M9523 7/14/95	M9523 7/15/95	M9523 7/16/95	M9523 7/17/95	M9523 7/18/95	M9523 7/19/95	M9523 7/20/95	M9523 7/21/95	M9523 7/22/95	M9523 7/23/95	M9523 7/24/95	M9523 7/25/95	M9523 7/26/95
30																	
40																	
50													2				
60				1													1
70				1	2												
80				6	9	6	4	2	1	1		1				1	1
90			1	10	13	32	8	4	4	2	2	2					2
100		1		1	5	14	9	3	2		1	3	5			3	4
110				1	3		1			1		1	3				
120				4	2	3	5	1	1	2	1	1	1				
130		1		1	4	10	5	3		2	1	2	2				1
140		1		2	2	3	2					2	3			1	2
150	1	1		2	5	2		2				1	1				
160			1	1	1	3	4		2			1	1				2
170		2		1	2	2	4	2			1		3		1		1
180			1		2		1		1			1					
190							1	1	1								1
200												1					
210																	
220																	
230																	
240																	
250																	
260		1															
270																	
280																	
290																	
300																	
310																	
320																	
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
Total:	1	7	3	31	50	75	44	18	12	8	6	16	21	0	1	5	15
Effort (hrs):	24.25	25.42	22.00	16.75	22.50	23.33	24.50	25.67	22.67	24.17	23.17	24.08	25.00	22.92	24.83	23.50	23.33

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork	Fyke Nets									Gill Nets						
Length	M9523	M9523	M9523	M9523	M9523	M9523	M9523	M9523	M9523	C9504	C9505	C9506	C9510	C9511	C9512	C9513
(mm)	7/27/95	7/28/95	7/29/95	7/30/95	7/31/95	8/1/95	8/2/95	8/3/95	8/4/95	10/31/95	11/4/95	11/4/95	10/29/95	10/30/95	10/30/95	10/31/95
30																
40																
50																
60																
70																
80																
90	6							1	1							
100	3	2	1					3	2							
110	1		1						3							
120								1								
130	2	2				1			2							
140	2	1	2		1				2							
150		1			1											
160	2	1			2			2							1	
170	2						2									
180		1					1	1	1							
190																
200						1		1								
210																
220																
230		1	1													
240																
250																
260																
270								1								
280																
290													1			
300																
310																
320																
330																
340																
350																
360																
370																
380																
390																
400																
Total:	18	9	5	0	4	2	3	10	11	0	0	0	1	0	1	0
Effort (hrs):	24.00	25.50	23.58	22.92	22.75	24.42	24.17	25.42	22.00	20.29	22.79	20.54	26.54	20.79	24.71	21.12

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																	
	C9601 8/4/96	C9601 8/5/96	C9601 8/6/96	C9601 8/7/96	C9601 8/8/96	C9601 8/9/96	C9601 8/10/96	C9601 8/11/96	C9601 8/13/96	C9601 8/16/96	C9601 8/18/96	C9601 8/19/96	C9601 8/21/96	C9601 8/22/96	C9601 8/23/96	C9601 8/24/96	C9601 8/25/96	C9601 8/26/96
30																		
40																		
50																		
60		1																
70																		
80																		
90																		
100								1									1	
110		1		1			1	1	1		2		1			3	2	1
120				1				1	1						2	8	4	3
130								1			1		1		1	2	2	1
140		1								1		2		1	3	1		
150		1			1		1	2							2	4	3	2
160				3								1			1	1	2	
170			1			1			1								1	3
180				1	2		1	1	1						2	1	1	
190		1		1														
200									1	1						1		
210	1																	
220					1													
230																		
240																		
250						1												
260																		
270																		
280																		
290																		
300																		
310																		
320																		
330																		
340																		
350																		
360																		
370																		
380																		
390																		
400																		
Total:	1	5	1	7	4	2	3	7	5	2	3	3	2	1	11	21	16	10
Effort (hrs):	23.1	23.5	22.8	23.3	24.2	23.9	24.2	23.8	23.8	24.0	23.9	24.1	24.2	23.8	23.0	24.0	23.9	24.2

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																	
	C9601 8/27/96	C9601 8/28/96	C9602 8/4/96	C9602 8/9/96	C9602 8/11/96	C9602 8/12/96	C9602 8/14/96	C9602 8/16/96	C9602 8/18/96	C9602 8/23/96	C9602 8/24/96	C9602 8/27/96	C9602 8/28/96	C9603 8/4/96	C9603 8/5/96	C9603 8/7/96	C9603 8/9/96	C9603 8/10/96
30																		
40																		
50																1		
60																		
70																		
80																		1
90																		
100				1								1			1			
110	1	3					1			1		1	2	2	2	1	1	1
120	1												1			2		
130	1	1											2	1		1		
140	1									1								
150	2	1				1		1					1	1				
160					1								4	2	1	1	1	
170			1			1								1				
180				1									1		1	1	1	
190														1				1
200																		
210																		
220																		
230																		
240																		
250																		
260																		
270																		
280																		
290																		
300																		
310																		
320																		
330																		
340																		
350																		
360																		
370																		
380																		
390																		
400																		
Total:	6	5	1	2	1	2	1	1	1	1	1	12	8	4	7	2	2	3
Effort (hrs):	24.2	23.3	23.4	23.8	24.0	23.7	24.3	24.2	23.9	23.3	24.0	24.5	23.3	25.2	22.7	23.4	24.0	24.2

Appendix Table 9. Round whitefish length frequency by date and station - 1995-96 river channel and tapped lakes.

Fork Length (mm)	Fyke Nets																
	C9603 8/11/96	C9603 8/12/96	C9603 8/13/96	C9603 8/14/96	C9603 8/15/96	C9603 8/16/96	C9603 8/18/96	C9603 8/19/96	C9603 8/20/96	C9603 8/21/96	C9603 8/22/96	C9603 8/23/96	C9603 8/24/96	C9603 8/25/96	C9603 8/26/96	C9603 8/27/96	C9603 8/28/96
30																	
40																	
50														1			
60															1		
70											1			1			
80												1	1				
90													1			1	1
100		1			1		2				1		1	1	2	1	
110	1	4			3	1	7	11			3	1	2		8	6	5
120		1	1		2	1	3	3			5	2	2		12	5	
130		1			1		2	2							3		2
140							2				2	1		1	4		2
150	1				1		1	5		1	1	3	4	1	7	3	6
160							3	1	1		1			1	5	5	7
170						1					1		2	1	1	2	
180	1		1	1		1	2				1		1	3	2	3	1
190		1			1	1	1								1		3
200														1	1		2
210															2		
220																	
230																	
240																	
250						1											
260																	
270																1	
280				1													
290																	
300																	
310				1													
320																	
330																	
340																	
350																	
360																	
370																	
380																	
390																	
400																	
Total:	3	8	2	3	9	6	23	22	1	1	16	8	14	11	49	27	29
Effort (hrs):	24.1	23.9	23.6	27.4	21.1	24.2	23.9	24.2	23.9	24.6	23.6	23.3	23.9	24.1	24.0	23.8	24.1

Appendix Table 10. Length frequency of least cisco at perched, drainage and miscellaneous tapped lakes during 1995 (F = fyke net, G = gill net).

	Low Perched Lakes												High Perched Lakes			
Fork Length (mm)	B8534-F Jul 19 95 20.5 hr	L9283-F Jul 19 95 20.9 hr	L9316-F Jul 15 95 16.7 hr	L9316-G Nov 6 95 22.3 hr	M9524-F Jul 18 95 21.2 hr	B8530-G Jul 25 96 2.5 hr	B8532-G Jul 31 96 8.0 hr	B8534-G Aug 9 96 10.1 hr	M9608-G Jul 25 96 2.6 hr	M9610-G Jul 22 96 5.5 hr	M9611-G Jul 22 96 9.2 hr	M9622-G Jul 31 96 5.9 hr	B8533-F Jul 17 95 23.7 hr	L9280-F Jul 12 95 20.3 hr	L9281-G Nov 5 95 21.0 hr	L9310-F Jul 26 95 20.3 hr
30																
40																
50																
60																
70	2				12									3		
80	46	3			87									1		
90	9	1			26											
100																
110					1										1	
120				1	2										2	
130				1	2											
140					1											
150			3													
160																
170			2	1				1								
180	1		8				3									
190			5	3		1	3								2	
200				4			1		1						9	
210					1		1						1		3	
220		1	1				1									
230	1						2									
240		2									2					
250	1	1	1						1	1	1					
260		1		1		1		1		3		1			1	
270									1	2					3	
280	1	1		2					1							
290	2	1		1			2	2							8	
300				4					1				1		8	
310				2				1	1				1		5	1
320															4	
330				2								1			1	
340				1			1								1	
350															3	
360				1											1	
370						1										
380																
390																
400																
410															1	
420						1										
430																
440																
450																
Totals:	63	11	20	24	132	4	14	5	6	6	3	2	3	4	53	1

Appendix Table 10. Length frequency of least cisco at perched, drainage and miscellaneous tapped lakes during 1995 (F = fyke net, G = gill net).

	High Perched Lakes														
Fork Length (mm)	L9311-G Nov 2 95 20.8 hr	L9312-G Nov 2 95 21.7 hr	L9313-F Jul 14 95 23.3 hr	L9317-F Jul 16 95 23.3 hr	L9318-F Jul 14 95 24.2 hr	L9321-F Jul 18 95 22.4 hr	L9322-F Jul 23 95 44.9 hr	L9333-F Jul 20 95 23.4 hr	L9335-F Jul 21 95 23.2 hr	L9342-F Jul 24 95 18.5 hr	L9342-G Nov 3 95 23.7 hr	M9321-G Nov 6 95 23.1 hr	M9505-F Jul 25 95 119.5 hr	M9509-F Jul 25 95 94.8 hr	B8533-G Aug 12 96 11.7 hr
30															
40															
50															
60									1						
70															
80															
90						1	2								
100						1	2								
110		1				1									
120															
130						1						14			
140										1	3	4			
150		1									14				
160													1		
170		13										1			
180		7				1		1	1			6			
190	2	20							1			17			
200	1	7										14			
210		7										7			
220	1	2	1									3			
230	1														1
240	3								2				2		
250	5	2	1						1			1			1
260	6		2						1						
270	7										3	1			
280	4		1								2			1	
290	1	1			1		1				1	2			
300	2	1		1	1						2		1	1	
310	1			1							3		2		1
320											3			1	
330	1			1							2				
340											5				
350											8				
360											3	2	1		
370											2	4			
380												6	1		
390											3	7			
400											3	3			
410	1											3			
420															
430	1														
440															
450															
Totals:	37	62	5	3	2	5	5	1	7	1	57	95	8	3	3

Appendix Table 10. Length frequency of least cisco at perched, drainage and miscellaneous tapped lakes during 1995 (F = fyke net, G = gill net).

	High Perched Lakes									Drainage Lakes						
Fork Length (mm)	L9280-G Aug 10 96 11.3 hr	L9321-G Aug 11 96 11.5 hr	L9323-G Jul 21 96 5.6 hr	L9327-G Jul 20 96 11.2 hr	L9328-G Jul 20 96 9.9 hr	M9606-G Jul 19 96 13.3 hr	M9607-G Jul 19 96 11.8 hr	M9612-G Jul 25 96 11.7 hr	M9626-G Aug 16 96 8.0 hr	L9334-F Jul 21 95 24.2 hr	M9501-F Jul 20 95 22.7 hr	M9502-F Jul 20 95 20.3 hr	L9334-G Jul 24 96 11.3 hr	M9603-G Jul 17 96 8.1 hr	M9603-G Jul 27 96 10.9 hr	M9621-G Jul 31 96 6.1 hr
30																
40																
50																
60																
70																
80												1				
90											1					
100												3				
110												7				
120												10				
130												3				
140												1				
150								1				1			1	
160								3								
170					1							1			1	
180				5				1								
190				13				4					1			
200				8				15					1			
210				5		1		6					2			
220				3		4		3							1	
230				6	1	3										
240	1			4											3	
250				3											1	
260				1												
270				1			1						2			
280					1				1				1	1	1	
290	1					4							1		1	
300	1				2	1										
310	1	1	1		3	1			1					1		
320					2	1				1						
330					2	1							1			
340	1				1	1										
350					1					1						
360		1			1								1			
370	1				2											1
380																
390																
400																
410																
420																
430																
440																
450																
Totals:	6	2	50	15	6	17	1	33	2	2	1	27	10	2	9	1

Appendix Table 10. Length frequency of least cisco at perched, drainage and miscellaneous tapped lakes during 1995 (F = fyke net, G = gill net).

Fork Length (mm)	Tapped Lakes L9278-F Jul 15 95 24.3 hr	Tapped Lakes M9525-F Jul 18 95 23.0 hr
30	1	
40		
50		
60		
70	3	
80	4	
90		
100	2	1
110		1
120		
130		
140	1	
150	1	
160		
170	2	
180	1	
190		
200	1	
210		
220	1	
230		
240	2	
250	1	
260		
270		
280		
290		
300		
310		
320		
330		
340		
350		
360		
370		
380		
390		
400		
410		
420		
430		
440		
450		
Totals:	20	2

Appendix Table 11. Length frequency of broad whitefish at perched, drainage and miscellaneous tapped lakes during 1995-1996.

(F = fyke net, G = gill net).

Fork Length (mm)	Low Perched								High Perched Lakes		
	L9316-G Nov 6 95 22.3 hr	B8530-G Jul 25 96 2.5 hr	B8532-G Jul 31 96 8.0 hr	L9324-G Jul 21 96 11.5 hr	M9608-G Jul 25 96 2.6 hr	M9610-G Jul 22 96 5.5 hr	M9611-G Jul 22 96 9.2 hr	M9622-G Jul 31 96 5.9 hr	L9310-G Nov 3 95 22.7 hr	L9311-G Nov 2 95 20.8 hr	L9312-F Jul 26 95 20.0 hr
30											
40											
50											
60											
70											
80											
90											
100											
110											
120											
130											
140											
150											
160											
170											
180											
190		1									
200											
210											
220											
230											
240											
250											
260											
270											
280											
290											
300											
310											
320			1								
330											
340								2			
350								1			
360			1								
370							1				
380					1		1				
390					1		1		1		
400								1			
410						1	2				
420								1			
430				1							1
440			2								
450								1		1	
460				3			1				
470						1					
480											
490							1				
500						1		1	1		
510											
520				1	1						
530											
540											
550											
560											
570											
580											
590										1	
600											
610											
620											
630											
640											1
650											
Totals:	1	4	5	3	3	7	7	2	2	1	1

Appendix Table 11. Length frequency of broad whitefish at perched, drainage and miscellaneous tapped lakes during 1995-1996.

(F = fyke net, G = gill net).

	High Perched Lakes										
Fork Length (mm)	L9312-G Nov 2 95 21.7 hr	L9318-F Jul 14 95 24.2 hr	L9333-F Jul 20 95 23.4 hr	M9509-F Jul 25 95 94.8 hr	B8533-G Aug 12 96 11.7 hr	L9280-G Aug 10 96 11.3 hr	L9321-G Aug 11 96 11.5 hr	L9323-G Jul 21 96 5.6 hr	L9327-G Jul 20 96 11.2 hr	L9328-G Jul 20 96 9.9 hr	M9606-G Jul 19 96 13.3 hr
30											
40											
50											
60											
70											
80											
90											
100											
110											
120		1									
130											
140			1								
150			4								
160			5								
170			2								
180				1							
190											
200											
210											
220											
230											
240											
250											
260											
270							2				
280							2				
290											
300							2				
310							2				
320											
330	1										
340	1										
350							1				
360											
370											1
380											1
390											2
400								1			
410											
420											
430											
440	1										
450								1			
460	1										1
470	1										
480											1
490											
500					1					2	
510								1			1
520											3
530					1					1	1
540			1								
550									1	1	
560										1	
570									1		
580											
590						1					
600											
610											
620											
630											
640											
650											
Totals:	5	1	13	1	2	1	9	3	2	5	11

Appendix Table 11. Length frequency of broad whitefish at perched, drainage and miscellaneous tapped lakes during 1995-1996.

(F = fyke net, G = gill net).

	High Perched Lakes				Drainage Lakes			Tapped Lakes		
Fork Length (mm)	M9607-G Jul 19 96 11.8 hr	M9609-G Jul 22 96 5.6 hr	M9612-G Jul 25 96 11.7 hr	M9613-G Jul 26 96 11.8 hr	M9502-F Jul 20 95 20.3 hr	L9334-G Jul 24 96 11.3 hr	C7904- Jul 28 96 5.3 hr	L9278-F Jul 15 95 24.3 hr	M9525-F Jul 18 95 23.0 hr	M9625-G Aug 15 96 8.5 hr
30										
40										
50										
60										
70										
80								1		
90								1		
100						1		5		
110								3	2	1
120								2	2	
130								2	3	4
140								1	1	3
150								8		
160								1		
170								2		3
180								1		1
190										
200										
210										1
220										
230										
240			1					1		
250			1							
260				2						
270				3				1		
280			1	2						
290										
300								1		
310	1							1		1
320										1
330										1
340										
350		1								
360				1						1
370		2				1				
380						1				1
390							2			
400										
410										
420							2			
430										
440							1			
450							1			
460							1			
470										
480										
490										
500						1				
510										
520										
530										
540										
550										
560										
570										
580										
590			1							
600										
610							1			
620										
630										
640										
650										
Totals:	1	3	4	8	1	3	8	31	8	18

Appendix Table 12. Length frequency of Arctic grayling at perched and drainage lakes during 1995-1996.

Fork Length (mm)	High Perched	Drainage Lakes							Tapped
	L9332-F Jul 19 95 22.8 hr	L9119-F Aug 3 95 52.2 hr	L9334-F Jul 21 95 24.2 hr	M9501-F Jul 20 95 22.7 hr	M9502-F Jul 20 95 20.3 hr	M9603-G Jul 27 96 5.4 hr	MC7906-G Jul 23 96 5.8 hr	MC7904-G Jul 28 96 5.3 hr	M9625 Aug 15 96 4.7 hr
30									
40									
50									
60									
70				2					
80			3	3	1				
90				2					
100									
110				1					
120				1					
130			1	3					
140				3	1				
150									
160				1					
170		1		2	1			1	
180				4					
190				1					
200				2					
210				4	1				
220				1					1
230				1		1			
240									
250				1					
260		1		2					
270									
280								1	
290				1					
300				1					
310	1			2				1	
320				3					
330								1	
340								3	
350				1				2	
360				1				3	
370								1	
380									
390								1	
400									
410								1	
Totals:	1	2	4	43	4	1	1	14	1

Appendix Table 13. Fyke net effort (in hours) at continuous sampling stations in the Sakoonang Channel (C9501, C9601-C9603) and tapped lakes (M9521 and M9523), Colville Delta 1995-1996.

	Stations		
Date	C9501	M9521	M9523
7/9/95	16.52	18.25	--
7/10/95	14.83	23.00	--
7/11/95	16.08	25.08	--
7/12/95	28.42	23.08	--
7/13/95	18.00	24.33	16.75
7/14/95	25.83	24.00	22.50
7/15/95	24.33	23.75	23.33
7/16/95	24.50	24.17	24.50
7/17/95	24.75	24.58	25.67
7/18/95	22.17	23.50	22.67
7/19/95	24.25	23.83	24.17
7/20/95	23.00	24.17	23.17
7/21/95	24.33	24.00	24.08
7/22/95	25.42	24.00	25.00
7/23/95	22.25	24.00	22.92
7/24/95	25.08	24.42	24.83
7/25/95	23.42	24.00	23.50
7/26/95	23.42	23.17	23.33
7/27/95	24.17	24.17	24.00
7/28/95	24.92	25.25	25.50
7/29/95	22.92	23.00	23.58
7/30/95	22.83	23.67	22.92
7/31/95	22.83	23.58	22.75
8/1/95	24.42	24.67	24.42
8/2/95	24.25	24.25	24.17
8/3/95	25.50	25.42	25.42
8/4/95	22.25	22.00	22.00

	Stations		
Date	C9601	C9602	C9603
8/3/96	20.33	20.33	
8/4/96	23.08	23.40	25.25
8/5/96	23.50	23.75	22.67
8/6/96	22.83	22.58	22.17
8/7/96	23.25	23.42	23.42
8/8/96	24.17	24.08	24.08
8/9/96	23.92	23.83	23.97
8/10/96	24.20	24.33	24.25
8/11/96	23.83	24.00	24.08
8/12/96	23.83	23.67	23.92
8/13/96	23.83	23.67	23.58
8/14/96	23.58	24.33	27.42
8/15/96	24.55	24.42	21.08
8/16/96	23.95	24.17	24.25
8/17/96	23.92	23.92	23.67
8/18/96	23.92	23.92	23.92
8/19/96	24.08	24.13	24.25
8/20/96	24.17	24.00	23.92
8/21/96	24.17	24.45	24.58
8/22/96	23.83	23.67	23.58
8/23/96	23.00	23.25	23.33
8/24/96	24.00	24.00	23.92
8/25/96	23.92	24.08	24.08
8/26/96	24.17	24.08	24.00
8/27/96	24.25	24.50	23.83
8/28/96	23.33	23.25	24.08

Appendix Table 14. Fyke net and gill net effort (in hours) at various habitats in the Colville Delta during 1995-1996.

Fyke Net Effort

Habitat	Station Number	Date	Sampling Duration (hours)
Drainage Lake	L9119	8/3/95	52.20
	L9123	7/31/95	22.37
	L9334	7/21/95	24.17
	M9501	7/20/95	22.67
	M9502	7/20/95	20.25
	MC7903	7/30/95	21.22
	MC7903	7/30/95	21.00
Low Perched Lake	B8534	7/19/95	20.50
	L9283	7/19/95	20.92
	L9314	7/16/95	21.67
	L9316	7/15/95	16.75
	M9524	7/18/95	21.17
High Perched Lake	B8533	7/17/95	23.67
	L9120	8/1/95	21.53
	L9121	8/1/95	22.33
	L9122	7/31/95	23.13
	L9279	7/11/95	28.00
	L9279	7/27/95	24.08
	L9279	7/28/95	17.63
	L9280	7/12/95	20.27
	L9281	7/11/95	25.62
	L9281	7/27/95	21.03
	L9281	7/28/95	21.12
	L9310	7/13/95	18.30
	L9310	7/26/95	20.25
	L9311	7/13/95	22.62
	L9311	7/25/95	26.87
	L9312	7/14/95	23.87
	L9312	7/26/95	20.00
	L9313	7/14/95	23.33
	L9313	7/26/95	20.73
	L9317	7/16/95	23.25
	L9317	7/17/95	23.58
	L9318	7/14/95	24.20
	L9319	7/15/95	17.08
	L9320	7/16/95	22.05
	L9321	7/18/95	22.42
	L9322	7/23/95	44.90
	L9332	7/19/95	22.83
	L9333	7/20/95	23.45
	L9335	7/21/95	23.22
	L9342	7/12/95	19.92
	L9342	7/13/95	23.17
	L9342	7/24/95	18.53
	M9321	7/17/95	21.42
	M9505	7/25/95	119.50
	M9509	7/25/95	94.83
	M9512	8/3/95	52.17
	M9514	8/3/95	46.00
	M9515	8/4/95	19.08
	M9516	8/4/95	16.17
	M9528	8/4/95	18.53
Tapped Lake	L9278	34895	24.28
	M9525	34898	23.00

Gill Net Effort

Habitat	Station Number	Date	Sampling Duration (hours)
Drainage Lake	L9334	7/24/96	11.33
	M9603	7/17/96	8.07
	M9603	7/27/96	10.92
	M9621	7/31/96	6.08
	MC7904	7/28/96	5.25
	MC7905	7/28/96	12.67
	MC7906	7/23/96	11.58
Low Perched Lake	L9316	11/6/95	22.33
	B8530	7/25/96	2.50
	B8532	7/31/96	8.00
	B8534	8/9/96	10.08
	L9324	7/21/96	11.53
	M9522	8/3/96	11.17
	M9608	7/25/96	2.58
	M9610	7/22/96	5.45
	M9611	7/22/96	9.25
	M9622	7/31/96	5.92
High Perched Lake	L9279	11/5/95	22.00
	L9279	11/5/95	22.00
	L9281	11/5/95	20.92
	L9281	11/5/95	21.08
	L9310	11/3/95	22.67
	L9311	11/2/95	20.67
	L9311	11/2/95	21.00
	L9312	11/2/95	21.33
	L9312	11/2/95	22.00
	L9313	11/1/95	20.58
	L9313	11/1/95	20.83
	L9342	11/3/95	23.58
	L9342	11/3/95	23.92
	M9321	11/6/95	23.17
	M9321	11/6/95	23.08
	B8533	8/12/96	11.68
	L9280	8/10/96	11.30
	L9313	8/8/96	9.12
	L9321	8/11/96	11.50
	L9323	7/21/96	5.58
	L9327	7/20/96	11.22
	L9328	7/20/96	9.92
	L9502	8/14/96	11.00
	M9606	7/19/96	13.30
	M9607	7/19/96	11.83
	M9609	7/22/96	5.62
	M9612	7/25/96	11.75
	M9613	7/26/96	11.83
	M9623	8/13/96	12.55
	M9626	8/16/96	8.00
Tundra Lake	L9128	7/18/96	4.75
	M9601	7/17/96	4.08
	M9602	7/26/96	10.67
	M9605	7/18/96	4.33
	M9614	7/27/96	12.75
	M9615	7/28/96	3.78
	M9617	7/29/96	11.08
	M9618	7/30/96	12.00
	M9619	7/30/96	11.17
Tapped Lake	M9625	8/15/96	8.50

Appendix Table 14. Fyke net and gill net effort (in hours) at various habitats in the Colville Delta during 1995-1996.

Gill Net Effort

Habitat	Station Number	Date	Sampling Duration (hours)
River Channel	C9504	10/31/95	20.17
	C9504	10/31/95	20.42
	C9505	11/4/95	22.83
	C9505	11/4/95	22.75
	C9506	11/4/95	20.50
	C9506	11/4/95	20.58
	C9510	10/29/95	26.75
	C9510	10/29/95	26.33
	C9511	10/30/95	20.33
	C9511	10/30/95	21.25
	C9512	10/30/95	24.67
	C9512	10/30/95	24.75
	C9513	10/31/95	21.42
	C9513	10/31/95	20.83

Appendix Table 15. Minnow trap effort (in hours) at various habitats in the Colville Delta during 1995.

Minnow Trap Effort

Habitat	Station Number	Date	Sampling Duration (hours)
Drainage Lake	M9501	7/20/95	22.28
	M9501	7/20/95	22.35
	M9502	7/20/95	20.32
	M9502	7/20/95	20.32
	L9334	7/21/95	23.87
	L9334	7/21/95	23.85
	MC7903	7/30/95	21.43
	MC7903	7/30/95	21.02
	MC7903	7/30/95	21.02
	L9123	7/31/95	22.35
	L9123	7/31/95	22.35
	L9119	8/3/95	52.17
	L9119	8/3/95	52.17
Low Perched Lake	L9316	7/15/95	16.43
	L9314	7/16/95	21.67
	L9314	7/16/95	21.55
	M9524	7/18/95	21.17
	M9524	7/18/95	21.10
	B8534	7/19/95	20.25
	L9283	7/19/95	20.90
	L9283	7/19/95	20.70
High Perched Lake	L9279	7/10/95	18.88
	L9281	7/10/95	21.17
	L9281	7/10/95	21.25
	L9281	7/11/95	26.25
	L9280	7/12/95	20.27
	L9280	7/12/95	20.32
	L9342	7/12/95	20.30
	L9342	7/12/95	20.92
	L9310	7/13/95	18.75
	L9310	7/13/95	18.68
	L9311	7/13/95	22.28
	L9311	7/13/95	16.33
	L9312	7/14/95	24.32
	L9312	7/14/95	24.30
	L9318	7/14/95	24.23
	L9318	7/14/95	23.78
	L9313	7/15/95	21.60
	L9313	7/15/95	21.58
	L9319	7/15/95	17.23
	L9319	7/15/95	17.25
	L9317	7/16/95	23.18
	L9317	7/16/95	22.97
	L9320	7/16/95	22.42
	L9320	7/16/95	21.93
	B8533	7/17/95	24.23
	B8533	7/17/95	24.10
	M9321	7/17/95	22.32
	M9321	7/17/95	22.03
	L9321	7/18/95	22.42
	L9321	7/18/95	22.42
	L9332	7/19/95	22.62
	L9332	7/19/95	22.58
	L9333	7/20/95	23.22

Habitat	Station Number	Date	Sampling Duration (hours)
High Perched Lake	L9333	7/20/95	21.87
	L9335	7/21/95	23.15
	L9335	7/21/95	23.00
	L9322	7/23/95	44.80
	L9322	7/23/95	44.80
	M9505	7/25/95	119.40
	M9505	7/25/95	119.57
	M9509	7/25/95	95.83
	L9122	7/31/95	23.08
	L9120	8/1/95	21.33
	L9121	8/1/95	22.33
	M9512	8/3/95	51.92
	M9514	8/3/95	45.83
	M9514	8/3/95	46.15
	M9515	8/4/95	19.08
	M9515	8/4/95	19.08
	M9516	8/4/95	16.07
	M9528	8/4/95	18.25
	M9528	8/4/95	18.25
River Channel	C9501	7/12/95	21.83
	C9501	7/12/95	21.92
Tapped Lake	L9278	7/15/95	24.05
	M9525	7/18/95	23.00
	M9525	7/18/95	23.00
	M9521	7/12/95	20.75
	M9521	7/12/95	21.02

Appendix Table 16. Set line effort (in hours) and seine effort (in number of hauls) at various habitats in the Colville Delta during 1995.

Set Line Effort

Habitat	Station Number	Date	Sampling Duration (hours)
Drainage Lake	L9119	8/3/95	52.00
	L9123	7/31/95	22.08
	L9334	7/21/95	24.08
	M9501	7/20/95	22.45
	M9502	7/20/95	20.08
	MC7903	7/30/95	21.08
	MC7903	7/30/95	20.95
Low Perched Lake	B8534	7/19/95	20.08
	L9283	7/19/95	20.77
	L9314	7/16/95	21.32
	L9316	7/15/95	16.72
	M9524	7/18/95	21.32
High Perched Lake	B8533	7/17/95	23.77
	L9120	8/1/95	21.75
	L9121	8/1/95	22.13
	L9122	7/31/95	23.00
	L9279	7/12/95	21.40
	L9280	7/13/95	24.08
	L9310	7/13/95	18.13
	L9311	7/13/95	22.67
	L9312	7/14/95	23.53
	L9313	7/15/95	21.57
	L9313	7/16/95	24.32
	L9317	7/16/95	23.15
	L9318	7/14/95	24.02
	L9319	7/15/95	17.03
	L9320	7/16/95	22.12
	L9321	7/18/95	22.38
	L9322	7/23/95	44.50
	L9332	7/19/95	22.33
	L9333	7/20/95	22.83
	L9335	7/21/95	23.03
	L9342	7/12/95	19.90
	M9321	7/17/95	22.12
	M9505	7/25/95	120.37
	M9509	7/25/95	95.92
	M9512	8/3/95	52.05
	M9514	8/3/95	45.60
	M9515	8/4/95	19.08
	M9516	8/4/95	16.17
	M9528	8/4/95	18.08
River Channel	C9502	7/14/95	20.17
	C9503	7/24/95	18.58
	C9503	7/25/95	27.83
	C9504	7/24/95	19.17
	C9504	7/25/95	27.08
Tapped Lake	L9278	7/15/95	24.67
	M9521	7/12/95	21.15
	M9525	7/18/95	23.12
	M9526	7/26/95	20.33
	M9527	7/26/95	20.25

Seine Effort

Habitat	Station Number	Date	Sampling Effort (hauls)
Low Perched Lake	L9316	7/14/95	1
High Perched Lake	L9279	7/9/95	4
	L9280	7/12/95	3
	L9281	7/9/95	4
	L9342	34892	3
Tapped Lake	L9278	34894	3

Appendix Table 17. Water temperature and conductivity at continuously sampled stations in the Sakoonang Channel and tapped lakes in the Colville Delta, 1995-1996.

1995

	C9501		M9521		M9523	
Date	Water Temperature (°C)	Conductivity (µmho/cm)	Water Temperature (°C)	Conductivity (µmho/cm)	Water Temperature (°C)	Conductivity (µmho/cm)
7/8/95	19.0	180	15.0	252	--	--
7/9/95	16.4	420	16.0	265	--	--
7/10/95	--	--	12.5	463	--	--
7/11/95	--	--	13.5	463	--	--
7/12/95	--	--	--	--	--	--
7/13/95	--	--	--	--	--	--
7/14/95	14.0	--	--	--	13.5	--
7/15/95	--	--	--	--	--	--
7/16/95	--	--	--	--	--	--
7/17/95	15.0	--	15.0	--	15.0	--
7/18/95	15.0	--	13.0	--	14.0	--
7/19/95	--	--	14.0	--	14.0	--
7/20/95	12.0	--	12.0	--	13.0	--
7/21/95	12.0	--	11.0	--	12.0	--
7/22/95	10.0	--	8.0	--	9.0	--
7/23/95	10.0	--	8.0	--	9.0	--
7/24/95	9.0	--	8.0	--	9.0	--
7/25/95	8.0	--	5.0	--	7.0	--
7/26/95	8.0	--	7.0	--	8.0	--
7/27/95	8.0	--	6.0	--	7.0	--
7/28/95	8.0	--	6.0	--	7.0	--
7/29/95	8.0	--	6.0	--	7.0	--
7/30/95	7.0	--	6.0	--	7.0	--
7/31/95	7.5	--	7.0	--	7.0	--
8/1/95	8.0	--	8.0	--	8.5	--
8/2/95	9.0	--	8.5	--	8.5	--
8/3/95	7.0	--	6.5	--	6.0	--
8/4/95	0.4	--	6.0	--	6.0	--

1996

	C9601	
Date	Water Temperature (°C)	Conductivity (µmho/cm)
8/4/96	9.8	1120
8/5/96	--	--
8/6/96	9.7	1375
8/7/96	8.2	880
8/8/96	8.5	920
8/9/96	7	550
8/10/96	6	1500
8/11/96	6.8	1480
8/12/96	10.2	2050
8/13/96	11.1	1320
8/14/96	9.5	1250
8/15/96	6.1	1620
8/16/96	9	1660

Appendix Table 18. Water temperature and conductivity at Colville Delta lakes surveyed in summer, 1995-1996.

Summer Measurements

Lake Classification	Lake Number	Date	Water Temperature (°C)	Conductivity (µmho/cm)
Drainage	L9119	8/1/95	9.3	218
	L9123	7/30/95	7.9	92
	L9334	7/20/95	14.0	113
	L9334	7/24/96	13.9	
	M9501	7/19/95	16.9	88
	M9502	7/19/95	15.8	90
	M9603	7/17/96	13.2	128
	M9621	7/31/96	10.1	120
	MC7903	7/29/95	8.5	165
	MC7905	7/28/96	12.5	88
	MC7906	7/23/96	12.2	57
Low Perched	B8534	7/18/95	15.3	225
	L9283	7/18/95	16.8	197
	L9314	7/15/95	16.2	525
	L9316	7/14/95	15.0	98
	L9324	7/21/96	12.5	42
	M9522	7/8/95		2700
	M9522	8/3/96	9.5	3020
	M9524	7/17/95	15.9	95
	M9610	7/22/96	12.3	64
	M9611	7/22/96	12.5	49
	M9622	7/31/96	11.5	108
	M9623	8/13/96	9.8	2500
High Perched	B8533	7/16/95	16.1	138
	L9120	7/31/95	8.1	198
	L9121	7/31/95	8.3	206
	L9122	7/30/95	8.1	252
	L9279	7/9/95	14.8	155
	L9280	7/11/95	12.9	205
	L9281	7/9/95	12.8	265
	L9310	7/12/95	13.0	97
	L9311	7/12/95	13.1	98
	L9312	7/13/95	13.4	47
	L9313	7/13/95	13.1	83
	L9317	7/15/95	15.8	113
	L9318	7/23/95	12.1	75
	L9319	7/14/95	15.5	97
	L9320	7/15/95	14.0	119
	L9321	7/18/95	15.1	113
	L9322	7/21/95	13.0	62
	L9323	7/21/96	12.9	57
	L9327	7/20/96	12.0	60
	L9328	7/20/96	13.2	75
	L9332	7/18/95	15.2	73
	L9333	7/19/95	16.0	109
	L9335	7/20/95	14.1	58
	L9342	7/12/95	12.7	64
	L9502	8/14/96	9.0	150
	M9321	7/16/95	16.0	121
	M9505	7/20/95	14.1	66
	M9508	7/21/95	12.8	58
	M9509	7/21/95	13.5	101
	M9512	8/1/95	9.5	241
	M9514	8/1/95	10.5	234
	M9515	8/3/95	8.2	153
	M9516	8/3/95	8.1	172
	M9528	8/4/95	6.2	329
	M9606	7/19/96	13.5	77
	M9607	7/19/96	14.0	98
	M9609	7/22/96	12.2	59
	M9612	7/25/96	14.3	67
	M9613	7/26/96	14.9	116
	M9626	8/16/96	11.0	180
Tundra	L9128	7/18/96	12.1	125
	M9601	7/17/96	14.2	144
	M9605	7/18/96	13.4	137
	M9614	7/27/96	12.2	125
	M9616	7/29/96	7.0	275
	M9618	7/30/96	12.0	44
Tapped	L9278	7/14/95	16.9	3580
	M9525	7/18/95	14.8	280
	M9625	8/15/96	7.5	700

Appendix Table 19. Water temperature and conductivity at Colville Delta lakes surveyed in fall, 1995.

Fall Measurements

Habitat Classification	Lake Number	Date	Depth (m)	Water Temperature (°C)	Conductivity (µmho/cm)
Low Perched Lake	L9316	11/6/95	0.0	0.0	98
			0.5	0.2	100
			1.0	0.8	99
			1.5	0.9	98
			2.0	1.0	98
			2.5	1.0	98
			3.0	1.2	98
High Perched Lake	L9279	11/4/95	0.0	0.0	151
			0.5	0.1	151
			1.0	0.2	151
			1.5	0.4	151
			2.0	0.8	151
			2.5	1.0	151
			3.0	1.0	146
High Perched Lake	L9281	11/4/95	0.0	0.1	220
			0.5	0.3	220
			1.0	0.5	220
			1.5	0.5	220
			2.0	0.7	220
			2.5	0.7	220
			3.0	0.9	220
			3.5	1.0	220
High Perched Lake	L9310	11/2/95	0.0	0.0	92
			0.5	0.1	92
			1.0	0.2	92
			1.5	0.5	93
			2.0	0.5	95
			2.5	0.8	95
			3.0	1.2	95
			3.5	1.9	105
High Perched Lake	L9311	11/2/95	0.0	0.1	103
			0.5	0.2	103
			1.0	0.4	103
			1.5	0.5	105
			2.0	0.6	105
			2.5	1.0	105
			3.0	1.2	104
High Perched Lake	L9312	11/2/95	0.0	0.0	71
			0.5	0.0	72
			1.0	0.5	70
			1.5	0.5	70
			2.0	0.8	71
			2.5	1.1	71
			3.0	1.7	73
			3.5	1.8	75

Appendix Table 18. Water temperature and conductivity at Colville Delta lakes surveyed in fall, 1995.

Fall Measurements

Habitat Classification	Lake Number	Date	Depth (m)	Water Temperature (°C)	Conductivity (µmho/cm)
High Perched Lake	L9313	10/31/95	0.0	0.0	99
			0.5	0.1	99
			1.0	0.2	99
			1.5	0.4	99
			2.0	0.9	98
			2.5	1.0	92
High Perched Lake	L9342	11/2/95	0.0	0.2	98
			0.5	0.3	98
			1.0	0.5	98
			1.5	0.7	98
			2.0	1.0	99
			2.5	1.1	100
High Perched Lake	M9321	11/6/95	0.0	0.0	120
			0.5	0.0	120
			1.0	0.1	119
			1.5	0.2	118
			2.0	0.9	115
			2.5	1.0	112
			3.0	1.2	112

Appendix Table 20. Water temperature, conductivity and salinity at Colville Delta river channel stations surveyed in fall, 1995.

Fall Measurements

Habitat Classification	Station Number	Date	Depth (m)	Water Temperature (°C)	Conductivity (µmho/cm)	Salinity (‰)
River Channel	C9504	10/31/95	0.0	0.0		0.9
			0.5	0.0		1.2
			1.0	0.0		1.5
			1.5	0.0		1.7
			2.0	0.0		1.8
			2.5	0.0		1.8
			3.0	0.1		1.9
			3.5	0.1		1.9
			4.0	0.1		2.0
			4.5	0.4		2.0
			5.0	2.7		3.8
			5.5	3.0		4.1
River Channel	C9505	11/4/95	0.0	0.0		2.0
			0.5	0.0		2.0
			1.0	0.0		5.5
			1.5	0.0		6.2
			2.0	0.0		6.9
			2.5	0.0		7.2
			3.0	0.0		7.8
			3.5	0.0		7.8
			4.0	0.0		7.8
River Channel	C9506	11/4/95	0.0	0.0		3.8
			0.5	0.0		3.8
			1.0	0.0		4.3
			1.5	0.0		6.2
			2.0	0.0		7.4
			2.5	0.0		8.3
			3.0	0.0		9.0
			3.5	0.0		9.2
River Channel	C9510	10/29/95	0.0	0.0	32	
			0.5	0.0	31	
			1.0	0.0	30	
			1.5	0.0	29	
			2.0	0.0	28	
			2.5	0.0	25	
			3.0	0.0	23	
			3.5	0.0	22	
			4.0	0.0	22	
River Channel	C9511	10/29/95	0.0	0.0	57	
			0.5	0.0	57	
			1.0	0.0	54	
			1.5	0.0	50	
			2.0	0.0	49	
			2.5	0.0	42	
			3.0	0.0	42	
			3.4	0.0	42	

Appendix Table 20. Water temperature, conductivity and salinity at Colville Delta river channel stations surveyed in fall, 1995.

Fall Measurements

Habitat Classification	Station Number	Date	Depth (m)	Water Temperature (°C)	Conductivity (µmho/cm)
River Channel	C9511	10/31/95	0.0	0.0	132
			0.5	0.0	132
			1.0	0.0	132
			1.5	0.1	132
			2.0	0.1	132
			2.5	0.2	132
			3.0	0.3	133
			3.5	0.5	135
River Channel	C9512	10/29/95	0.0	0.0	132
			0.5	0.0	132
			1.0	0.0	133
			1.5	0.0	134
			2.0	0.0	135
			2.5	0.0	135
			3.0	0.0	139
			3.5	0.0	141
River Channel	C9513	10/31/95	0.0	0.0	129
			0.5	0.1	129
			1.0	0.2	129
			1.5	0.5	130
			2.0	0.7	138
			2.5	0.9	151

Appendix Table 21. Mean length at age for least cisco caught by fyke net from river channels and tapped lakes during summer 1995-1996.

Age	Mean Fork Length (mm)	Standard Deviation	Sample Size	Minimum Length (mm)	Maximum Length (mm)
0			0		
1	82.4	11.7	18	65	116
2	141.5	5.5	15	132	149
3	180.4	12.8	12	166	208
4	210.3	14.1	12	188	231
5	241.0	8.1	4	235	253
6	262.7	12.7	6	249	285
7	292.0	20.0	3	279	315
8	314.5	36.1	2	289	340
9	309.0		1	309	309
10	318.0		1	318	318
11	311.0		1	311	311
12	335.5	38.9	2	308	363
13	323.0		1	323	323
14	412.0		1	412	412
15	324.0		1	324	324

Appendix Table 22. Mean length at age for broad whitefish caught by fyke net from river channels and tapped lakes during summer 1995-1996.

Age	Mean Fork Length (mm)	Standard Deviation	Sample Size	Minimum Length (mm)	Maximum Length (mm)
0			0		
1	118.8	10.7	19	100	141
2	160.5	12.8	8	144	175
3	199.1	13.2	34	169	227
4	224.5	19.1	2	211	238
5	258.0	13.8	10	238	281
6	284.4	17.4	17	254	323
7	323.5	51.6	2	287	360
8	347.0	35.4	2	322	372
9	364.3	21.6	3	349	389
10	370.0		1	370	370
11			0		
12	406.0		1	406	406

Appendix Table 23. Mean length at age for humpback whitefish caught by fyke net from river channels and tapped lakes during summer 1995-1996.

Age	Mean Fork Length (mm)	Standard Deviation	Sample Size	Minimum Length (mm)	Maximum Length (mm)
0			0		
1	92.3	8.0	12	80	103
2	148.2	10.5	5	139	164
3	190.8	22.8	5	152	208
4	228.0		1	228	228
5	234.0		1	234	234
6	262.3	13.0	12	244	285
7	298.3	14.8	7	280	321
8	321.0	37.0	4	293	375
9	324.8	24.3	6	280	345
10	336.0	17.5	4	314	354
11	337.5	4.9	2	334	341
12	354.0	7.1	2	349	359
13					
14	366.0		1	366	366
15					
16	359.0		1	359	359
17					
18	386.0		1	386	386
19					
20					
21					
22					
23	407.0		1	407	407

Appendix Table 24. Mean length at age for round whitefish caught by fyke net from river channels and tapped lakes during summer 1995-1996.

Age	Mean Fork Length (mm)	Standard Deviation	Sample Size	Minimum Length (mm)	Maximum Length (mm)
0			0		
1	92.5	4.0	4	87	96
2	132.0	17.9	11	101	160
3	169.2	8.1	18	155	187
4	199.3	13.0	6	178	213
5	219.4	22.8	5	182	238
6	252.3	27.3	4	216	280
7			0		
8	277.0		1	277	277