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DISTRIBUTION OF FISH AND FISH HARVESTS IN THE NEARSHORE BEAUFORT SEA AND MACKENZIE DELTA DURING ICE-COVERED PERIODS, OCTOBER-JUNE

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Peter Wainwright (LGL Limited) performed much of the work in regard to development of the data base and production of computerised products of the study. His lively participation in the project is appreciated.

EXECUTIVE SUMMARY

This study defines various types of fish overwintering habitats and associated fish assemblages in the Mackenzie Delta-nearshore Beaufort Sea region on the basis of existing scientific data and information on fish harvests and harvesting areas in the region. Harvesting information was analysed for the communities of Fort McPherson, Arctic Red River, Aklavik, Inuvik and Tuktoyaktuk.

Eight general types of fish overwintering habitat were identified. Characteristics used to define habitat types included amount of free water, connections with adjacent waterbodies, temperature, salinity, dissolved oxygen and in a few cases conductivity and pH.

Perennial springs are a well-defined overwintering habitat, most often found in the mountainous regions of the northwestern portion of the study area. They are characterised by small but continuous flows of relatively warm, alkaline water. Arctic grayling and especially Arctic char are associated with this overwintering habitat.

Upland lake overwintering habitat is characterised by large volumes of free water, low conductivity and poor access to other waterbodies, especially those leading to the sea. Northern pike, lake trout and Arctic grayling are most often found in this habitat. Upland lakes are scattered throughout most regions of the study area except the inner Mackenzie Delta region.

Moderate rivers are defined as those which contain isolated pools of free water during winter, but no continuous flow. Arctic grayling is the only species of fish regularly found in this apparently undependable overwintering habitat type.

Major rivers have large continuous flows, high conductivity and good access to other waterbodies. This habitat included major channels of the Mackenzie River, Peel River and Arctic Red River. A large variety of fish are commonly found during

winter in major rivers, including broad whitefish, burbot, inconnu, Arctic cisco, lake whitefish, northern pike and rainbow smelt.

Inner delta lakes and channels are found only on the inner delta of the Mackenzie River. Access to other waterbodies is variable, but annual flooding temporarily improves connections to major rivers. Fish associated with this habitat are similar to those overwintering in major rivers, escept that rainbow smelt and Arctic cisco are usually absent.

Outer delta lake habitat is found in the Tuktoyaktuk Peninsula-Husky Lakes region. Flooding is uncommon in this region and access to other waterbodies is variable. Least cisco and lake trout are most often associated with this habitat in winter.

Estuarine coastal overwintering habitat is typified by low variable salinities, temperatures of near 0°C and no physical barriers to fish movement. Extent of this habitat varies with freshwater inflow and ice cover. Arctic cisco, least cisco, rainbow smelt, Pacific herring and saffron cod are normally found overwintering in estuarine coastal waters.

Nearshore marine overwintering habitat has high salinity and temperatures often below 0° C. Saffron cod was the most frequently reported fish in this overwintering habitat.

Perennial springs overwintering habitat is the best documented, because of ease of location of such areas in winter and scientific interest in Arctic char. Upland lake and moderate river overwintering habitats are relatively well-documented; however, exact locations of the latter habitat type are extremely difficult to predict. Estuarine coastal overwintering habitat is well-defined by its physical and chemical characteristics and its overwintering fish community is relatively well known. The nearshore marine habitat is similarly well defined, but its overwintering fish community is virtually unknown due to lack of sampling. Outer delta lake, inner

delta lake and major river habitats are most difficult to distinguish from one another, because they form a continuum where physical and chemical characteristics are shared. Such overwintering habitats are also shared by a variety of opportunistic, hardy Arctic fishes.

Fish assemblages of particular habitats determined in this study were derived solely from quantitative analysis of the frequency of reports of a particular species in a particular habitat. Because abundance of fish was not considered in our analyses, results are biased, especially towards species which are targeted for frequent harvesting in winter. Thus, some fish species may be especially abundant in particular areas, but were not identified as dominant fish species in our analysis. This bias is most apparent for broad whitefish, a species that is known to occur in very large numbers in a variety of overwintering habitats, including major rivers, upland lakes, inner delta lakes and outer delta lakes, but was not often identified as a major species inhabiting a particular type of overwintering habitat.

SOMMAIRE À L'INTENTION DE LA DIRECTION

Cette étude définit divers types d'habitats d'hivernage des poissons, ainsi que les assemblages spécifiques correspondants, dans la région du delta du Mackenzie et du littoral de la mer de Beaufort, à partir des données scientifiques recueillies et de l'information sur les captures et les zones de pêche de la région. L'information sur les captures a été analysée pour les communautés de Fort McPherson, Arctic Red River, Aklavik, Inuvik et Tuktoyaktuk.

On a défini huit grands types d'habitat. Les caractéristiques utilisées pour définir ces types sont la quantité d'eau libre, les liens avec d'autres masses d'eau adjacentes, la température, la salinité, l'oxygène dissous et, dans certains cas, la conductivité et le pH.

Les sources pérennes constituent un habitat d'hivernage bien défini, qu'on trouve le plus souvent dans les régions montagneuses de la partie nord-ouest de la zone étudiée. Cet habitat se caractérise par des écoulements faibles mais continus d'eau alcaline relativement chaude. L'ombre arctique et surtout l'omble chevalier sont associés à cet habitat.

L'habitat des lacs de hauteur se caractérise par des volumes importants d'eau libre, une faible conductivité et un accès médiocre à d'autres masses d'eau, particulièrement celles qui mènent à la mer. Le grand brochet, le touladi et l'ombre arctique sont les espèces les plus fréquemment trouvées dans cet habitat. Ces lacs sont dispersés dans la plupart des régions de la zone étudiée, sauf dans la région intérieure du delta du Mackenzie.

Les rivières moyennes sont celles qui contiennent des bassins isolés d'eau libre pendant l'hiver, mais sans écoulement continu. L'ombre arctique est la seule espèce que l'on trouve régulièrement dans ce type d'habitat apparemment peu fiable pour l'hivernage.

Les grands cours d'eau présentent des débits continus et importants, une forte conductivité et un bon accès à d'autres masses d'eau. Cet habitat couvre les principaux chenaux du Mackenzie, de la Peel et de la rivière Arctic Red. On y trouve généralement une grande variété de poissons pendant l'hiver, notamment le corégone tschir, la lotte, l'inconnu, le cisco arctique, le grand corégone, le grand brochet et l'éperlan arc-en-ciel.

Les lacs et les chenaux de la partie intérieure du delta se retrouvent seulement dans le fond du delta du Mackenzie. L'accès aux autres masses d'eau est variable, mais les inondations annuelles améliorent temporairement les liens avec les grands cours d'eau. Les poissons associés à cet habitat sont similaires à ceux qui hivernent dans les grands cours d'eau, à l'exception de l'éperlan arc-en-ciel et du cisco arctique, qui en sont généralement absents.

L'habitat des lacs de la partie océanique du delta se retrouve dans la région de la péninsule Tuktoyaktuk et des lacs Husky. Les inondations sont peu fréquentes dans la région, et l'accès aux autres masses d'eau est variable. Le cisco sardinelle et le touladi sont le plus souvent associés à cet habitat en hiver.

L'habitat estuarien se caractérise par des salinités faibles et variables, des températures proches de 0 °C et l'absence de barrières physiques au déplacement des poissons. L'étendue de cet habitat varie avec l'apport d'eau douce et la couverture de glace. Le cisco arctique, le cisco sardinelle, l'éperlan arc-en-ciel, le hareng du Pacifique et le navaga jaune hivernent normalement dans les eaux côtières estuariennes.

L'habitat marin littoral présente une salinité élevée et des températures qui sont souvent inférieures à 0 °C. Le navaga jaune est l'espèce la plus fréquemment signalée dans cet habitat d'hivernage.

L'habitat des sources pérennes est le mieux connu, du fait que ces zones sont faciles à localiser en hiver, et à cause de l'intérêt scientifique que présente l'omble chevalier. Les habitats des lacs de hauteur et des cours d'eau moyens sont relativement bien étudiés; toutefois, la localisation exacte de ce dernier type d'habitat est extrêmement difficile à prédire. L'habitat estuarien est bien défini par ses caractéristiques physiques et chimiques, et on connaît relativement bien la communauté de poissons qui y hiverne. L'habitat marin littoral est également bien défini, mais la communauté de poissons qui hiverne dans cet habitat est pratiquement inconnue à cause de l'absence d'échantillonnage. Les habitats de la partie océanique du delta, des lacs de la partie intérieure du delta et des grands cours d'eau sont extrêmement difficiles à distinguer les uns des autres, parce qu'ils forment un continuum

dont les caractéristiques physiques et chimiques sont proches. Ces habitats d'hivernage sont aussi communs à une grande variété de poissons de l'Arctique, espèces robustes et opportunistes.

Les assemblages de poissons caractéristiques des habitats définis par cette étude ont été établis uniquement à partir de l'analyse quantitative de la fréquence des rapports sur une espèce particulière dans un habitat donné. Étant donné que nous n'avons pas tenu compte de l'abondance des poissons, les résultats sont biaisés, particulièrement en faveur des espèces qui sont la cible de prélèvements fréquents en hiver. Ainsi, certaines espèces de poissons peuvent être particulièrement abondantes dans certaines zones, mais n'ont pas été identifiées comme dominantes dans notre analyse. Ce biais apparaît surtout pour le corégone tschir, espèce dont on sait qu'elle est présente en très grand nombre dans des habitats d'hivernage très divers, notamment les grands cours d'eau, les lacs de hauteur, les lacs de la partie intérieure du delta et ceux de la partie océanique, mais qui n'a pas été souvent identifiée comme espèce principale occupant un type particulier d'habitat d'hivernage.

INTRODUCTION

BACKGROUND

Our understanding of the winter distribution of Arctic fish, their ecology and the characteristics of their overwintering habitat has lagged seriously behind our knowledge of these fish during periods of open water. Despite a general agreement that overwintering habitat is critical and, in many cases, a limiting factor to populations of many Arctic fish, most fisheries studies terminate when freezing weather approaches and only recommence after the long winter period, usually after waters subside from the spring freshets. When winter fisheries studies are performed, they are usually a minor portion of investigations, which expend most of their effort during the open-water period. Such has been the case with aquatic studies that were performed in relation to hydrocarbon developments in the Canadian Beaufort Sea/Mackenzie Valley in the 1970s (e.g., Craig and Mann 1974; Hatfield et al. 1972; Griffiths et al. 1975; Mann 1975) and the 1980s (Lawrence et al. 1984; Bond and Erickson 1985; various unpublished NOGAP studies performed by Department of Fisheries and Oceans). Only a few exceptional studies, such as winter fish studies in Hans Bay (Poulin 1977), year-round studies of Tuktoyaktuk Harbour by Bond (1982) and surveys of fish overwintering areas along proposed pipeline routes across the Yukon North Slope and Mackenzie Delta by Craig and McCart (1974a) and Mann (1975) have concentrated on obtaining information specifically during the winter period.

Although winter studies have also lagged behind open-water efforts in Alaska, Alaskan studies during winter have been considerably more intense, consistent and prolonged than any that have taken place in Canada. For example, the most detailed winter fisheries study ever conducted in Arctic North America was performed in the Sagavanirktok Delta (5 stations) and the Colville Delta (one station) in 1985 and 1986. Details of this North Slope Alaskan study are reported by Schmidt et al. (1989). The study involved SCUBA divers who deployed various types of under-ice nets, conducted visual transects to census fish, measured dimensions of overwintering

areas and operated underwater video equipment. In addition, samples of epibenthos and infauna were taken along with measurements of various physical and chemical parameters. This study concluded that the amount of overwintering habitat available in these areas was only about 3% of the volume available during the summer and overwintering habitat was one of the most important limiting factors to anadromous fish populations in the region.

The Simpson Lagoon study (Craig and Griffiths 1981; Craig et al. 1984; 1985) also had significant winter sampling in coastal and marine environments to the west of Prudhoe Bay. Sustained efforts by Bendock (1976, 1979, 1981, 1982, 1983) and Bendock and Burr (1984, 1985) have also provided a relatively good understanding of the distribution of freshwater overwintering areas on the Alaskan North Slope.

As a result of knowledge obtained from the above studies, Craig (1989) recently described the following five types of anadromous and freshwater fish overwintering habitats in Alaska:

	Habitat	Associated Fish Species
1.	Spring-fed streams and other groundwater sources	Arctic char, Arctic grayling, lake trout, burbot, round whitefish
2.	Deep pools (isolated from one another by frozen sections of stream	Broad whitefish, lake whitefish, Arctic char, Arctic cisco, least cisco, Arctic grayling, round whitefish, burbot
3.	Brackish water coastal deltas	Arctic cisco, Bering cisco, least cisco, lake whitefish, broad whitefish, rainbow smelt, saffron cod
4.	Lakes	Lake trout, Arctic grayling, Arctic char, least cisco, Arctic cisco, lake whitefish, broad whitefish
5.	Coastal marine waters	Rainbow smelt, pink salmon, chum salmon

OBJECTIVES

The overall intent of the present study was to define important fish overwintering areas and types of overwintering habitat that are present in the Mackenzie Delta/Beaufort Sea region. Specific objectives of the present study were to:

1. obtain and synthesize available published and unpublished information on fish overwintering areas and overwintering habitat in the study area;
2. develop a fish overwintering habitat classification system;
3. develop a data base and map fish overwintering areas of known importance;
4. identify data gaps; and
5. recommend a strategy for future research to further our knowledge of fish overwintering ecology and habitat.

The above information is necessary so that hydrocarbon exploration and development in the region can proceed without undue adverse effects on fish or their critical habitats. Such information is, for example necessary in:

1. planning seismic and other exploration activities;
2. assessing alternative production facility sites;
3. assessing potential development impacts;
4. selecting alternative pipeline routes; and
5. developing environmental protection plans for construction and operational phases of development.

FISH HARVEST INFORMATION

In the latter phases of this study, an unexpectedly large amount of Inuvialuit Harvest data (IHD) on winter fish catches became available. These data, together with the land use map data (LUMD) produced by the Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, was analysed for information on important overwintering fish habitat. These results are presented in a separate section of the report entitled "RESULTS PART II: HARVEST INFORMATION." Results of analysis of harvest data are then compared with results from the main body of the report.

APPENDICES AND DATA BASE

Appendix I contains data sheets of all information used in RESULTS: PART I. Appendix II contains details of the harvest information (IHD and LUMD) that was included in RESULTS: PART II. Tables of information (date, location, longitude, latitude, overwintering habitat type) are presented for each fish species or group. Four maps showing documented overwintering locations by habitat type are also included for each species or group; maps correspond to four time periods — October-November; December-April; May-June and October-June. The appendices are bound separately from the present report.

MATERIALS AND METHODS

SCOPE

The study area was the nearshore Beaufort Sea (shoreline to the 10 m isobath) from the Alaska border east to the Anderson River, including the Tuktoyaktuk Peninsula, Eskimo Lakes and Liverpool Bay; and the Mackenzie River and tributaries downstream of Arctic Red River, as well as the Yukon North Slope (Figure 1).

Major fish species included in the terms of reference for this study were: broad whitefish, lake whitefish, Arctic cisco, least cisco, inconnu, Arctic char, burbot, lake trout, northern pike, Arctic grayling, rainbow smelt, saffron cod and Pacific herring and Arctic cod.

For RESULTS: PART I, the winter period was defined as from freeze-up in October to break-up in about June. It was noted that a considerable number of reports of fish in October and November were recovered. This is a period of active fish migration for some species of fish from fall spawning areas to overwintering areas. Such migrations can occur before, during or after freeze-up. For completeness, such reports were included unless there was good evidence of active migration.

To more closely define the true overwintering period three time periods were recognised for analysis of harvest information as follows:

1. October to November — a period of migratory movement for some species;

2. December to April — the overwintering period when little movement is thought to occur; and

3. May to June — a period of spring migratory movement for some species.

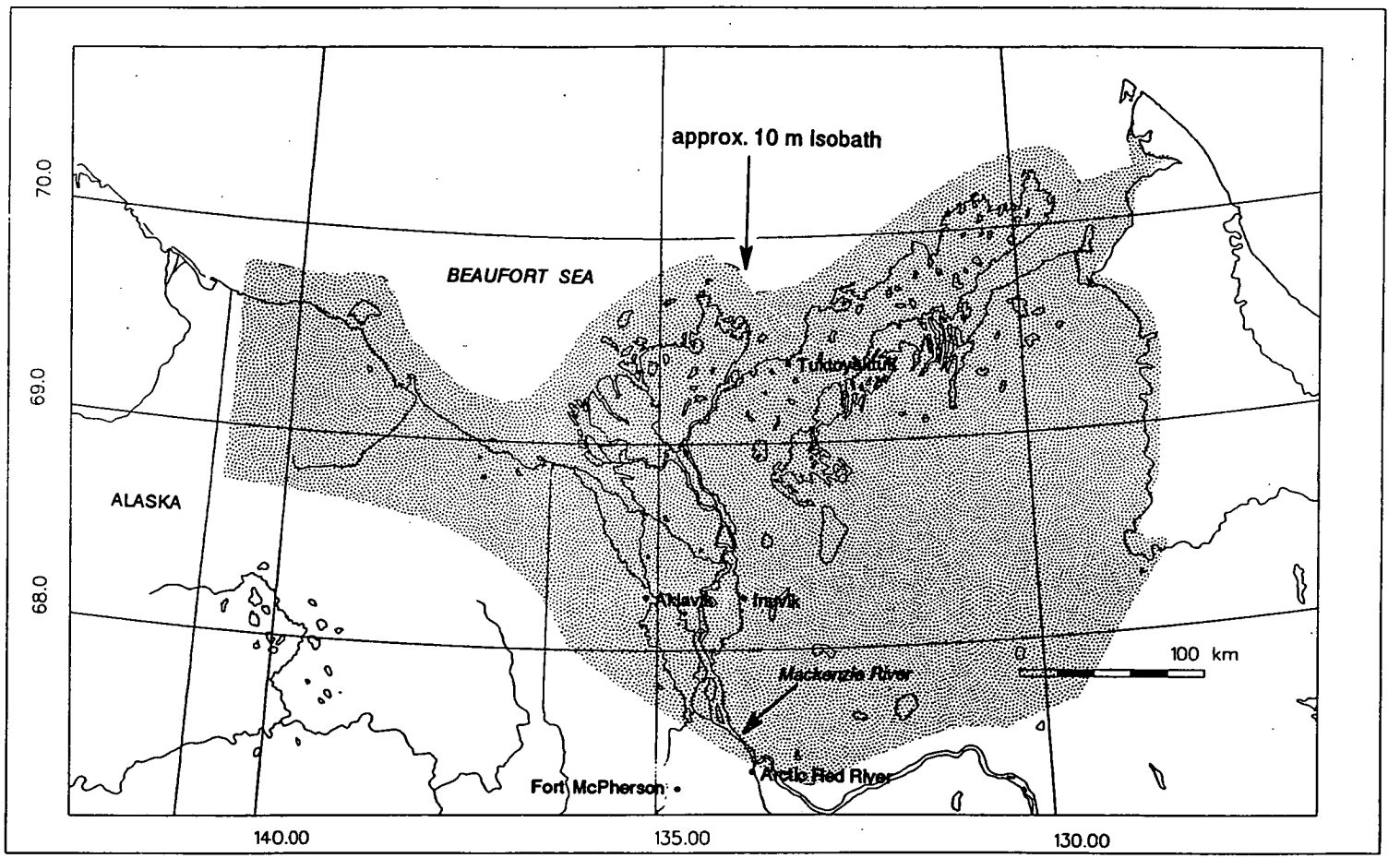

Figure 1. The study area.

Records from the December to April period are believed to represent fish in their overwintering areas, whereas records of early or late winter catches could represent migrating fish. Most emphasis was, therefore, placed in analysis of catches from the mid-winter period.

INFORMATION REVIEW AND SYNTHESIS

Standard information review techniques were used during the present study, including computer searches of databases (BOREAL, BIOSES and ASTIS), searches of personal libraries of the study team, and telephone interviews with various industry and government representatives. Key sources were as follows:

1. The Arctic Data Compilation and Appraisal series of reports at Department of Fisheries and Oceans, Institute of Oceans Sciences, Pat Bay, B.C. (contact person: Brian Smiley);

2. Beaufort Sea fisheries studies of Department of Fisheries and Oceans, Winnipeg, Man. (contact persons: Doug Chiperzak, Bill Bond, Ken Chang-Kue, Bruce Fallis);

3. Regional fisheries studies of Department of Fisheries and Oceans in Inuvik , NWT (former contact person Vic Gillman);

4. Inuvialuit harvest data (IHD) from the Inuvialuit Joint Secretariat in Inuvik, NWT (contact person: Michael Fabijan);

5. Regional fisheries studies sponsored by the Inuvialuit Fisheries Joint Management Committee in Inuvik, NWT (former contact person Lois Harwood);

6. Land use map data (LUMD) prepared by the Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission in Inuvik, NWT (former contact person: Eleanor Younge).

Extensive efforts were made to access and fully utilize information from 6.) above, because the land use maps identify specific waterbodies or areas used for fishing by residents of communities in the study area over very long periods of time.

Such information has not been previously complied and this source represented a substantial amount of largely unconsolidated, unsynthesised information. It should be noted that co-ordinates on some of the land use maps (LUMD) do not appear to correspond to the appropriate NTS topography maps of the area. Where discrepancies occurred corrected co-ordinates were used in all material for the present report.

Similarly, IHD information (4. above) represents a very large body of information (over 1500 separate records) on current winter fishing which has not been analysed for useful information on overwintering fish habitat. Collection of IHD information involved monthly interviews with hunters in all Inuvialuit communities—Aklavik, Inuvik, Tuktoyaktuk, Paulatuk, Holman, Sachs Harbour—by six community workers. Information was recorded on data sheets and forwarded to a harvest coordinator in Inuvik. Field workers attempted to include 100% of the hunters in each survey. Each record consisted of month and year of harvest, location fished, and species and estimates of number caught. Data from Aklavik, Inuvik and Tuktoyaktuk for the years 1987 through 1990 were considered in this study. Fabijan (1991 a,b,c,) should be reviewed for further information on design of harvest studies.

The general search for information was limited to records of fish caught or observed from October to June. When such records were found, appropriate details on fish species, numbers, sampling methods and physical/chemical characteristics, if available, were recorded on a data sheet (Figure 2). Separate studies of the same study area were recorded on separate data sheets. A total of 316 data sheets representing approximately 220 overwintering sites were prepared, and are contained in Appendix I. Individual records from this information set were not recorded on data sheets and are not part of Appendix I.

FISH OVERWINTERING STUDY
DATA SHEET ___

Reference Information

Citation

Type of publication

Location of study, document or map

Format of information

Classification/Mapping Information

Species

# of samples/population estimate

Sampling gear

CPUE

Location of study

Date of Sampling

Effort

Water quality/quantity information

Habitat classification

Specificity of Information (Potential for use in GIS)

Comments

Figure 2. Example of data sheet.

COLLOQUIAL FISH NAMES

The use of common and colloquial names, particularly in the fish harvest studies, was a problem in determining what fish species were actually being discussed. Common fish names recommended by the American Fisheries Society (1990) were used in this report, with one exception. Lake and humpback whitefish were combined into a single group called lake (humpback) whitefish (*Coregonus clupeaformis* complex) as described by McPhail and Lindsey (1970). The common, scientific, and colloquial names for the species described for this report are provided in Table 1.

COMPUTERISED DATABASE

Appropriate data from the data sheets were entered into a database (Macintosh Microsoft Works DB), which contained reference information (authors, date, publisher, type, format and location of publication) and overwintering area information (site location name and co-ordinates, fish species, numbers (if available), quantitative or qualitative population estimates, effort, catch per unit effort, water quality and quantity, habitat type, quality of data and comments). The data base was then transferred into dBase III+ format.

MAPS

Overwintering areas were plotted on maps (1:2,000,000) of the study area for each species using the database and a modified version of QUICKMAP (1992). Pertinent maps appear in the text of this report, and a complete set of maps in relation to harvest information is contained in Appendix II.

Table 1. Common, scientific and colloquial names for fish species in the study area.

Common Name	Scientific Name	Colloquial Name
Arctic char	*Salvelinus alpinus*	Char, Iqalukpik, Iqalukpak
Broad whitefish	*Coregonus nasus*	Whitefish, Anaakliq
Lake whitefish	*Coregonus clupeaformis* complex	Humpback, Crooked back, Pikuktuuk
Arctic cisco	*Coregonus autumnalis*	Herring, Qaaktak
Least cisco	*Coregonus sardinella*	Herring, Qaaktak
Inconnu	*Stenodus leucichthys nelma*	Conny, Conni, Siiraq
Arctic grayling	*Thymallus arcticus*	Grayling, Sulukqauqaq
Northern pike	*Esox lucius*	Jackfish, Siulik
Burbot	*Lota lota*	Loche, Taktaalik
Lake trout	*Salvelinus namaycush*	Iqaluakpak
Rainbow smelt	*Osmerus mordax*	Boreal smelt
Pacific herring	*Clupea harengus pallasi*	Blue herring, Blue back, Piqquaqtitaq
Saffron cod	*Eleginus navaga*	Tom cod, Uuqaq
Arctic cod	*Boreogadus saida*	Rock cod, Uugavik

POINT SOURCE DATA VS GENERAL INFORMATION

All of the harvest information contained in this report is non-point source information. Although specific coordinates are given for each harvest record, each represents a centre-point for a harvesting area and not a point source measurement. In contrast, most information from scientific reports is specific and coordinates closely identify areas sampled. Point source data are identified on each data sheet under the heading "Specificity of Information." In addition, point source data are identified in all text tables with a "✓"; all entries not so marked are not point source data.

RESULTS: PART I

The following material describes the available information on overwintering habitats and the occurrence of each of the major fish species in the different habitat types in the study area as reflected by scientific reports and LUMD harvest information. The characteristics of each proposed overwintering habitat type are described first. Later material describes fish occurrence in each overwintering habitat. However, before presenting more detailed material, the following points are emphasised.

The importance of overwintering habitat to Arctic fish species has long been recognized, particularly for those species that use either nearshore coastal areas or freshwater habitats. This is because the extent of these types of habitat are, in many cases, limited. In addition, fish spend long periods of time—from 6 to 9 months—in overwintering area in Arctic regions. As will be shown, only limited amounts of physical and chemical data (e.g., volume or depth of free water, temperature, conductivity, dissolved oxygen, etc.) are available from the study area, to typify the possible different types of overwintering habitat. This makes it difficult to describe the characteristics of overwintering habitats in anything but a preliminary fashion. However, a strength of the following physical-chemical data is that all measurements were obtained in known fish overwintering areas, as documented by fish catches during the same time period.

It is usually not possible to determine extent of fish overwintering habitat from winter fish sampling programs because of limited sampling. It is also rarely known if fish samples from two or more adjacent sites represent separate overwintering areas or samples from one larger overwintering site. In addition, as described earlier, some sites that were sampled either in early winter (October-November) or spring (May-June) may represent migration corridors rather than overwintering areas. This may be particularly true for sampling sites in major and moderate rivers.

OVERWINTERING HABITATS

For preliminary analysis, fish overwintering habitat was divided into eight categories. The characteristics and limitations of each habitat type are described more fully below:

Habitat Type		Characteristics	Geographic Area
1.	Perennial springs	- Warm, 2-4° C, occasionally to 15° C - Constant flow throughout winter - Relatively low discharge - Water quality good, occasionally mineralised	Mountainous and foothill regions of the British and Richardson Mountains, occasionally on North Slope Yukon coastal plains
2.	Inner Delta Lakes and Minor Channels	- Water quality poor to moderate - Small to moderate volumes available - Many subject to annual flooding - Turbid in summer	Active Mackenzie Delta from approximately Arctic Red River to but not including outer delta islands
3.	Outer Delta Lakes and Minor Channels	- Water quality poor to moderate - Usually small to moderate volumes available - Not subject to annual flooding - Good connection to adjacent waterbodies	Outer Mackenzie Delta - Tuk Peninsula, Richards, Langley, Ellice Islands, Eskimo Lakes region
4.	Major Rivers	- Water quality good to excellent - Substantial flow throughout winter - Good connection to adjacent waterbodies	Mainstem Mackenzie and major channels; Peel River, lower Arctic Red River
5.	Moderate Rivers	- Water quality poor to moderate - Small volumes available - Flow intermittent or free water in isolated pools in winter - Variable connection to adjacent waterbodies	Throughout southeastern portion of study area; Anderson, Thunder, Travaillant, Rat, Vittrekwa River, etc.
6.	Upland Lakes	- Water quality variable but normally good to excellent - Large volumes available - Poor connection to other waterbodies	Southeastern portion of the study area; rarely in southwestern or northwestern portion of study area
7.	Estuarine Coastal	- Water quality good to excellent - Salinity variable from freshwater to 10-20 ppt - Good connection to other waterbodies	Coastal waters adjacent to the Mackenzie Delta including portions of Liverpool Bay affected by freshwater run-off
8.	Nearshore Marine	- Water quality good to excellent - Salinity variable but greater than about 20 ppt - Good connection to other waterbodies	Coastal waters to the 10 m isobath; bottom waters of isolated bays and inlets such as Tuktoyaktuk Harbour

Selection of these categories was based, in part, on information provided by 1). Craig and McCart (1974b) on classification of North Slope streams; 2). Taylor et al. (1982) on lake types in the inner Mackenzie Delta; 3). Lawrence et al. (1984) on fish use of coastal waters of the southeastern Beaufort Sea and lakes of the Tuktoyaktuk Peninsula; 4). Bond and Erickson (1985) on fish use of freshwater systems on the Tuktoyaktuk Peninsula; 5). Bond (1982) on fish use of Tuktoyaktuk Harbour, 6). Chang-Kue (1987) on fish overwintering areas in the lower Mackenzie River and coastal waters, and 7). Craig (1989) on types of fish overwintering habitat on the Alaskan North Slope.

General distribution of the eight preliminary overwintering habitat types is shown in Figure 3. It is important to note that in some cases habitat types may change with time, as when fresh water accumulates beneath the ice and spreads into nearshore marine areas. In addition, it is possible to have more than one habitat type at a particular site. Thus, in winter, bottom waters of Tuktoyaktuk Harbour are classified as nearshore marine habitat because of their high salinity, but surface waters are considered estuarine coastal habitat, because of their freshwater characteristics. The following material provides more details on the eight overwintering habitat types.

Perennial Springs

Perennial springs are typically warm water outflows that persist throughout the year. The heat to warm spring waters comes from the interior of the earth, and water temperatures are determined by the closeness of the water to the heat source. As shown in Table 2, the physical and chemical characteristics of perennial springs vary widely: temperature of 2° C to 15° C; water depth 0.1 to 0.5 m; oxygen level 0.5 to 9.4 ppt, conductivity 300 to 4500 μmhos/cm, and pH 7.7-8.4. However, ranges are considerably reduced if the warm mineral Cache Creek spring is not considered. In addition, Craig and McCart (1974a) noted that the low dissolved oxygen concen-

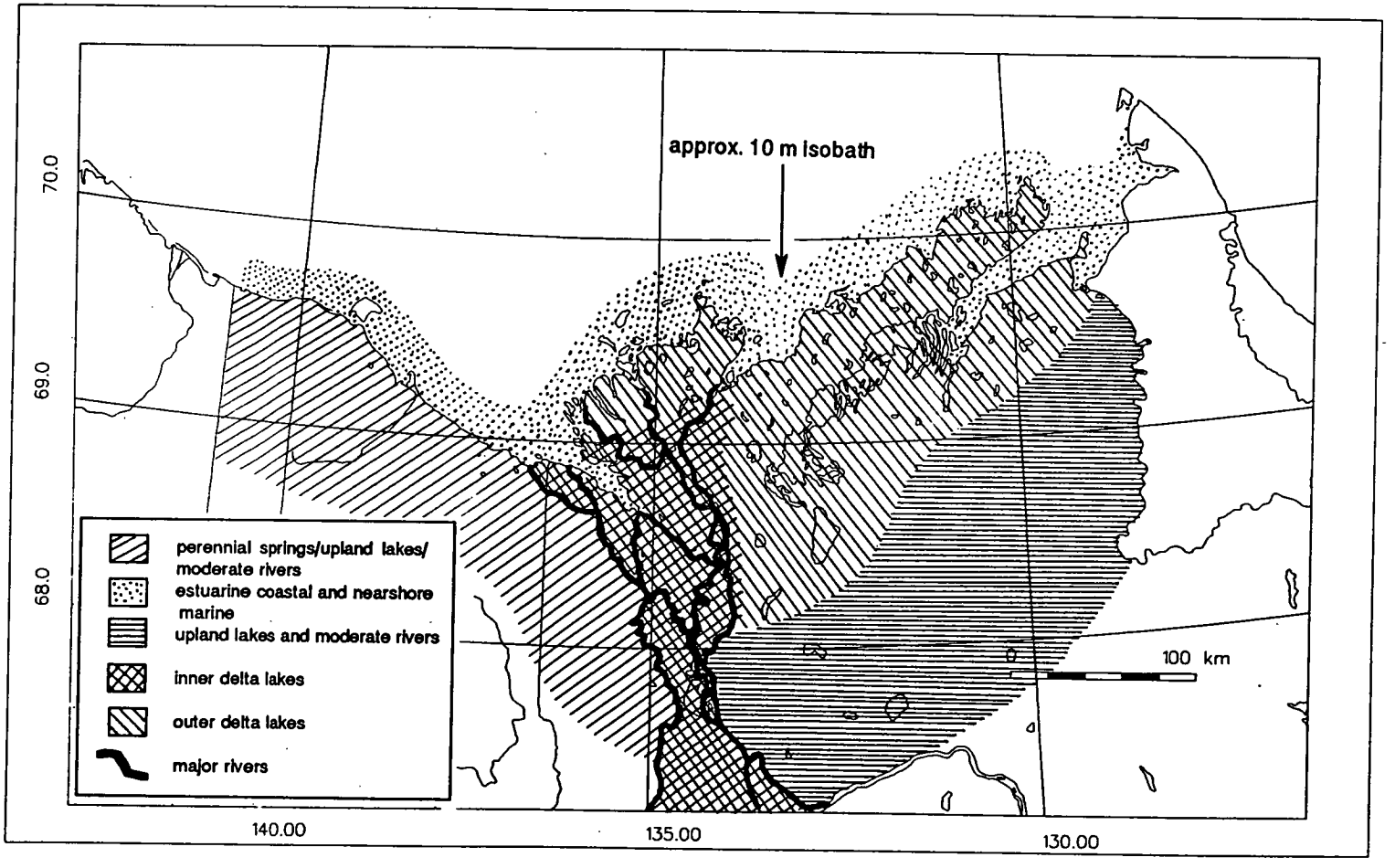

Figure 3. General distribution of eight different types of overwintering habitat in the study area.

Table 2. Characteristics of perennial springs at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
14	deBruyn and McCart (1974).	Firth Delta	-	9.40	-	-	-	0.7	-	yes	Jun 72
15	McCart (1974).	Fish Creek	2.00	5.00	8.40	300.00	-	0.1	-	yes	Apr 73
16	McCart (1974).	Firth River Spring	2.00	6.20	8.30	42.00	-	0.5	-	yes	Apr 73
17	McCart (1974).	Cache Creek	14.00	0.50*	8.30	4500.00	-	0.1	-	no	Apr 73
31	McCart and Bain (1974).	Cache Creek	15.00 15.50	0.50* 2.00*	7.70 7.80	4531.00 4546.00	-	-	-	no	Nov 72, Apr, May 73
249	Bain (1974).	Babbage River	7.00	-	-	-	-	-	-	yes	May 73
252	Bain (1974).	Fish Hole Creek	5.00	-	-	-	-	-	-	yes	May 73

* Measurement taken near orifice of spring.

trations measured in Cache Creek were taken at or near the orifice of the spring and that the waters become more oxygenated in downstream areas.

Generally, there is an area of open water below the orifice of the spring that provides the overwintering and/or spawning habitat for fish and there may also be some ice-covered free water which provides overwintering habitat farther downstream (free water = unfrozen water). The size of the free water area is determined by a number of factors including temperature, flow rate and topography of the stream bed. Further downstream there is typically a layered icing or *aufeis* field formed by the continual freezing of the water flowing out of the open-water area. These *aufeis* fields can be very large (i.e., km^2s) and persist throughout the summer season.

As shown in Figure 3, perennial springs are only associated with the mountain streams between the Canada/Alaska border and the western margin of the Mackenzie Delta. Although the springs are generally located in foothill or mountainous regions, a few are also found on the coastal plain, such as those associated with the Firth River Delta. Most are accessible to migratory fishes during the open-water period of the year (Table 2).

Outer Delta Lakes and Channels

Outer delta lakes and associated channels are distributed around the outer Mackenzie Delta at a sufficient altitude to prevent flooding on an annual basis by spring run-off of the Mackenzie River (Figure 3). Many of these waterbodies are connected to channels of the Mackenzie River or stream systems which empty into Liverpool Bay, Eskimo Lakes or directly into the Beaufort Sea (Table 3). Hence some of the connections serve as migratory routes for a variety of anadromous fishes.

Table 3. Characteristics of outer delta lakes and channels at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
26	McCart (1974).	Island Lake	0.00	7.00	6.90	90.00	-	3.0	1.20	unknown	Apr 73
28	McCart (1974).	Unnamed Lake	0.00	11.00	8.10	45.00	-	21.6	0.91	unknown	Apr 73
33	McCart et al (1974).	Island Lake	0.00	7.00	6.90	90.00	-	1.3	1.20	unknown	Apr 73
50	Mann (1975).	Unnamed Channel, Langley Island	0.00	12.40	7.00	175.00	-	2.5	0.98	yes	Apr 75
52	Mann (1975).	West Twin Channel, Mackenzie Delta	3.00	-	8.00	290.00	-	4.0	0.00	yes	Oct 74
53	Mann (1975).	East Twin Channel, Mackenzie Delta	0.00	11.20	7.50	150.00	-	9.0	0.31	yes	Nov 74
55	Mann (1975).	Unnamed Lake, Mackenzie Delta	1.00	11.20	7.40	90.00	-	18.5	0.32	yes	Nov 74
242	Bond and Erickson (1985).	Lake 5, Mayogiak System, Tuk Pen	0.00	5.00	6.90	-	-	4.0	1.60	yes	May 82
243	Bond and Erickson (1985).	Lake 3, Freshwater System, Tuk Pen	0.00	2.00	6.96	-	-	5.0	1.80	yes	May 82
244	Bond and Erickson (1985).	Lake 8, Freshwater System, Tuk Pen	0.00	7.00	6.93	-	-	8.0	1.70	yes	May 82
267	Poulin (1977).	Zed Lake Lakes	1.40	12.50	7.50	50.00	-	7.9	0.30	unknown	Nov 76

Continued...

Table 3. (cont). Characteristics of outer delta lakes and channels at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
268	Poulin (1977).	Lake E54, Eskimo Lakes	0.30	14.60	7.00	182.00	-	8.0	0.30	yes	Nov 76
269	Poulin (1977).	Lake E58, Eskimo Lakes	1.50	14.20	7.50	225.00	-	3.7	0.27	yes	Nov 76
270	Poulin (1977).	East Hans Lake (E13), Eskimo Lakes	1.00	15.00	7.50	50.00	-	2.4	0.29	yes	Nov 76
271	Poulin (1977).	Lake E35, Eskimo Lakes	1.60		7.50	50.00	-	2.9	0.31	yes	Nov 76
272	Poulin (1977).	Parsons Lake	1.00	16.20	7.50	26.00	-	8.0	0.38	yes	Nov 76
306	Percy (1975).	Harry Channel	-	-	8.00	-	-	1.5	-	yes	Mar 75
307	Percy (1975).	Big Horn Point	-	-	8.50	-	-	1.8	-	yes	Mar 75

Outer delta lakes and channels exhibit a moderately wide range of physical and chemical characteristics (Table 3). Winter temperatures are relatively uniform (usually from 0 to 2° C), as are pH (6.9 to 8.5) and conductivity (26 to 290 μmhos/cm). However, water in channels is usually of greater conductivity (175 to 290 μmhos/cm) than in lakes (26 to 225 μmhos/cm). Oxygen levels are generally high (from about 7 to 12 mg/L), but waters are occasionally depleted, such as lakes on the Tuktoyaktuk Peninsula, where Bond and Erickson (1985) found concentrations of from 2 to 5 mg/L or, at times, even super-saturated, such as Parsons Lake with a concentrations of 16.2 mg/L (Poulin 1977).

Water depths in documented fish overwintering areas also vary greatly. Large areas in the Eskimo Lakes are 10's of metres deep and must offer overwintering habitat to a variety of fishes. However, some smaller lakes are also of substantial depth (e.g., 10-20 m) and even river channels such as East Twin Channel with a depth of 9.0 m (Table 3) can be of considerable depth. Ice thickness in this habitat type is generally less than 2.0 m.

Inner Delta Lakes and Channels

Inner delta lakes and associated streams and channels are located within the active Mackenzie Delta (Figure 3), and many are flooded by the Mackenzie River during spring break-up. Taylor et al. (1982) suspected that this process recharges them with nutrients annually. Generally inner delta lakes are turbid during the open-water season, and many are quite shallow. Relatively little chemical and physical information is available at fish overwintering areas for this habitat type (Table 4). Those that have been sampled were well oxygenated, neutral or slightly alkaline with temperatures of 0° C or slightly above. Under-ice water depths at sampled sites ranged from 1.5 to 11.5 m.

Many inner delta lakes are connected to the major channels of the Mackenzie River for at least a portion of the year. Fish are thus able to migrate in and out of

Table 4. Characteristics of inner delta lakes and channels at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
25	McCart (1974).	Peter Lake	1.00	13.00	7.50	27.00	-	-	1.42	unknown	Apr 73
46	Mann (1975).	Unnamed Channel, Mackenzie Delta	0.00	-	8.50	290.00	-	4.0	0.10	yes	Oct 74
47	Mann (1975).	Unnamed Lake, Langley Island	0.00	11.60	8.20	185.00	-	1.5	0.33	yes	Nov 74
48	Mann (1975).	Unnamed Channel, Langley Island	0.00	7.40	7.00	195.00	-	2.5	0.85	yes	Apr 75
49	Mann (1975).	Unnamed Lake Langley Island	0.00	11.80	7.40	158.00	-	2.2	0.35	yes	Nov 74
54	Mann (1975).	West Tununuk Channel, Mackenzie Delta	0.00	-	7.40	210.00	-	11.5	1.00	yes	Apr 75

the waterbodies at least during specific seasons. In some cases the connecting channels can only be used during the early part of the summer when water levels in the delta are at their highest.

Interior Upland Lakes

Interior upland lakes are those found at higher altitudes and are especially common in the southeastern portion of the study area (Figure 3). Their altitudes are variable. Some are found in high mountain areas but others may be present at 10s of metres above the Mackenzie Delta. Most lakes are connected either to the Mackenzie River or its tributaries by moderate rivers, or smaller streams. However, some are at considerable distances from major fish migratory pathways and, although fish might move within the local vicinity, use of these overwintering areas by anadromous fishes is uncommon.

Relatively little information on the physical and chemical characteristics at fish overwintering sites in upland lakes is available (Table 5). Winter water temperatures are reported from 0 to 2° C; under-ice water depths ranged between 3 and 5 m; oxygen levels were high (7 to 12 mg/L). Conductivity of upland lake water (41 to 185 μmhos/cm) is generally lower than water in other habitat types. Sampled lakes have been near neutral or slightly alkaline (pH 6.9 to 8.35).

Major Rivers

Major rivers are defined as those that flow year round, and thus, to our knowledge, the only major rivers in the study region are the Mackenzie (and associated major channels), and possibly the lower portions of the Peel and Arctic Red River. Surprisingly, very little physical and chemical data are available from fish overwintering sites in major rivers (Table 6). Measured water temperatures are near 0° C, water is well oxygenated and relatively alkaline (pH 7.5-8.8). Conductivity is low to moderate except for the report by Mann (1974) of 650 μmhos/cm in Moose Channel

Table 5. Characteristics of interior upland lakes at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
24	McCart (1974).	Clearwater Lake	0.00	7.00	6.90	71.00	-	0.66-1.57	0.99-1.1	no	Apr 73
27	McCart (1974).	High Point Lake	0.00	12.40	7.40	41.00	-	17.2	1.10	no	Apr 73
29	McCart (1974).	Jiggle Lake	2.00	7.20	7.90	185.00	-	2.2	1.00	no	Apr 73
30	McCart (1974).	Deep Lake	0.00	10.40	8.35	65.00	-	237.7	1.10	no	Apr 73
35	McCart et al (1974).	Unnamed Lake	0.00	11.00	8.10	45.00	-	21.6	0.91	unknown	Apr 73
39	McCart et al (1974).	Travaillant Lake	0.00	11.40	7.70	65.00	-	4.7	0.71	no?	Apr 73
80	Reist (1987).	Long Lake, Rat River	-	-	-	-	-	3.0	-	no	Oct-Nov 86
81	Reist (1987).	Ogilvie Lake, Rat River	-	-	-	-	-	3.0	-	no	Oct-Nov 86
82	Reist (1987).	Twin Lake S., Rat River	-	-	-	-	-	5.3	-	no	Oct-Nov 86
83	Reist (1987).	Canoe Lake	-	-	-	-	-	1.5	-	no	Nov 86

Table 6. Characteristics of major rivers at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
22	McCart (1974).	Peel River	0.00	8.80	8.30	135.00	-	-	-	yes	Apr 73
23	McCart (1974).	Mackenzie River	0.00	10.20	8.40	153.00	-	13.1	1.20	yes	Apr 73
51	Mann (1975).	Middle Channel, Mackenzie Delta	0.00	13.20	8.80	160.00	-	7.0	1.25	yes	Apr 75
56	Mann (1975).	East Channel, Mackenzie Delta	1.00	-	8.10	280.00	-	3.0	0.00	yes	Oct 74
57	Mann (1975).	East Channel, Mackenzie Delta	0.00	11.60	8.30	155.00	-	3.0	-	yes	Nov 74
305	Percy (1975).	Swimming Point, East Channel	-	-	8.50	-	-	-	-	yes	Mar 74
311	Percy (1975).	Swimming Point	-	-	7.50	-	-	-	-	yes	Mar 75
44	Mann (1975).	Moose Channel, Mackenzie Delta	-	-	8.50	650.00	-	3.0	0.10	yes	Oct 74
45	Mann (1975).	Moose Channel, Mackenzie Delta	0.00	11.80	7.70	285.00	-	3.0	0.32	yes	Nov 74

Table 7. Characteristics of moderate rivers at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
38	McCart et al (1974).	Travaillant River	1.00	13.40	8.20	150.00	-	-	-	no?	Apr 73
40	McCart et al (1974).	Thunder River	0.00	10.40	8.30	65.00	-	-	0.75	no?	Apr 73

in October 1974. This area was obviously mildly affected by marine water at the time of sampling. Water depths at fish overwintering sites were normally less than 10.0 m.

Moderate Rivers

Moderate rivers have been defined as those that do not flow during the winter, but contain areas of unfrozen water, sometimes in isolated pools. Due to the limited amount of under-ice sampling that has taken place in these types of rivers, and the difficulty in locating sometimes small areas of free water in winter, the distribution of this habitat type is very poorly known. We believe that most of these rivers are located in the southern portion of the study area. Two sample sites in fish overwintering areas in moderate rivers indicate that waters were near 0° C, well-oxygenated, alkaline and of low conductivity (Table 7).

Estuarine Coastal and Nearshore Marine

Because the Mackenzie River flows during the winter into the ice-covered Beaufort Sea, unmixed fresh water can extend into coastal areas for appreciable distances. In addition, some mixing takes place to produce water of varying salinity. In some cases, a distinct halocline exists and separates relatively unmixed marine bottom waters from the fresh or brackish surface waters (Bond 1982). Typically, temperatures in the freshwater layer are near or slightly below 0° C, while those in the lower marine or brackish layer can be below zero. Salinity is the main characteristic which separates estuarine coastal habitat (0 to about 20 ppt) from nearshore marine habitat (greater than about 20 ppt) (Tables 8 and 9).

The geographic distribution of estuarine and marine habitats changes with time with the former expanding as winter progresses and more and more fresh water from the Mackenzie River accumulates in coastal regions of the Beaufort Sea (Figure 3). Bottom waters in many areas can, however, maintain their marine characteristics,

Table 8. Characteristics of estuarine coastal waters at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
255	Chiperzak et al. (In prep).	Station 86030 off Tuk Pen	-	-	-	-	0.36	5.0	2	yes	May 86
273	Poulin (1977).	Hans Bay HB2	-0.90	12.80	8.00	2100.00	1.00	32.0	0.28	yes	Nov 76
274	Poulin (1977).	Hans Bay HB9	-0.90	12.80	8.00	2100.00	1.00	32.0	0.28	yes	Nov 76
308	Percy (1975).	Mallik Bay	-	-	8.50 9.00	-	4.9 to 7.90	-	-	yes	Mar 75
309	Percy (1975).	Mason Bay	-	-	9.60	6.70	-	4.2	-	yes	Mar 75
310	Percy (1975).	Hendrickson Is., Kugmallit Bay	-	-	7.70	0.00	0.20	1.0	-	yes	Mar 75
314	Chiperzak et al. (In prep).	Station 86031 off Tuk Pen	-	-	-	-	0.23	4.8	2.2	yes	May 86
315	Chiperzak et al. (In prep).	Station 87011 off Tuk Pen	0.00	-	-	-	0.13	4.8	1.6	yes	May 87
317	Bond (1982).	West Entrance Tuk Harbour	-	-	-	-	1.00	-	-	yes	Apr-Jun 80
318	Bond (1982).	Kugmallit Bay	-	-	-	-	1.00	-	-	yes	Apr-Jun 80
320	Bond (1982).	Entrances, Tuk Harbour	-	-	-	-	1.00	-	-	yes	Jan-Mar 81
321	Bond (1982).	Kugmallit Bay	-	-	-	-	1.00	-	-	yes	Jan-Mar 81

Table 9. Characteristics of nearshore marine waters at known fish overwintering areas.

Data Sheet	Reference	Location	Water Quality					Water Depth (m)	Ice Thickness (m)	Accessible to Anadromous Populations	Study Date
			Temp °C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt				
254	Chiperzak et al. (In prep.).	Station 85050, off Tuk Pen	0.85	-	-	-	28.53	-	-	yes	Mar 85
316	Bond (1982).	Tuktoyaktuk Harbour	-	-	-	-	20.00-30.00	-	-	yes	Apr-Jun 80
319	Bond (1982).	Tuktoyaktuk Harbour	-	-	-	-	20.00-30.00	-	-	yes	Jan-Mar 81

especially if they are in isolated bays and inlets. The exact limits of these habitats are unknown at any one time, but it is suspected that at least most of the surface waters of Kugmallit Bay and a significant portion of Mackenzie Bay become freshened during winter. Because of the "open" nature of these habitats, they are readily accessible to all types of migratory fishes.

FISH OVERWINTERING AREAS

This section describes available overwintering information in our study area for each fish species considered. As described earlier, it was not always possible to determine the precise number and extent of actual overwintering locations because of potential overlap between adjacent sites and inclusion of fall and spring samples (in this section of the results) which could include migrants. Quantitative description of actual overwintering sites is, therefore, representative rather than definitive.

Arctic Char (*Salvelinus alpinus*)

A total of 21 Arctic char overwintering areas were identified in this study (Figure 4, Table 10). The major overwintering areas for Arctic char in the study area are associated with streams (e.g., Firth, Babbage and Fish River) that originate in the British and Richardson Mountains in the northern Yukon Territory (Figure 4). Two major habitat types have been identified as potential overwintering habitat for Arctic char: perennial springs and upland lakes. The estuarine coastal habitat of the Yukon coast was identified as being important for Arctic char, based on harvest catches taken between mid-April and mid-June by Thrasher and McDonald (1989). These data are not included in this report, because Arctic char are known to have left overwintering habitats and entered the nearshore coastal waters by early to mid-June (Griffiths 1975). Arctic char caught in coastal waters at this time are migrating or are in summer feeding areas. In addition, all available information indicates that Arctic char cannot survive in saline or brackish coastal water in winter (McCart 1982; Johnson 1980).

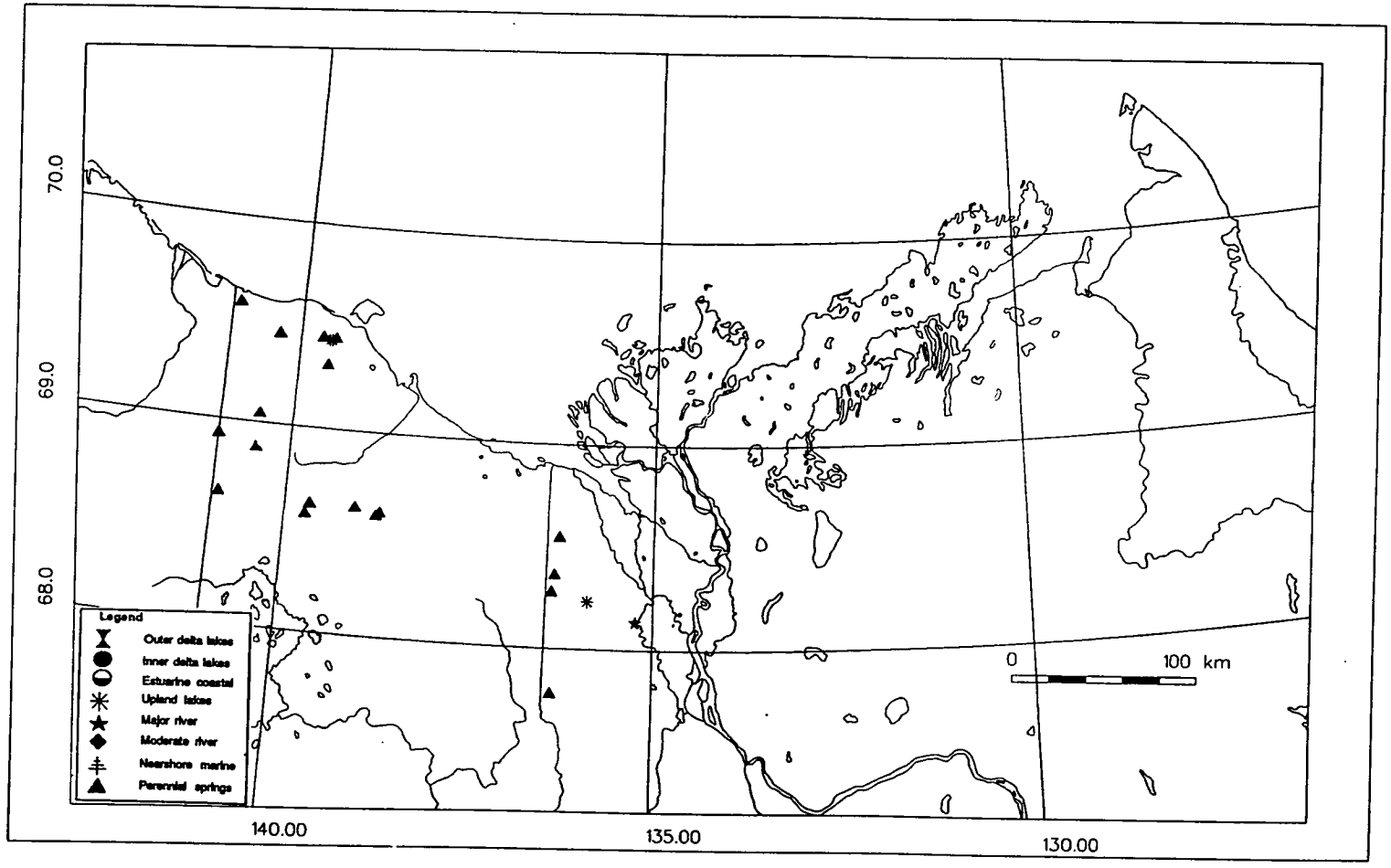

Figure 4. Documented locations of overwintering habitat for Arctic char in the study area.

Table 10. Location and types of overwintering areas of Arctic char in the study area.

CHAR SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	1	✓Craig and McCart.	1974a.	Fish Creek	69.450	140.300	Oct 1972	PS
1	15	✓McCart.	1974.	Fish Creek	69.450	140.300	Apr 73	PS
2	2	✓Craig and McCart.	1974a.	Firth Spring	69.450	139.700	Nov 72, Apr 73	PS
3	4	✓Craig and McCart.	1974a.	Firth Delta	69.450	139.500	Sep, Nov 72, Apr 73	PS
4	5	✓Craig and McCart.	1974a.	Joe Creek	68.933	141.000	Oct 72	PS
5	6	✓Sternenberger.	1974.	Firth River	68.883	140.467	Sep 1971-73, Oct 73	PS
6	7	✓Craig and McCart.	1974a.	Firth River	68.650	140.917	May, Jun 72	PS
7	8	✓Craig and McCart.	1974a.	Babbage River	68.633	139.033	Mar, May, Jun 72	PS
8	9	✓Craig and McCart.	1974a.	Fish Hole Creek	68.617	138.700	May, Nov 1972	PS
9	10	✓Craig and McCart.	1974a.	Cache Creek	68.283	136.367	Oct, Nov 72, Apr 73	PS
9	31	✓McCart and Bain.	1974.	Cache Creek	68.367	136.333	Nov 72, Apr, May 73	PS
10	13	✓deBruyn and McCart.	1974.	Canoe Creek	68.600	138.750	Jun 72	PS
11	16	✓McCart.	1974.	Firth River Spring	69.450	139.700	Apr 73	PS
12	17	✓McCart.	1974.	Cache Creek	68.550	136.283	Apr 73	PS
13	32	✓McCart et al.	1974.	Craig Creek	69.583	140.900	Apr 73	PS
14	245	✓Bain.	1974	Babbage River	68.633	139.667	Mar 72	PS
14	246	✓Bain.	1974	Babbage River	68.633	139.667	May 72	PS
14	247	✓Bain.	1974	Babbage River	68.633	139.667	May 72	PS
14	248	✓Bain.	1974	Babbage River	68.633	139.667	Jun 72	PS
14	249	✓Bain.	1974	Babbage River	68.633	139.667	May 73	PS
14	250	✓Bain.	1974	Babbage River	68.633	139.667	Jun 73	PS
15	251	✓Bain.	1974	Fish Hole Creek	68.583	139.717	May 72	PS
15	252	✓Bain.	1974	Fish Hole Creek	68.583	139.717	May 73	PS
15	253	✓Bain.	1974	Fish Hole Creek	68.583	139.717	Jun 73	PS
16	322	✓McCart.	1980.	Firth River	69.050	140.467		PS
17	323	✓McCart.	1980.	Firth River	69.317	139.600		PS
18	324	✓McCart.	1980.	Lake 103	69.433	139.567		UL
19	325	✓McCart.	1980.	Lake 104	69.433	139.600		UL
20	83	✓Reist.	1987.	Canoe Lake	68.233	135.883	Nov 86	UL
21	205	Firth et al.	1989b.	Fish Creek	67.783	136.333	May-Jun	PS

* PS = perennial springs; UL= interior upland lake
✓ = point source data

Although the amount of data on specific Arctic char overwintering areas is not extensive, the identified overwintering areas are based either on the actual sighting of large schools or the capture of small numbers of Arctic char during early winter (October-November) or early spring (April-early May). These are relatively well-documented areas and it is believed that, in comparison to other species of fish, Arctic char overwintering areas are relatively well known.

The most common overwintering habitat type identified for Arctic char is perennial springs, as McCart (1980) indicated in his monograph on Arctic char in the western Arctic. These areas are generally located in tributaries (e.g., Joe Creek and Fish Hole Creek) of moderate rivers (e.g., Firth and Babbage rivers). Because springs flow year round they are associated with layered ice-fields (*aufeis*) that form during the winter and typically persist well into summer. The water flowing from the springs is relatively warm (2 to 15° C) and, consequently, there is an area of open water downstream from the source of the spring. This habitat is used for spawning and/or wintering by large adults and overwintering by all sizes of Arctic char. It should be noted that not all perennial springs are located on foothill tributaries. A few occur in river deltas (e.g., the Firth Delta) and in the main channels of moderate rivers (Babbage River). Such areas are also important for Arctic char overwintering.

Three lakes were identified as overwintering areas for Arctic char. Canoe Lake, sampled by Reist (1987) appears to be a typical upland lake, which most likely supports a lake-resident population of char. McCart (1980) also classified the Arctic char in Lakes 103 and 104 as being resident. These lakes are not typical "upland" lakes, but are situated on the Yukon coastal plain near the Firth River Delta. All other char overwintering sites in this region are in areas of perennial springs and it is quite unusual for coastal plain lakes to support overwintering populations of char. A possible explanation that McCart (1980) did not mention is that Lakes 103 and 104 are influenced by springs which empty directly into the lakes.

Broad Whitefish (*Coregonus nasus*)

Nearly 80 broad whitefish overwintering areas have been identified in the study region, mostly in the lower Mackenzie drainage and along the Tuktoyaktuk Peninsula (Figure 5 and Table 11). Other overwintering areas are likely to occur, especially in the eastern portion of the study area; however, records of overwintering broad whitefish were notably absent in the area between the Mackenzie Delta and the Alaska/Canada border. Numerous records of broad whitefish catches were from early winter (October/November) or less commonly early spring (April/May). Catches from these periods could represent overwintering and/or migration sites but were included unless there was sound evidence that such areas did not provide habitat for fish throughout the winter.

Broad whitefish overwintering sites included a range of habitat types: estuarine coastal, major and moderate rivers, inner and outer delta lakes, and interior upland lakes. The wide range of overwintering habitats reported for broad whitefish might be because there are several distinct populations in the area, each associated with a different river (e,g., Arctic Red, Peel, Mackenzie rivers, etc.). Most use the channels and lakes of the general Mackenzie Delta region for feeding and/or migration, but each may have distinct spawning or overwintering areas. In addition, there appear to be numerous populations of broad whitefish that are isolated in lakes in the region—such waterbodies satisfy all life-history requirements, including overwintering.

The complex life-history pattern of at least some broad whitefish populations, such as those associated with the Tuktoyaktuk Peninsula, as described by Bond (1982), Bond and Erickson (1985), and Chang-Kue (1987), explains why a wide range of overwintering habitats are reported for this species. Age 0+ broad whitefish typically enter particular outer delta lakes along the Tuktoyaktuk Peninsula, where they remain for three or four years to feed in the summer and to overwinter. There-

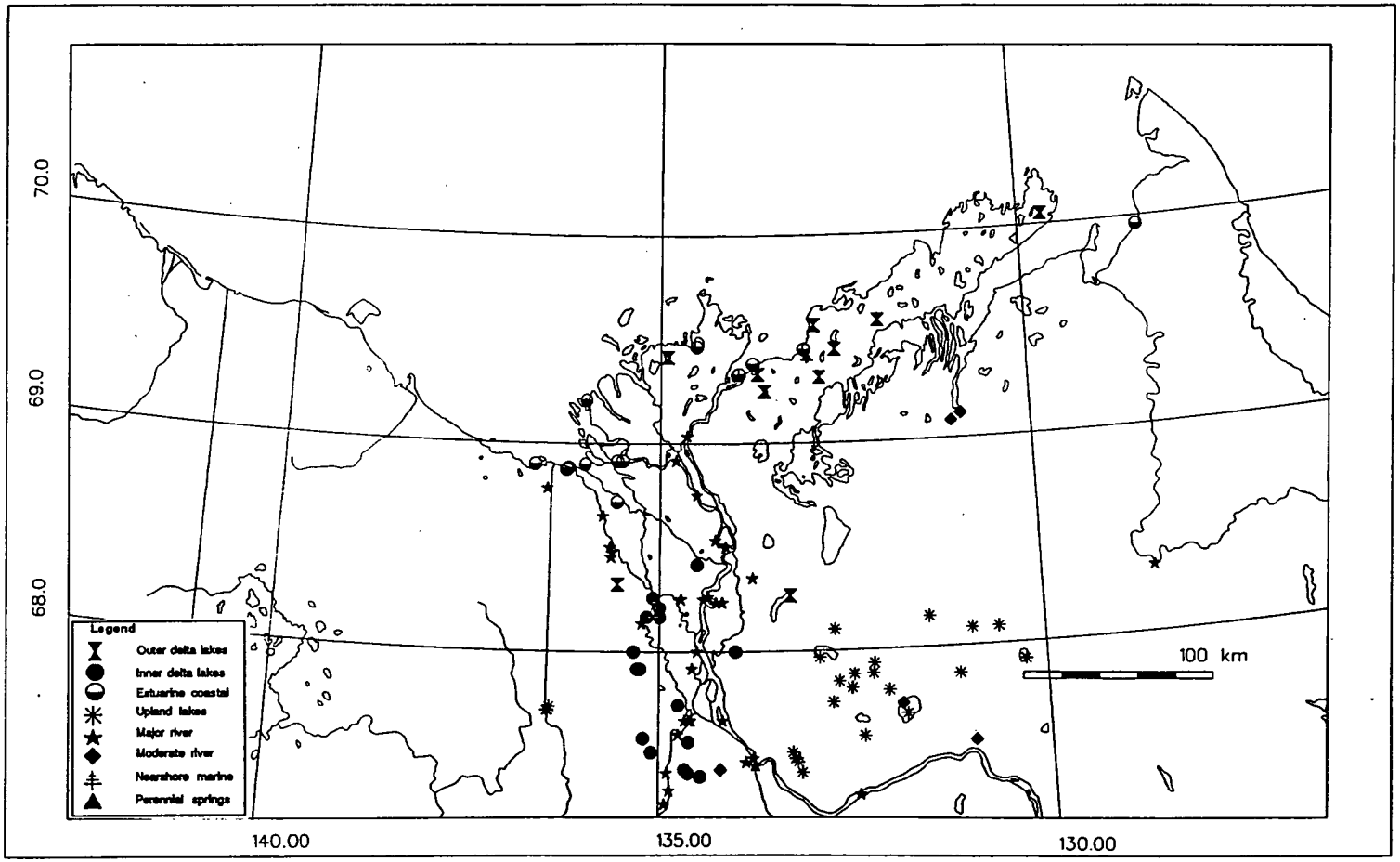

Figure 5. Documented locations of overwintering habitat for broad whitefish in the study area.

Table 11. Location and types of overwintering areas of broad whitefish in the study area.

BDWF SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	34	✓McCart et al.	1974.	High Point Lake	67.883	132.467	Apr 73	UL
2	35	✓McCart et al.	1974.	Unnamed Lake	67.817	132.500	Apr 73	UL
2	110	Andre and Macleod.	1989 b.	Unnamed Lake	67.817	132.500	May-Jun	UL
3	39	✓McCart et al.	1974.	Travaillant Lake	67.683	131.797	Apr 73	UL
3	106	Andre and Macleod.	1989 b.	Travaillant Lake	67.683	131.792	May-Jun	UL
4	40	✓McCart et al.	1974.	Thunder River and Headwater Lakes	67.542	130.933	Apr 73	MODR
5	45	✓Mann.	1975.	Moose Channel, Mackenzie Delta	68.783	136.500	Nov 74	MAJR?
6	56	✓Mann.	1975.	East Channel Mackenzie Delta	69.033	134.633	Oct 74	MAJR
7	58	✓Reist.	1987.	Peel River	67.333	134.867	Oct 83	MAJR
7	64	✓Reist.	1987.	Peel River	67.267	134.933	Oct 84	MAJR
8	59	✓Reist.	1987.	Horseshoe Bend	68.233	134.150	Oct 83	MAJR
8	60	✓Reist.	1987.	Horsechoe Bend	68.233	134.150	Nov 84	MAJR
9	61	✓Reist.	1987.	East Channel, Mackenzie Delta	68.350	133.767	Oct, Nov 84	MAJR
10	62	✓Reist.	1987.	Arctic Red River	67.183	133.533	Nov 84	MAJR
10	115	Andre and Macleod.	1989 b.	Arctic Red River	67.083	133.350	May-Jun	MAJR
10	118	Andre and Macleod.	1989 b.	Arctic Red River	67.450	133.750	May-Jun	MAJR
11	63	✓Reist.	1987.	Mackenzie River	67.450	133.767	Nov 84	MAJR
11	111	Andre and Macleod.	1989 b.	Mackenzie River	67.450	133.767	May-Jun	MAJR
11	265	✓Chang-Kue and Jessop.	1992.	Mackenzie River	67.467	133.875	Nov 82, 84	MAJR
11	296	INAC.	1972.	Mackenzie River at Arctic Red	67.450	133.750	Oct-Nov	MAJR
11	297	INAC.	1972.	Mackenzie River	67.483	133.783	Oct-Nov	MAJR
12	66	✓Reist.	1987.	Mackenzie River	67.300	132.433	Nov 84	MAJR
13	67	✓Reist.	1987.	Travaillant River	67.733	131.850	Nov 84	MODR
14	68	✓Reist.	1987.	Anderson River	68.317	128.550	Nov 84	MODR
15	70	✓Reist.	1987.	Campbell Lake	68.267	133.283	Oct-Nov 85	ODL
16	72	✓Reist.	1987.	West Channel, Mackenzie Delta	68.217	135.000	Nov 85	MAJR
17	73	✓Reist.	1987.	Arctic Red River	67.450	133.767	Oct 85	MAJR

* UL=interior upland lake; ODL=outer delta lake; MODR=moderate river; MAJR=major river
✓ = point source data

Continued ...

Table 11 (continued). Location and types of overwintering areas of broad whitefish in the study area.

BDWF SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
18	74	✓Reist.	1987.	Miner River	69.083	131.050	Nov 85	MODR
19	75	✓Reist.	1987.	Kugaluk River	69.117	130.917	Nov 85	MODR
20	80	✓Reist.	1987.	Long Lake, Rat River	67.717	136.417	Oct-Nov 86	UL
21	81	✓Reist.	1987.	Ogilvie Lake, Rat River	67.717	136.433	Oct-Nov 86	UL
22	82	✓Reist.	1987.	Twin Lake S., Rat River	67.733	136.400	Oct-Nov 86	UL
23	92	Andre and Macleod.	1989a.	Loche Lake	67.583	132.350	Nov-Apr	UL
24	94	Andre and Macleod.	1989a.	Odizen Lake	67.750	132.750	Nov-Apr	UL
25	96	Andre and Macleod.	1989a,b.	Caribou Lake	67.967	132.917	Nov-Jun	UL
26	97	Andre and Macleod.	1989a.	Fishing Bear Lake	67.514	133.283	Dec-Apr	UL
26	105	Andre and Macleod.	1989 b.	Fishing Bear Lake	67.483	133.250	May-Jun	UL
27	103	Andre and Macleod.	1989 b.	Attoe Lake	67.417	133.167	May-Jun	UL
28	104	Andre and Macleod.	1989 b.	Whirl Lake	67.467	133.217	May-Jun	UL
29	108	Andre and Macleod.	1989 b.	Sunny Lake	67.850	132.667	May-Jun	UL
31	114	Andre and Macleod.	1989 b.	Crossing Creek Lake	67.800	132.017	May-Jun	UL
32	117	Andre and Macleod.	1989 b.	Fish Trap Lake	67.933	132.200	May-Jun	UL
33	119	Andre and Macleod.	1989 b.	Wood Bridge Lake	67.883	132.217	May-Jun	UL
33	153	Draper et al.	1990a,b.	Wood Bridge Lake	67.883	132.217	Oct-Jun	UL
34	121	Anaviak, et al.	1989a,b.	Big Lake, Richards Island	69.417	134.900	Oct-Jun	ODL
35	122	Anaviak, et al.	1989a,b.	Unnamed River and lakes, Kittigazuit	69.250	133.583	Oct-Jun	ODL
36	125	Anaviak, et al.	1989a.	Unnamed lakes, Tuk Pen	69.333	133.667	Oct-Apr	ODL
37	127	Anaviak, et al.	1989a,b.	Itkrilik Lake	69.583	132.000	Oct-Jun	ODL
38	131	Anaviak, et al.	1989a.	Unnamed Lakes, Tibjak Point	69.567	132.900	Oct-Apr	ODL
39	136	Anaviak, et al.	1989a,b.	Unnamed Lakes, Tuk Pen	70.050	129.667	Oct-Jun	ODL
40	150	Draper et al.	1990a,b.	Middle Channel	68.500	134.117	Oct-Jun	MAJR
40	189	Thrasher and McDonald.	1989a,b.	Middle Channel	68.250	134.417	Nov-Jun	MAJR
40	190	Thrasher and McDonald.	1989a,b.	Middle Channel	68.533	134.250	Nov-Jun	MAJR
40	191	Thrasher and McDonald.	1989a,b.	Middle Channel	68.750	134.500	Nov-Jun	MAJR

* UL=interior upland lake; ODL=outer delta lake; MODR=moderate river; MAJR=major river
✓ = point source data

Continued ...

Table 11 (continued). Location and types of overwintering areas of broad whitefish in the study area.

BDWF SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
40	192	Thrasher and McDonald.	1989a,b.	Middle Channel	68.917	134.783	Nov-Jun	MAJR
40	259	✓Chang-Kue and Jessop.	1992.	Middle Channel	68.233	134.167	Nov-Mar 83-84	MAJR
40	264	✓Chang-Kue and Jessop	1987.	Middle Channel	68.000	134.500	Oct-Nov 82-84	MAJR
41	161	Draper et al.	1990a,b.	Shotgun Lake	68.147	131.467	Oct-Jun	UL
42	164	Draper et al.	1990a.	Unnamed Lake, Iroquois River	67.917	130.267	Nov-Dec	UL
43	165	Draper et al.	1990a.	Unnamed Lake	68.083	130.917	Oct-Apr	UL
44	166	Draper et al.	1990a.	Star Lake	68.083	130.583	Oct-Apr	UL
45	170	Firth et al.	1989a.	Husky Lake	67.517	135.100	Nov-Apr	IDL
46	171	Firth et al.	1989a.	Unnamed Lakes	67.583	135.200	Nov-Apr	IDL
47	172	Firth et al.	1989a.	Unnamed Lakes (Frog Creek)	67.567	134.617	Nov-Apr	IDL
48	174	Firth et al.	1989a.	Husky Channel	67.917	135.283	Nov-Apr	IDL
48	196	Thrasher and McDonald.	1989a,b.	Husky Channel	68.000	135.333	Nov-Jun	IDL
48	230	Thrasher and McDonald.	1989a.	Husky Channel	67.917	135.250	Nov-Apr	IDL
49	176	Firth et al.	1989a.	Frog Creek	67.433	134.200	Nov-Apr	MODR
50	185	Firth et al.	1989a.	Dark Water Lake	67.433	134.667	Nov-Apr	IDL
51	186	Firth et al.	1989a.	Narrow Lake	67.417	134.625	Nov-Apr	IDL
52	187	Firth et al.	1989b.	Deep Water Lake (Nigger Lake)	67.400	134.467	Apr-Jun	IDL
53	188	Thrasher and McDonald.	1989a,b.	Middle Channel	67.917	134.567	Nov-Jun	MAJR
53	258	✓Chang-Kue and Jessop.	1992.	Middle Channel	67.667	134.167	Sep-Nov 86	MAJR
54	193	Thrasher and McDonald.	1989a,b.	West Channel	68.250	134.717	Nov-Jun	MAJR
54	194	Thrasher and McDonald.	1989a,b.	West Channel	68.500	135.650	Nov-Jun	MAJR
54	195	Thrasher and McDonald.	1989a,b.	West Channel	68.650	135.750	Nov-Jun	MAJR
55	197	Thrasher and McDonald.	1989a,b.	Peel Channel	68.167	135.167	Nov-Jun	IDL
56	198	Thrasher and McDonald.	1989a,b.	Enoch Channel	68.167	135.000	Nov-Jun	IDL
57	208	Firth et al.	1989b.	Unnamed Delta Channel	67.667	134.583	May-Jun	MAJR
57	209	Firth et al.	1989b.	Peel River	67.667	134.617	May-Jun	MAJR
57	210	Firth et al.	1989b.	Dry River	67.667	134.667	May-Jun	MAJR

* UL=interior upland lake; ODL=outer delta lake; MODR=moderate river; MAJR=major river
✓ = point source data

Concluded ...

Table 11 (concluded). Location and types of overwintering areas of broad whitefish in the study area.

BDWF SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
58	211	Firth et al.	1989b.	Moonshine Lake	67.742	134.750	May-Jun	IDL
59	212	Firth et al.	1989b.	Peel River	67.600	134.750	May-Jun	MAJR
60	222	Thrasher and McDonald.	1989a,b.	Raymond, Napoiak and Schooner Channels	68.417	134.500	Nov-Jun	IDL
61	226	Thrasher and McDonald.	1989a,b.	Shoalwater Bay	68.875	136.250	Nov-Jun	EC
62	266	✓Chang-Kue and Jessop.	1992.	Peel River	67.417	134.900	Nov 83	MAJR
63	243	✓Bond and Erickson.	1985.	Lake 3, Freshwater system	69.450	132.617	May 82	ODL
64	244	✓Bond and Erickson.	1985.	Lake 8, Freshwater system, Tuk Pen	69.317	132.833	May 82	ODL
65	256	✓Chang-Kue and Jessop.	1992.	Kittigazuit Inlet	69.333	133.917	Sep-Nov 86	EC
65	262	✓Chang-Kue and Jessop.	1992.	East Channel Inlet	69.333	133.917	Nov-Mar 83-84	EC
66	257	✓Chang-Kue and Jessop.	1992.	Kittigazuit Bay	69.383	133.733	Nov-Jan 84-85	EC
66	263	✓Chang-Kue and Jessop.	1992.	Kittigazuit Inlet	69.383	133.733	Nov-Jan 84-85	EC
67	260	✓Chang-Kue and Jessop.	1992.	Shallow Bay	68.900	136.000	Oct-Jan 84-85	EC
68	261	✓Chang-Kue and Jessop.	1992.	Ellice Island	69.208	136.000	Jan 85	EC
69	308	✓Percy.	1975.	Mallik Bay	69.467	134.500	Mar 75	EC
70	312	Andre and Macleod.	1989b.	North Caribou Lake	68.100	132.708	May-Jun	UL
71	313	Andre and Macleod.	1989b.	Tenlen Lake	67.867	131.100	May-Jun	UL
72	316	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Apr-Jun 80	NM
73	320	✓Bond.	1982.	Entrances, Tuktoyaktuk Harbour	69.450	133.042	Jan-Mar 81	EC
74	301	Anaviak et al.	1989a,b.	Mason River Inlet	69.958	128.375	Oct-Jun	EC
75	326	✓Chang-Kue and Jessop.	1992.	Reindeer Channel	68.917	135.500	Oct-Jan 84-85	EC
76	327	✓Chang-Kue and Jessop.	1992.	Shallow Bay	68.720	135.567	Oct-Jan 84-85	EC
77	328	✓Chang-Kue and Jessop.	1992.	Shallow Bay	68.883	136.233	Oct-Jan 84-85	EC
78	329	✓Chang-Kue and Jessop.	1992.	Tent Island	68.917	135.567	Oct-Jan 84-85	EC
79	330	✓Chang-Kue and Jessop.	1992.	Reindeer Channel	68.900	136.667	Oct-Jan 84-85	EC

* ODL=outer delta lake; UL=upland lake; MODR=moderate river; MAJR=major river; IDL=inner delta lake; EC=estuarine coastal; NM=nearshore marine

✓ = point source data

after, they undertake summer feeding forays into the nearshore zone and, while some return to overwinter in outer delta lakes, others overwinter in the outer portion of the Mackenzie Delta and the lower Mackenzie mainstem. Spawners move into the Mackenzie Delta and move upstream during the summer, to spawn in early winter (October-November). After spawning, they move back downstream to overwintering areas in the outer Mackenzie Delta.

The post-spawning and/or early winter downstream movement of adults from Horseshoe Bend in the Middle Channel of the Mackenzie River to overwintering areas in the outer Mackenzie Delta has been documented by tracking radio-tagged broad whitefish from 1982 to 1987 (Chang-Kue 1987). These fish appeared to overwinter primarily in Kittigazuit Inlet, although some individuals have been found at various sites across the outer Mackenzie Delta (Figure 5). It should be noted that the overwintering sites in the western portion of the outer Mackenzie Delta were not occupied during every year of the study. The tagging studies also showed that immature broad whitefish from the Tuktoyaktuk region overwintered in the Kittigazuit Inlet area. Chang-Kue (pers. comm. October 1990) suspects that there are several important broad whitefish overwintering areas in the outer Mackenzie Delta, especially around Richards Island, that have not yet been identified.

Although the main channels of the Mackenzie, Peel and Arctic Red rivers also provide overwintering habitat, some of the early winter sampling conducted in these areas undoubtedly captured broad whitefish that were migrating to overwintering areas farther downstream. Tagging studies have shown that fish found in the main channels in October and November are found later in the winter in bays of the outer Mackenzie Delta.

There also appears to be substantial overwintering of broad whitefish in outer delta and interior upland lakes based on winter harvest reports (Anaviak et al. 1989a,b; Andre and Macleod 1989a,b; Firth et al. 1989a,b; Thrasher and McDonald

1989a,b; Draper et al. 1990a,b). The presence of broad whitefish in these lakes from early winter onward strongly suggests that the species overwinter in these habitats.

There appears to be minimal overwintering of broad whitefish in the Tuktoyaktuk Harbour region or in the nearshore waters between the harbour and the Kittigazuit Inlet area, although Bond (1982) did report broad whitefish caught from marine bottom waters of Tuktoyaktuk Harbour and also from the more brackish waters in the entrances to Tuktoyaktuk Harbour.

Because broad whitefish overwinter in nearly all habitat types, it might be assumed that they are able to tolerate a wide range of physical conditions. However, they are normally regarded as a stenohaline species that avoids saline water. This agrees well with what is known of winter habitats in areas where this species has been found. Even those that overwinter in the estuarine coastal habitat are most likely in fresh or highly brackish water, because these sites are all located on the outer edge of the Mackenzie Delta, a region that is strongly affected by the flow of the Mackenzie River throughout the winter. As previously explained, these coastal habitats can be layered systems with fresh water or brackish water overlaying more marine water. Bond's (1982) report of broad whitefish in bottom waters of Tuktoyaktuk Harbour is such a system and it apparently conflicts with the known salinity preferences of this species.

In the case of lake and river habitats where overwintering broad whitefish have been located, the main criteria for successful overwintering appears to be water depth and the presence of sufficient oxygen. Waters must be deep enough to allow for the presence of free water after the ice has reached maximum thicknesses of about 1.5 to 3.0 m. Because overwintering success is dependent on ice thickness, which is variable, all sites may not be continuously occupied each winter or each year.

Lake (Humpback) Whitefish (*Coregonus clupeaformis* complex)

Numerous lake whitefish overwintering areas have been identified in the study region, and as was the case with broad whitefish, most of these are associated with the Mackenzie drainage or are along the Tuktoyaktuk Peninsula. Although there are probably many other unidentified overwintering sites in the latter areas, none have been found to the west between the Mackenzie Delta and the Alaska/Yukon border. Current information identifies over 70 lake whitefish overwintering areas (Figure 6, Table 12).

Lower channels of the Mackenzie River together with estuarine coastal regions, especially in eastern Kugmallit Bay, are important overwintering areas (Mann 1975; Percy 1975; Thrasher and McDonald 1989a,b). The latter regions are freshened by the Mackenzie River in winter.

Approximately 16 outer delta lakes on the Tuktoyaktuk Peninsula are overwintering areas for lake whitefish. As Bond (1982) indicates, some of these populations are migratory, probably inhabiting these lakes as juveniles for a number of years and leaving to complete their life cycle in other areas.

At least 20 upland lakes were identified as overwintering areas. Populations in most of these lakes are probably isolated, non-migratory forms. It is suspected that virtually all upland lakes will contain resident populations of lake whitefish if they are sufficiently deep to contain free water throughout the winter.

A few moderate rivers were identified as overwintering areas. These include the Thunder River, Travaillant River, Rengleng River and Pierre Creek. It is very doubtful that these rivers flow throughout the winter, but they may contain isolated pockets of free water where lake whitefish can overwinter.

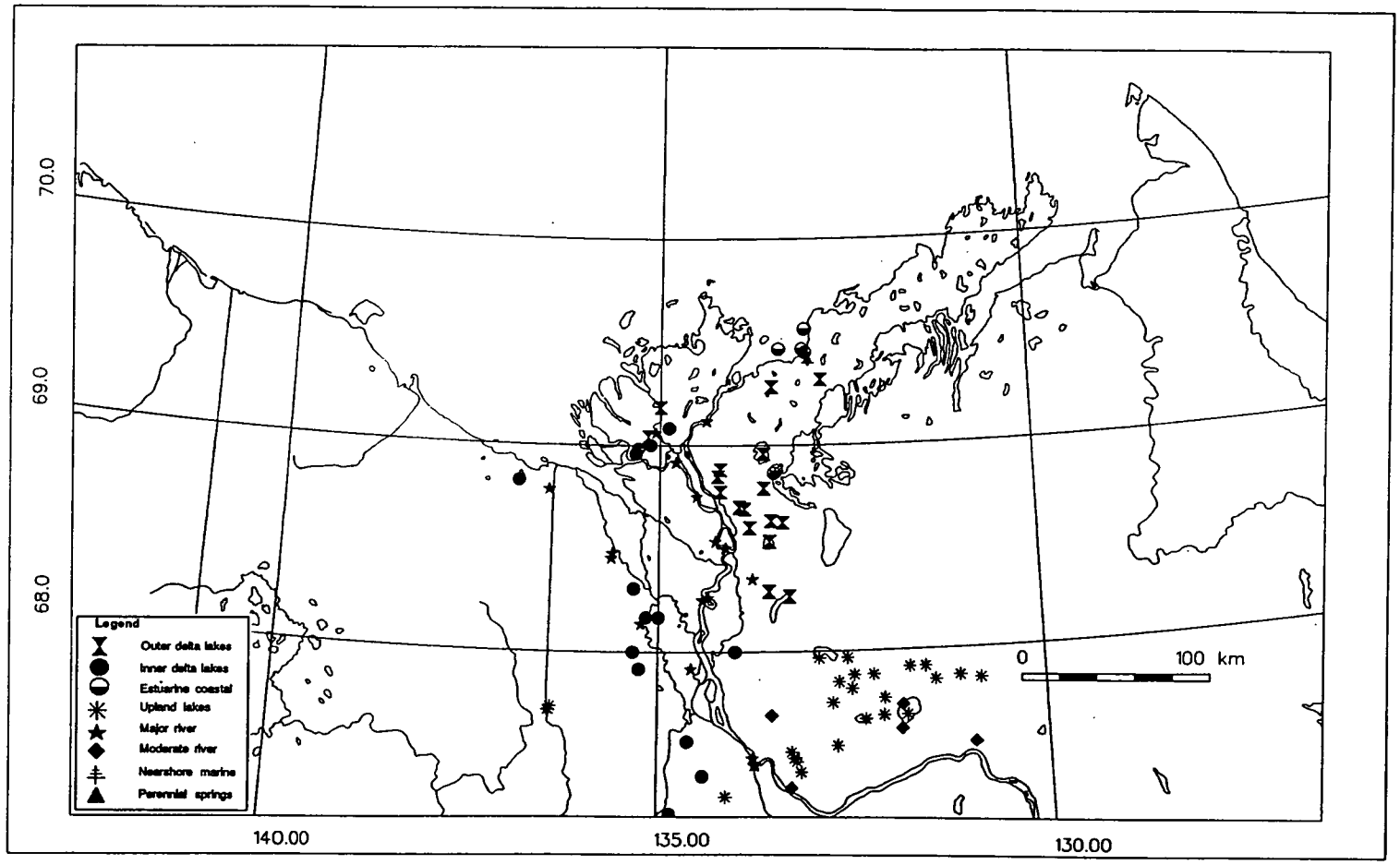

Figure 6. Documented locations of overwintering habitat for lake whitefish in the study area.

Table 12. Location and types of overwintering areas of lake (humpback) whitefish in the study area.

LKWF SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	34	✓McCart et al.	1974.	High Point Lake	67.883	132.467	Apr 73	UL
2	35	✓McCart et al.	1974.	Unnamed Lake	67.817	132.500	Apr 73	UL
2	110	Andre and Macleod.	1989 b.	Unnamed Lake	67.817	132.500	May-Jun	UL
3	36	✓McCart et al.	1974.	Jiggle Lake	67.683	132.100	Apr 73	UL
4	37	✓McCart et al.	1974.	Deep Lake	67.667	132.333	Apr 73	UL
4	91	Andre and Macleod.	1989a,b.	Deep Lake	67.667	132.333	Nov-Jun	UL
5	39	✓McCart et al.	1974.	Travaillant Lake	67.683	131.797	Apr 73	UL
5	106	Andre and Macleod.	1989 b.	Travaillant Lake	67.683	131.792	May-Jun	UL
6	40	✓McCart et al.	1974.	Thunder River and headwater lakes	67.542	130.933	Apr 73	MODR
7	45	✓Mann.	1975.	Moose Channel	68.783	136.500	Nov 74	MAJR?
8	46	✓Mann.	1975.	Unnamed Channel, Mackenzie Delta	68.825	136.917	Oct 74	IDL
9	47	✓Mann.	1975.	Unnamed Lake, Langley Island	68.958	135.333	Nov 74	IDL
10	48	✓Mann.	1975.	Unnamed Channel, Langley Island	68.983	135.300	Apr 75	IDL
11	49	✓Mann.	1975.	Unnamed Lake, Langley Island	69.000	135.133	Nov 74	IDL
12	50	✓Mann.	1975.	Unnamed Channel, Langley Island	69.042	135.167	Apr 75	ODL
13	51	✓Mann.	1975.	Middle Channel	69.058	135.067	Apr 75	MAJR
14	54	✓Mann.	1975.	West Tununuk Channel, Mackenzie Delta	69.083	134.883	Apr 75	IDL
15	61	✓Reist.	1987.	East Channel, Mackenzie Delta	68.350	133.767	Oct, Nov 84	MAJR
16	62	✓Reist.	1987.	Arctic Red River	67.183	133.533	Nov 84	MAJR
17	67	✓Reist.	1987.	Travaillant River	67.733	131.850	Nov 84	MODR
17	89	Andre and Macleod.	1989a.	Travaillant River	67.733	131.850	Nov-Apr	MODR
18	70	✓Reist.	1987.	Campbell Lake	68.267	133.283	Oct-Nov 85	ODL
19	71	✓Reist.	1987.	Dolomite Lake	68.292	133.550	Nov 84	ODL
20	80	✓Reist.	1987.	Long Lake, Rat River	67.717	136.417	Oct-Nov 86	UL
21	81	✓Reist.	1987.	Ogilvie Lake, Rat River	67.717	136.433	Oct-Nov 86	UL
22	82	✓Reist.	1987.	Twin Lake S., Rat River	67.733	136.400	Oct-Nov 86	UL

* UL=interior upland lake; IDL=inner delta lake; ODL=outer delta lake; MODR= moderate river; MAJR=major river

Continued ...

Table 12 (continued). Location and types of overwintering areas of lake (humpback) whitefish in the study area.

LKWF SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
24	85	Andre and Macleod.	1989a,b.	Trout Lake, Kugaluk River	67.850	131.417	Nov-Jun	UL
25	86	Andre and Macleod.	1989a.	Unnamed Lake, Kugaluk River	67.850	130.833	Nov-Jun	UL
26	87	Andre and Macleod.	1989a,b.	Unnamed Lake, Kuglauk River	67.917	131.542	Nov-Jun	UL
27	88	Andre and Macleod.	1989a,b.	Unnamed Lake, Kugaluk River	67.917	131.750	Nov-Jun	UL
28	90	Andre and Macleod.	1989a.	Travaillant River	67.617	131.867	Nov-Apr	MODR
29	93	Andre and Macleod.	1989a,b.	In and Out Lake	67.542	132.700	Nov-Jun	UL
30	94	Andre and Macleod.	1989a.	Odizen Lake	67.750	132.750	Nov-Apr	UL
31	95	Andre and Macleod.	1989a.	Sunny Lake	67.850	132.667	Nov-Apr	UL
31	108	Andre and Macleod.	1989 b.	Sunny Lake	67.850	132.667	May-Jun	UL
32	96	Andre and Macleod.	1989a,b.	Caribou Lake	67.967	132.917	Nov-Jun	UL
33	97	Andre and Macleod.	1989a.	Fishing Bear Lake	67.514	133.283	Dec-Apr	UL
33	105	Andre and Macleod.	1989 b.	Fishing Bear Lake	67.483	133.250	May-Jun	UL
34	98	Andre and Macleod.	1989a.	Rengleng River	67.692	133.533	Dec-Mar	MODR
35	100	Andre and Macleod.	1989a.	Mackenzie River at Arctic Red	67.458	133.750	Nov-Apr	MAJR
35	111	Andre and Macleod.	1989 b.	Mackenzie River	67.450	133.767	May-Jun	MAJR
35	296	INAC.	1972.	Mackenzie River at Arctic Red	67.450	133.750	Oct-Nov	MAJR
35	297	INAC.	1972.	Mackenzie River	67.483	133.783	Oct-Nov	MAJR
36	101	Andre and Macleod.	1989a,b.	Nerejo Lake	67.300	134.125	Nov-Jun	UL
37	103	Andre and Macleod.	1989 b.	Attoe Lake	67.417	133.167	May-Jun	UL
38	104	Andre and Macleod.	1989 b.	Whirl Lake	67.467	133.217	May-Jun	UL
39	107	Andre and Macleod.	1989 b.	Pierre Creek, Mackenzie River	67.342	133.292	May-Jun	MODR
41	113	Andre and Macleod.	1989 b.	Tregnantchiez Lake	67.767	132.083	May-Jun	UL
41	153	Draper et al.	1990a,b.	Wood Bridge Lake	67.883	132.217	Oct-Jun	UL
42	119	Andre and Macleod.	1989 b.	Wood Bridge Lake	67.883	132.217	May-Jun	UL
43	120	Andre and Macleod.	1989 b.	Hill Lake	67.967	132.550	May-Jun	UL
44	139	Draper et al.	1990a,b.	West Round Lake	68.700	133.933	Oct-Jun	ODL
45	140	Draper et al.	1990a,b.	Unnamed Lake (Wolverine Lakes)	68.850	134.217	Oct-Jun	ODL
46	141	Draper et al.	1990a,b.	Unnamed Lake (Wolverine Lakes)	68.883	134.183	Oct-Jun	ODL
47	142	Draper et al.	1990a,b.	Unnamed Lake (Peter Lake)	68.775	134.183	Oct-Jun	ODL

* UL=interior upland lake; MODR= moderate river; MAJR=major river

Continued ...

Table 12 (continued). Location and types of overwintering areas of lake (humpback) whitefish in the study area.

LKWF SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
48	143	Draper et al.	1990a,b.	East Round Lake	68.692	133.867	Oct-Jun	ODL
49	144	Draper et al.	1990a,b.	Bonnet Plume Lake	68.600	133.800	Oct-Jun	ODL
50	145	Draper et al.	1990a,b.	Jimmy Lake	68.633	133.517	Oct-Jun	ODL
51	146	Draper et al.	1990a,b.	Unnamed Lake	68.625	133.367	Oct-Jun	ODL
52	147	Draper et al.	1990a,b.	Noell Lake	68.533	133.542	Oct-Jun	ODL
53	150	Draper et al.	1990a,b.	Middle Channel	68.500	134.117	Oct-Jun	MAJR
53	188	Thrasher and McDonald.	1989a,b.	Middle Channel	67.917	134.567	Nov-Jun	MAJR
53	189	Thrasher and McDonald.	1989a,b.	Middle Channel	68.250	134.417	Nov-Jun	MAJR
53	190	Thrasher and McDonald.	1989a,b.	Middle Channel	68.533	134.250	Nov-Jun	MAJR
53	191	Thrasher and McDonald.	1989a,b.	Middle Channel	68.750	134.500	Nov-Jun	MAJR
53	192	Thrasher and McDonald.	1989a,b.	Middle Channel	68.917	134.783	Nov-Jun	MAJR
54	167	Draper et al.	1990a,b.	Kittigazuit Lakes	69.283	133.500	Oct-Jun	ODL
55	172	Firth et al.	1989a.	Unnamed Lakes (Frog Creek)	67.567	134.617	Nov-Apr	IDL
56	196	Thrasher and McDonald.	1989a,b.	Husky Channel	68.000	135.333	Nov-Jun	IDL
56	230	Thrasher and McDonald.	1989a.	Husky Channel	67.917	135.250	Nov-Apr	IDL
57	197	Thrasher and McDonald.	1989a,b.	Peel Channel	68.167	135.167	Nov-Jun	IDL
58	198	Thrasher and McDonald.	1989a,b.	Enoch Channel	68.167	135.000	Nov-Jun	IDL
59	218	Firth et al.	1989b.	Nigger Lake (Deep Water Lake)	67.400	134.417	May-Jun	IDL
60	219	Firth et al.	1989b.	Unnamed Lake	67.083	134.583	May-Jun	IDL
60	220	Firth et al.	1989b.	Unnamed Lake	67.217	134.833	May-Jun	IDL
61	244	✓Bond and Erickson.	1985.	Lake 8, Freshwater system Tuk Pen	69.317	132.833	May 82	ODL
62	268	✓Poulin.	1977.	Lake E54. Eskimo Lakes	68.792	133.611	Nov 76	ODL
63	272	✓Poulin.	1977.	Parsons Lake	68.958	133.611	Nov 76	ODL
64	273	✓Poulin.	1977.	Hans Bay HB2	68.878	133.441	Nov 76	EC
65	274	✓Poulin.	1977.	Hans Bay HB9	68.865	133.480	Nov 76	EC

* UL=interior upland lake; IDL=inner delta lake; ODL=outer delta lake; MODR= moderate river; MAJR=major river

✓ = point source data

Concluded ...

Table 12 (concluded). Location and types of overwintering areas of lake (humpback) whitefish in the study area.

LKWF SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
66	306	✓Percy.	1975.	Harry Channel	69.183	135.000	Mar 75	ODL
67	310	✓Percy.	1975.	Hendrickson Island, Kugmallit Bay	69.467	133.400	Mar 75	EC
68	311	✓Percy.	1975.	Swimming Point	69.117	134.367	Mar 75	MAJR
69	313	Andre and Macleod.	1989b.	Tenlen Lake	67.867	131.100	May-Jun	UL
70	315	✓Chiperzak et al.	1991.	Station 87011, off Tuk Pen	69.563	133.050	May 87	EC
71	316	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Apr-Jun 80	NM
71	319	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Jan-Mar 81	NM
72	318	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Apr-Jun 80	EC
73	320	✓Bond.	1982.	Entrances, Tuktoyaktuk Harbour	69.450	133.042	Jan-Mar 81	EC

* UL=interior upland lake; IDL=inner delta lake; ODL=outer delta lake; MAJR=major river; EC=estuarine coastal; NM=nearshore marine
✓ = point source data

Lake whitefish also overwinter in inner delta lakes and channels. Approximately 13 such areas were identified. Lake whitefish in these areas may be migratory or non-migratory, depending on the nature of the migration routes to and from the overwintering sites.

Lake whitefish appear to be an adaptable species that can use a variety of freshwater habitats for overwintering, although they have not been found in the perennial springs in the western portion of the study area.

Arctic Cisco (*Coregonus autumnalis*)

Few specific overwintering areas have been identified for Arctic cisco (Figure 7, Table 13) and most are either along the outer Mackenzie Delta, off the Tuktoyaktuk Peninsula, or in Tuktoyaktuk Harbour. No sites have been identified along the Yukon Coast at present.

In July and August, there are large spawning runs of Arctic cisco associated with many of the tributaries of the Mackenzie River such as the Arctic Red, Peel, Mountain and Liard rivers (Sekerak 1989). Post-spawning downstream migrations have also been reported, such as in the Peel River (Wynne-Edwards 1952). It is suspected that the reports of Arctic cisco in the Mackenzie River and the Arctic Red River in October and November are actually downstream migrants. These sites are still indicated as possible overwintering areas, although suspect.

Fechhelm et al. (1983) reported that Arctic cisco are a euryhaline species and can tolerate a wide range of salinities at least in summer. Circumstantial evidence suggests that they also prefer to be at least in the proximity of brackish water throughout the winter and they are rarely found in inland fresh waters of the study area. Arctic cisco may be the only true anadromous whitefish species in the region, in that once it enters brackish to marine waters as a young-of-the-year fish, it does not re-enter fresh water until it is ready to spawn.

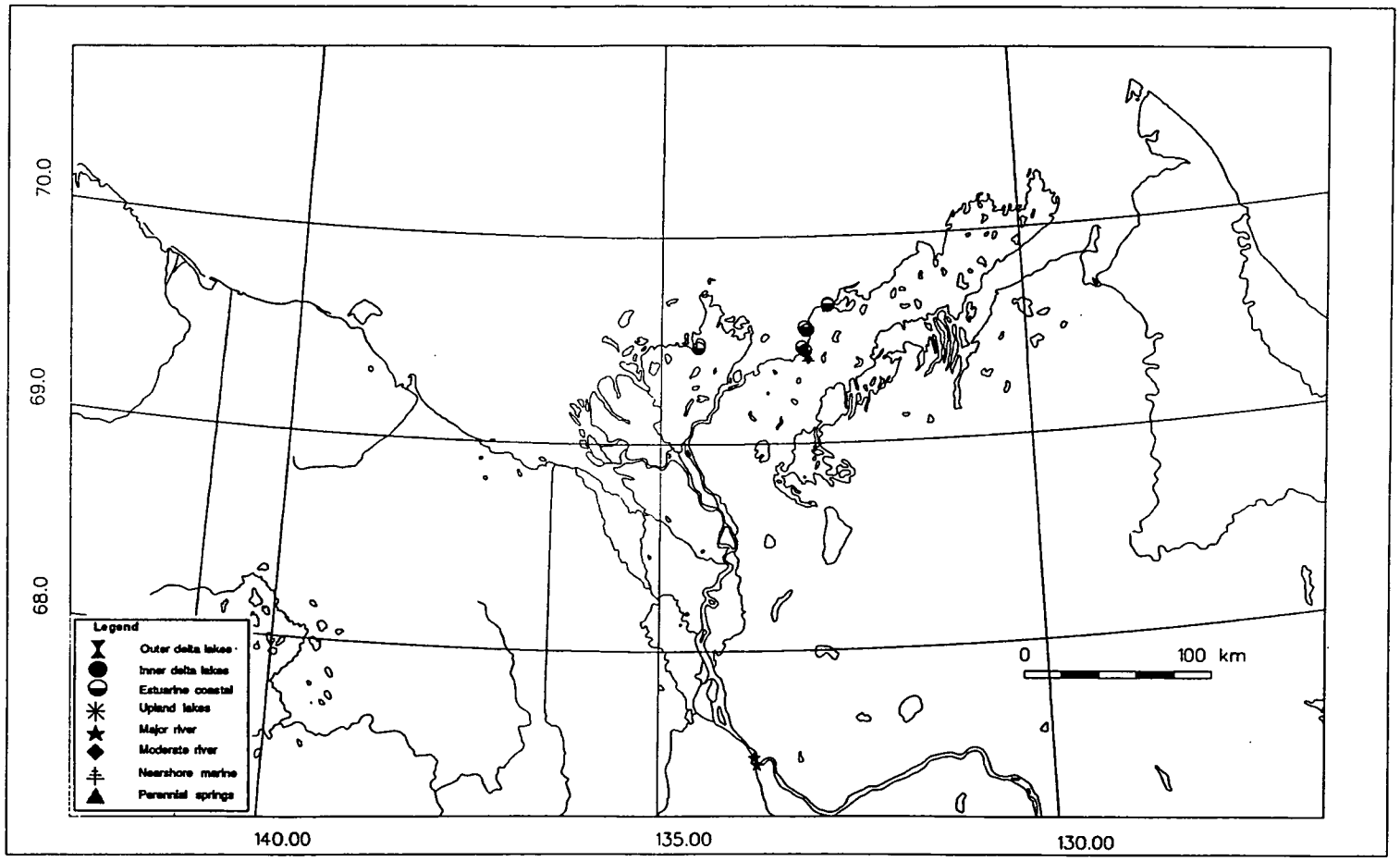

Figure 7. Documented locations of overwintering habitat for Arctic cisco in the study area.

Table 13. Location and types of overwintering areas of Arctic cisco in the study area.

ARCS SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	76	✓Reist.	1987.	Toker Point	69.667	132.717	May 85	EC
1	255	✓Chiperzak et al.	1991.	Station 86030, off Tuk Pen	69.673	132.720	May 86	EC
2	77	✓Reist.	1987.	Tibjak Point	69.550	133.000	May 85	EC
2	314	✓Chiperzak et al.	1991.	Station 86031, off Tuk Pen	69.547	133.025	May 86	EC
3	296	INAC.	1972.	Mackenzie River at Arctic Red	67.450	133.750	Oct-Nov	MAJR
4	297	INAC.	1972.	Mackenzie River	67.483	133.783	Oct-Nov	MAJR
5	308	✓Percy.	1975.	Mallik Bay	69.467	134.500	Mar 75	EC
6	315	✓Chiperzak et al.	1991.	Station 87011, off Tuk Pen	69.563	133.050	May 87	EC
7	316	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Apr-Jun 80	NM
7	319	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Jan-Mar 81	NM
8	317	✓Bond.	1982.	West Entrance, Tuk Harbour	69.450	133.042	Apr-Jun 80	EC
8	320	✓Bond.	1982.	Entrances, Tuktoyaktuk Harbour	69.450	133.042	Jan-Mar 81	EC
9	318	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Apr-Jun 80	EC
9	321	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Jan-Mar 81	EC

* EC=estuarine coastal; NM= nearshore marine; MAJR=major river
✓ = point source data

Least Cisco (*Coregonus sardinella*)

The overwintering areas identified for least cisco are shown in Figure 8 and listed in Table 14. They include most habitat types including: nearshore marine, estuarine coastal, major and moderate rivers, upland lakes, and inner and outer delta lakes. The wide range of overwintering habitats reported for least cisco is partly due to the presence of non-migratory and migratory populations. The former may occupy upland lakes if they are of sufficient depth to contain free water throughout the winter. Migratory stocks appear to use Kugmallit Bay for overwintering and also the lakes and channels of the lower Mackenzie Delta, especially near Richards Island.

Least cisco have been found overwintering in brackish estuarine coastal habitats with salinities less than 10.0 ppt and in Tuktoyaktuk Harbour where salinity is greater than 20 ppt (Bond 1982). This suggests that least cisco are quite opportunistic in selecting overwintering habitat, since they are also found in a variety of freshwater habitats.

Cisco (*Coregonus sardinella* and *C. autumnalis*)

Information on land use maps presented by Andre and MacLeod (1989a,b), Anaviak et al. (1989a,b), Firth et al. (1989a,b) and Thrasher and McDonald (1989a,b) does not distinguish between Arctic cisco and least cisco, but simply refers to the cisco group as "herring". These reports are listed in Table 15. Since we were unable to ascertain species of fish in this case, we have also treated this group as cisco. We believe that, although most of these reports represent Arctic cisco, some undoubtedly also represent least cisco. This group was reported from a variety of overwintering habitat types; major river (14 areas), moderate river (4 areas), estuarine coastal (6 areas) and inland delta lakes (2). The latter records are most likely least cisco, since Arctic cisco have not been reported to overwinter in this habitat type.

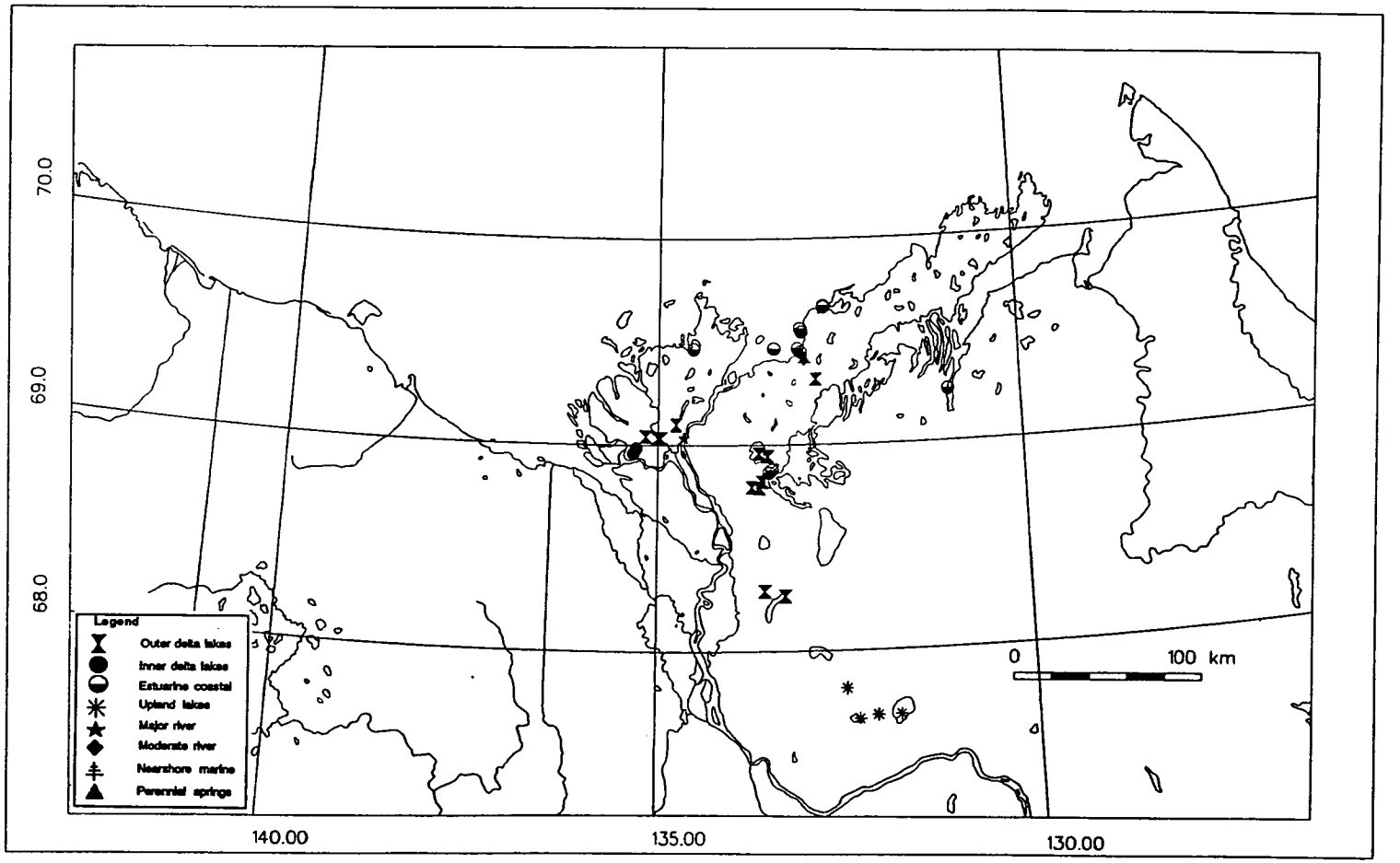

Figure 8. Documented locations of overwintering habitat for least cisco in the study area.

Table 14. Location and types of overwintering areas of least cisco in the study area.

LSCS SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	35	✓McCart et al.	1974.	Unnamed Lake	67.817	132.500	Apr 73	UL
2	36	✓McCart et al.	1974.	Jiggle Lake	67.683	132.100	Apr 73	UL
3	37	✓McCart et al.	1974.	Deep Lake	67.667	132.333	Apr 73	UL
4	39	✓McCart et al.	1974.	Travaillant Lake	67.683	131.797	Apr 73	UL
5	47	✓Mann.	1975.	Unnamed Lake, Langley Island	68.958	135.333	Nov 74	IDL
6	48	✓Mann.	1975.	Unnamed Channel, Langley Island	68.983	135.300	Apr 75	IDL
7	50	✓Mann.	1975.	Unnamed Channel, Langley Island	69.042	135.167	Apr 75	ODL
8	52	✓Mann.	1975.	West Twin Channel, Mackenzie Delta	69.033	135.000	Oct 74	ODL
9	53	✓Mann.	1975.	East Twin Channel, Mackenzie Delta	69.033	134.967	Nov 74	ODL
10	55	✓Mann.	1975.	Unnamed Lake, Mackenzie Delta	69.100	134.750	Nov 74	ODL
11	56	✓Mann.	1975.	East Channel, Mackenzie Delta	69.033	134.633	Oct 74	MAJR
12	70	✓Reist.	1987.	Campbell Lake	68.267	133.283	Oct-Nov 85	ODL
13	71	✓Reist.	1987.	Dolomite Lake	68.292	133.550	Nov 84	ODL
14	76	✓Reist.	1987.	Toker Point	69.667	132.717	May 85	EC
14	255	✓Chiperzak et al.	1991.	Station 86030, off Tuk Pen	69.673	132.720	May 86	EC
15	244	✓Bond and Erickson.	1985.	Lake 8, Freshwater System, Tuk Pen	69.317	132.833	May 82	ODL
15	267	✓Poulin.	1977.	Zed Lake	68.945	133.496	Nov 76	ODL
16	268	✓Poulin.	1977.	Lake E54, Eskimo Lakes	68.792	133.611	Nov 76	ODL
17	269	✓Poulin.	1977.	Lake E58, Eskimo Lakes	68.796	133.709	Nov 76	ODL
18	270	✓Poulin.	1977.	East Hans Lake (E13), Eskimo Lakes	68.945	133.496	Nov 76	ODL
19	271	✓Poulin.	1977.	Lake E35, Eskimo Lakes	68.821	133.570	Nov 76	ODL
20	272	✓Poulin.	1977.	Parsons Lake	68.958	133.611	Nov 76	ODL
21	273	✓Poulin.	1977.	Hans Bay HB2	68.878	133.441	Nov 76	EC

* UL=interior upland lake; IDL=inner delta lake; ODL=outer delta lake; MAJR=major river; EC=estuarine coastal
✓ = point source data

Concluded ...

Table 14 (concluded). Location and types of overwintering areas of least cisco in the study area.

LSCS SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
22	274	✓Poulin.	1977.	Hans Bay HB9	68.865	133.480	Nov 76	EC
23	277	INAC.	1972.	Kugaluk Inlet	69.250	131.000	Fall & Winter	EC
24	286	INAC.	1972.	Tuktoyaktuk Harbour	69.417	132.983	Winter	NM
24	316	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Apr-Jun 80	NM
25	308	✓Percy.	1975.	Mallik Bay	69.467	134.500	Mar 75	EC
26	310	✓Percy.	1975.	Hendrickson Island, Kugmallit Bay	69.467	133.400	Mar 75	EC
27	314	✓Chiperzak et al.	1991.	Station 86031, off Tuk Pen	69.547	133.025	May 86	EC
28	315	✓Chiperzak et al.	1991.	Station 87011, off Tuk Pen	69.563	133.050	May 87	EC
29	317	✓Bond.	1982.	West Entrance, Tuktoyaktuk Harbour	69.450	133.042	Apr-Jun 80	EC
29	320	✓Bond.	1982.	Entrances, Tuktoyaktuk Harbour	69.450	133.042	Jan-Mar 81	EC
30	318	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Apr-Jun 80	EC
30	321	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Jan-Mar 81	EC

* ODL=outer delta lake; NM=nearshore marine; EC=estuarine coastal
✓ = point source data

Table 15. Location and types of overwintering areas of cisco in the study area.

CISC SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	188	Thrasher and McDonald.	1989a,b.	Middle Channel	67.917	134.567	Nov-Jun	MAJR
1	189	Thrasher and McDonald.	1989a,b.	Middle Channel	68.250	134.417	Nov-Jun	MAJR
1	191	Thrasher and McDonald.	1989a,b.	Middle Channel	68.750	134.500	Nov-Jun	MAJR
1	192	Thrasher and McDonald.	1989a,b.	Middle Channel	68.917	134.783	Nov-Jun	MAJR
1	190	Thrasher and McDonald.	1989a,b.	Middle Channel	68.533	134.250	Nov-Jun	MAJR
1	111	Andre and Macleod.	1989 b.	Mackenzie River	67.450	133.767	May-Jun	MAJR
2	193	Thrasher and McDonald.	1989a,b.	West Channel	68.250	134.717	Nov-Jun	MAJR
2	194	Thrasher and McDonald.	1989a,b.	West Channel	68.500	135.650	Nov-Jun	MAJR
2	195	Thrasher and McDonald.	1989a,b.	West Channel	68.650	135.750	Nov-Jun	MAJR
3	115	Andre and Macleod.	1989 b.	Arctic Red River	67.083	133.350	May-Jun	MODR
3	118	Andre and Macleod.	1989 b.	Arctic Red River	67.450	133.750	May-Jun	MAJR
4	123	Anaviak, et al.	1989a,b.	Tuktoyaktuk	67.417	133.000	Oct-Jun	EC
5	124	Anaviak, et al.	1989a,b.	Topkak/Beluga Point Bay	69.500	132.967	Oct-Jun	EC
6	126	Anaviak, et al.	1989a,b.	Hutchinson Bay	69.650	132.200	Oct-Jun	EC
7	175	Firth et al.	1989a.	Stony Creek	67.333	135.250	Nov-Apr	MODR
8	176	Firth et al.	1989a.	Frog Creek	67.433	134.200	Nov-Apr	MODR
9	177	Firth et al.	1989a.	Vittrekwa River	67.117	135.500	Nov-Apr	MODR
10	208	Firth et al.	1989b.	Unnamed Delta Channel	67.667	134.583	May-Jun	MAJR
11	209	Firth et al.	1989b.	Peel River	67.667	134.617	May-Jun	MAJR
11	212	Firth et al.	1989b.	Peel River	67.600	134.750	May-Jun	MAJR
12	210	Firth et al.	1989b.	Dry River	67.667	134.667	May-Jun	MAJR
13	211	Firth et al.	1989b.	Moonshine Lake	67.742	134.750	May-Jun	IDL
14	226	Thrasher and McDonald.	1989a,b.	Shoalwater Bay	68.875	136.250	Nov-Jun	EC
15	231	Thrasher and McDonald.	1989a,b.	Peel Channel	68.200	135.083	Nov-Jun	IDL
16	302	Anaviak et al.	1989a,b.	Maitland Point	70.150	128.017	Oct-Jun	EC
17	303	Anaviak et al.	1989a,b.	Harrowby Bay	70.250	128.250	Oct-Jun	EC

* MAJR=major river; MODR=moderate river; IDL=inner delta lake; EC=estuarine coastal

Since fish species could not be determined, the above information is not mapped or analysed on a species-specific basis.

Inconnu (*Stenodus leucichthys nelma*)

Nearly 60 inconnu overwintering areas have been identified, mainly in the lower Mackenzie drainage and along the Tuktoyaktuk Peninsula (Figure 9, Table 16). None have been found to the west between the Mackenzie Delta and the Alaska/Canada border.

Thirteen upland lakes were identified as overwintering areas for inconnu. These are mainly in the vicinity of Caribou Lake and Travaillant Lake to the northeast of the community of Arctic Red River. At least some of these are probably localised lake populations. Inconnu also overwinter in three outer delta lakes (Dolomite, Campbell and Sitidgi lakes) near Inuvik. However, the inner Mackenzie Delta, including its major channels and lakes, appear to contain the most important inconnu overwintering areas in the study area. These include Husky Channel, Peel Channel, Enoch Channel, West Channel, Aklavik Channel, Reindeer Channel, East Channel, Peel River and Arctic Red River.

Inconnu also overwinter in the estuarine coastal habitat on the outer Mackenzie Delta. Such areas include western Kugmallit Bay along the Tuktoyaktuk Peninsula, Shallow Bay and Shoalwater Bay along the western fringe of the delta and along the northern shore of Richards Island. Bond (1982) also reported catching inconnu in winter in the saline bottom waters of Tuktoyaktuk Harbour.

Lake Trout (*Salvelinus namaycush*)

Lake trout overwintering areas have been identified primarily in lake habitats in the Mackenzie drainage and south of the Eskimo Lakes region. Although there are probably other areas to the east of the Mackenzie system, none have been found in lakes or streams along the Yukon coastal plain.

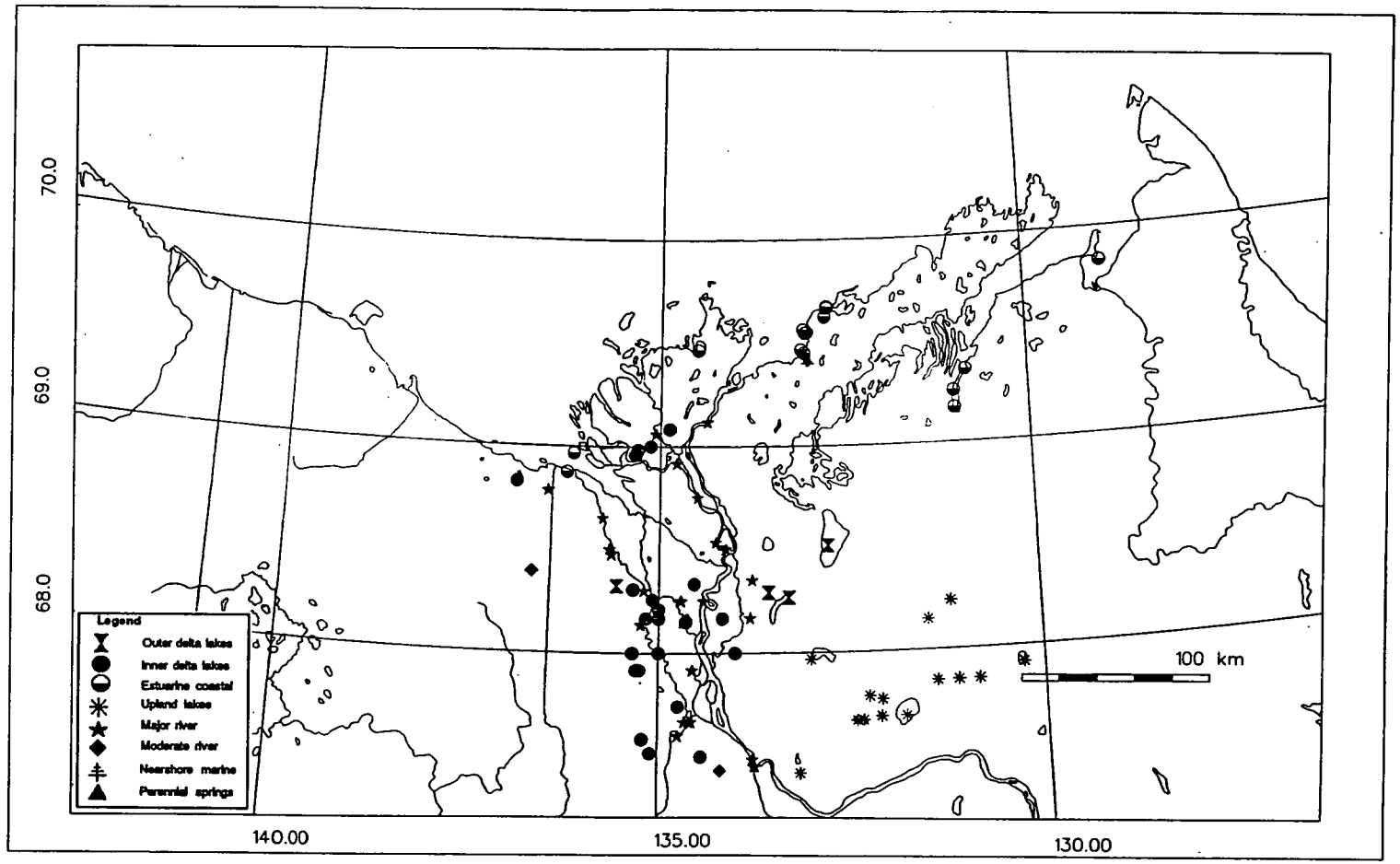

Figure 9. Documented locations of overwintering habitat for inconnu in the study area.

Table 16. Location and types of overwintering areas of inconnu in the study area.

INCO SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	45	✓Mann.	1975.	Moose Channel, Mackenzie Delta	68.783	136.500	Nov 74	MAJR?
2	46	✓Mann.	1975.	Unnamed Channel, Mackenzie Delta	68.825	136.917	Oct 74	IDL
3	47	✓Mann.	1975.	Unnamed Lake, Langley Island	68.958	135.333	Nov 74	IDL
4	48	✓Mann.	1975.	Unnamed Channel, Langley Island	68.983	135.300	Apr 75	IDL
5	49	✓Mann.	1975.	Unnamed Lake, Langley Island	69.000	135.133	Nov 74	IDL
6	51	✓Mann.	1975.	Middle Channel, Mackenzie Delta	69.058	135.067	Apr 75	MAJR
7	54	✓Mann.	1975.	West Tununuk Channel, Mackenzie Delta	69.083	134.883	Apr 75	IDL
8	61	✓Reist.	1987.	East Channel, Mackenzie Delta	68.350	133.767	Oct, Nov 84	MAJR
9	70	✓Reist.	1987.	Campbell Lake	68.267	133.283	Oct-Nov 85	ODL
10	71	✓Reist.	1987.	Dolomite Lake	68.292	133.550	Nov 84	ODL
11	76	✓Reist.	1987.	Toker Point	69.667	132.717	May 85	EC
11	255	✓Chiperzak et al.	1991.	Station 86030, off Tuk Pen	69.673	132.720	May 86	EC
12	77	✓Reist.	1987.	Tibjak Point	69.550	133.000	May 85	EC
12	314	✓Chiperzak et al.	1991.	Station 86031, off Tuk Pen	69.547	133.025	May 86	EC
13	103	Andre and Macleod.	1989 b.	Attoe Lake	67.417	133.167	May-Jun	UL
14	111	Andre and Macleod.	1989 b.	Mackenzie River	67.450	133.767	May-Jun	MAJR
15	115	Andre and Macleod.	1989 b.	Arctic Red River	67.083	133.350	May-Jun	MODR
15	118	Andre and Macleod.	1989 b.	Arctic Red River	67.450	133.750	May-Jun	MAJR
16	132	Anaviak, et al.	1989a.	Kugaluk Inlet	69.350	130.833	Oct-Apr	EC
16	133	Anaviak, et al.	1989a,b.	Kuglauk Inlet	69.167	131.000	Oct-Jun	EC
16	277	INAC.	1972.	Kugaluk Inlet	69.250	131.000	Fall & Winter	EC
17	137	Anaviak, et al.	1989a,b.	Wood Bay, Nicholson Pen	69.833	128.917	Oct-Jun	EC
18	148	Draper et al.	1990a,b.	Sitidgi Lake	68.517	132.750	Oct-Jun	ODL
19	149	Draper et al.	1990a,b.	Hyndman Lake	68.233	131.167	Oct-Jun	UL
20	150	Draper et al.	1990a,b.	Middle Channel	68.500	134.117	Oct-Jun	MAJR
20	188	Thrasher and McDonald.	1989a,b.	Middle Channel	67.917	134.567	Nov-Jun	MAJR

* MAJR=major river; MODR=moderate river; UL=interior upland lake; IDL=inner delta lake; ODL=outer delta lake; EC=estuarine coastal

✓ = point source data

Continued...

Table 16 (continued). Location and types of overwintering areas of inconnu in the study area.

INCO SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
20	189	Thrasher and McDonald.	1989a,b.	Middle Channel	68.250	134.417	Nov-Jun	MAJR
20	190	Thrasher and McDonald.	1989a,b.	Middle Channel	68.533	134.250	Nov-Jun	MAJR
20	191	Thrasher and McDonald.	1989a,b.	Midle Channel	68.750	134.500	Nov-Jun	MAJR
20	192	Thrasher and McDonald.	1989a,b.	Middle Channel	68.917	134.783	Nov-Jun	MAJR
20	296	INAC.	1972.	Mackenzie River at Arctic Red	67.450	133.750	Oct-Nov	MAJR
20	297	INAC.	1972.	Mackenzie River	67.483	133.783	Oct-Nov	MAJR
21	151	Draper et al.	1990a,b.	East Channel	68.167	133.800	Oct-Jun	MAJR
22	152	Draper et al.	1990a,b.	Kalinek Channel	68.167	134.167	Oct-Jun	IDL
23	154	Draper et al.	1990a,b.	Sandy Lake	67.783	132.250	Oct-Jun	UL
24	155	Draper et al.	1990a,b.	Tregnantchiez Lake	67.767	132.083	Oct-Jun	UL
25	156	Draper et al.	1990a,b.	Jiggle Lake	67.683	132.100	Oct-Jun	UL
26	157	Draper et al.	1990a,b.	Bathing Lake	67.667	132.417	Oct-Jun	UL
27	158	Draper et al.	1990a,b.	Travaillant Lake	67.683	131.783	Oct-Jun	UL
28	159	Draper et al.	1990a,b.	Deep Lake	67.667	132.333	Oct-Jun	UL
29	160	Draper et al.	1990a,b.	Caribou Lake	67.967	133.000	Oct-Jun	UL
30	161	Draper et al.	1990a,b.	Shotgun Lake	68.147	131.467	Oct-Jun	UL
31	162	Draper et al.	1990a,b.	Trout Lake	67.850	131.367	Oct-Jun	UL
32	163	Draper et al.	1990a,b.	Tenlen Lake	67.850	131.100	Oct-Jun	UL
33	164	Draper et al.	1990a.	Unnamed Lake, Iroquois River	67.917	130.267	Nov-Dec	UL
34	168	Draper et al.	1990a,b.	Unnamed Lake	67.850	130.833	Apr-Jun	UL
35	170	Firth et al.	1989a.	Husky Lake	67.517	135.100	Nov-Apr	IDL
36	171	Firth et al.	1989a.	Unnamed Lakes	67.583	135.200	Nov-Apr	IDL
37	174	Firth et al.	1989a.	Husky Channel	67.917	135.283	Nov-Apr	IDL
37	196	Thrasher and McDonald.	1989a,b.	Husky Channel	68.000	135.333	Nov-Jun	IDL
37	230	Thrasher and McDonald.	1989a.	Husky Channel	67.917	135.250	Nov-Apr	IDL
38	176	Firth et al.	1989a.	Frog Creek	67.433	134.200	Nov-Apr	MODR
39	181	Firth et al.	1989a.	Neyando Lake	67.500	134.453	Nov-Apr	IDL

* MAJR = major river; MODR = moderate river; UL = interior upland lake; IDL = inner delta lake

Concluded ...

Table 16 (concluded). Location and types of overwintering areas of inconnu in the study area.

INCO SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
40	193	Thrasher and McDonald.	1989a,b.	West Channel	68.250	134.717	Nov-Jun	MAJR
40	194	Thrasher and McDonald.	1989a,b.	West Channel	68.500	135.650	Nov-Jun	MAJR
40	195	Thrasher and McDonald.	1989a,b.	West Channle	68.650	135.750	Nov-Jun	MAJR
40	232	Thrasher and McDonald.	1989a,b.	West Channel	68.300	135.200	Nov-Jun	MAJR
41	197	Thrasher and McDonald.	1989a,b.	Peel Channel	68.167	135.167	Nov-Jun	IDL
42	198	Thrasher and McDonald.	1989a,b.	Enoch Channel	68.167	135.000	Nov-Jun	IDL
43	199	Thrasher and McDonald.	1989b.	Philips Channel	68.000	135.000	Apr-Jun	IDL
44	200	Thrasher and McDonald.	1989b.	Aklavik Channel	68.150	134.650	Apr-Jun	IDL
45	201	Thrasher and McDonald.	1989b.	Raymond Channel	68.333	134.540	Apr-Jun	IDL
46	208	Firth et al.	1989b.	Unnamed Delta Channel	67.667	134.583	May-Jun	MAJR
46	209	Firth et al.	1989b.	Peel River	67.667	134.617	May-Jun	MAJR
46	210	Firth et al.	1989b.	Dry River	67.667	134.667	May-Jun	MAJR
47	211	Firth et al.	1989b.	Moonshine Lake	67.742	134.750	May-Jun	IDL
48	212	Firth et al.	1989b.	Peel River	67.600	134.750	May-Jun	MAJR
49	223	Thrasher and McDonald.	1989b.	Fish River	68.392	136.683	Apr-Jun	MODR
50	226	Thrasher and McDonald.	1989a,b.	Shoalwater Bay	68.875	136.250	Nov-Jun	EC
51	286	INAC.	1972.	Tuktoyaktuk Harbour	69.417	132.983	Winter	NM
51	316	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Apr-Jun 80	NM
51	319	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Jan-Mar 81	NM
52	287	INAC.	1972.	Toker Point Bay	69.625	132.750	Winter	EC
53	304	✓Percy.	1975.	Tent Island	68.967	136.167	Feb 74	EC
54	305	✓Percy.	1975.	Swimming Point, East Channel	69.117	134.367	Mar 74	MAJR
55	308	✓Percy.	1975.	Mallik Bay	69.467	134.500	Mar 75	EC
56	315	✓Chiperzak et al.	1991.	Station 87011, off Tuk Pen	69.563	133.050	May 87	EC
57	317	✓Bond.	1982.	West Entrance, Tuk Harbour	69.450	133.042	Apr-Jun 80	EC
57	320	✓Bond.	1982.	Entrances, Tuk Harbour	69.450	133.042	Jan-Mar 81	EC
58	318	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Apr-Jun 80	EC
58	321	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Jan-Mar 81	EC

* MAJR=major river; MODR=moderate river; IDL=inner delta lake; EC=estuarine coastal; NM=nearshore marine
✓ = point source data

Documented overwintering areas for lake trout are shown in Figure 10 and Table 17. Twenty-three upland lakes and 18 outer delta lakes are identified as overwintering areas. Most of the outer delta lakes are near Inuvik, whereas most of the upland lakes are northeast of Arctic Red River. It is suspected that most lakes of these types harbour overwintering lake trout if they are sufficiently deep to contain well-oxygenated free water throughout the winter. Three inner delta lakes, all near Fort McPherson, were also identified as overwintering sites. Somewhat surprisingly, Kalinek Channel (inner delta channel) near Inuvik and the mainstem of the Mackenzie River, near Arctic Red River, were identified as overwintering areas for lake trout. Although lake trout are widely distributed in northern rivers, they have rarely been reported in the mainstem Mackenzie or other closely-associated channels and lakes.

The reports of overwintering lake trout in moderate rivers (Thunder River, James Creek, Rat River and Fish River) was also unexpected, since these are relatively small streams which likely do not flow year round. The report of lake trout in Fish Creek in May-June by Firth et al. (1989b) appears to be evidence to classify this site as an overwintering area. This is the only perennial spring area known to harbour lake trout.

The two overwintering sites in the estuarine coastal habitat were both in Hans Bay, an Eskimo Lakes estuary, and represented nine fish collected on two dates (8 and 13 November) by Poulin (1977). Although lake trout are reported to be the least tolerant of all chars to salt water, they are occasionally reported from brackish water (Scott and Crossman 1973). Their upper tolerance limit to salt water is reported to be between 11-13 ppt (Boulva and Simard 1968, cited in Scott and Crossman 1973).

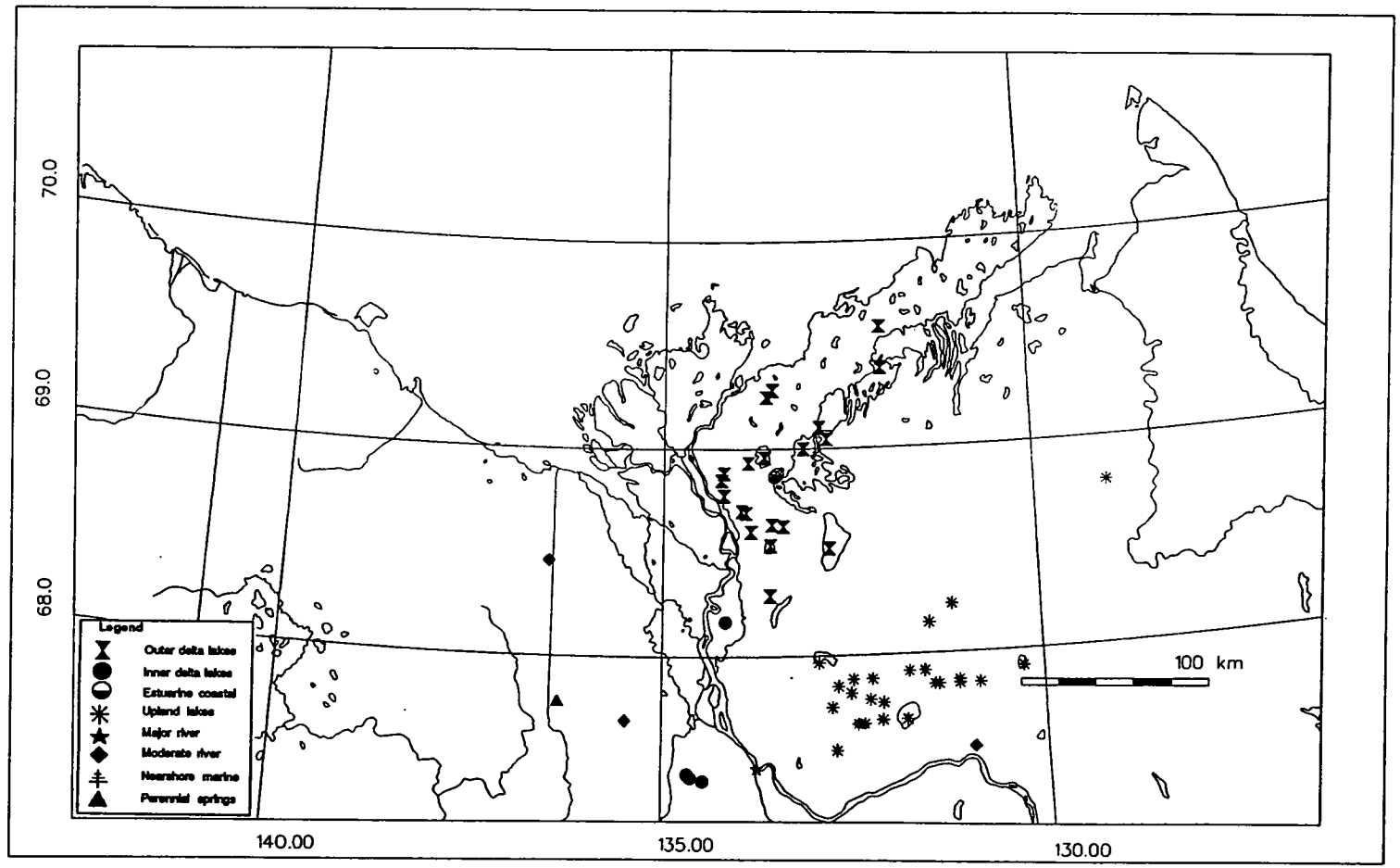

Figure 10. Documented locations of overwintering habitat for lake trout in the study area.

Table 17. Location and types of overwintering areas of lake trout in the study area.

LKTR SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	33	✓McCart et al.	1974.	Island Lake	68.933	133.833	Apr 73	ODL
2	34	✓McCart et al.	1974.	High Point Lake	67.883	132.467	Apr 73	UL
3	35	✓McCart et al.	1974.	Unnamed Lake	67.817	132.500	Apr 73	UL
4	36	✓McCart et al.	1974.	Jiggle Lake	67.683	132.100	Apr 73	UL
4	156	Draper et al.	1990a,b.	Juggle Lake	67.683	132.100	Oct-Jun	UL
5	159	Draper et al.	1990a,b.	Deep Lake	67.667	132.333	Oct-Jun	UL
5	37	✓McCart et al.	1974.	Deep Lake	67.667	132.333	Apr 73	UL
5	91	Andre and Macleod.	1989a,b.	Deep Lake	67.667	132.333	Nov-Jun	UL
6	158	Draper et al.	1990a,b.	Travaillant Lake	67.683	131.783	Oct-Jun	UL
6	39	✓McCart et al.	1974.	Travaillant Lake	67.683	131.797	Apr 73	UL
6	106	Andre and Macleod.	1989 b.	Travaillant Lake	67.683	131.792	May-Jun	UL
7	40	✓McCart et al.	1974.	Thunder River and headwater lakes	67.542	130.933	Apr 73	MODR
8	71	✓Reist.	1987.	Dolomite Lake	68.292	133.550	Nov 84	ODL
9	162	Draper et al.	1990a,b.	Trout Lake	67.850	131.367	Oct-Jun	UL
9	85	Andre and Macleod.	1989a,b.	Trout Lake, Kugaluk River	67.850	131.417	Nov-Jun	UL
10	168	Draper et al.	1990a,b.	Unnamed Lake	67.850	130.833	Apr-Jun	UL
10	86	Andre and Macleod.	1989a.	Unnamed Lake, Kugaluk River	67.850	130.833	Nov-Jun	UL
11	87	Andre and Macleod.	1989a,b.	Unnamed Lake, Kugaluk River	67.917	131.542	Nov-Jun	UL
12	88	Andre and Macleod.	1989a,b.	Unnamed Lake, Kugaluk River	67.917	131.750	Nov-Jun	UL
13	93	Andre and Macleod.	1989a,b.	In and Out Lake	67.542	132.700	Nov-Jun	UL
14	94	Andre and Macleod.	1989a.	Odizen Lake	67.750	132.750	Nov-Apr	UL
15	95	Andre and Macleod.	1989a.	Sunny Lake	67.850	132.667	Nov-Apr	UL
15	108	Andre and Macleod.	1989 b.	Sunny Lake	67.850	132.667	May-Jun	UL
16	96	Andre and Macleod.	1989a,b.	Caribou Lake	67.967	132.917	Nov-Jun	UL
17	100	Andre and Macleod.	1989a.	Mackenzie River at Arctic Red	67.458	133.750	Nov-Apr	MAJR
18	110	Andre and Macleod.	1989 b.	Unnamed Lake	67.817	132.500	May-Jun	UL
19	122	Anaviak, et al.	1989a,b.	Unnamed River and lakes, Kittigazuit	69.250	133.583	Oct-Jun	ODL

* UL=interior upland lake; ODL=outer delta lake; MAJR=major river; MODR=moderate river
✓ = point source data

Continued ...

Table 17 (continued). Location and types of overwintering areas of lake trout in the study area.

LKTR SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
20	127	Anaviak, et al.	1989a,b.	Itkrilik Lake	69.583	132.000	Oct-Jun	ODL
21	128	Anaviak, et al.	1989a,b.	Eskimo Lakes (N)	69.383	132.000	Oct-Jun	ODL
22	129	Anaviak, et al.	1989a,b.	Eskimo Lakes (S)	69.000	133.083	Oct-Jun	ODL
23	138	Anaviak, et al.	1989a,b.	Unnamed Lake, Smoke River headwaters	68.783	129.033	Oct-Jun	UL
24	139	Draper et al.	1990a,b.	West Round Lake	68.700	133.933	Oct-Jun	ODL
25	140	Draper et al.	1990a,b.	Unnamed Lake (Wolverine Lakes)	68.850	134.217	Oct-Jun	ODL
26	141	Draper et al.	1990a,b.	Unnamed Lake (Wolverine Lakes)	68.883	134.183	Oct-Jun	ODL
27	142	Draper et al.	1990a,b.	Unnamed Lake (Peter Lake)	68.775	134.183	Oct-Jun	ODL
28	143	Draper et al.	1990a,b.	East Round Lake	68.692	133.867	Oct-Jun	ODL
29	144	Draper et al.	1990a,b.	Bonnet Plume Lake	68.600	133.800	Oct-Jun	ODL
30	145	Draper et al.	1990a,b.	Jimmy Lake	68.633	133.517	Oct-Jun	ODL
31	146	Draper et al.	1990a,b.	Unnamed Lake	68.625	133.367	Oct-Jun	ODL
32	147	Draper et al.	1990a,b.	Noell Lake	68.533	133.542	Oct-Jun	ODL
33	148	Draper et al.	1990a,b.	Sitidgi Lake	68.517	132.750	Oct-Jun	ODL
34	149	Draper et al.	1990a,b.	Hyndman Lake	68.233	131.167	Oct-Jun	UL
35	152	Draper et al.	1990a,b.	Kalinek Channel	68.167	134.167	Oct-Jun	IDL
36	153	Draper et al.	1990a,b.	Wood Bridge Lake	67.883	132.217	Oct-Jun	UL
37	154	Draper et al.	1990a,b.	Sandy Lake	67.783	132.250	Oct-Jun	UL
38	155	Draper et al.	1990a,b.	Tregnantchiez Lake	67.767	132.083	Oct-Jun	UL
39	157	Draper et al.	1990a,b.	Bathing Lake	67.667	132.417	Oct-Jun	UL
40	161	Draper et al.	1990a,b.	Shotgun Lake	68.147	131.467	Oct-Jun	UL
41	163	Draper et al.	1990a,b.	Tenlen Lake	67.850	131.100	Oct-Jun	UL
41	313	Andre and Macleod.	1989b.	Tenlen Lake	67.867	131.100	May-Jun	UL

* UL=interior upland lake; ODL=outer delta lake; IDL=inner delta lake

Concluded ...

Table 17 (concluded). Location and types of overwintering areas of lake trout in the study area.

LKTR SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
42	164	Draper et al.	1990a.	Unnamed Lake, Iroquois River	67.917	130.267	Nov-Dec	UL
43	167	Draper et al.	1990a,b.	Kittigazuit Lakes	69.283	133.500	Oct-Jun	ODL
45	178	Firth et al.	1989b.	James Creek	67.117	135.917	May-Jun	MODR
46	184	Firth et al.	1989a.	Rat River	67.692	135.467	Nov-Apr	MODR
47	185	Firth et al.	1989a.	Dark Water Lake	67.433	134.667	Nov-Apr	IDL
48	186	Firth et al.	1989a.	Narrow Lake	67.417	134.625	Nov-Apr	IDL
49	187	Firth et al.	1989b.	Deep Watre Lake (Nigger Lake)	67.400	134.467	Apr-Jun	IDL
50	205	Firth et al.	1989b.	Fish Creek	67.783	136.333	May-Jun	PS
51	227	Thrasher and McDonald.	1989a,b.	Fish River	68.458	136.500	Nov-Jun	MODR
52	272	✓Poulin.	1977.	Parsons Lake	68.958	133.611	Nov 76	ODL
53	273	✓Poulin.	1977.	Hans Bay HB2	68.878	133.441	Nov 76	EC
54	274	✓Poulin.	1977.	Hans Bay HB9	68.865	133.480	Nov 76	EC

* UL=interior upland lake; ODL=outer delta lake; IDL=inner delta lake; EC=estuarine coastal; PS=perennial spring; MODR=moderate river
✓ = point source data

The above information suggests that, although large deep lakes are most important for overwintering lake trout, a number of other habitats may be used by some populations. This includes major and moderate rivers and, more rarely, perennial springs and estuarine coastal waters.

Burbot *(Lota lota)*

Over 60 overwintering areas for burbot have been identified and are shown in Figure 11 and Table 18. They consist mainly of all three lake habitats, a substantial number (about 14) of areas in the main channels of the Mackenzie, Peel and Arctic Red rivers, and four minor channels of the Mackenzie. In addition, six estuarine coastal areas and one nearshore marine area were identified as overwintering areas. It is probable that more lakes contain isolated populations of burbot. Only three moderate-sized rivers were identified as harbouring burbot over winter, and no overwintering areas have been reported on the North Slope of the Yukon Territory.

Northern Pike *(Esox lucius)*

Approximately 74 northern pike overwintering areas have been identified primarily in the lake habitats of the Mackenzie drainage and in areas south of the Eskimo Lakes region. No overwintering pike have been found in lakes along the Yukon Coastal Plain.

The major overwintering areas for northern pike that have been identified up to the present time are shown in Figure 12 and Table 19. They are composed of outer delta lakes (19), inner delta lakes (14) and upland lakes (34), with very few sites in rivers. Aside from major channels of the Mackenzie River (Moose Channel, Middle Channel, West Channel and East Channel), northern pike have only been reported overwintering in the Thunder River and the Rengleng River.

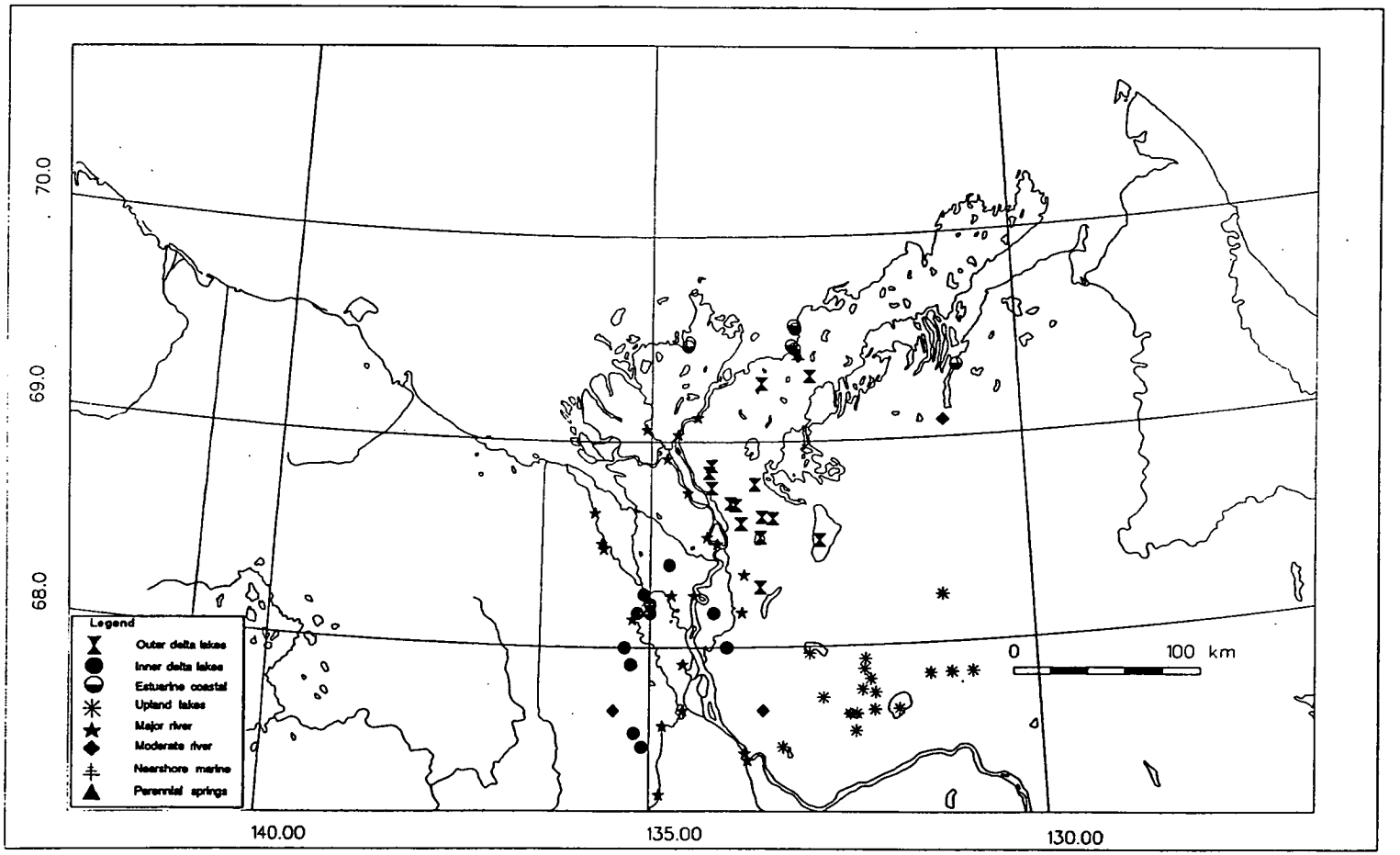

Figure 11. Documented locations of overwintering habitat for burbot in the study area.

Table 18. Location and types of overwintering areas of burbot in the study area.

BRBT SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	36	✓McCart et al.	1974.	Jiggle Lake	67.683	132.100	Apr 73	UL
1	156	Draper et al.	1990a,b.	Jiggle Lake	67.683	132.100	Oct-Jun	UL
2	51	✓Mann.	1975.	Middle Channel	69.058	135.067	Apr 75	MAJR
3	56	✓Mann.	1975.	East Channel, Mackenzie Delta	69.033	134.633	Oct 74	MAJR
4	61	✓Reist.	1987.	East Channel, Mackenzie Delta	68.350	133.767	Oct, Nov 84	MAJR
5	62	✓Reist.	1987.	Arctic Red River	67.183	133.533	Nov 84	MAJR
6	71	✓Reist.	1987.	Dolomite Lake	68.292	133.550	Nov 84	ODL
7	74	✓Reist.	1987.	Miner River	69.083	131.050	Nov 85	MODR
8	92	Andre and Macleod.	1989a.	Loche Lake	67.583	132.350	Nov-Apr	UL
9	94	Andre and Macleod.	1989a.	Odizen Lake	67.750	132.750	Nov-Apr	UL
10	96	Andre and Macleod.	1989a,b.	Caribou Lake	67.967	132.917	Nov-Jun	UL
11	97	Andre and Macleod.	1989a.	Fishing Bear Lake	67.514	133.283	Dec-Apr	UL
12	98	Andre and Macleod.	1989a.	Rengleng River	67.692	133.533	Dec-Mar	MODR
13	116	Andre and Macleod.	1989 b.	David Lake	67.833	132.143	May-Jun	UL
14	117	Andre and Macleod.	1989 b.	Fish Trap Lake	67.933	132.200	May-Jun	UL
15	132	Anaviak, et al.	1989a.	Kugaluk Inlet	69.350	130.833	Oct-Apr	EC
16	139	Draper et al.	1990a,b.	West Round Lake	68.700	133.933	Oct-Jun	ODL
17	140	Draper et al.	1990a,b.	Unnamed Lake, Wolverine Lakes	68.850	134.217	Oct-Jun	ODL
18	141	Draper et al.	1990a,b.	Unnamed Lake, Wolverine Lakes	68.883	134.183	Oct-Jun	ODL
19	142	Draper et al.	1990a,b.	Unnamed Lake (Peter Lake)	68.775	134.183	Oct-Jun	ODL
20	143	Draper et al.	1990a,b.	East Round Lake	68.692	133.867	Oct-Jun	ODL
21	144	Draper et al.	1990a,b.	Bonnet Plume Lake	68.600	133.800	Oct-Jun	ODL
22	145	Draper et al.	1990a,b.	Jimmy Lake	68.633	133.517	Oct-Jun	ODL
23	146	Draper et al.	1990a,b.	Unnamed Lake	68.625	133.367	Oct-Jun	ODL
24	147	Draper et al.	1990a,b.	Noell Lake	68.533	133.542	Oct-Jun	ODL
25	148	Draper et al.	1990a,b.	Sitidgi Lake	68.517	132.750	Oct-Jun	ODL
26	149	Draper et al.	1990a,b.	Hyndman Lake	68.233	131.167	Oct-Jun	UL
27	150	Draper et al.	1990a,b.	Middle Channel	68.500	134.117	Oct-Jun	MAJR
27	188	Thrasher and McDonald.	1989a,b.	Middle Channel	67.917	134.567	Nov-Jun	MAJR

* UL=interior upland lake; MAJR=major river; MODR=moderate river; ODL=outer delta lake; EC=estuarine coastal

✓ = point source data

Continued ...

Table 18 (continued). Location and types of overwintering areas of burbot in the study area.

BRBT SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
27	189	Thrasher and McDonald.	1989a,b.	Middle Channel	68.250	134.417	Nov-Jun	MAJR
27	191	Thrasher and McDonald.	1989a,b.	Middle CHannel	68.750	134.500	Nov-Jun	MAJR
27	192	Thrasher and McDonald.	1989a,b.	Middle Channel	68.917	134.783	Nov-Jun	MAJR
27	190	Thrasher and McDonald.	1989a,b.	Middle Channel	68.533	134.250	Nov-Jun	MAJR
28	151	Draper et al.	1990a,b.	East Channel	68.167	133.800	Oct-Jun	MAJR
29	152	Draper et al.	1990a,b.	Kalinek Channel	68.167	134.167	Oct-Jun	IDL
30	153	Draper et al.	1990a,b.	Wood Bridge Lake	67.883	132.217	Oct-Jun	UL
31	154	Draper et al.	1990a,b.	Sandy Lake	67.783	132.250	Oct-Jun	UL
32	155	Draper et al.	1990a,b.	Tregnantchiez Lake	67.767	132.083	Oct-Jun	UL
33	157	Draper et al.	1990a,b.	Bathing Lake	67.667	132.417	Oct-Jun	UL
34	158	Draper et al.	1990a,b.	Travaillant Lake	67.683	131.783	Oct-Jun	UL
35	159	Draper et al.	1990a,b.	Deep Lake	67.667	132.333	Oct-Jun	UL
36	162	Draper et al.	1990a,b.	Trout Lake	67.850	131.367	Oct-Jun	UL
37	163	Draper et al.	1990a,b.	Tenlen Lake	67.850	131.100	Oct-Jun	UL
38	167	Draper et al.	1990a,b.	Kittigazuit Lakes	69.283	133.500	Oct-Jun	ODL
39	168	Draper et al.	1990a,b.	Unnamed Lake	67.850	130.833	Apr-Jun	UL
40	170	Firth et al.	1989a.	Husky Lake	67.517	135.100	Nov-Apr	IDL
41	171	Firth et al.	1989a.	Unnamed Lakes	67.583	135.200	Nov-Apr	IDL
42	179	Firth et al.	1989a.	Peel River	67.167	135.000	Nov-Apr	MAJR
43	180	Firth et al.	1989a.	Peel River	67.283	134.875	Nov-Apr	MAJR
44	182	Firth et al.	1989a.	Peel River	67.617	134.833	Nov-Apr	MAJR
45	183	Firth et al.	1989a.	Peel River	67.692	134.567	Nov-Apr	MAJR
46	184	Firth et al.	1989a.	Rat River	67.692	135.467	Nov-Apr	MODR
47	193	Thrasher and McDonald.	1989a,b.	West Channel	68.250	134.717	Nov-Jun	MAJR
47	194	Thrasher and McDonald.	1989a,b.	West Channel	68.500	135.650	Nov-Jun	MAJR
47	195	Thrasher and McDonald.	1989a,b.	West Channel	68.650	135.750	Nov-Jun	MAJR

* UL=interior upland lake; MAJR=major river; IDL=inner delta lake; ODL=outer delta lake

Concluded ...

Table 18 (concluded). Location and types of overwintering areas of burbot in the study area.

BRBT SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
48	196	Thrasher and McDonald.	1989a,b.	Husky Channel	68.000	135.333	Nov-Jun	IDL
48	230	Thrasher and McDonald.	1989a.	Husky Channel	67.917	135.250	Nov-Apr	IDL
49	197	Thrasher and McDonald.	1989a,b.	Peel Channel	68.167	135.167	Nov-Jun	IDL
50	198	Thrasher and McDonald.	1989a,b.	Enoch Channel	68.167	135.000	Nov-Jun	IDL
51	202	Thrasher and McDonald.	1989b.	Taylor Channel	68.400	134.750	Apr-Jun	IDL
52	244	✓Bond and Erickson.	1985.	Lake 8, Freshwater system, Tuk Pen	69.317	132.833	May 82	ODL
53	268	✓Poulin.	1977.	Lake E54, Eskimo Lakes	68.792	133.611	Nov 76	ODL
54	316	✓Bond.	1982.	Tuktouyaktuk Harbour	69.417	133.000	Apr-Jun 80	NM
54	286	INAC.	1972.	Tuktoyaktuk Harbour	69.417	132.983	Winter	NM
55	296	INAC.	1972.	Mackenzie River at Arctic Red	67.450	133.750	Oct-Nov	MAJR
56	297	INAC.	1972.	Mackenzie River	67.483	133.783	Oct-Nov	MAJR
57	305	✓Percy.	1975.	Swimming Point, East Channel	69.117	134.367	Mar 74	MAJR
58	308	✓Percy.	1975.	Mallik Bay	69.467	134.500	Mar 75	EC
59	314	✓Chiperzak et al.	1991.	Station 86031, off Tuk Pen	69.547	133.025	May 86	EC
60	315	✓Chiperzak et al.	1991.	Station 87011, off Tuk Pen	69.563	133.050	May 87	EC
61	318	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Apr-Jun 80	EC
62	320	✓Bond.	1982.	Entrances, Tuk Harbour	69.450	133.042	Jan-Mar 81	EC

* NM=nearshore marine; MAJR=major river; MODR=moderate river; IDL=inner delta lake; ODL=outer delta lake; EC=estuarine coastal
✓ = point source data

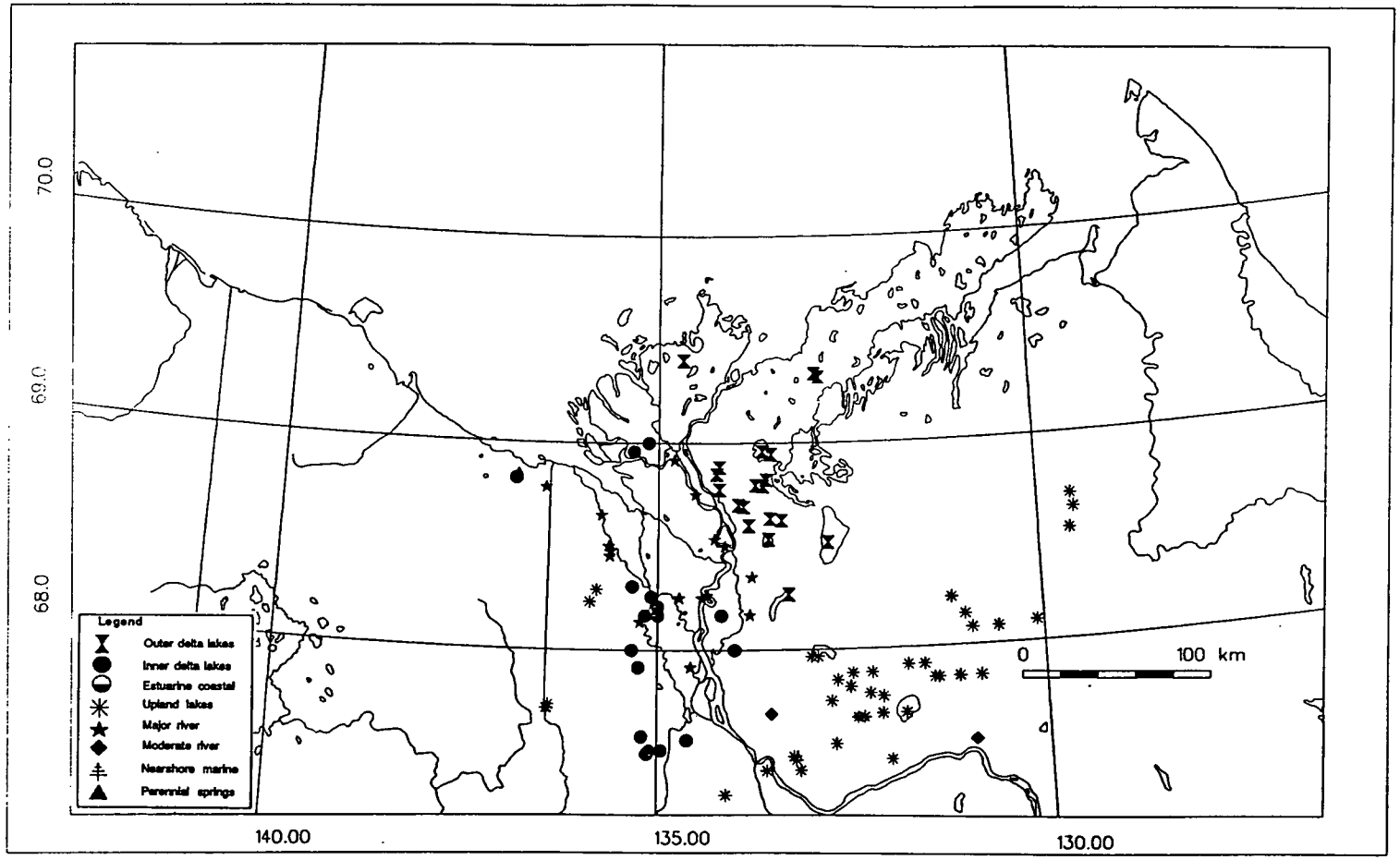

Figure 12. Documented locations of overwintering habitat for northern pike in the study area.

Table 19. Location and types of overwintering areas of northern pike in the study area.

PIKE SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	34	✓McCart et al.	1974.	High Point Lake	67.883	132.467	Apr 73	UL
2	35	✓McCart et al.	1974.	Unnamed Lake	67.817	132.500	Apr 73	UL
3	36	✓McCart et al.	1974.	Jiggle Lake	67.683	132.100	Apr 73	UL
3	156	Draper et al.	1990a,b.	Jiggle Lake	67.683	132.100	Oct-Jun	UL
4	159	Draper et al.	1990a,b.	Deep Lake	67.667	132.333	Oct-Jun	UL
4	37	✓McCart et al.	1974.	Deep Lake	67.667	132.333	Apr 73	UL
5	40	✓McCart et al.	1974.	Thunder River and headwater lakes	67.542	130.933	Apr 73	MODR
6	45	✓Mann.	1975.	Moose Channel, Mackenzie Delta	68.783	136.500	Nov 74	MAJR?
7	46	✓Mann.	1975.	Unnamed Channel, Mackenzie Delta	68.825	136.917	Oct 74	IDL
8	47	✓Mann.	1975.	Unnamed Lake, Langley Island	68.958	135.333	Nov 74	IDL
9	49	✓Mann.	1975.	Unnamed Lake, Langley Island	69.000	135.133	Nov 74	IDL
10	61	✓Reist.	1987.	East Channel, Mackenzie Delta	68.350	133.767	Oct, Nov 84	MAJR
11	70	✓Reist.	1987.	Campbell Lake	68.267	133.283	Oct-Nov 85	ODL
12	80	✓Reist.	1987.	Long Lake, Rat River	67.717	136.417	Oct-Nov 86	UL
13	81	✓Reist.	1987.	Ogilvie Lake, Rat R.	67.717	136.433	Oct-Nov 86	UL
14	82	✓Reist.	1987.	Twin Lake S., Rat R.	67.733	136.400	Oct-Nov 86	UL
15	162	Draper et al.	1990a,b.	Trout Lake	67.850	131.367	Oct-Jun	UL
15	85	Andre and Macleod.	1989a,b.	Trout Lake, Kugaluk River	67.850	131.417	Nov-Jun	UL
16	168	Draper et al.	1990a,b.	Unnamed Lake	67.850	130.833	Apr-Jun	UL
16	86	Andre and Macleod.	1989a.	Unnamed Lake, Kugaluk River	67.850	130.833	Nov-Jun	UL
17	87	Andre and Macleod.	1989a,b.	Unnamed Lake, Kugaluk River	67.917	131.542	Nov-Jun	UL
18	88	Andre and Macleod.	1989a,b.	Unnamed Lake, Kugaluk River	67.917	131.750	Nov-Jun	UL
19	93	Andre and Macleod.	1989a,b.	In and Out Lake	67.542	132.700	Nov-Jun	UL
20	94	Andre and Macleod.	1989a.	Odizen Lake	67.750	132.750	Nov-Apr	UL
21	96	Andre and Macleod.	1989a,b.	Caribou Lake	67.967	132.917	Nov-Jun	UL
21	160	Draper et al.	1990a,b.	Caribou Lake	67.967	133.000	Oct-Jun	UL
22	98	Andre and Macleod.	1989a.	Rengleng River	67.692	133.533	Dec-Mar	MODR

* UL=interior upland lake; MAJR=major river; MODR=moderate river; ODL=outer delta lake
✓ = point source data

Continued ...

Table 19 (continued). Location and types of overwintering areas of northern pike in the study area.

PIKE SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
23	99	Andre and Macleod.	1989a.	Clearwater Lake	67.417	133.600	Nov-Apr	UL
24	101	Andre and Macleod.	1989a,b.	Nerejo Lake	67.300	134.125	Nov-Jun	UL
25	103	Andre and Macleod.	1989 b.	Attoe Lake	67.417	133.167	May-Jun	UL
26	104	Andre and Macleod.	1989 b.	Whirl Lake	67.467	133.217	May-Jun	UL
27	105	Andre and Macleod.	1989 b.	Fishing Bear Lake	67.483	133.250	May-Jun	UL
28	158	Draper et al.	1990a,b.	Travaillant Lake	67.683	131.783	Oct-Jun	UL
28	106	Andre and Macleod.	1989 b.	Travaillant Lake	67.683	131.792	May-Jun	UL
29	108	Andre and Macleod.	1989 b.	Sunny Lake	67.850	132.667	May-Jun	UL
30	112	Andre and Macleod.	1989 b.	Rat Lake (=Big Lake)	67.458	132.000	May-Jun	UL
31	139	Draper et al.	1990a,b.	West Round Lake	68.700	133.933	Oct-Jun	ODL
32	140	Draper et al.	1990a,b.	Unnamed Lake (Wolverine Lakes)	68.850	134.217	Oct-Jun	ODL
33	141	Draper et al.	1990a,b.	Unnamed Lake (Wolverine Lakes)	68.883	134.183	Oct-Jun	ODL
34	142	Draper et al.	1990a,b.	Unnamed Lake (Peter Lake)	68.775	134.183	Oct-Jun	ODL
35	143	Draper et al.	1990a,b.	East Round Lake	68.692	133.867	Oct-Jun	ODL
36	144	Draper et al.	1990a,b.	Bonnet Plume Lake	68.600	133.800	Oct-Jun	ODL
37	145	Draper et al.	1990a,b.	Jimmy Lake	68.633	133.517	Oct-Jun	ODL
38	146	Draper et al.	1990a,b.	Unnamed Lake	68.625	133.367	Oct-Jun	ODL
39	147	Draper et al.	1990a,b.	Noell Lake	68.533	133.542	Oct-Jun	ODL
40	148	Draper et al.	1990a,b.	Sitidgi Lake	68.517	132.750	Oct-Jun	ODL
41	149	Draper et al.	1990a,b.	Hyndman Lake	68.233	131.167	Oct-Jun	UL
41	281	INAC.	1972.	Hyndman Lake	68.233	131.167	Winter	UL
42	150	Draper et al.	1990a,b.	Middle Channel	68.500	134.117	Oct-Jun	MAJR
42	188	Thrasher and McDonald.	1989a,b.	Middle Channel	67.917	134.567	Nov-Jun	MAJR
42	189	Thrasher and McDonald.	1989a,b.	Middle Channel	68.250	134.417	Nov-Jun	MAJR
42	191	Thrasher and McDonald.	1989a,b.	Middle Channel	68.750	134.500	Nov-Jun	MAJR
42	192	Thrasher and McDonald.	1989a,b.	Middle Channel	68.917	134.783	Nov-Jun	MAJR
42	190	Thrasher and McDonald.	1989a,b.	Middle Channel	68.533	134.250	Nov-Jun	MAJR
43	151	Draper et al.	1990a,b.	East Channel	68.167	133.800	Oct-Jun	MAJR

* UL=interior upland lake; MODR=moderate river; ODL=outer delta lake

Continued ...

Table 19 (continued). Location and types of overwintering areas of northern pike in the study area.

PIKE SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
44	152	Draper et al.	1990a,b.	Kalinek Channel	68.167	134.167	Oct-Jun	IDL
45	153	Draper et al.	1990a,b.	Wood Bridge Lake	67.883	132.217	Oct-Jun	UL
46	154	Draper et al.	1990a,b.	Sandy Lake	67.783	132.250	Oct-Jun	UL
47	155	Draper et al.	1990a,b.	Tregnantchiez Lake	67.767	132.083	Oct-Jun	UL
48	157	Draper et al.	1990a,b.	Bathing Lake	67.667	132.417	Oct-Jun	UL
49	163	Draper et al.	1990a,b.	Tenlen Lake	67.850	131.100	Oct-Jun	UL
50	170	Firth et al.	1989a.	Husky Lake	67.517	135.100	Nov-Apr	IDL
50	206	Firth et al.	1989b.	Husky Lake "Jackfish Lake #1"	67.500	135.133	May-Jun	IDL
51	171	Firth et al.	1989a.	Unnamed Lakes	67.583	135.200	Nov-Apr	IDL
52	172	Firth et al.	1989a.	Unnamed Lakes (Frog Creek)	67.567	134.617	Nov-Apr	IDL
53	193	Thrasher and McDonald.	1989a,b.	West Channel	68.250	134.717	Nov-Jun	MAJR
53	194	Thrasher and McDonald.	1989a,b.	West Channel	68.500	135.650	Nov-Jun	MAJR
53	195	Thrasher and McDonald.	1989a,b.	West Channel	68.650	135.750	Nov-Jun	MAJR
54	196	Thrasher and McDonald.	1989a,b.	Husky Channel	68.000	135.333	Nov-Jun	IDL
54	230	Thrasher and McDonald.	1989a.	Husky Channel	67.917	135.250	Nov-Apr	IDL
55	197	Thrasher and McDonald.	1989a,b.	Peel Channel	68.167	135.167	Nov-Jun	IDL
56	198	Thrasher and McDonald.	1989a,b.	Enoch Channel	68.167	135.000	Nov-Jun	IDL
57	207	Firth et al.	1989b.	Jackfish Lake #2	67.517	134.950	May-Jun	IDL
58	224	Thrasher and McDonald.	1989a,b.	Canoe Lake	68.233	135.883	Nov-Jun	UL
59	225	Thrasher and McDonald.	1989a,b.	Divide Lake	68.292	135.800	Nov-Jun	UL
60	242	✓Bond and Erickson.	1985.	Lake 5, Mayogiak System, Tuk Pen	69.333	132.900	May 82	ODL
61	244	✓Bond and Erickson.	1985.	Lake 8, Freshwater System, Tuk Pen	69.317	132.833	May 82	ODL
62	267	✓Poulin.	1977.	Zed Lake	68.945	133.496	Nov 76	ODL
63	268	✓Poulin.	1977.	Lake E54, Eskimo Lakes	68.792	133.611	Nov 76	ODL
64	269	✓Poulin.	1977.	Lake E58, Eskimo Lakes	68.796	133.709	Nov 76	ODL
65	271	✓Poulin.	1977.	Lake E35, Eskimo Lakes	68.821	133.570	Nov 76	ODL
66	272	✓Poulin.	1977.	Parsons Lake	68.958	133.611	Nov 76	ODL

* UL=interior upland lake; MAJR=major river; IDL=inner delta lake; ODL=outer delta lake

✓ = point source data

Concluded ...

Table 19 (concluded). Location and types of overwintering areas of northern pike in the study area.

PIKE SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
67	278	INAC.	1972.	Crossley Lakes I	68.700	129.550	Winter	UL
68	279	INAC.	1972.	Crossley Lakes II	68.633	129.517	Winter	UL
69	280	INAC.	1972.	Crossley Lakes III	68.533	129.583	Winter	UL
70	282	INAC.	1972.	Unnamed Lake	68.150	131.000	Winter	UL
71	283	INAC.	1972.	Unnamed Lake	68.083	130.917	Winter	UL
72	284	INAC.	1972.	Unnamed Lake	68.083	130.583	Winter	UL
73	285	INAC.	1972.	Unnamed Lake	68.100	130.083	Winter	UL
74	307	✓Percy.	1975.	Big Horn Point	69.400	134.667	Mar 75	ODL

* UL=interior upland lake; IDL=inner delta lake; ODL=outer delta lake
✓ = point source data

Arctic Grayling (*Thymallus arcticus*)

Arctic grayling overwintering areas are scattered throughout the study area (Figure 13) and in a number of different habitat types. There are undoubtedly other unreported overwintering areas for Arctic grayling, since this is one of the most widely distributed fish species in the study area.

The 27 overwintering areas identified for Arctic grayling are shown in Figure 13 and listed in Table 20. They include outer delta lakes (1 site), interior upland lakes (13), perennial springs (6), major rivers (1), moderate rivers (5) and one estuarine coastal site near the southern extremity of Liverpool Bay. There is no information on habitat at this site, but it is strongly suspected that the area contains freshened water throughout the winter.

Arctic grayling have been reported from five streams which are classed as moderate rivers. It is very doubtful that these streams flow throughout the year but they may contain isolated pools of free water where fish can survive throughout the winter. Some, such as Site 20, Fish River, may also be influenced by perennial springs.

There is good evidence of overwintering Arctic grayling in a variety of upland lakes, and this type of habitat is undoubtedly very important to the species as a whole.

With the exception noted above, Arctic grayling have not been found overwintering in coastal or marine waters, but they have been reported in a variety of freshwater habitats. This corresponds to general knowledge of the species; namely, that they are quite adaptable within the freshwater environment but they have little tolerance for marine waters.

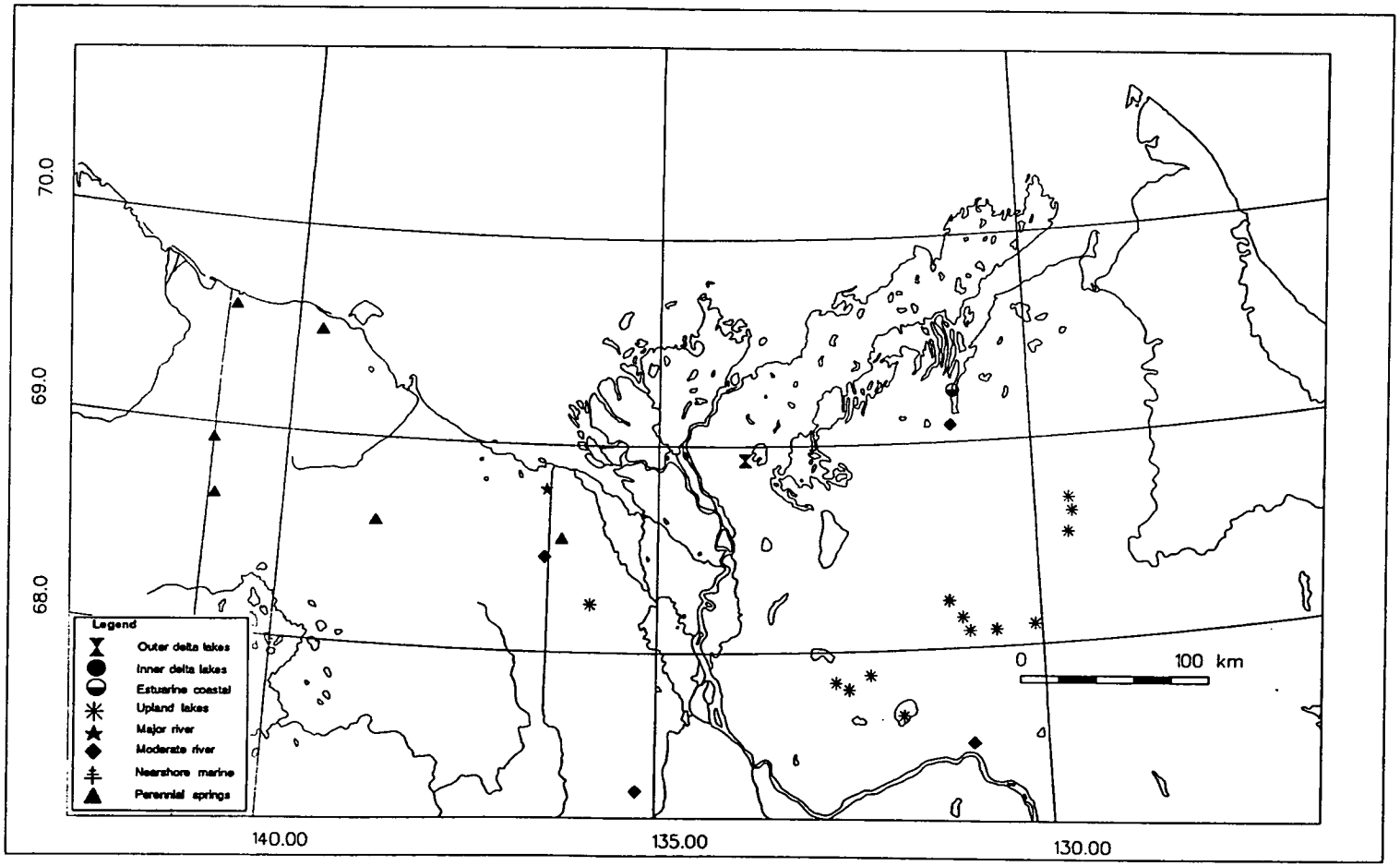

Figure 13. Documented locations of overwintering habitat for Arctic grayling in the study area.

Table 20. Location and types of overwintering areas of Arctic grayling in the study area.

GRAY SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	277	INAC.	1972.	Kugaluk Inlet	69.250	131.000	Fall & Winter	EC
2	33	✓McCart et al.	1974.	Island Lake	68.933	133.833	Apr 73	ODL
3	44	✓Mann.	1975.	Moose Channel, Mackenzie Delta	68.783	136.500	Oct 74	MAJR?
3	45	✓Mann.	1975.	Moose Channel, Mackenzie Delta	68.783	136.500	Nov 74	MAJR?
4	39	✓McCart et al.	1974.	Travaillant Lake	67.683	131.797	Apr 73	UL
4	106	Andre and Macleod.	1989 b.	Travaillant Lake	67.683	131.792	May-Jun	UL
5	40	✓McCart et al.	1974.	Thunder River and headwater lakes	67.542	130.933	Apr 73	MODR
6	108	Andre and Macleod.	1989 b.	Sunny Lake	67.850	132.667	May-Jun	UL
7	153	Draper et al.	1990a,b.	Wood Bridge Lake	67.883	132.217	Oct-Jun	UL
8	278	INAC.	1972.	Crossley Lakes I	68.700	129.550	Winter	UL
9	279	INAC.	1972.	Crossley Lakes II	68.633	129.517	Winter	UL
10	280	INAC.	1972.	Crossley Lakes III	68.533	129.583	Winter	UL
11	281	INAC.	1972.	Hyndman Lake	68.233	131.167	Winter	UL
12	282	INAC.	1972.	Unnamed Lake	68.150	131.000	Winter	UL
13	283	INAC.	1972.	Unnmaed Lake	68.083	130.917	Winter	UL
14	284	INAC.	1972.	Unnamed Lake	68.083	130.583	Winter	UL
15	285	INAC.	1972.	Unnamed Lake	68.100	130.083	Winter	UL
16	74	✓Reist.	1987.	Miner River	69.083	131.050	Nov 85	MODR
17	14	✓deBruyn and McCart.	1974.	Firth Delta	69.500	139.667	Jun 72	PS
18	173	Firth et al.	1989a.	James Creek	67.117	135.917	Nov-Apr	MODR
19	175	Firth et al.	1989a.	Stony Creek	67.333	135.250	Nov-Apr	MODR
20	227	Thrasher and McDonald.	1989a,b.	Fish River	68.458	136.500	Nov-Jun	MODR
21	11	✓deBruyn and McCart.	1974.	Firth River	68.667	140.917	Jun 72	PS
22	12	✓deBruyn and McCart.	1974.	Joe Creek	68.933	141.000	Jun 72	PS
23	13	✓deBruyn and McCart.	1974.	Canoe Creek	68.600	138.750	Jun 72	PS
24	17	✓McCart.	1974.	Cache Creek	68.550	136.283	Apr 73	PS
25	32	✓McCart et al.	1974.	Craig Creek	69.583	140.900	Apr 73	PS
26	35	✓McCart et al.	1974.	Unnamed Lake	67.817	132.500	Apr 73	UL
27	224	Thrasher and McDonald.	1989a,b.	Canoe Lake	68.233	135.883	Nov-Jun	UL

PS= perennial springs; UL=interior upland lake; ODL=outer delta lake; MODR=moderate river; MAJR=major river; EC=estuarine coastal
✓ = point source data

Rainbow Smelt (*Osmerus mordax*)

Only eight overwintering sites have been identified for rainbow smelt in the study region (Figure 14, Table 21). This is not surprising because available data suggest that this species tends to overwinter in brackish or perhaps marine waters before undertaking spawning migrations into freshwater during the early spring period. Very little sampling has been conducted in the nearshore marine habitat where one might expect to find this species during winter.

Six of the eight areas identified are in estuarine coastal habitat, from Richards Island to near Kukjuktuk Bay on the Tuktoyaktuk Peninsula. The other two sites are in major channels of the Mackenzie River near the southern end of Richards Island.

Insufficient information on this species has been collected in overwintering habitats to allow for a meaningful description of their preferred overwintering habitat. Data at hand suggest that they overwinter in brackish or sometimes fresh water found in the outer delta and along the Tuktoyaktuk Peninsula. However, it does not appear that they are found in typical freshwater habitats such as lakes or perennial springs.

Pacific Herring (*Clupea harengus pallasi*)

Ten overwintering sites for Pacific herring have been identified in the study area (Figure 15, Table 22). With two exceptions, all are estuarine coastal habitats along the Tuktoyaktuk Peninsula, in Tuktoyaktuk Harbour, or in Hans Bay, an Eskimo Lakes estuary. The exceptions are 1). a report by Mann (1975) which reported Pacific herring in Moose Channel, of the lower Mackenzie River in October 1974, and 2). a report by Bond (1980), which found this species in saline bottom waters in Tuktoyaktuk Harbour in January.

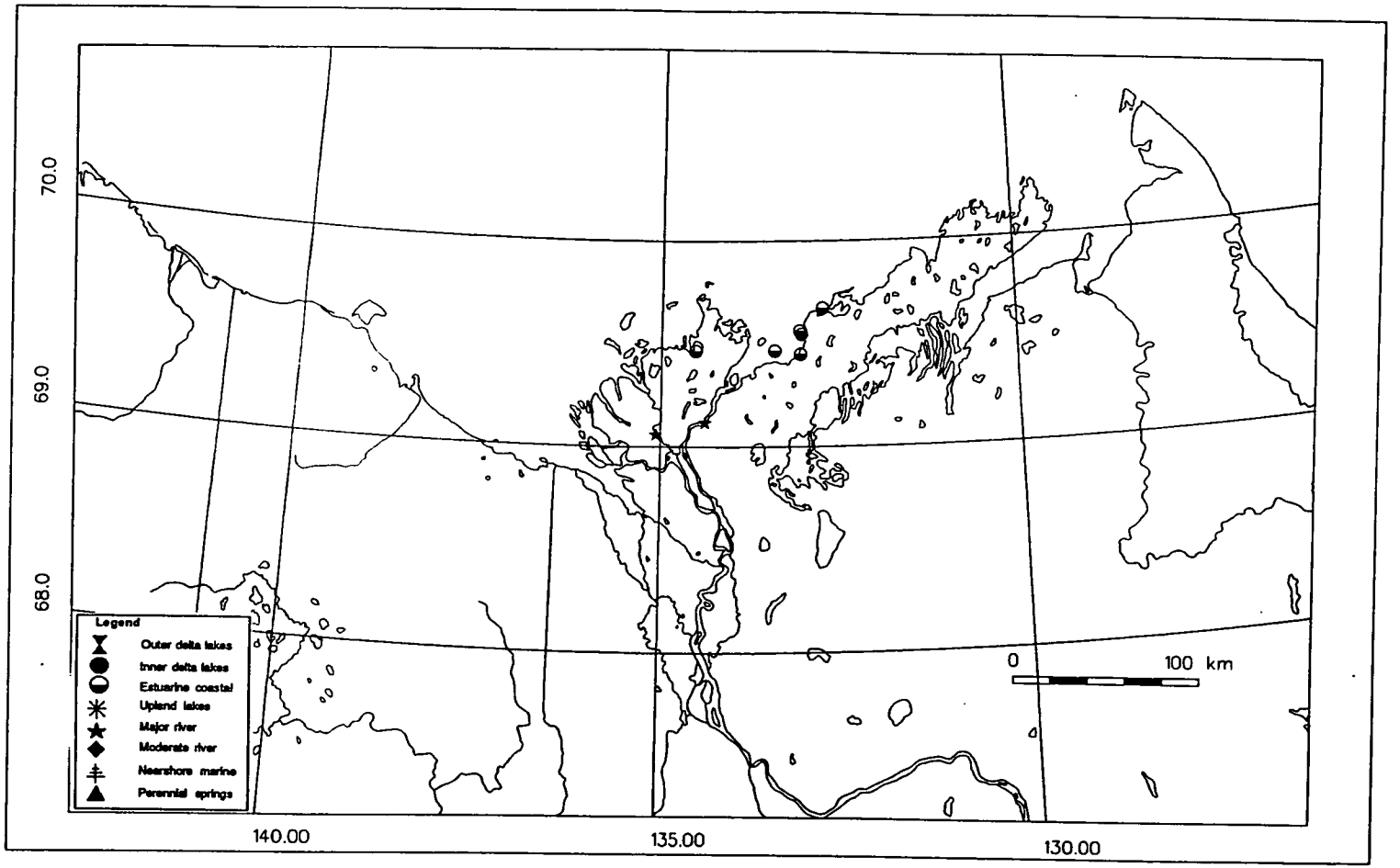

Figure 14. Documented locations of overwintering habitat for rainbow smelt in the study area.

Table 21. Location and types of overwintering areas of rainbow smelt in the study area.

RNSM SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
1	51	✓Mann.	1975.	Middle Channel, Mackenzie Delta	69.058	135.067	Apr 75	MAJR
2	255	✓Chiperzak et al.	1991.	Station 86030, off Tuk Pen	69.673	132.720	May 86	EC
3	305	✓Percy.	1975.	Swimming Point, East Channel	69.117	134.367	Mar 74	MAJR
3	311	✓Percy.	1975.	Swimming Point	69.117	134.367	Mar 75	MAJR
4	308	✓Percy.	1975.	Mallik Bay	69.467	134.500	Mar 75	EC
5	310	✓Percy.	1975.	Hendrickson Island, Kugmallit Bay	69.467	133.400	Mar 75	EC
6	314	✓Chiperzak et al.	1991.	Station 86031, off Tuk Pen	69.547	133.025	May 86	EC
7	315	✓Chiperzak et al.	1991.	Station 87011, off Tuk Pen	69.563	133.050	May 87	EC
8	317	✓Bond.	1982.	West Entrance, Tuktoyaktuk Harbour	69.450	133.042	Apr-Jun 80	EC

* EC=estuarine coastal; MAJR=major river
✓ = point source data

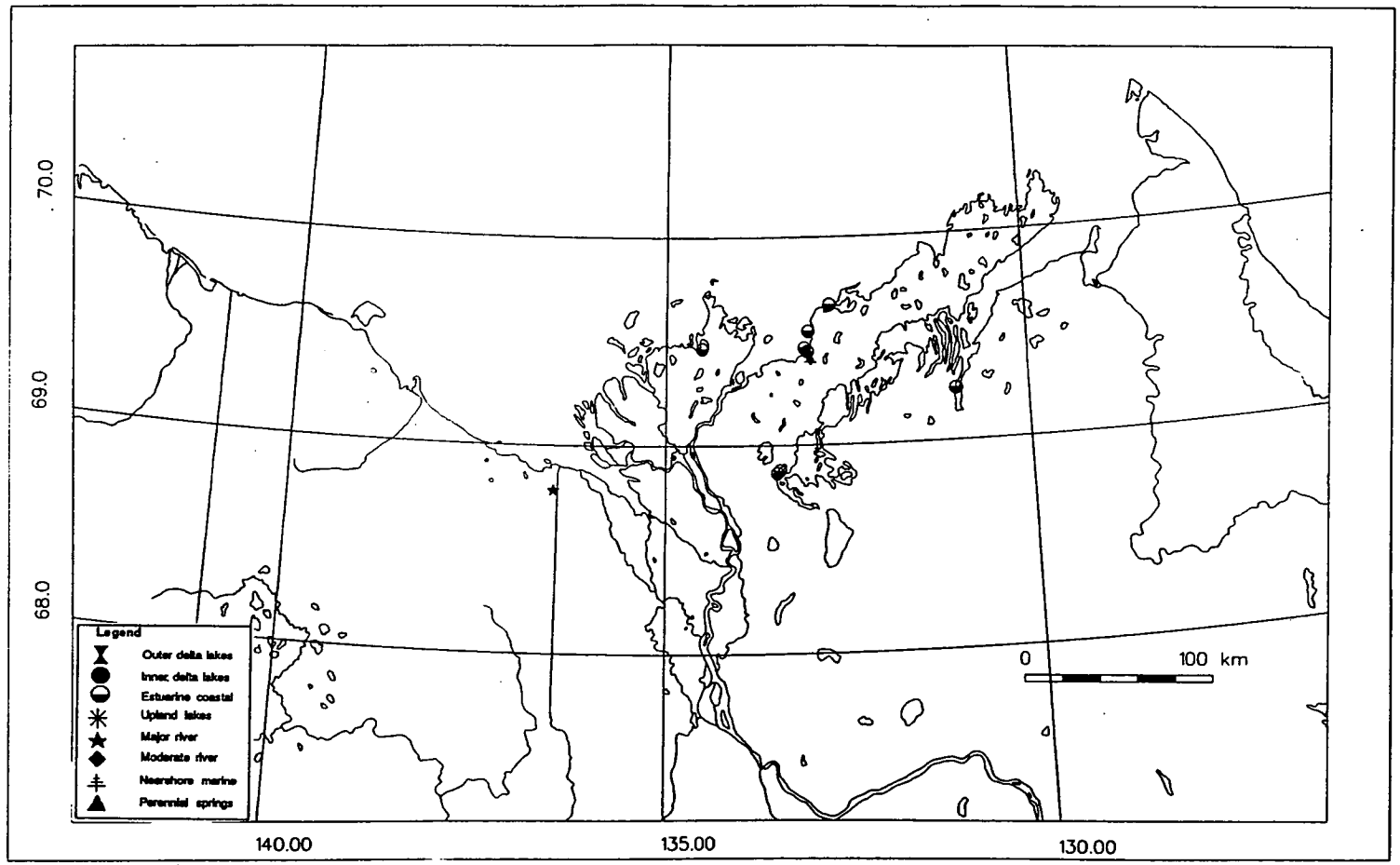

Figure 15. Documented locations of overwintering habitat for Pacific herring in the study area.

Table 22. Location and types of overwintering areas of Pacific herring and saffron cod in the study area.

SITE NO.	DATA SHEET NO.	AUTHORS	YEAR	LOCATION	LAT.	LON.	STUDY DATE	HAB*
PCHR								
1	44	✓Mann.	1975.	Moose Channel, Mackenzie Delta	68.783	136.500	Oct 74	MAJR?
2	255	✓Chiperzak et al.	1991.	Station 86030, off Tuk Pen	69.673	132.720	May 86	EC
3	273	✓Poulin.	1977.	Hans Bay HB2	68.878	133.441	Nov 76	EC
4	274	✓Poulin.	1977.	Hans Bay HB9	68.865	133.480	Nov 76	EC
5	277	INAC.	1972.	Kugaluk Inlet	69.250	131.000	Fall & Winter	EC
6	308	✓Percy.	1975.	Mallik Bay	69.467	134.500	Mar 75	EC
7	314	✓Chiperzak et al.	1991.	Station 86031, off Tuk Pen	69.547	133.025	May 86	EC
8	316	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Apr-Jun 80	NM
8	319	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Jan-Mar 81	NM
9	320	✓Bond.	1982.	Entrances, Tuktoyaktuk Harbour	69.450	133.042	Jan-Mar 81	EC
9	317	✓Bond.	1982.	West Entrance, Tuktoyaktuk Harbour	69.450	133.042	Apr-Jun 80	EC
10	318	✓Bond.	1982.	Kugmallit Bay	69.467	133.083	Apr-Jun 80	EC
SFCD								
1	42	✓Fallis.	1984.	Kukjuktuk Bay	69.650	132.500	Mar-Jun 78	EC
2	254	✓Chiperzak et al.	1991.	Station 85050, off Tuk Pen	69.850	132.517	Mar 85	NM
3	255	✓Chiperzak et al.	1991.	Station 86030, off Tuk Pen	69.673	132.720	May 86	EC
4	316	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Apr-Jun 80	NM
4	319	✓Bond.	1982.	Tuktoyaktuk Harbour	69.417	133.000	Jan-Mar 81	NM

* MAJR = major river; EC = estuarine coastal; NM = nearshore marine

✓ = point source data

The above information indicates that this brackish to marine water species rarely enters fresh water to overwinter. It is likely that there are numerous other overwintering areas within the coastal zone that have not been identified because of the small effort expended sampling in this habitat type.

Saffron Cod (*Eleginus navaga*)

Four overwintering sites have been identified in the study region for this marine species, two in the estuarine coastal habitat and two in the nearshore marine habitat. All were collected either along the Tuktoyaktuk Peninsula or in Tuktoyaktuk Harbour (Figure 16, Table 22). The report of saffron cod in Tuktoyaktuk Harbour was by Bond (1982), who found this species below the halocline, where deeper waters may exceed 20 ppt. For this reason, we have classified the bottom waters of the area as marine habitat.

The lack of sampling in the nearshore marine and estuarine coastal habitats accounts for the small number of overwintering sites recorded for saffron cod since this species does not enter fresh water to overwinter.

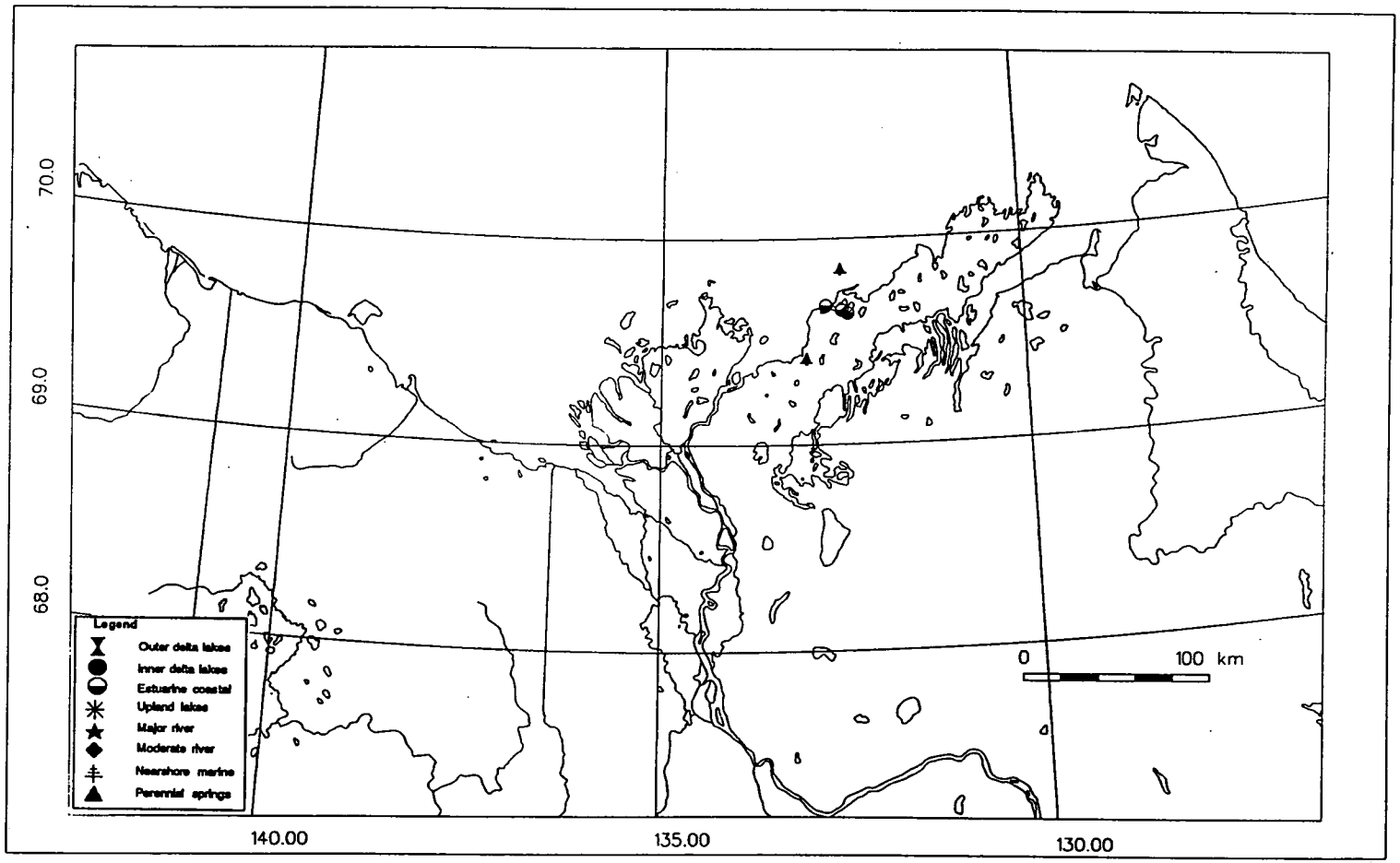

Figure 16. Documented locations of overwintering habitat for saffron cod in the study area.

RESULTS PART II - HARVEST DATA

The following section describes information on fish overwintering habitats and areas as reflected by data on fish harvests in the study area. Two major data sets are considered. The first is the Inuvialuit Harvest data (IHD) (see Fabijan 1991 a,b,c), which consists of 1672 records of fish catches at monthly intervals from 1987 to 1990. In all, 264 separate fishing areas (successfully fished on a total of 452 occasions) are represented within the data set. These areas correspond to circled areas on inhouse maps prepared as part of the Inuvialuit Harvest Study.

The second data set is that derived from information recorded on maps produced by the Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, referred to here as Land Use Map Data (LUMD). As previously described, information recorded on maps consists of species caught in each area in three time periods, October to November, December to April and May to June. No information was given in regard to frequency of fishing or fishing success. One hundred and nineteen separate fishing areas were identified on land use maps. It should be noted that these data were included in RESULTS: PART I as well as in this section.

It should be noted that IHD reflect current fishing sites, whereas LUMD represent historical fishing areas, as well as those in present use. Therefore, differences may be inherent in the two data sets. In both data sets, fishing areas were represented as a circle on a map. Although precise information on location of fishing areas in terms of latitude and longitude is given in Appendix II, all such information is derived from a centre point of the fishing area and the associated fish data come from the surrounding region. LUMD represents information from the communities of Fort McPherson, Arctic Red River, Inuvik, Tuktoyaktuk and Aklavik; IHD originated from the latter three communities.

In discussion with community residents during the course of this study, it became evident that the true overwintering period should not be considered the period of ice cover (as originally defined in the terms of reference for this study) because a considerable amount of fish movement occurs beneath the ice in both fall and spring (pers. comm. Billy Day, Inuvik, March 1992). For this reason, we divided the period of ice cover into the following three periods:

1. October to November — a time of fall migration for many species of fish;
2. December to April — the true overwintering period; and
3. May to June — a spring migration period for many fishes.

Harvest information was analysed according to the above time periods, wherever possible, with emphasis on the December to April period.

The following material first describes the harvest data sets as a whole and then investigates fishing areas by species in the various types of overwintering fish habitat as reflected by both of the above data sets. The information is then summarized and compared.

FREQUENCY OF FISH CATCHES IN HABITAT TYPES

Tables 23 and 24 list the number of areas fished in each habitat type by community. This analysis was performed primarily to investigate possible biases in the fish harvest information so that later interpretations could be performed with identified biases in mind.

As shown in Tables 23 and 24, fishing areas are highly clumped near communities and are not distributed uniformly throughout the various types of fish overwintering habitat. In addition, the type of habitat fished varied by community. For example, most of the winter fishing areas of Tuktoyaktuk residents are in outer delta lake habitat and, to a lesser degree, estuarine coastal habitat. Figures 17 to 24 illustrate the geographical distribution of fishing sites by community.

Table 23. Number of areas fished by habitat type based on Inuvialuit Harvest Data (IHD) (1987-1990) and Land Use Maps (LUMD).

Information Source	Number of Areas Fished							
	ODL	IDL	EC	UL	PS	MAJR	MODR	All
IHD								
Inuvik	8	66	1	5	0	15	2	97
Tuktoyaktuk	54	0	12	2	0	0	5	73
Aklavik	4	57	3	1	2	27	0	94
Total IHD	66	123	16	8	2	42	7	264
LUMD								
Inuvik	11	1	0	16	0	2	0	30
Tuktoyaktuk	11	0	9	1	0	0	0	21
Aklavik	0	10	1	2	0	9	6	28
Arctic Red River	0	0	0	29	0	3	5	37
Ft. McPherson	0	14	0	0	1	8	6	29
Total LUMD	22	25	10	48	1	22	17	145

Table 24. Most important overwintering habitat type fished by community according to IHD and LUMD. Percentages indicate the number of areas fished of a particular habitat type.

Community	IHD		LUMD	
Tuktoyaktuk	ODL (74%)	EC (16%)	ODL (52%)	EC (43%)
Aklavik	IDL (61%)	MAJR (29%)	IDL (36%)	MAJR (32%)
Inuvik	IDL (68%)	MAJR (15%)	UL (53%)	ODL (37%)
Arctic Red River			UL (78%)	MODR (14%)
Fort McPherson			IDL (48%)	MAJR (28%)

ODL = Outer Delta Lake; IDL = Inner Delta Lake; EC = Estuarine Coastal; UL = Upland Lake; PS = Perennial Spring; MAJR = Major River; MODR = Moderate River

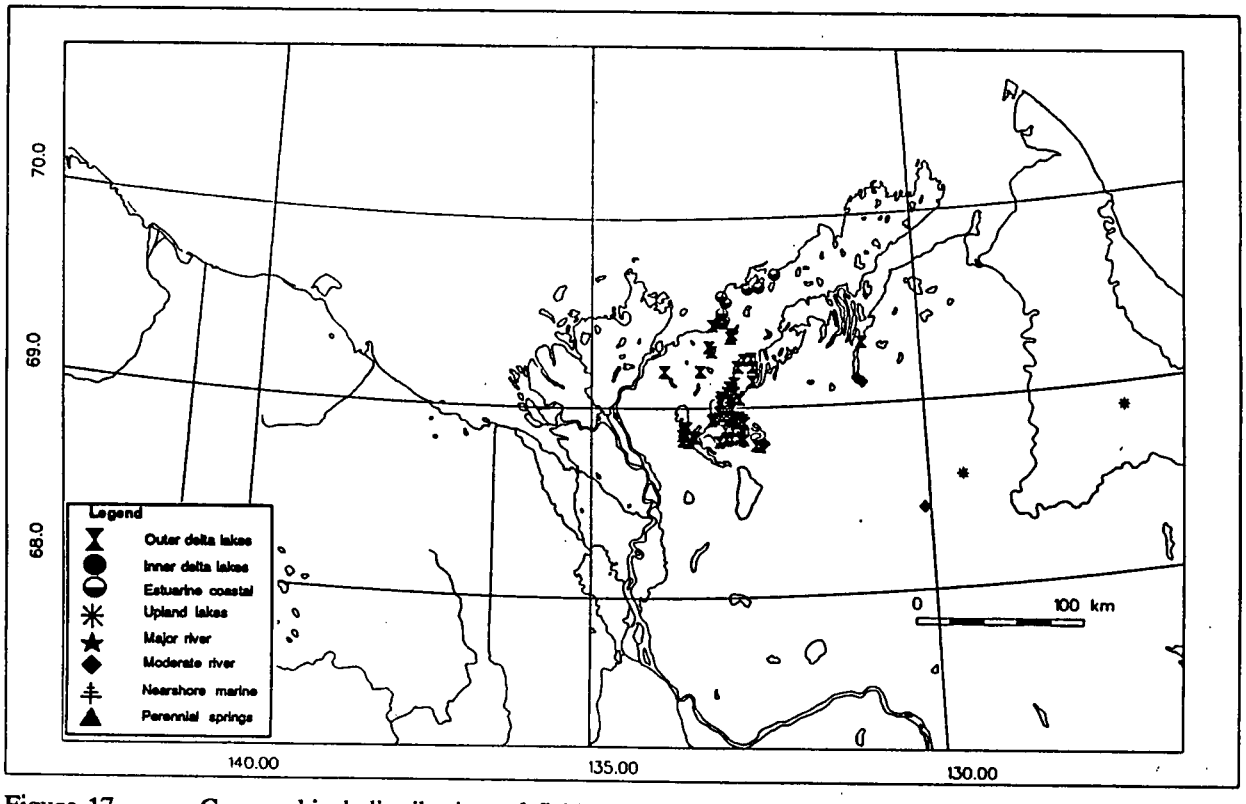

Figure 17. Geographical distribution of fishing sites as documented by Tuktoyaktuk residents (from IHD).

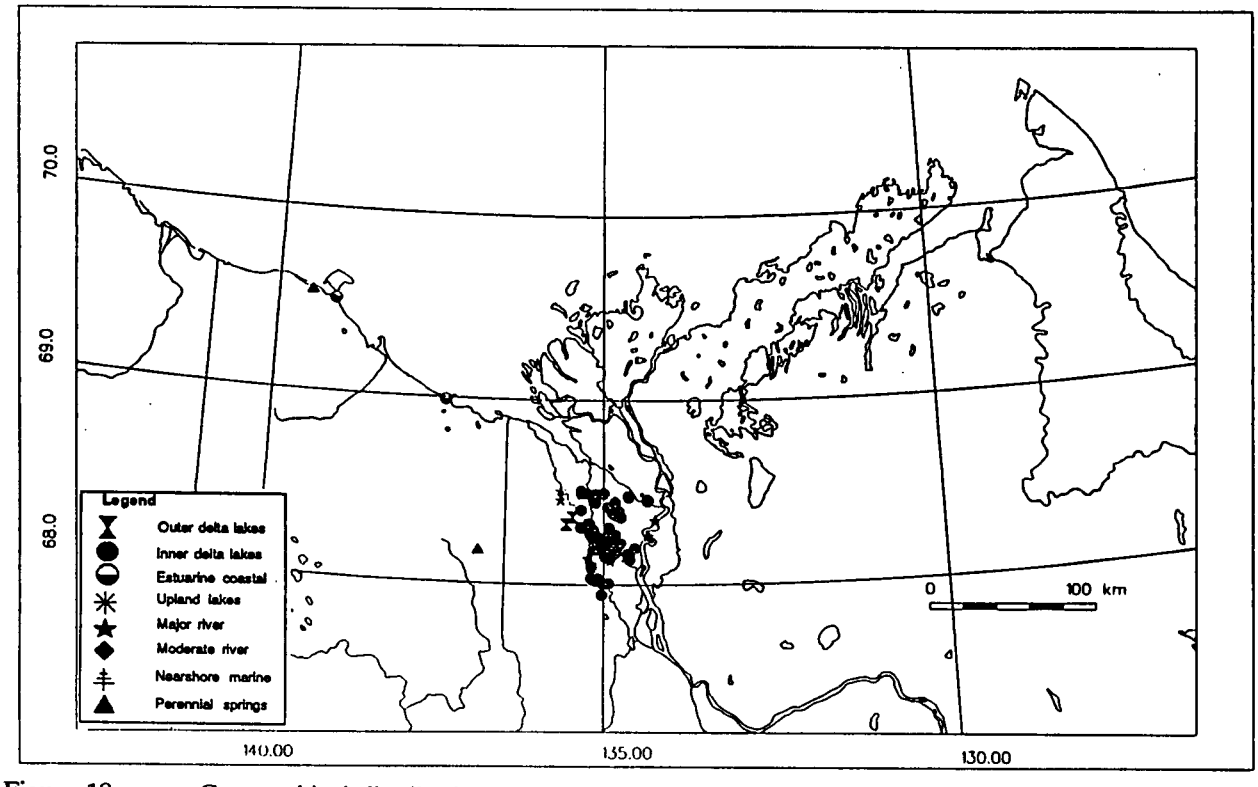

Figure 18. Geographical distribution of fishing sites as documented by Aklavik residents (from IHD).

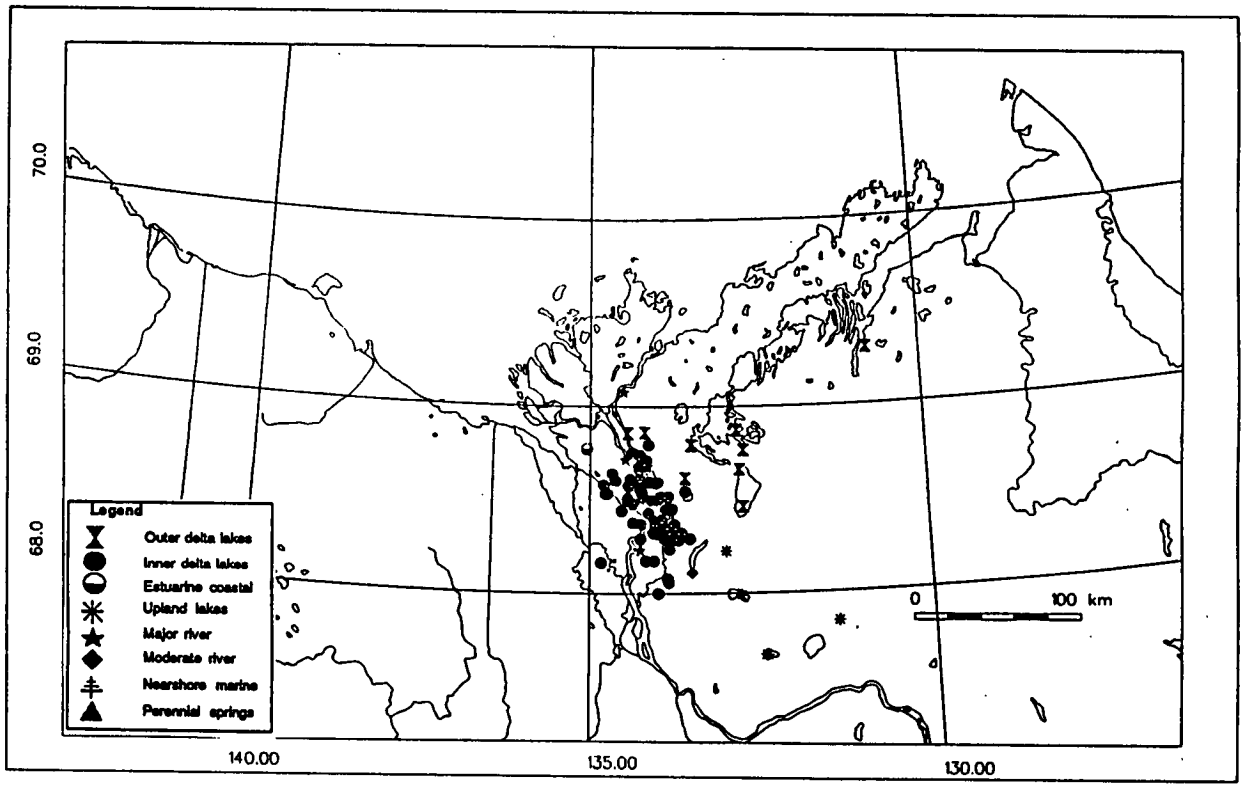

Figure 19. Geographical distribution of fishing sites as documented by Inuvik residents (from IHD).

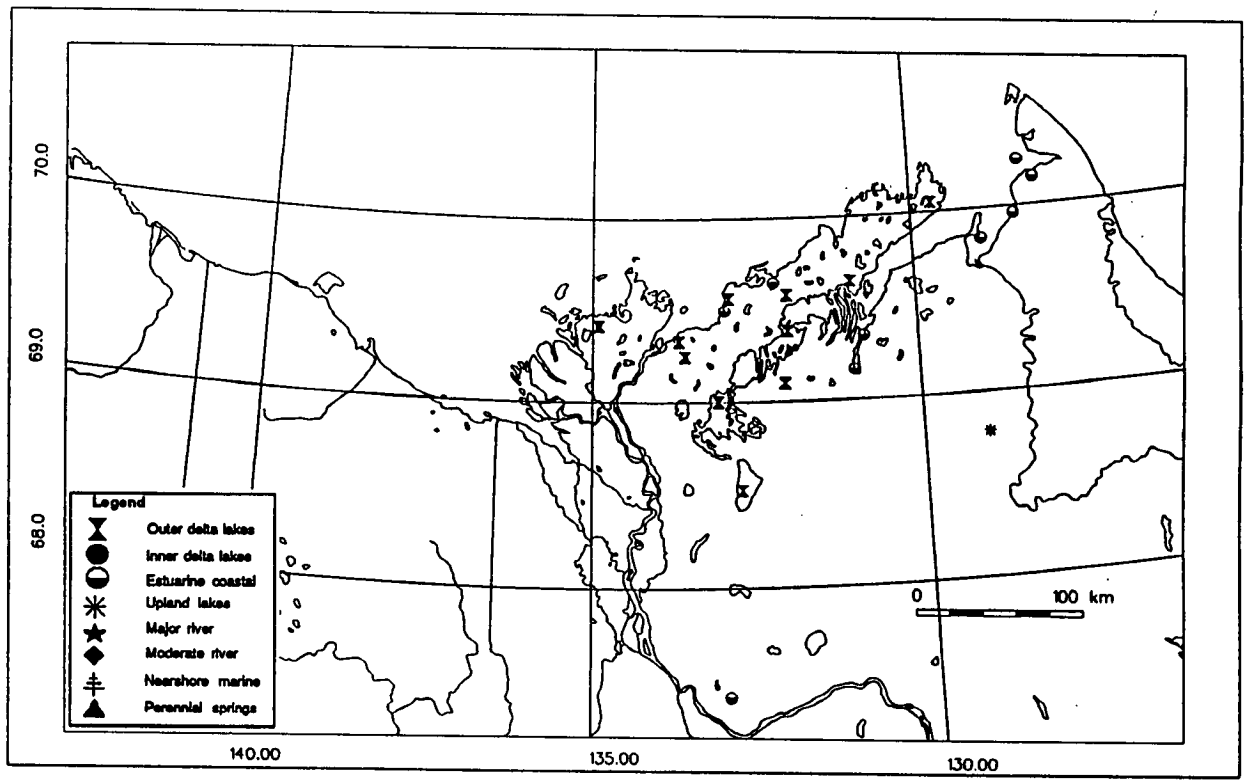

Figure 20. Geographical distribution of fishing sites as documented by Tuktoyaktuk residents (from LUMD).

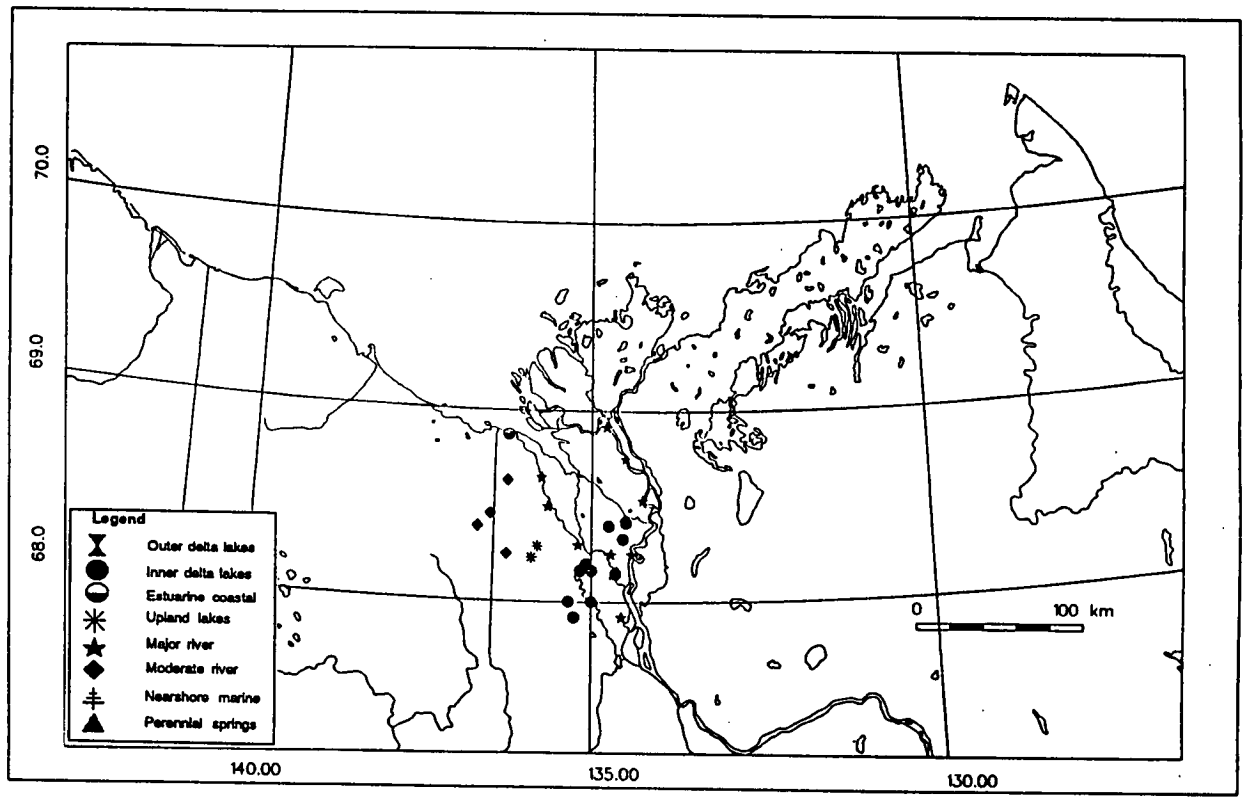

Figure 21. Geographical distribution of fishing sites as documented by Aklavik residents (from LUMD).

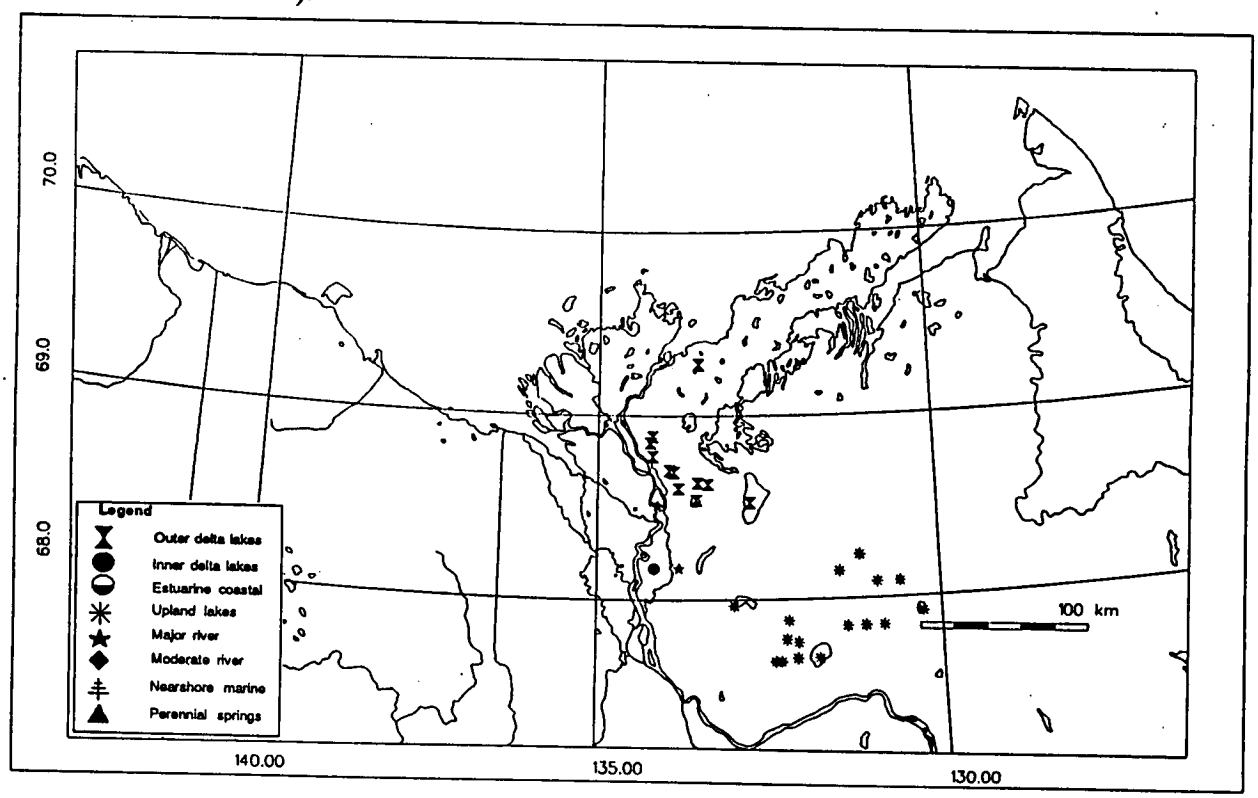

Figure 22. Geographical distribution of fishing sites as documented by Inuvik residents (from LUMD).

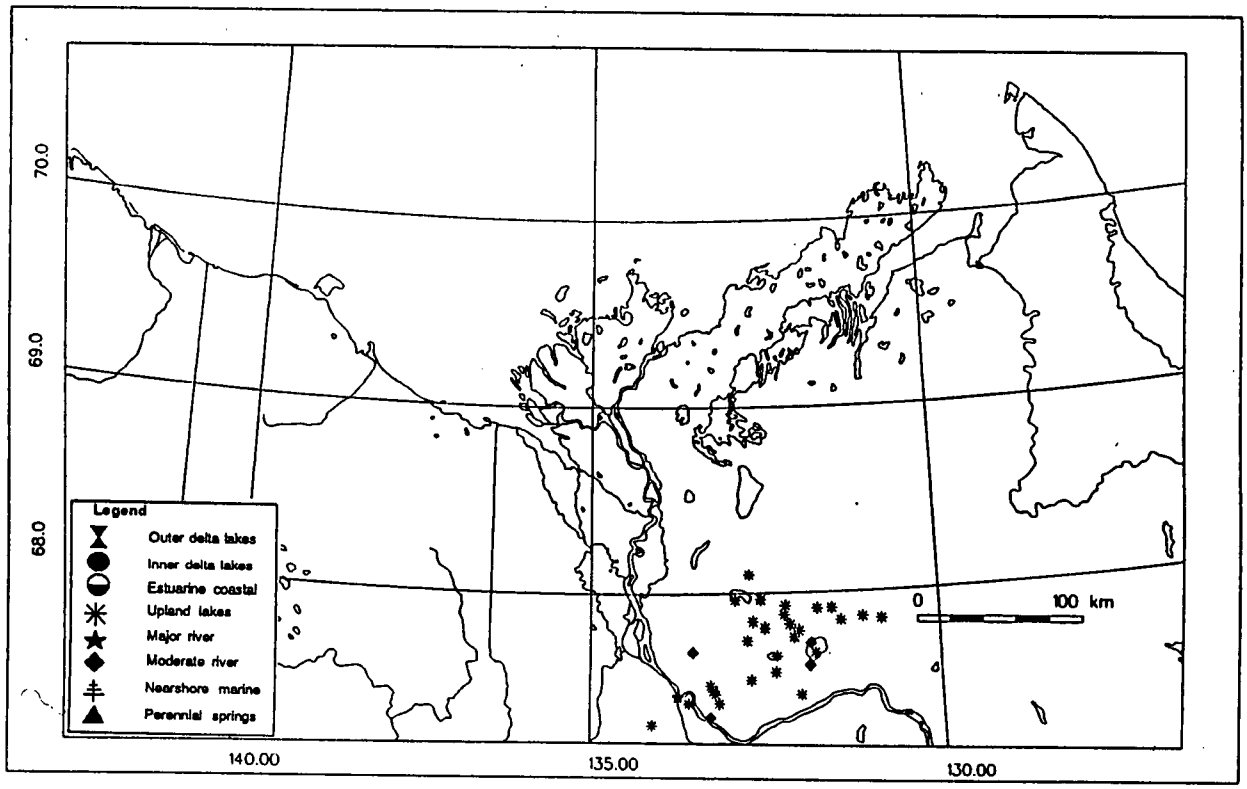

Figure 23. Geographical distribution of fishing sites as documented by Arctic Red River residents (from LUMD).

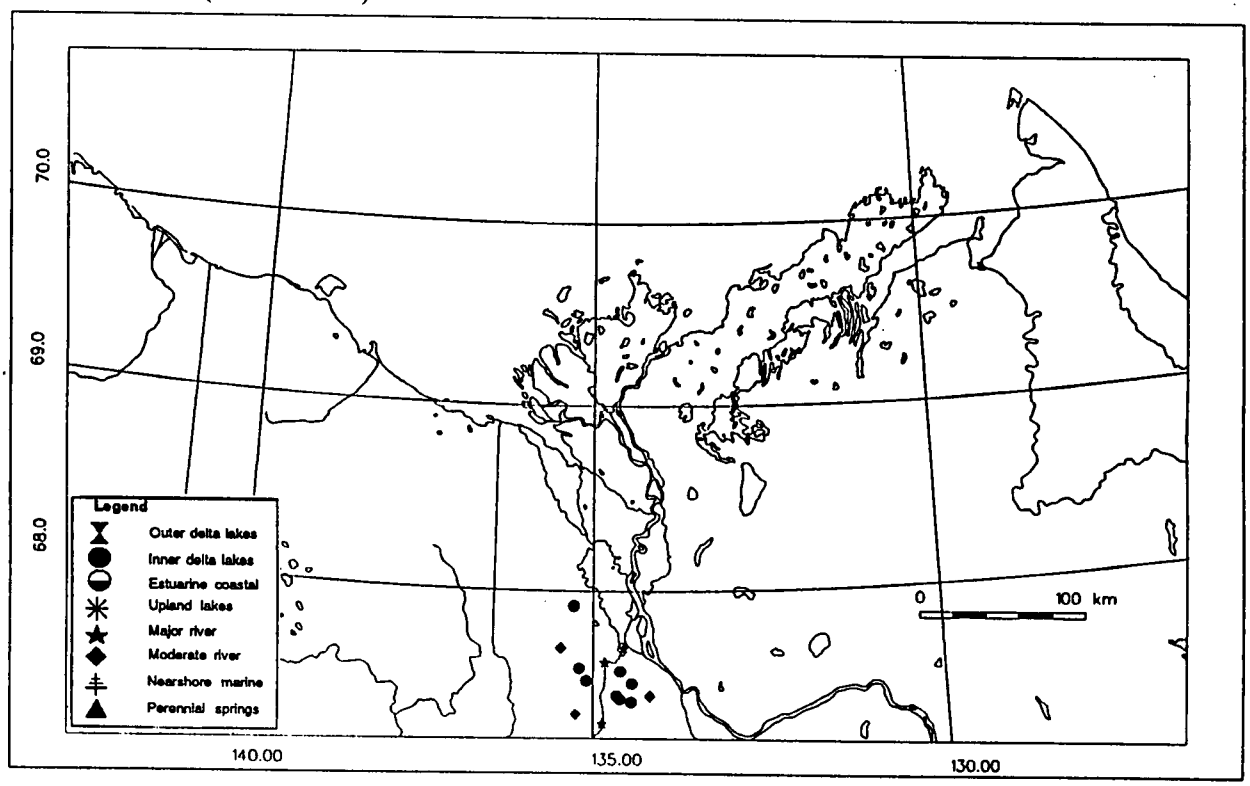

Figure 24. Geographical distribution of fishing sites as documented by Fort McPherson residents (from LUMD).

A generalized understanding of fishing effort over the overwintering habitat types is also obtained by the following ranking of fish areas in each habitat type:

Habitat Type	No.	% of Total
Inner Delta Lakes and Streams	148	36
Outer Delta Lakes and Streams	88	22
Major Rivers	64	16
Upland Lakes	56	14
Estuarine Coastal	26	6
Moderate Rivers	24	6
Perennial Springs	3	1
Nearshore Marine	0	0
Total No. of Areas	409	100

Fishing efforts are directed mostly toward inner and outer delta lakes and channels and major rivers. These three habitats receive 74% of fishing effort. Other habitats are lightly fished and no winter fishing was reported in the marine habitat.

ARCTIC CHAR

Inuvialuit Harvest Data

Arctic char were present in catches at 5 locations in October to November and 3 in May-June (Table 25 and Figure 25A). No char were present in catches in the true overwintering period from December to April. This is probably due to the lack of fishing effort in mid-winter in perennial springs (only two such locations are reported, fished only in early and late winter), where Arctic char commonly overwinter.

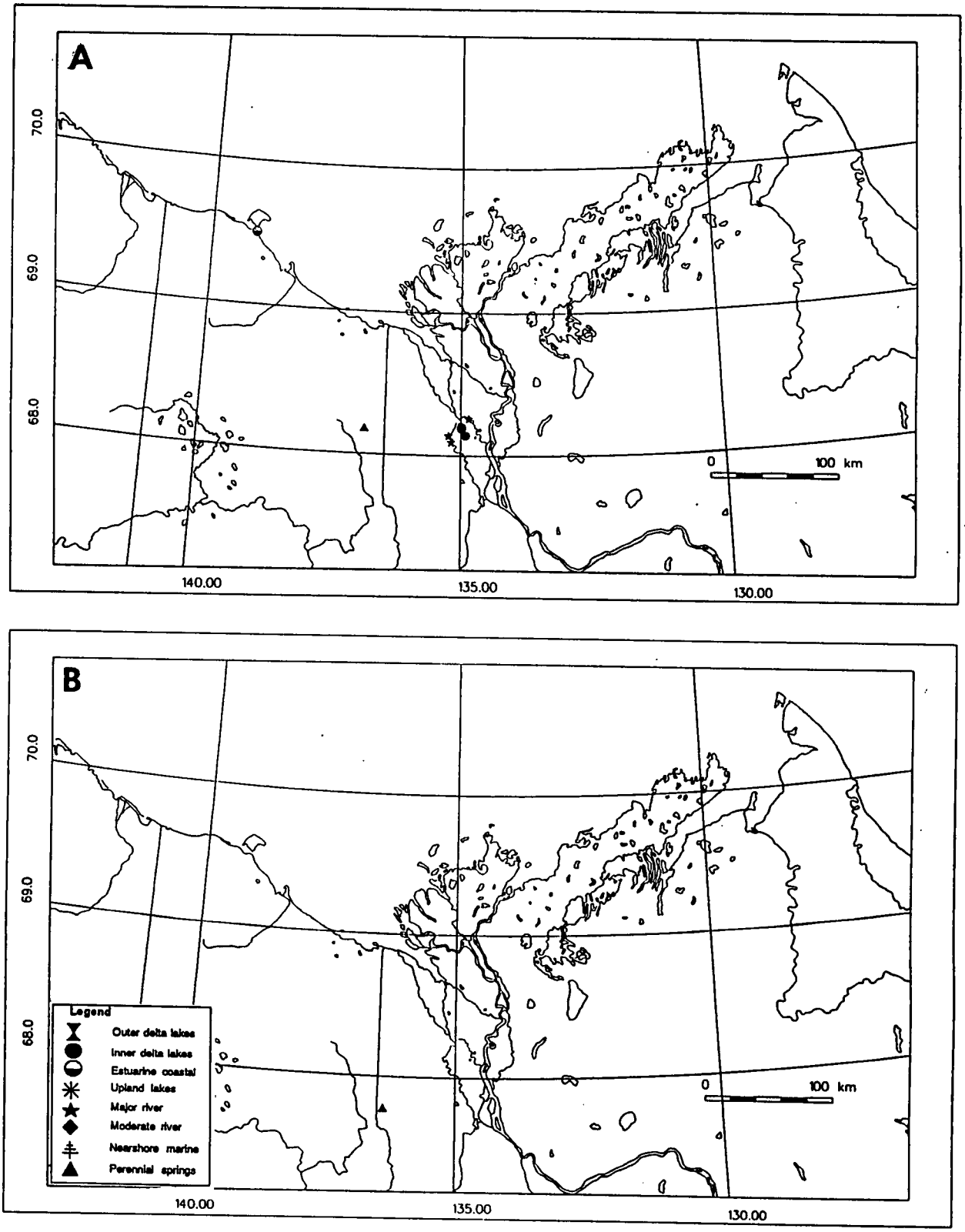

Figure 25. Documented locations of habitat for Arctic char according to A. Inuvialuit harvest data and B. land use map data (LUMD).

Table 25. Number of areas where Arctic char were captured in the eight habitat types during three winter periods, according to Inuvialuit Harvest data (IHD) and land use map data (LUMD).

Habitat	No. of Areas			No. of Unique Areas
	Oct-Nov	Dec-Apr	May-Jun	Oct-Jun
IHD				
Estuarine Coastal	1	0	0	1
Inner Delta Lakes	0	0	3	3
Major Rivers	3	0	0	3
Moderate Rivers	0	0	0	0
Nearshore Marine	0	0	0	0
Outer Delta Lakes	0	0	0	0
Perennial Springs	1	0	0	1
Upland Lakes	0	0	0	0
TOTAL	5	0	3	8
LUMD				
Estuarine Coastal	0	0	0	0
Inner Delta Lakes	0	0	0	0
Major Rivers	0	0	0	0
Moderate Rivers	0	0	0	0
Nearshore Marine	0	0	0	0
Outer Delta Lakes	0	0	0	0
Perennial Springs	0	0	1	1
Upland Lakes	0	0	0	0
TOTAL	0	0	1	1

Land Use Map Data

Arctic char were reported in late winter from the single perennial spring (Fish Creek) fished by Fort McPherson residents (Figure 25B).

BROAD WHITEFISH

Both IHD and LUMD information reported frequent broad whitefish catches in early and late winter (Table 26), mostly from inner delta lakes and channels and major river habitats. A substantial part of these records probably represent migrating fish. However, catches from mid-winter also indicate that these habitats are important at that time; hence, it is possible that some of the early and late winter catches were of broad whitefish that would or had overwintered in such habitats.

Inuvialuit Harvest Data

As shown in Table 26 and Figure 26A, broad whitefish were reported from 87 areas. The majority of these were in early winter (53%) and late winter (36%) periods. Broad whitefish were caught in mid-winter (December to April) primarily in major rivers (50%)—Mackenzie and Peel Rivers, Esau Channel (locally known as Aklavik River). They occurred less commonly in catches from inner delta lakes and channels (21%) and estuarine coastal habitats (14%). They were absent or uncommon in catches from all other habitat types during the mid-winter period.

Land Use Map Data

Broad whitefish were reported from 39 locations in mid-winter on land use maps (Table 26 and Figure 26B). LUMD information also documents that major rivers (Mackenzie River Middle Channel and West Channel) are important (23%) overwintering habitat for broad whitefish, but inner delta lakes were even more important (31%).

Table 26. Number of areas where broad whitefish were captured in the eight habitat types during three winter periods according to Inuvialuit harvest data (IHD) and land use map data (LUMD).

	No. of Areas			No. of Unique Areas
Habitat	**Oct-Nov**	**Dec-Apr**	**May-Jun**	**Oct-Jun**
IHD				
Estuarine Coastal	4	2	3	7
Inner Delta Lakes	26	3	20	43
Major Rivers	21	7	19	32
Moderate Rivers	1	1	0	1
Nearshore Marine	0	0	0	0
Outer Delta Lakes	1	1	1	3
Perennial Springs	0	0	0	0
Upland Lakes	1	0	0	1
TOTAL	54	14	43	87
LUMD				
Estuarine Coastal	2	2	2	3
Inner Delta Lakes	11	12	6	13
Major Rivers	9	9	15	15
Moderate Rivers	1	1	1	2
Nearshore Marine	0	0	0	0
Outer Delta Lakes	6	6	4	6
Perennial Springs	0	0	0	0
Upland Lakes	8	9	14	20
TOTAL	37	39	42	59

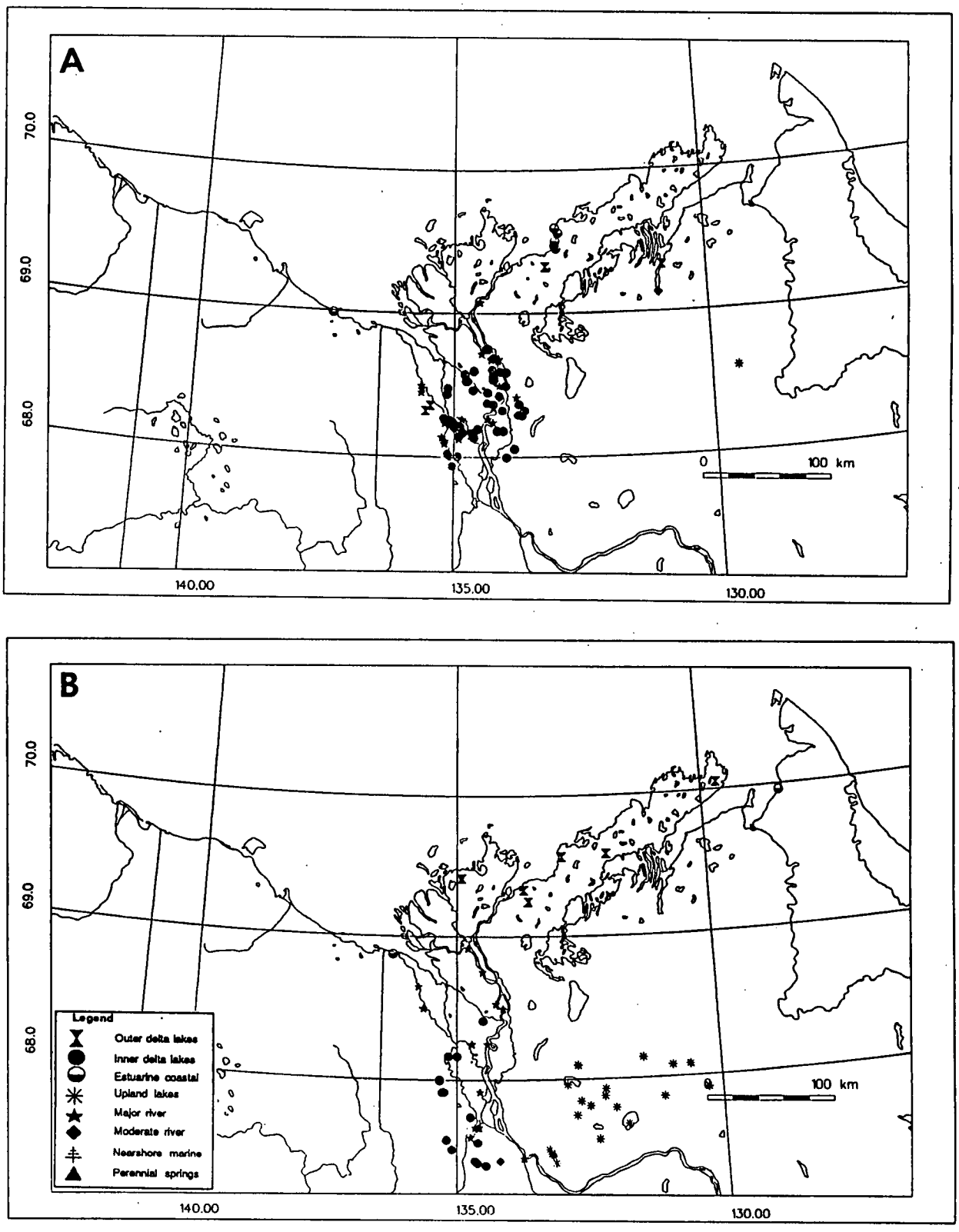

Figure 26. Documented locations of habitat for broad whitefish according to A. Inuvialuit harvest data and B. land use map data (LUMD).

Upland lakes were also identified as harbouring overwintering broad whitefish a number of times (23%), as well as in early and late winter. Populations in these areas are probably resident fish, so that early and late winter records are valid indicators of overwintering habitat.

LAKE WHITEFISH

Similar to broad whitefish, lake whitefish were reported quite frequently in early and late winter from a variety of habitats, especially inner and outer delta lakes and channels, and major rivers. These may have been migrants or fish resident in the area.

Inuvialuit Harvest Data

Lake whitefish were caught 18 times in 12 areas from December to April (Table 27 and Figure 27A). Seven of these locations were in major rivers (Mackenzie, Peel and Esau Channel) and two in estuarine coastal habitat (Tuktoyaktuk Harbour). This species was rare or absent in other habitat types, as reflected by IHD.

Land Use Map Data

Of the 37 reported areas where lake whitefish were present in catches in mid-winter, according to LUMD, the highest percentage were in outer delta lakes (32 %) and upland lakes (27%) (Table 27 and Figure 27B). However, major rivers (19%), inner delta lakes (14%) and moderate rivers (8%) also provide overwintering habitat for lake whitefish.

WHITEFISH

In addition to the above records of broad whitefish and lake whitefish, two of 17 records of unidentified whitefish catches were reported from December to April in one inner delta lake and one outer delta lake.

Table 27. Number of areas where lake whitefish were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD) and land use map data (LUMD).

Habitat	No. of Areas			No. of Unique Areas
	Oct-Nov	Dec-Apr	May-Jun	Oct-Jun
IHD				
Estuarine Coastal	3	2	0	4
Inner Delta Lakes	25	1	14	36
Major Rivers	19	7	0	29
Moderate Rivers	0	1	0	1
Nearshore Marine	0	0	0	0
Outer Delta Lakes	2	1	1	4
Perennial Springs	0	0	0	0
Upland Lakes	2	0	0	2
TOTAL	51	12	25	76
LUMD				
Estuarine Coastal	0	0	0	0
Inner Delta Lakes	5	5	6	8
Major Rivers	7	7	7	8
Moderate Rivers	2	3	1	4
Nearshore Marine	0	0	0	0
Outer Delta Lakes	10	10	10	10
Perennial Springs	0	0	0	0
Upland Lakes	11	12	19	22
TOTAL	35	37	43	52

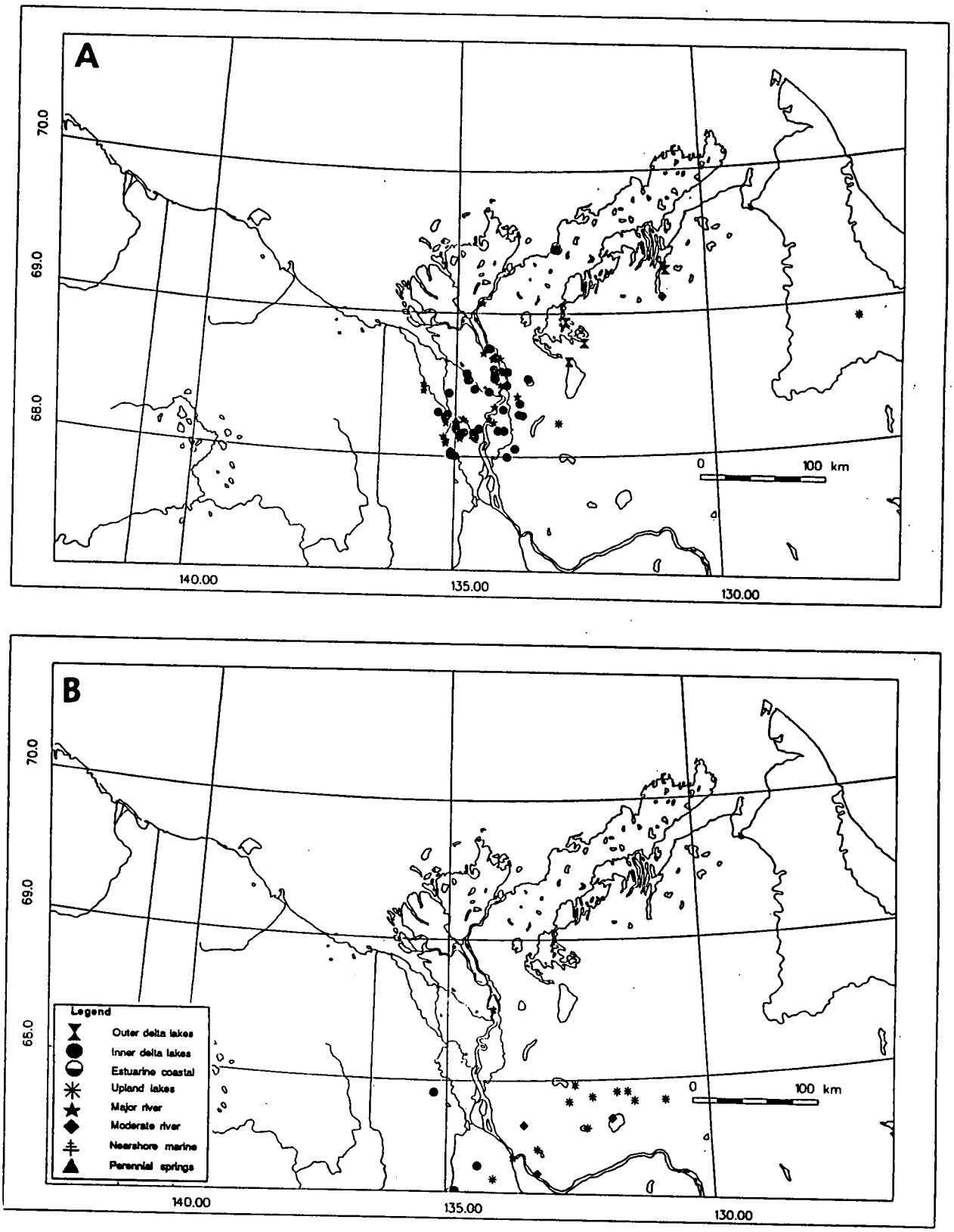

Figure 27. Documented locations of habitat for lake whitefish according to A. Inuvialuit harvest data and B. land use map data (LUMD).

CISCOES

Ciscoes were not identified to species in either IHD or LUMD and are consequently treated together. As shown in Table 28, ciscoes were frequently caught in early winter and less frequently in late winter, almost exclusively in three habitat types: major rivers, estuarine coastal and inner delta lakes-streams. Arctic cisco and some populations of least cisco are known to be highly migratory; therefore, these records cannot be used to indicate overwintering habitat with certainty.

Inuvialuit Harvest Data

Cisco were present in catches on only two occasions in mid-winter, one in estuarine coastal waters and one major river habitat (Table 28 and Figure 28A). This represents only 10% of the 20 locations where cisco were reported from October through June.

Land Use Map Data

Eighteen areas fished in mid-winter were documented as habitat for cisco (Table 28 and Figure 28B), as reported by LUMD. Forty-four percent of these areas were classified as major rivers (mostly in the Mackenzie River), and 33% were estuarine coastal. The remainder were moderate rivers (17%) and inner delta lake (6%). They were notably absent in other habitats.

INCONNU

Inconnu were frequently reported in fish harvests over the entire period of ice cover. As shown in Table 29, most catches in early and late winter are from inner delta lakes-channels, major rivers and estuarine coastal habitats. It is again not possible to distinguish resident and migratory fish during these periods.

Table 28. Number of areas where arctic and least cisco were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD) and land use map data (LUMD).

Habitat	No. of Areas			No. of Unique Areas
	Oct-Nov	Dec-Apr	May-Jun	Oct-Jun
IHD				
Estuarine Coastal	4	1	2	6
Inner Delta Lakes	1	0	2	3
Major Rivers	7	1	3	9
Moderate Rivers	1	0	0	1
Nearshore Marine	0	0	0	0
Outer Delta Lakes	0	0	0	0
Perennial Springs	0	0	0	0
Upland Lakes	1	0	0	1
TOTAL	14	2	7	20
LUMD				
Estuarine Coastal	6	6	6	6
Inner Delta Lakes	1	1	2	2
Major Rivers	8	8	14	14
Moderate Rivers	3	3	1	4
Nearshore Marine	0	0	0	0
Outer Delta Lakes	0	0	0	0
Perennial Springs	0	0	0	0
Upland Lakes	0	0	0	0
TOTAL	18	18	3	26

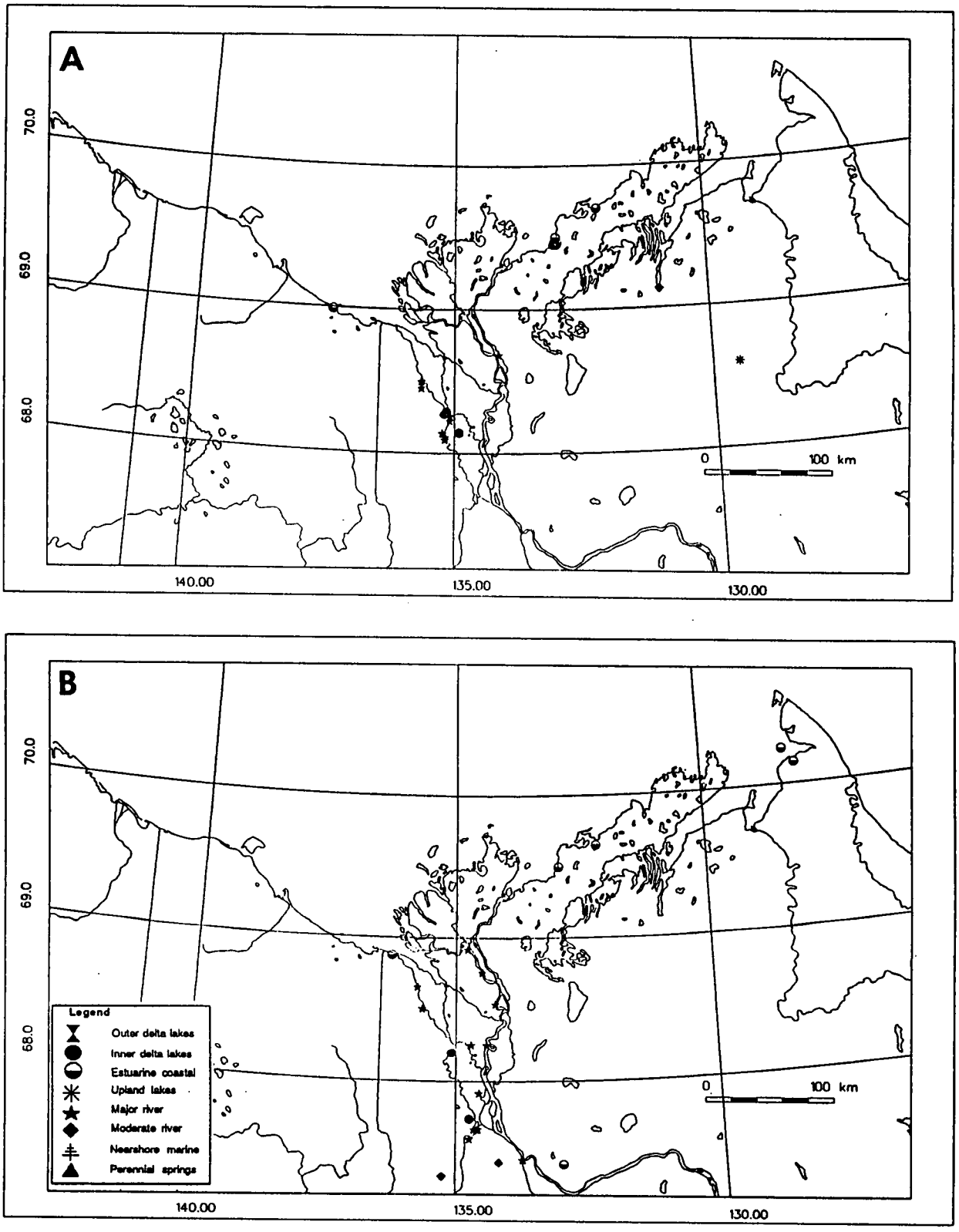

Figure 28. Documented locations of habitat for ciscoes according to A. Inuvialuit harvest data and B. land use map data (LUMD).

Table 29. Number of areas where inconnu were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD) and land use map data (LUMD).

Habitat	No. of Areas			No. of Unique Areas
	Oct-Nov	Dec-Apr	May-Jun	Oct-Jun
IHD				
Estuarine Coastal	7	2	2	8
Inner Delta Lakes	59	8	24	82
Major Rivers	19	7	14	31
Moderate Rivers	1	2	0	2
Nearshore Marine	0	0	0	0
Outer Delta Lakes	1	0	2	3
Perennial Springs	0	0	0	0
Upland Lakes	1	0	0	1
TOTAL	88	19	42	127
LUMD				
Estuarine Coastal	4	4	3	4
Inner Delta Lakes	9	12	8	13
Major Rivers	11	11	17	17
Moderate Rivers	1	2	2	3
Nearshore Marine	0	0	0	0
Outer Delta Lakes	1	1	1	1
Perennial Springs	0	0	0	0
Upland Lakes	13	13	13	14
TOTAL	38	43	44	52

Inuvialuit Harvest Data

As shown in Table 29, inconnu were reported during mid-winter at 19 (15%) of the 127 areas where inconnu were captured in the October to June period. Of these, the most important habitats were inner delta lakes and channels (42%) and major rivers (37%), with considerably fewer reports from estuarine coastal waters (11%) and moderate rivers 11%) (Figure 29A).

Land Use Map Data

Land use map data show a similar distribution of reports of inconnu in overwintering habitat as IHD (Figure 29B). An important exception is that the land use map data also show mid-winter catches of inconnu from a number of upland lakes (Table 29). Thus, it appears that upland lakes are also an important overwintering habitat for inconnu. However, it is suspected that many of the latter reports are of inconnu which are year-round residents of such habitats.

LAKE TROUT

Inuvialuit Harvest Data

As shown in Table 30, lake trout were present in catches from 67 areas. Fifty-two records were of catches which occurred in the May-June period, but only six records were from the October-November period. Thirty-six of the 38 records (95%)that occurred in the December to April period were from outer delta lakes, making this type of habitat by far the most important type in the mid-winter period. Most of the latter records were of overwintering lake trout in the Husky Lakes region (Figure 30A). However, the majority of the 52 records of lake trout in the May-June period were also from the Husky Lakes region. Considering the non-migratory nature of lake trout, the latter records are also indicative of lake trout overwintering areas.

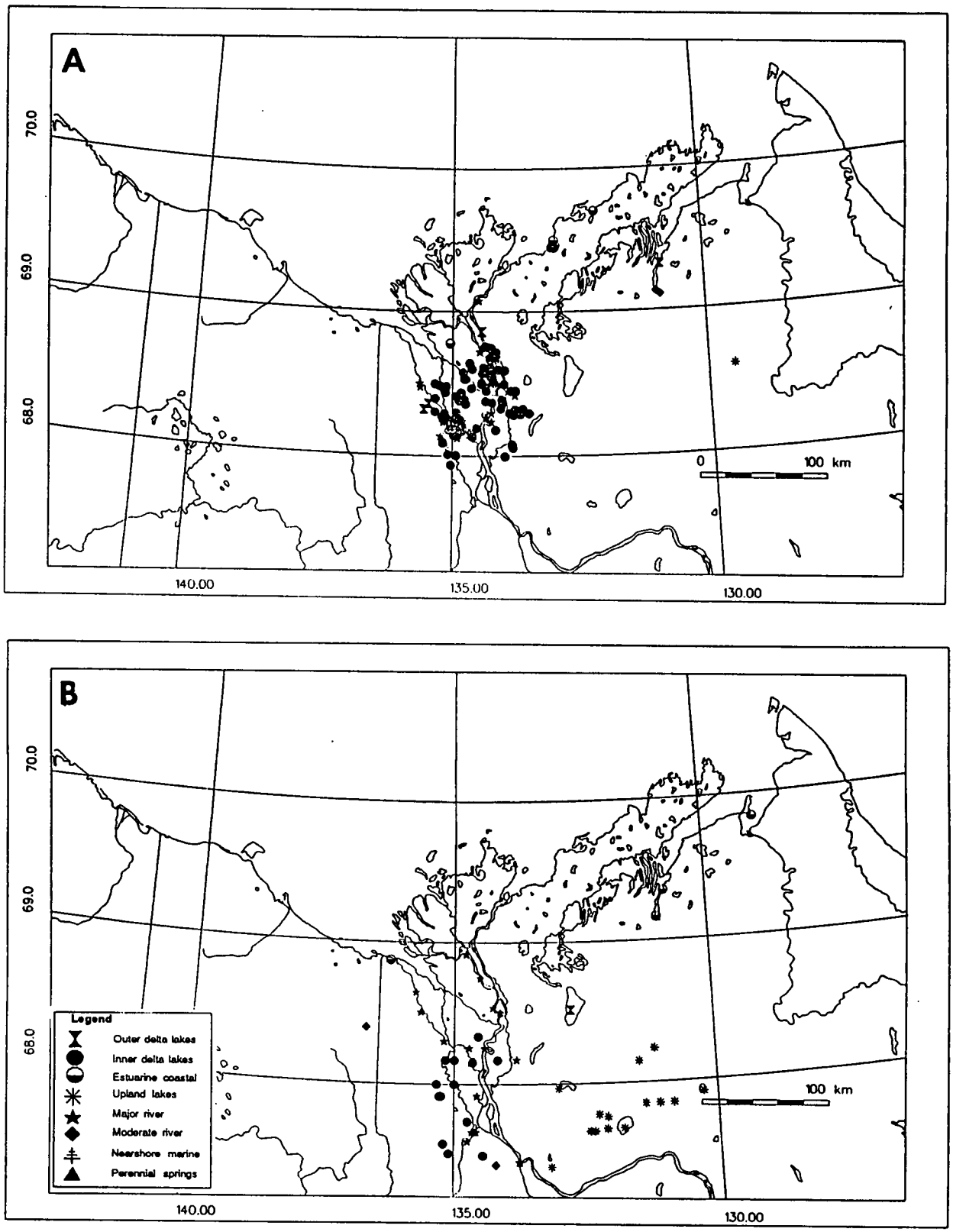

Figure 29. Documented locations of habitat for inconnu according to A. Inuvialuit harvest data and B. land use map data (LUMD).

Table 30. Number of areas where lake trout were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD) and land use map data (LUMD).

	No. of Areas			No. of Unique Areas
Habitat	**Oct-Nov**	**Dec-Apr**	**May-Jun**	**Oct-Jun**
IHD				
Estuarine Coastal	0	0	1	1
Inner Delta Lakes	1	0	2	3
Major Rivers	0	0	2	2
Moderate Rivers	1	0	1	2
Nearshore Marine	0	0	0	0
Outer Delta Lakes	2	31	45	54
Perennial Springs	0	0	0	0
Upland Lakes	2	2	1	5
TOTAL	6	33	52	67
LUMD				
Estuarine Coastal	0	0	0	0
Inner Delta Lakes	3	4	2	4
Major Rivers	1	1	0	1
Moderate Rivers	2	2	2	3
Nearshore Marine	0	0	0	0
Outer Delta Lakes	15	15	15	15
Perennial Springs	0	0	1	1
Upland Lakes	23	23	24	27
TOTAL	45	45	44	51

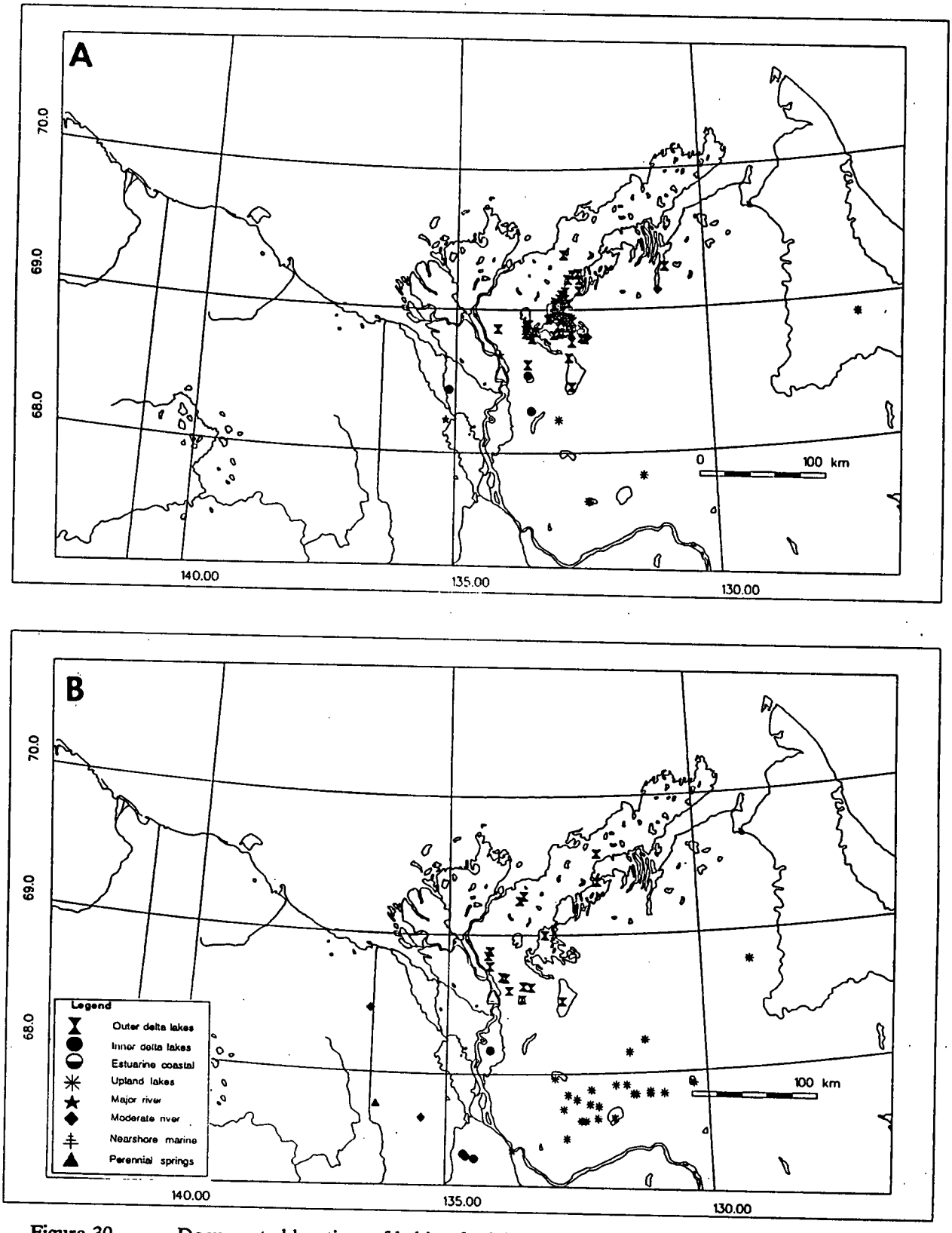

Figure 30. Documented locations of habitat for lake trout according to A. Inuvialuit harvest data and B. land use map data (LUMD).

Lake trout were extremely rare in fish catches from other habitat types. They were recorded once from estuarine coastal waters, three times from inner delta lakes and twice from major rivers, twice from moderate rivers and five times from upland lakes.

Land Use Map Data

Of the 51 locations where lake trout are caught according to LUMD, 15 (29%) are from outer delta lake habitat and 27 (53%) from upland lakes (Table 30). The importance of these two habitat types for lake trout overwintering is supported by these data. As shown in Figure 30A, upland lakes where lake trout are caught from December to April are in the vicinity of communities, where access is most available.

Lake trout are also recorded sporadically in other habitat types, according to LUMD, including perennial springs, inner delta lakes, major rivers and moderate rivers. We believe that, with the exception of some inner delta lakes which probably harbour populations of lake trout year round, the majority of such records are of incidental catches and may not be indicative of important overwintering areas for lake trout.

BURBOT

Although burbot are not well known for distinct migratory movements, especially over long distances, some annual movements may take place. It is, therefore, not known if the frequent early and late winter reports of burbot in inner delta lakes-channels, major rivers and outer delta lakes represent resident or migratory fish (Table 31). However, all burbot reported in upland lakes are assumed to be resident to these areas year round; hence, records throughout the period of ice-cover are indicative of overwintering habitats.

Table 31. Number of areas where burbot were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD) and land use map data (LUMD).

	No. of Areas			No. of Unique Areas
Habitat	**Oct-Nov**	**Dec-Apr**	**May-Jun**	**Oct-Jun**
IHD				
Estuarine Coastal	4	3	0	5
Inner Delta Lakes	80	9	7	87
Major Rivers	22	6	5	25
Moderate Rivers	1	2	0	3
Nearshore Marine	0	0	0	0
Outer Delta Lakes	3	3	0	5
Perennial Springs	0	0	0	0
Upland Lakes	3	1	0	4
TOTAL	111	25	12	129
LUMD				
Estuarine Coastal	1	1	0	1
Inner Delta Lakes	7	8	5	8
Major Rivers	14	14	10	14
Moderate Rivers	1	2	0	2
Nearshore Marine	0	0	0	0
Outer Delta Lakes	11	11	11	11
Perennial Springs	0	0	0	0
Upland Lakes	14	15	14	17
TOTAL	48	51	40	53

Inuvialuit Harvest Data

Of the 129 locations where burbot were reported, 19% were in the December to April period (Table 31). The majority of the habitats represented in this time period were inner delta lakes (36%); major rivers (24%) (Figure 31A). Burbot also overwintered in outerdelta lakes, estuarine coastal waters, moderate rivers and upland lakes. In early winter, the majority of burbot catches were from inner delta lakes (72%); this suggests that burbot may move from the shallower channels and lakes to the larger waterbodies to overwinter when the former freeze to the bottom.

Land Use Map Data

Of the 51 sites where burbot have been reported from December to April in the LUMD data (Table 31), the majority are major river (27%) and upland lakes (29%). Some outer and inner delta lakes (22% and 16%, resp.) also provide overwintering habitat for burbot (Figure 31 B). The remaining records were from moderate rivers and coastal water.

NORTHERN PIKE

Inuvialuit Harvest Data

As shown in Table 32, northern pike were present in 124 areas from October to June. Although only 19% of these reports were in mid-winter, it is not believed that northern pike undertake major movements; therefore, the remainder of the reports are also likely indicators of overwintering habitat. It is apparent that inland delta lakes-channels and major rivers are the two most important overwintering habitats for northern pike, based on IHD (Figure 32A). The two habitats contributed over 90% to the total number of areas where pike were harvested.

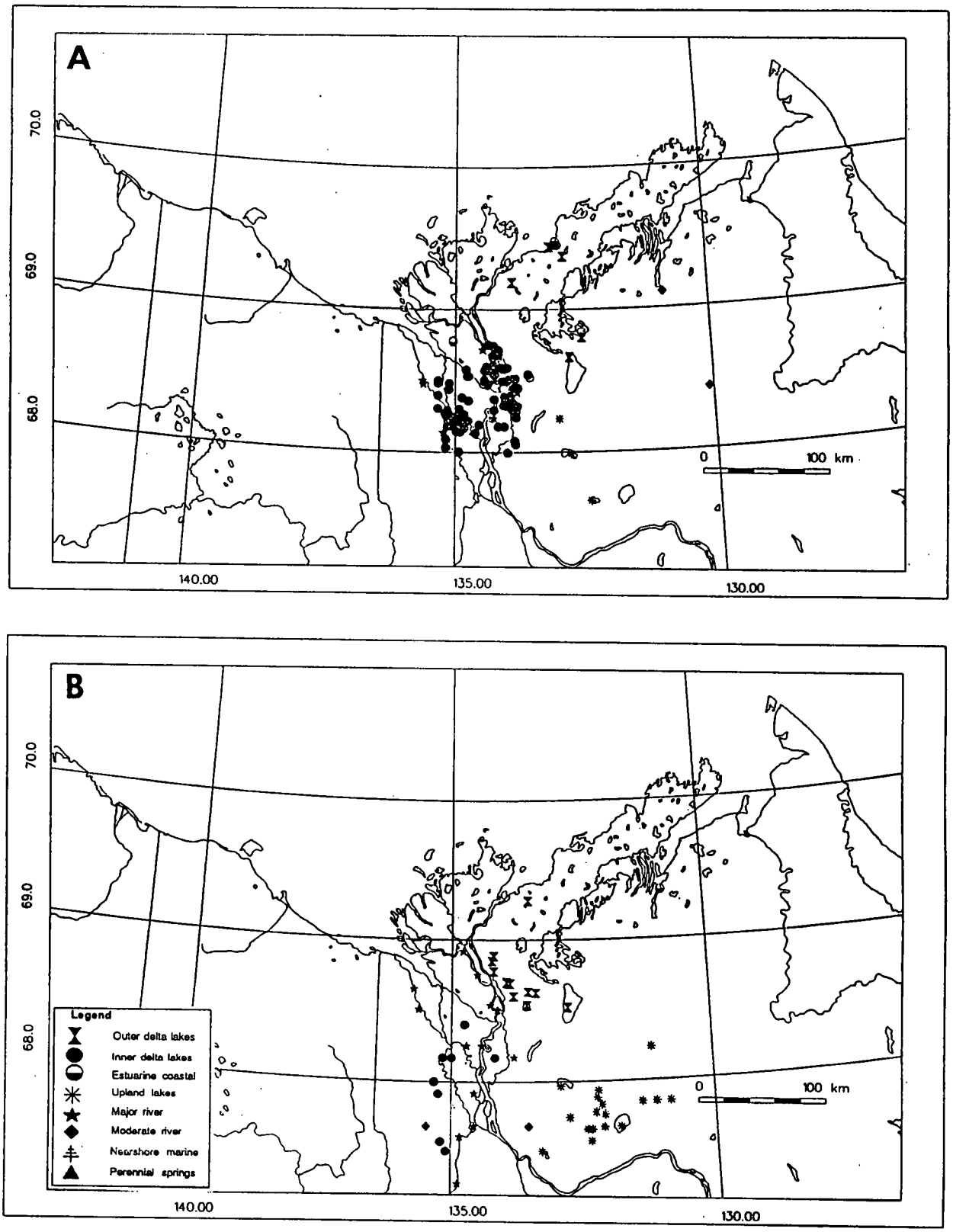

Figure 31. Documented locations of habitat for burbot according to A. Inuvialuit harvest data and B. land use map data (LUMD).

Table 32. Number of areas where northern pike were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD) and land use map data (LUMD).

	No. of Areas			No. of Unique Areas
Habitat	**Oct-Nov**	**Dec-Apr**	**May-Jun**	**Oct-Jun**
IHD				
Estuarine Coastal	1	0	0	1
Inner Delta Lakes	59	12	21	78
Major Rivers	23	8	12	34
Moderate Rivers	0	2	1	3
Nearshore Marine	0	0	0	0
Outer Delta Lakes	2	1	1	4
Perennial Springs	0	0	0	0
Upland Lakes	3	1	0	4
TOTAL	88	24	35	124
LUMD				
Estuarine Coastal	0	0	0	0
Inner Delta Lakes	8	8	6	10
Major Rivers	10	10	10	10
Moderate Rivers	0	1	0	1
Nearshore Marine	0	0	0	0
Outer Delta Lakes	10	10	10	10
Perennial Springs	0	0	0	0
Upland Lakes	23	23	27	29
TOTAL	51	52	53	60

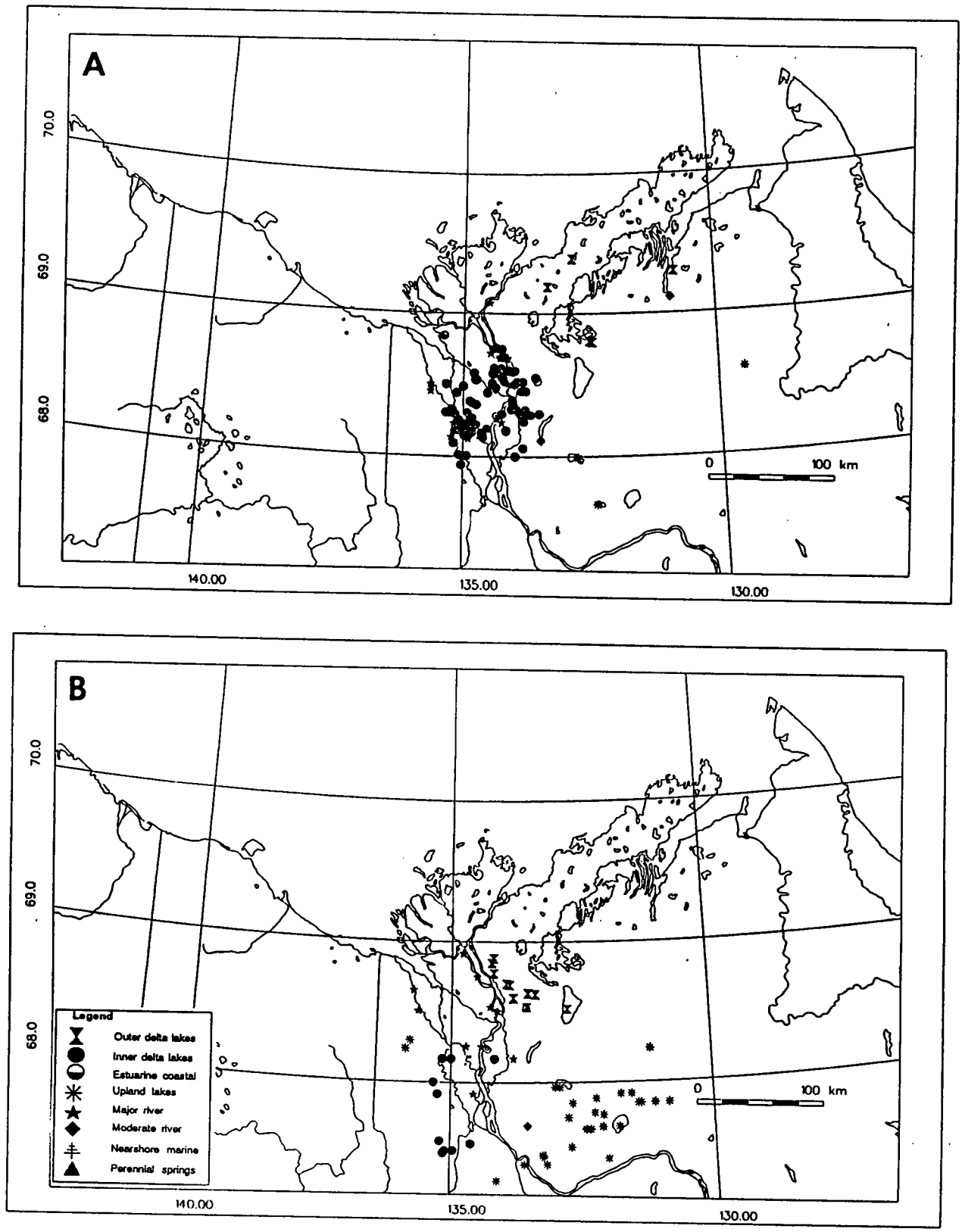

Figure 32. Documented locations of habitat for northern pike according to A. Inuvialuit harvest data and B. land use map data (LUMD).

Land Use Map Data

Upland lakes were the most important (48%) overwintering pike habitat according to LUMD (Figure 32B). Pike in such areas are undoubtedly resident. It should be noted that upland lakes were not identified as important pike overwintering habitat according to IHD, because such habitats are rarely fished by Inuvialuit (Tables 23 and 24). Inner and outer delta lakes-channels and major rivers were equally important (all 17%), according to LUMD. A single moderate river (Rengleng River) provided overwintering habitat for pike.

ARCTIC GRAYLING

Inuvialuit Harvest Data

As shown in Table 33 and Figure 33A, Arctic grayling were reported from catches on only three occasions, all in early winter, from an upland lake and two perennial springs. The fish probably overwintered in these areas.

Land Use Map Data

In the eight areas where Arctic grayling catches were reported in LUMD (Table 33 and Figure 33B), more than half provided overwintering habitat for these fish from December to April. These were moderate river and upland lake habitat. Grayling noted from such habitats in the October/November period and the May/June period are also likely overwintering.

PACIFIC HERRING

Pacific herring were recorded in Inuvialuit harvest data from only 9 fishing locations (Table 34 and Figure 34), with the only mid-winter record being in Tuktoyaktuk Harbour, probably an estuarine coastal overwintering habitat. The records of Pacific herring in inner delta lake-channel and major river habitat in early and late winter are unusual, since this species is predominantly marine.

Table 33. Number of areas where Arctic grayling were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD) and land use map data (LUMD).

	No. of Areas			No. of Unique Areas
Habitat	**Oct-Nov**	**Dec-Apr**	**May-Jun**	**Oct-Jun**
IHD				
Estuarine Coastal	0	0	0	0
Inner Delta Lakes	0	0	0	0
Major Rivers	0	0	0	0
Moderate Rivers	0	0	0	0
Nearshore Marine	0	0	0	0
Outer Delta Lakes	0	0	0	0
Perennial Springs	2	0	0	2
Upland Lakes	1	0	0	1
TOTAL	3	0	0	3
LUMD				
Estuarine Coastal	0	0	0	0
Inner Delta Lakes	0	0	0	0
Major Rivers	0	0	0	0
Moderate Rivers	3	3	2	4
Nearshore Marine	0	0	0	0
Outer Delta Lakes	0	0	0	0
Perennial Springs	0	0	0	0
Upland Lakes	2	2	4	4
TOTAL	5	5	6	8

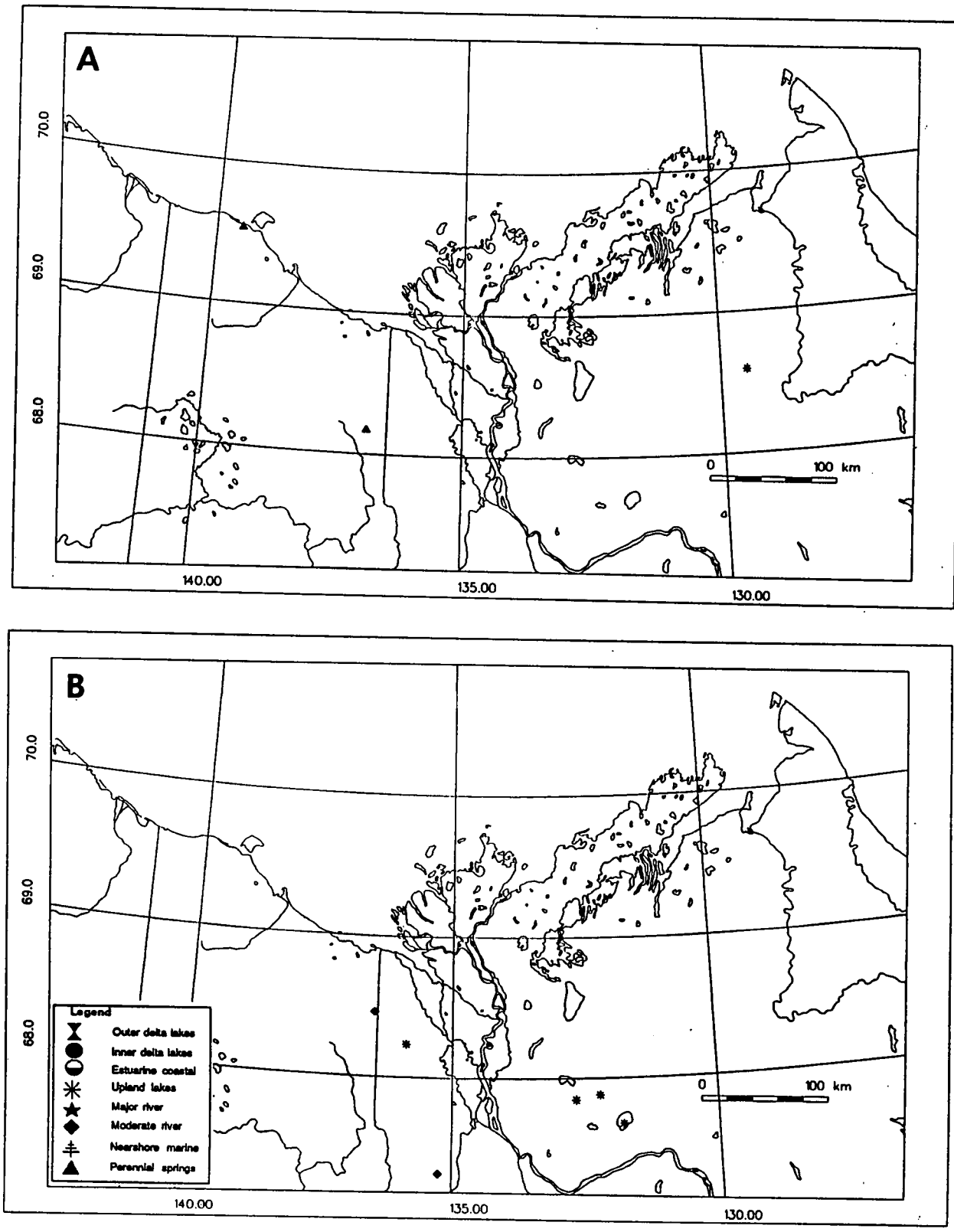

Figure 33. Documented locations of habitat for Arctic grayling according to A. Inuvialuit harvest data and B. land use map data (LUMD).

Table 34. Number of areas where Pacific herring were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD).

Habitat	No. of Areas			No. of Unique Areas
	Oct-Nov	Dec-Apr	May-Jun	Oct-Jun
IHD				
Estuarine Coastal	2	1	3	5
Inner Delta Lakes	0	0	2	2
Major Rivers	1	0	1	2
Moderate Rivers	0	0	0	0
Nearshore Marine	0	0	0	0
Outer Delta Lakes	0	0	0	1
Perennial Springs	0	0	0	0
Upland Lakes	0	0	0	0
TOTAL	3	1	6	9

SAFFRON COD

Table 35 and Figure 37 show five estuarine coastal locations and one outer delta (Husky Lakes) location where saffron cod were captured from October to June, according to Inuvialuit harvest data. No reports were from December to April; saffron cod may not overwinter in the inshore areas that are commonly fished by residents of the area.

ARCTIC COD

A single record of six Arctic cod was reported from Nallok (Husky Lakes region) in October 1987 (IHD only). Since this is so early in the season, this probably does not indicate the presence of overwintering habitat for Arctic cod in the area.

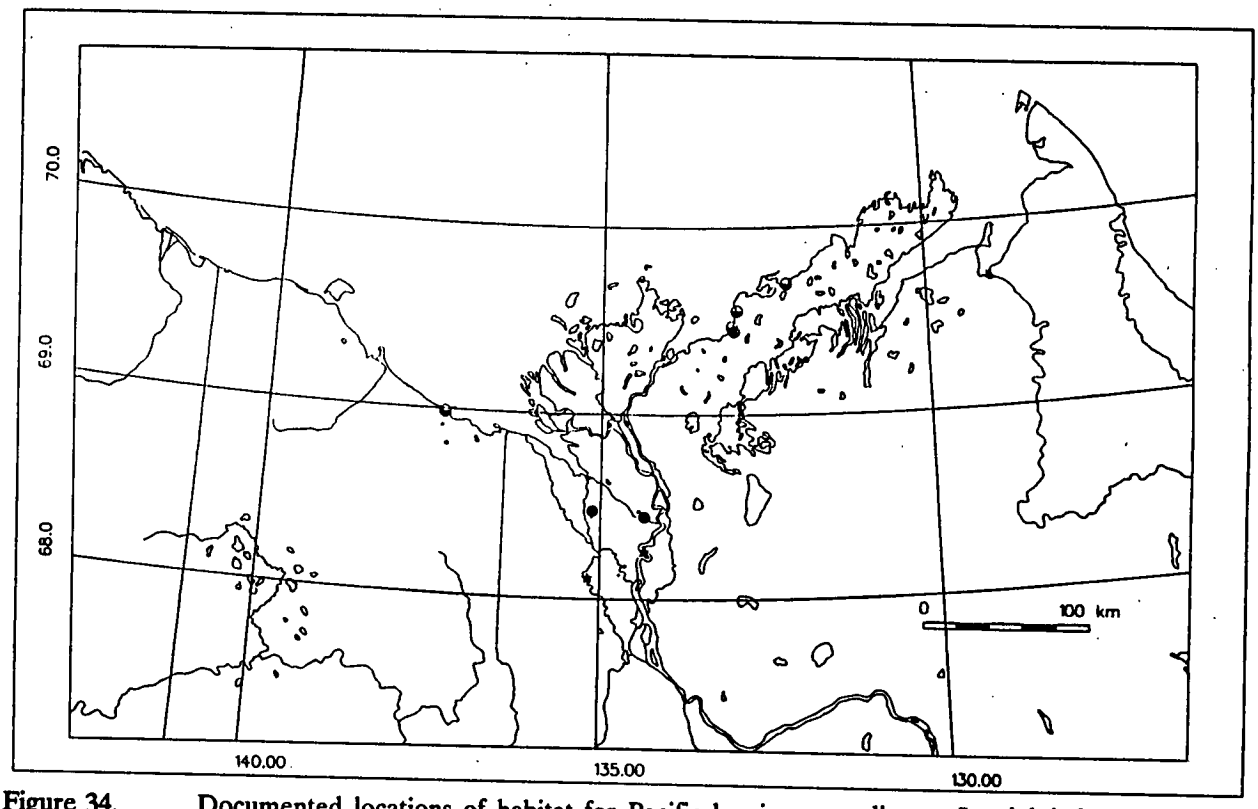

Figure 34. Documented locations of habitat for Pacific herring according to Inuvialuit harvest data.

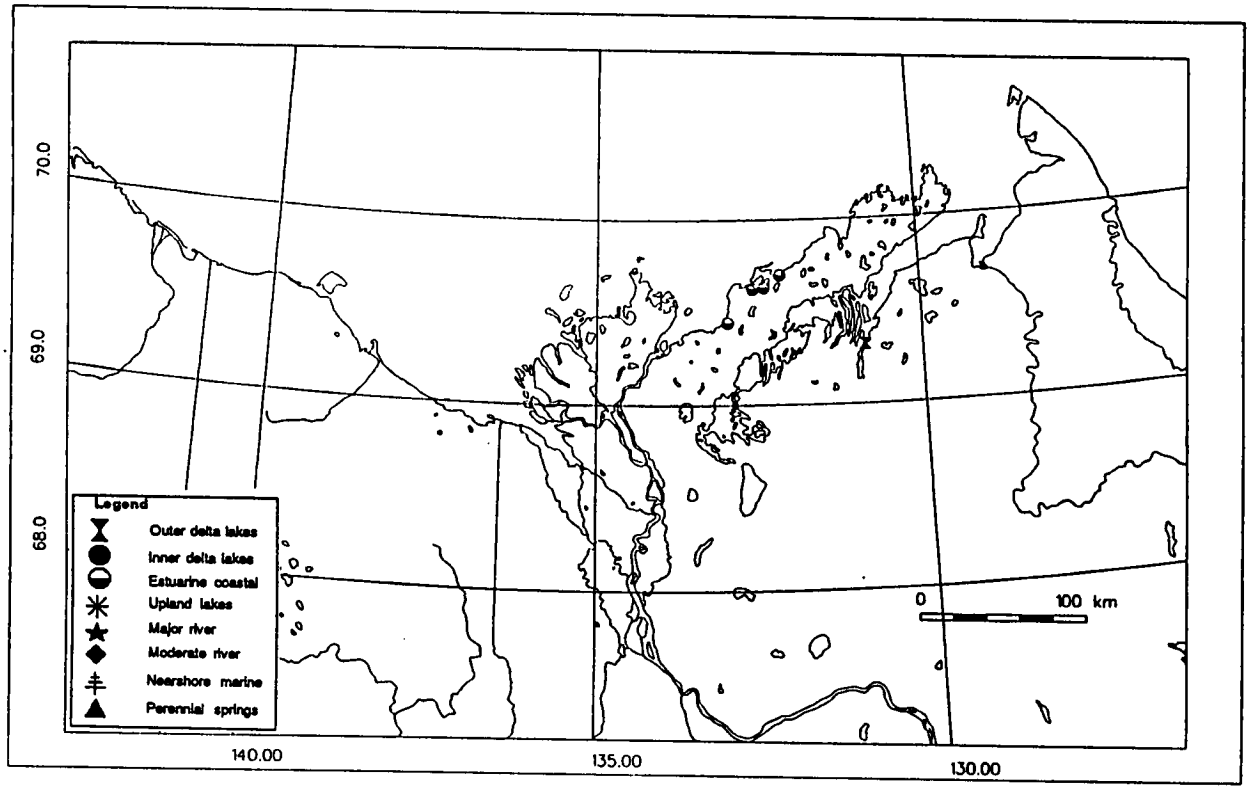

Figure 35. Documented locations of habitat for saffron cod according to Inuvialuit harvest data.

Table 35. Number of areas where saffron cod were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD).

	No. of Areas			No. of Unique Areas
Habitat	**Oct-Nov**	**Dec-Apr**	**May-Jun**	**Oct-Jun**
IHD				
Estuarine Coastal	2	0	3	5
Inner Delta Lakes	0	0	0	0
Major Rivers	0	0	0	0
Moderate Rivers	0	0	0	0
Nearshore Marine	0	0	0	0
Outer Delta Lakes	1	0	0	1
Perennial Springs	0	0	0	0
Upland Lakes	0	0	0	0
TOTAL	3	0	3	6

Table 36. Number of areas where Arctic cod were captured in the eight habitat types during three winter periods, according to Inuvialuit harvest data (IHD).

	No. of Areas			No. of Unique Areas
Habitat	**Oct-Nov**	**Dec-Apr**	**May-Jun**	**Oct-Jun**
IHD				
Estuarine Coastal	0	0	0	0
Inner Delta Lakes	0	0	0	0
Major Rivers	0	0	0	0
Moderate Rivers	0	0	0	0
Nearshore Marine	0	0	0	0
Outer Delta Lakes	1	0	0	1
Perennial Springs	0	0	0	0
Upland Lakes	0	0	0	0
TOTAL	1	0	0	1

DISCUSSION

The following material first compares results obtained in PART I of RESULTS with that obtained in PART II. Overwintering habitats are then defined according to their physical-chemical characteristics and in relation to overwintering fish use as found in the present study. Secondly, an example of potential use of the information gathered and synthesized in this report is presented by examining all available information on fish and habitat in the Kukjuktuk Creek drainage on the Tuktoyaktuk Peninsula. Overwintering habitat criteria for fish species or groups are then discussed.

COMPARISON OF INFORMATION SETS

Tables 37 and 38 summarize occurrence of each fish species (or group) in each habitat type as reflected by 1.) scientific data and LUMD analysed in RESULTS: PART I and IHD information presented in RESULTS: PART II. (As we have shown, the catches of Arctic char reported in the IHD information set were primarily during char migrations in the early and late winter, and catches from such areas were not indicative of overwintering sites. For this reason, data on Arctic char are not presented in Table 38.).

Table 39 summarizes the major fish species associated with overwintering habitats. The following points are worthy of note in relation to the results of the two data sets:

1. Upland lakes are known important overwintering sites for a variety of fish. IHD do not reflect this importance, probably because of lack of fishing effort in this habitat type in winter (Table 23);

2. IHD information suggests that outer delta lakes are important primarily for lake trout. This is most likely due to directed fishing efforts for this species, giving rise to numerous reports of lake trout catches from various

Table 37. Incidence of occurrence (%) of each fish species in eight overwintering habitat types as reflected by scientific information and LUMD.

Fish Species	Habitat Type								
	PS	UL	MODR	ODL	IDL	MAJR	EC	NM	Total
	19	52	18	58	26	12	29	2	216
CHAR	86	14	0	0	0	0	0	0	100
GRAY	22	48	19	4	0	4	4	0	100
LKTR	2	43	8	34	8	2	4	0	100
PIKE	0	50	3	26	15	7	0	0	100
LKWF	0	34	7	24	15	10	8	1	100
BDWF	0	29	8	11	14	21	16	1	100
BRBT	0	27	5	23	11	23	10	2	100
INCO	0	24	5	5	27	19	19	2	100
ARCS	0	0	0	0	0	22	67	11	100
LSCS	0	13	0	40	7	3	33	3	100
CISC	0	0	22	0	11	33	33	0	100
RNSM	0	0	0	0	0	25	75	0	100
PCHR	0	0	0	0	0	10	80	10	100
SFCD	0	0	0	0	0	0	50	50	100

Fish Species
CHAR = Arctic char; LKTR = lake trout; PIKE = northern pike; LKWF = lake whitefish; BDWF = broad whitefish; BRBT = burbot; INCO = inconnu; ARCS = Arctic cisco;
LSCS = least cisco; CISC = cisco; RNSM = rainbow smelt; PCHR = Pacific herring; SFCD = saffron cod
Habitat Types
PS = perennial springs; UL = upland lakes; MODR = moderate rivers;
ODL = outer delta lakes; IDL = inner delta lakes; MAJR = major rivers;
EC = estuarine coastal; NM = nearshore marine

Table 38. Incidence of occurrence (%) of each fish species in eight overwintering habitat types, according to Inuvialuit harvest data.

Fish Species	Habitat Type								Total
	PS	UL	MODR	ODL	IDL	MAJR	EC	NM	
	2	8	7	66	123	42	16	0	264
GRAY	66.7	33.3	0	0	0	0	0	0	100
LKTR	0	7.5	3.0	80.6	4.5	3.0	1.5	0	100
PIKE	0	3.2	2.4	3.2	62.9	27.4	0.8	0	100
LKWF	0	2.6	1.3	5.3	47.4	38.2	5.3	0	100
BDWF	0	1.1	1.1	3.4	49.4	36.8	8.0	0	100
BRBT	0	3.1	2.3	3.9	67.4	19.4	3.9	0	100
INCO	0	0.8	1.6	2.4	64.6	24.4	6.3	0	100
CISC	0	5.0	5.0	0	15.0	45.0	30.0	0	100
PCHR	0	0	0	0	22.2	22.2	55.6	0	100
SFCD	0	0	0	16.7	0	0	83.3	0	100
ARCD	0	0	0	100	0	0	0	0	100

For key to fish species and habitat type abbreviations, see previous table.

Table 39. Fish species associated with each overwintering habitat type as reflected by occurrence (%) in scientific/land use map data and Inuvialuit harvest data.

	Scientific and Land Use Data		Inuvialuit Harvest Data	
Habitat	**Major Species (%)**	**Secondary Species (%)**	**Major Species (%)**	**Secondary Species (%)**
Perennial Springs	Arctic char (86)	Arctic grayling (14)	Arctic grayling (67)	None
Upland Lakes	Northern pike (50) Arctic grayling (48) Lake trout (43)	Lake whitefish (34) Broad whitefish (29) Burbot (27) Inconnu (24)	Arctic grayling (33)	Lake trout (8)
Moderate Rivers	Arctic grayling (19)	Low sporadic occurrence of many freshwater species	None	Low sporadic occurrence of many species
Outer Delta Lakes and Channels	Least cisco (40) Lake trout (34)	Northern pike (26) Lake whitefish (24) Burbot (23)	Lake trout (81)	Low sporadic occurrence of many species
Inner Delta Lakes and Channels	Inconnu (27)	Northern pike (15) Lake whitefish (15) Broad whitefish (14)	Burbot (67) Inconnu (65) Northern pike (63) Broad whitefish (49) Lake whitefish (47)	Pacific herring (22) Cisco (15)
Major Rivers	Rainbow smelt (25) Burbot (23) Arctic cisco (22) Broad whitefish (21) Inconnu (19) Burbot	Low sporadic occurrence of several species	Cisco (45) Lake whitefish (38) Broad whitefish (37) Northern pike (27)	Inconnu (24) Burbot (19)
Estuarine Coastal	Pacific herring (80) Rainbow smelt (75) Arctic cisco (67) Saffron cod (50) Least cisco (33)	Broad whitefish (16) Inconnu (19) Burbot (10)	Pacific herring (56) Saffron cod (83)	Cisco (30)
Nearshore Marine	Saffron cod (50)	Arctic cisco (11) Pacific herring (10)	No information	

regions. Data from a broader array of studies (Table 37) document that outer delta lakes and channels are important for a considerable number of other fish species, especially broad whitefish.

3. IHD information suggests that inner delta lakes-channels and major rivers are more important overwintering areas for a number of fishes than indicated by more scientific data. It is believed that this suggestion is valid. Limited scientific sampling has been performed in inner delta lakes-channels (N = 26) and major rivers (N = 12) in winter. Sampling as represented by harvests has been much more intense—inner delta lakes-channels (N = 123), major rivers (N = 42)—giving rise to a much better understanding of fish overwintering in these two habitat types.

As a whole, including harvest data in the present study considerably improved understanding of the under-ice distribution of fish in the study area, especially in areas adjacent to communities.

CONCLUSIONS

Table 40 summarises water quality and physical information on the eight types of fish overwintering habitat identified. It is evident that a continuum exists with considerable overlap in the chemical and physical characteristics of adjacent habitat types. However, it is also apparent that the habitat types at one end of the continuum are distinctly different from those at the other—for example, perennial spring vs. marine habitats.

Table 41 summarises 1.) characteristics of overwintering habitat types and 2.) information on fish species associated with each habitat as reflected by all detailed information considered in this report. It is apparent that with some exceptions, most fish species are found in more than one overwintering habitat type. This is not

Table 40. Summary of water quality information for eight fish overwintering habitat types. Extremes in conditions are not listed.

Habitat	Water quality					Major Distinguishing Features
	Temp ° C	D.O. mg/L	pH	Cond. µmhos/cm	Salinity ppt.	
Perennial Springs	2-15	0.5-9.4 normally 6.2-9.4	7.7-8.4	42-4256 normally 42-300	0	- Warm waters - Continual flow - Quality of connections to other waterbodies is variable
Outer Delta Lakes and Channels	0-1.4	2-16	6.96-8.5	26-290	0	- Water volumes moderate - Flooding uncommon - Quality of connections to other waterbodies is variable
Inner Delta Lakes and Channels	0-1	7.4-13	7.4-8.5	27-290	0	- Water volumes moderate - Annual flooding common - Quality of connections to other waterbodies is variable
Upland Lakes	0-2	7.6-12.4	6.9-8.35	41-185	0	- Water volumes usually great - Low conductivity - Isolated
Major Rivers	0-1	8.8-13.2	7.5-8.8	135-650	0	- Continual flow - High conductivity - No barriers to migration
Moderate Rivers	0-1	10.4-13.4	8.2-8.3	65-150	0	- No flow in winter, isolated pools of free water present - Relatively isolated
Estuarine Coastal	near 0	-	-	-	0-20	- Cold temperatures - No barriers to migration
Nearshore Marine	near 0 or <0	-	-	-	> 20	- Cold temperatures - No barriers to migration

Table 41. Major distinguishing characteristics of eight overwintering habitats and occurrence of associated fish species.

Habitat	Distinguishing Characteristics	Major Species	Secondary Species
Perennial Springs	- Warm fresh water - Continuous but modest flows - Relatively alkaline	Arctic char	Arctic grayling
Upland Lakes	- Water volumes usually large - Low conductivity - Usually relatively isolated	Northern pike Arctic grayling Lake trout	Lake whitefish Broad whitefish Burbot Inconnu
Moderate Rivers	- No flow - Water volumes usually small - Connection to other waterbodies variable	Arctic grayling	Low sporadic occurrence of many freshwater species
Outer Delta Lakes and Channels	- Water volumes moderate - Flooding uncommon - Connection to other waterbodies variable	Least cisco Lake trout	Northern pike Lake whitefish Burbot Broad Whitefish
Inner Delta Lakes and Channels	- Water volumes good to moderate - Many flooded annually - Connection to other waterbodies variable	Inconnu Burbot Northern pike Broad whitefish Lake whitefish	Ciscoes
Major Rivers	- Continuous flow - Moderate to large volumes - High conductivity - No barriers to migration	Broad whitefish Burbot Inconnu Arctic cisco Rainbow smelt Lake whitefish Northern pike	Low sporadic occurrence of several species
Estuarine Coastal	- Increase in size with time - Large volumes - Salinity variable, 0-20 ppt - Temperatures near 0° C - No barriers to migration	Arctic cisco Least cisco Rainbow smelt Pacific herring Saffron cod	Broad whitefish Inconnu Burbot
Nearshore Marine	- Large volumes - High salinity, >20 ppt - Temperatures sometimes below 0° C - No barriers to migration	Saffron cod	Arctic cisco Pacific herring

surprising, because Arctic fishes are opportunistic—able to adapt and survive in harsh variable conditions imposed by an Arctic climate (Craig 1989; Johnson 1981, 1983). However, it is again apparent that a continuum exists, with considerable overlap of fish species in adjacent habitat types, but relatively distinctive fish assemblages in widely separated habitats. The following material summarizes conclusions from the present study in relation to fish use of overwintering habitats.

Perennial Springs

This overwintering habitat type is one of the most discrete in terms of geographic distribution, since it is confined to the northwest portion of the study area. Arctic char and Arctic grayling are the only major fish species inhabiting this very specialised overwintering habitat type. In contrast to most other species of fish considered, Arctic char within the present study area appear to be rather inflexible in their need for perennial springs for overwintering. The few that do occur in upland lake overwintering areas appear to be residents; whereas most of the population that overwinter in perennial springs are anadromous.

Upland Lakes

Upland lakes provide overwintering habitat for a considerable variety of freshwater fishes (Table 41). Major species that typify this habitat are Arctic grayling, lake trout and northern pike. Secondary species are broad and lake whitefish, inconnu and burbot. All of these species are widely distributed in the North. The majority of fish in upland lakes complete their life cycle within the lake, or in closely associated tributaries. As such, few fish populations in upland lakes are anadromous, very likely because of the numerous barriers to fish migration that occur in streams draining upland lakes.

Moderate Rivers

By definition, moderate rivers are those which cease to flow during winter but contain isolated pools or stretches of free water. Because of annual variability, overwintering habitat may or may not exist in any one year, and the amount of habitat declines throughout the winter due to ice growth.

Only Arctic grayling appear to use moderate rivers as overwintering habitat with relatively high frequency (Table 41). Although several other species of freshwater fish have been found in such habitats, their frequency of occurrence is very low (Tables 37 and 38). Due to the marginal nature of this type of overwintering habitat, the above results are not surprising. This type of habitat could often fail in mid- to late winter, resulting in mortality of all fish inhabiting a particular area. It is believed that this may naturally occur quite frequently, but records of such events are rare, because of the great difficulty in documenting their occurrence. Craig (1979) reported that, in Alaska, only three cases of winter fish kills have been documented—two in the lower Sagavanirktok River and one in the Dietrich River. In these cases fish kills occurred in isolated pools of free water which become uninhabitable due to oxygen depletion and crowding caused by encroachment of ice.

Outer Delta Lakes and Channels

Outer delta lakes and channels are located on Richards and associated islands, and the Tuktoyaktuk Peninsula including the Eskimo (Husky) Lakes region. The dominant fish species in this overwintering habitat are least cisco and lake trout, but northern pike, burbot and lake whitefish are also quite common. Some of these fish, such as lake trout, are quite likely resident in a particular waterbody. Others, however, such as lake whitefish and broad whitefish, may be migratory, because many of the waterbodies in this overwintering habitat type have, in many instances, good connections to other major systems. In addition, broad whitefish may be very abundant in particular outer delta lakes but absent in others.

Inner Delta Lakes and Channels

Inconnu, burbot, northern pike, lake whitefish and broad whitefish are the dominant fish overwintering in inner delta lakes and channels of the study area (Table 41). Inconnu and broad whitefish and, to a lesser extent, lake whitefish are noted for their migratory behaviour, sometimes spawning in areas far removed from their overwintering areas. It is believed and, in part, documented (see Chang-Kue 1987) that many of the overwintering sites in this habitat category contain migratory populations. Some, such as northern pike, are not noted for their migratory behaviour and likely reside in or near these areas year round.

Major Rivers

Major rivers in the study area are major channels of the Mackenzie River and the lowermost reaches of the Peel and Arctic Red rivers. A large number of species, including broad and lake whitefish, burbot, inconnu, Arctic cisco, northern pike and rainbow smelt, use this overwintering habitat.

The large size and reliability of this habitat type are undoubtedly reasons why a large number of fish species use this habitat for overwintering. An additional benefit is that it is a relatively open system with good connections to other waterbodies which migratory species can use to their advantage.

Estuarine Coastal

As previously described, the estuarine coastal overwintering habitat is variable in size. Quite unlike the other overwintering habitat types, it grows appreciably in size throughout the winter, due to the accumulation of brackish and fresh water beneath the ice in nearshore coastal waters.

Major fish species overwintering in this habitat type are a combination of freshwater species (Arctic cisco, least cisco, rainbow smelt) and marine species

(Pacific herring and saffron cod). Other freshwater species such as broad whitefish, burbot and inconnu are also quite common in this habitat type. All of these species are noted for their migratory nature.

Nearshore Marine

Due to very limited sampling, fish overwintering in the nearshore environment are very poorly known. Although eight species have been reported present in nearshore marine waters in winter (Table 37), the habitat is considered most important for saffron cod, Pacific herring and perhaps Arctic cisco.

APPLICATION OF PRESENT KNOWLEDGE AND HABITAT CLASSIFICATION

Development of animal habitat classification systems is, of course, not an end product. Actual use of the system to predict the occurrence of one or several species/groups on the basis of characteristics of habitat is the crucial test of the utility of any habitat classification system. Although we may be far removed from accurately predicting the winter distribution of all fish species in specific waterbodies in the study area, there is a considerable amount of knowledge that we can apply to increase the accuracy of such predictions when one considers:

1. knowledge of fish distribution in other seasons;
2. biology and life cycles of fish species involved; and
3. trends and associations identified in the present study.

The following is an example of application of all available knowledge, including insights obtained during the present study, to identify and classify known and suspected fish overwintering areas in Kukjuktuk Creek, a moderately-sized drainage on the northwestern side of the Tuktoyaktuk Peninsula (Figure 36). This area was chosen because it is relatively well studied (Anema et al. 1990 a,b—on water chemistry; Fee et al. 1988—on limnology; Lawrence et al. 1984; Chang-Kue and

Jessop 1990—on fish), yet portions of the system remain unsampled and no winter fish collections have been obtained.

Kukjuktuk Creek Drainage

Kukjuktuk Creek drains a lowland area on the Tuktoyaktuk Peninsula about 30 km northeast of the community of Tuktoyaktuk (Figure 37). Approximately 50 lakes and small ponds are connected via three main branches of the stream, which flow northerly, join and then flow through a single channel to Kukjuktuk Bay and the Beaufort Sea.

Outer Delta Lake-Channel Habitat Type: Since Kukjuktuk Creek is in the region classified as outer delta lake-channel overwintering habitat (Figure 3), the following species may be suspected to occur in the region based on the results of this study (Table 41).

Arctic grayling*	- R	Lake whitefish	- R,M
Lake trout	- R	Broad whitefish	- R,M
Northern pike	- R	Inconnu*	- R,M
Burbot	- R	Least cisco	- R,M

* = Likely to occur in small numbers; R = Resident; M = Migratory

Fish species which can be eliminated (see Table 41) are Arctic char, saffron cod, Pacific herring, rainbow smelt and Arctic cisco. Elimination of some of these species can be partially attributed to salinity preferences (marine or estuarine species such as Pacific herring, saffron cod and rainbow smelt), or their apparent requirement for overwintering and/or spawning, such as perennial springs for anadromous Arctic char. Reasons for the distribution of some species, such as Arctic cisco, remain ill-defined. This species, however, has not been reported in winter in the Outer Delta Lake habitat, nor has it been captured in open water sampling in the

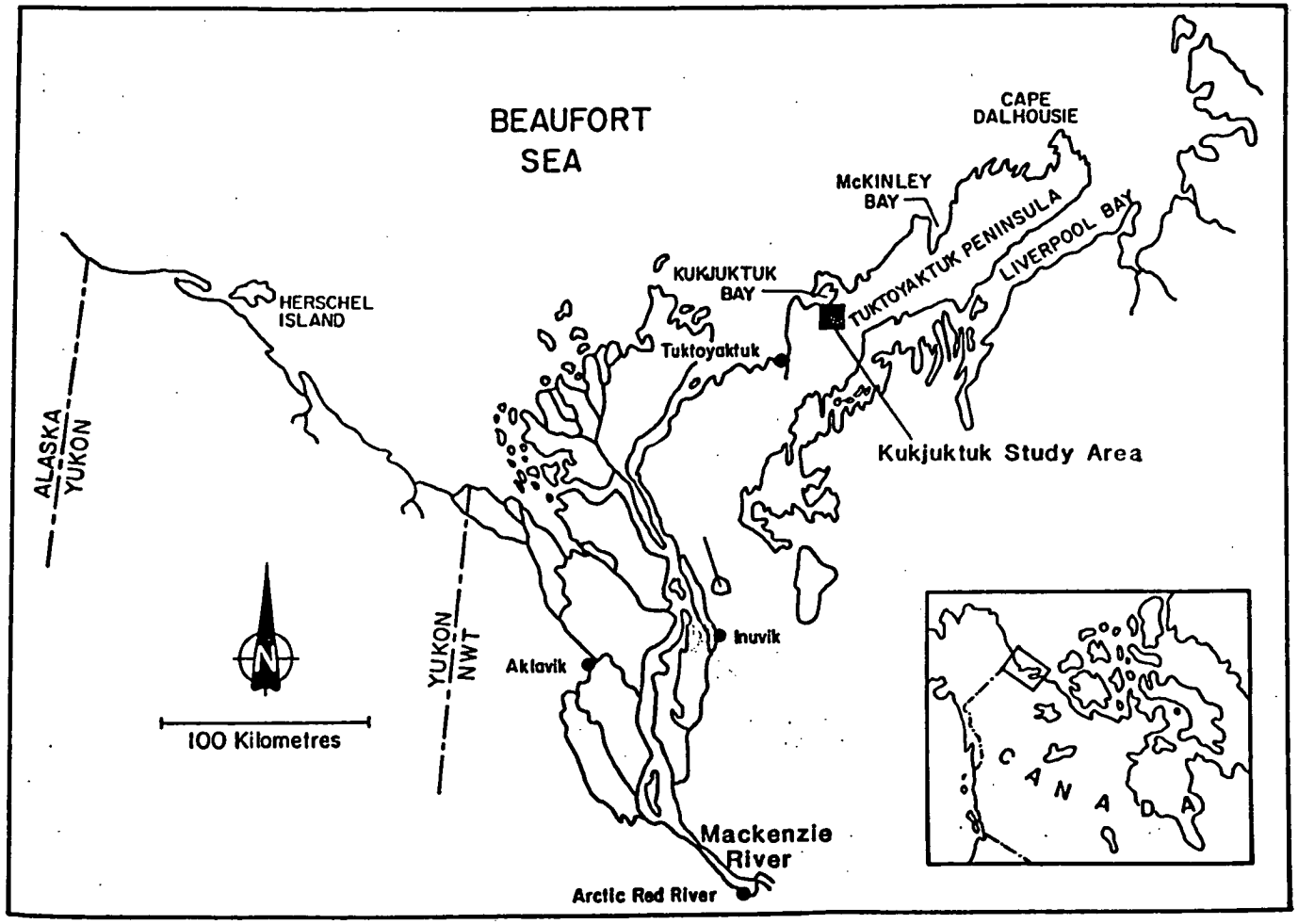

Figure 36. Kukjuktuk study area (figure adapted from Fee et al. 1988).

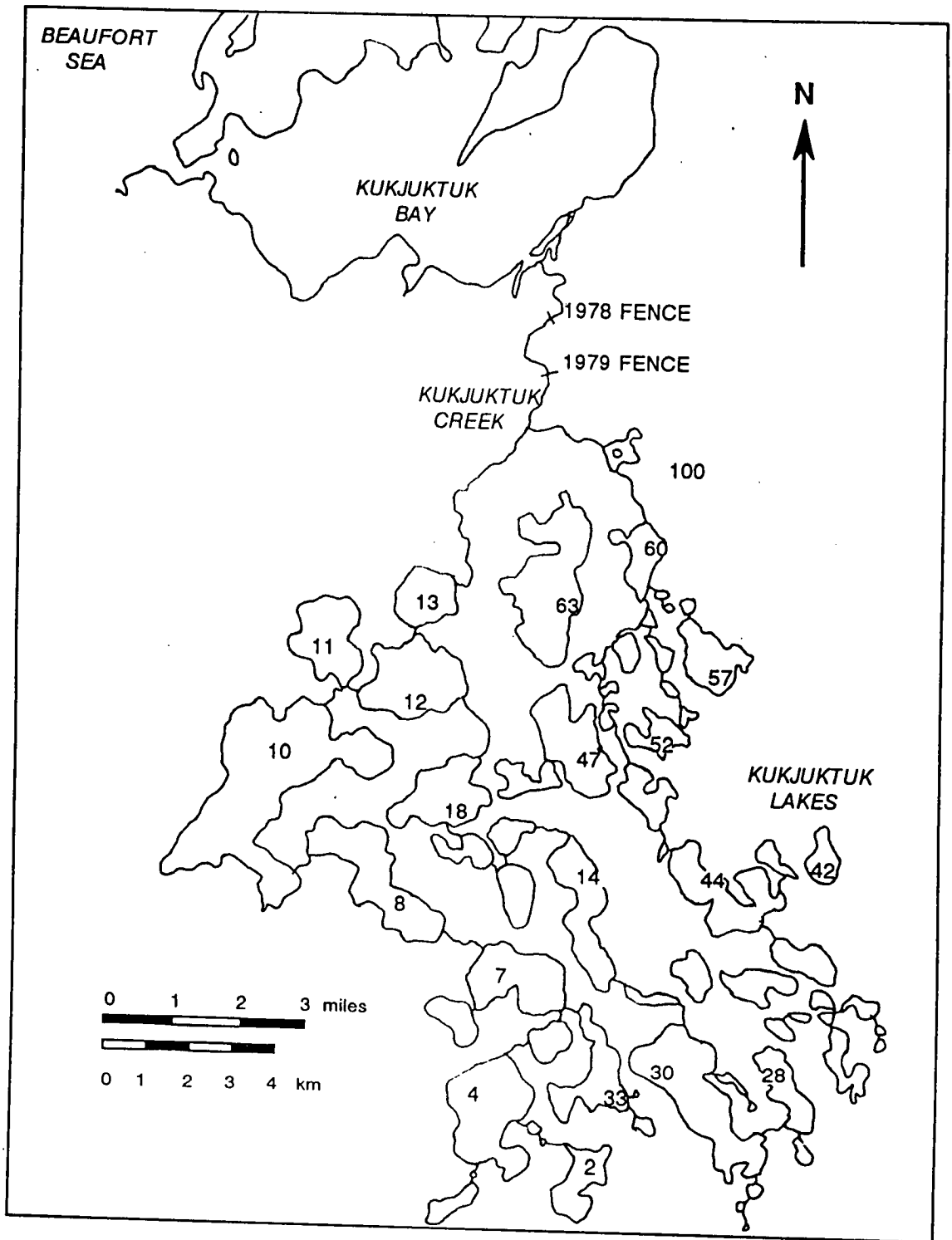

Figure 37. The Kukjuktuk Creek drainage (Figure modified from Chang-Kue and Jessop 1992). Lake numbers were assigned by Department of Fisheries and Oceans personnel in 1978-79.

Kukjuktuk Creek drainage. For this reason, it is also eliminated as a potential overwintering species in this drainage.

Water Depth: A universal criterion that can be applied to all fish overwintering habitat is their need for free water throughout the winter. Since maximum ice thickness is normally about 2.0 m in the study area, all lakes and ponds less than 2.0 m deep can be eliminated as overwintering areas with a large amount of certainty. The following five categories of quality of overwintering habitat can be defined on the basis of water depth.

1.	No overwintering potential	≤ 2.0 m deep
2.	Limited or marginal overwintering potential	Water depths in excess of 2.0 m restricted in extent
3.	Good overwintering habitat	Moderately large areas 2.0 to 5.0 m deep
4.	Excellent overwintering habitat	Large areas greater than 5.0 m deep
5.	Unknown overwintering habitat	No information on depth

Fallis (pers. comm.) and Fee et al. (1988) have obtained information on water depth in a number of lakes in the Kukjuktuk Creek drainage. This knowledge can be used to delineate known and suspected overwintering fish habitat on the basis of the above 5 categories, as illustrated in Figure 38. As shown, a considerable number of lakes can be eliminated as potential fish overwintering habitat due to insufficient depth. An example of a limited or marginal overwintering lake habitat is shown in Figure 39. As shown, maximum depth of this lake is 3.0 m and only a small portion of the lake would contain free water in late winter. Fallis (pers. comm.) reported that dead fish, including four broad whitefish and two least cisco, were observed in this lake on 30 June 1979. The deaths of these fish were presumed to be a result of winterkill. Dead fish were also observed in Lake 14—another lake with a small amount of water greater than 2 m deep.

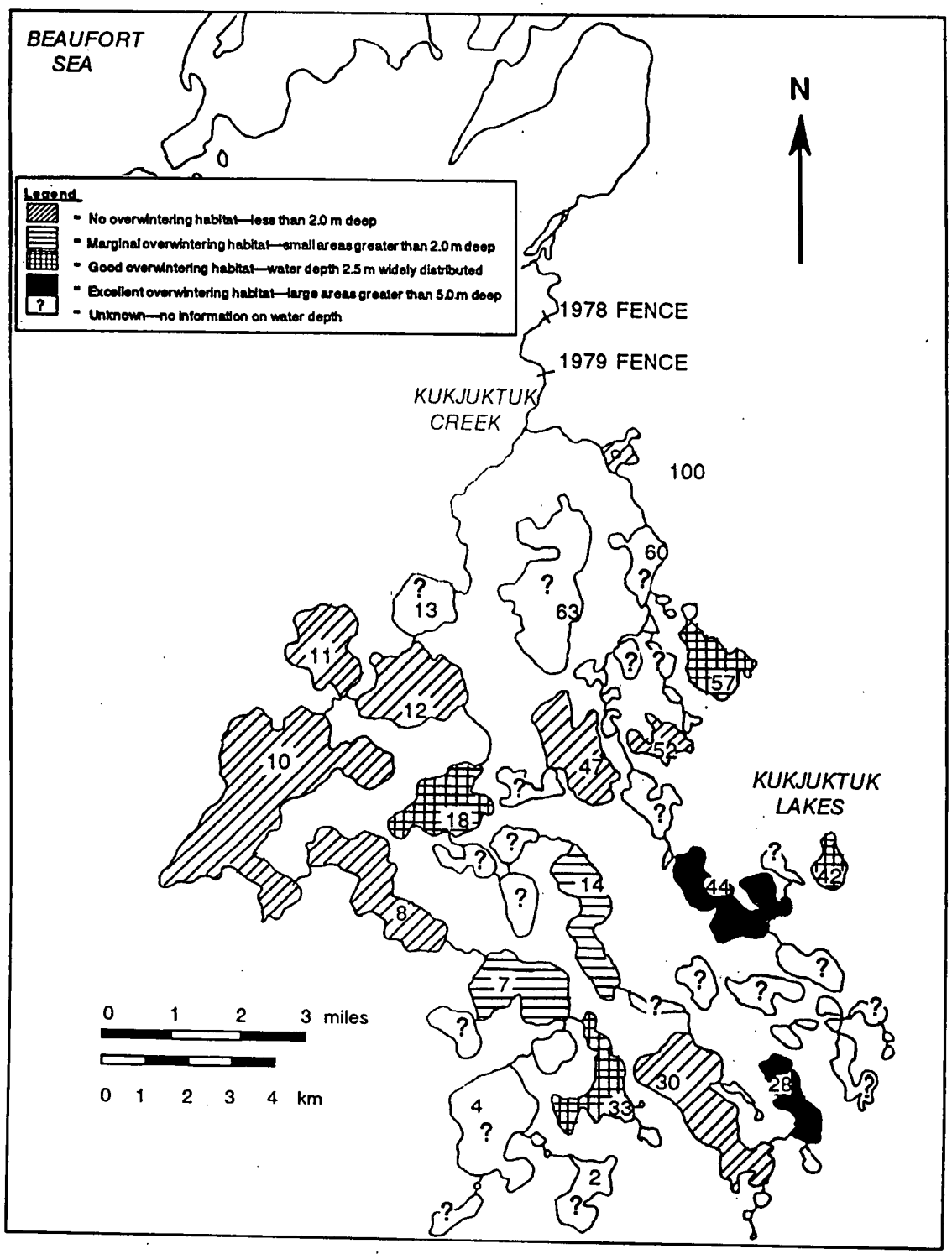

Figure 38. The Kukjuktuk drainage showing five types of potential overwintering habitat based on water depth (figure modified from Chang-Kue and Jessop 1992).

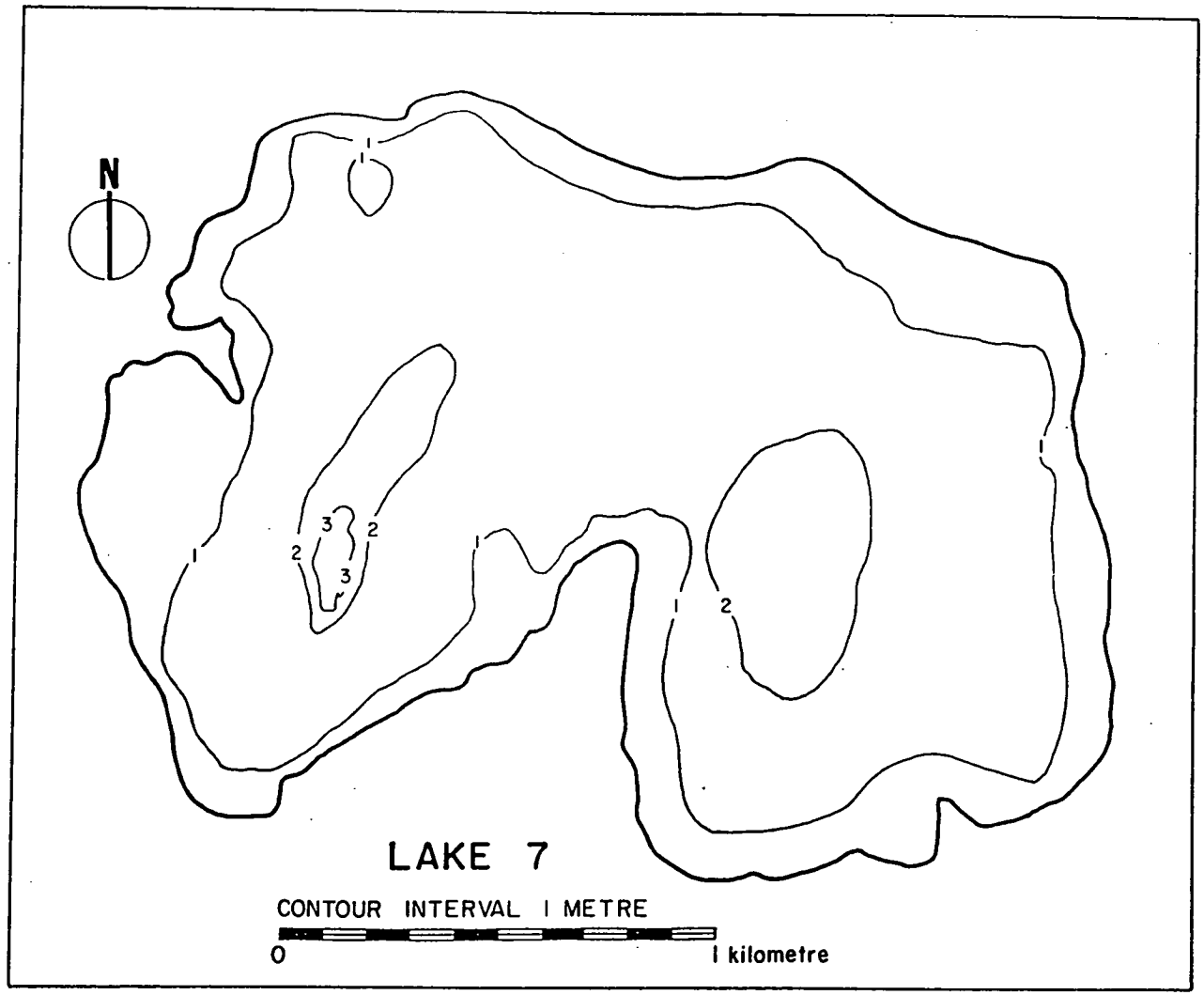

Figure 39. Bathymetric map of Kukjuktuk Lake 7 (figure from Fallis unpublished in Fee et al. 1988).

An example of excellent overwintering lake habitat based on water depth is shown in Figure 40. Substantial areas of this lake are over 2.0 m deep. Such overwintering habitat can be expected to harbour greater numbers of fish of a wider variety of species. For example, open-water sampling (Fallis pers. comm.) captured lake trout and burbot only in Lakes 44 and 28. Detailed bathymetry is not available for Lake 44, but depths up to 9.8 m have been measured and it may also provide extensive high quality overwintering habitat.

An example of good overwintering habitat is shown in Figure 41. Although large portions of the lake are less than 2.0 m deep. and are expected to freeze to the bottom during winter, substantial portions of the lake are also of moderate depth. Open water sampling suggests that coregonids and pike typically use such lakes for overwintering.

Connections to the Sea: Chang-Kue (pers. comm.) reported that anadromous fish are predominantly found in the southwestern portion of the Kukjuktuk Creek drainage and that they are rare or uncommon in the northeastern portion of the drainage because some of the main streams in this portion of the system have poorly defined channels and present many obstacles to fish migrations. This is especially true in the fall of particularly dry years when flow may be minimal or non-existent. On the basis of this information anadromous, as well as resident, lake whitefish, broad whitefish, and least cisco can be expected to occur in the drainage, but only in lakes in the southwestern portion of the drainage. This is valuable information, because anadromous populations are sometimes quite large and are sometimes harvested extensively, perhaps in regions far removed from their overwintering areas.

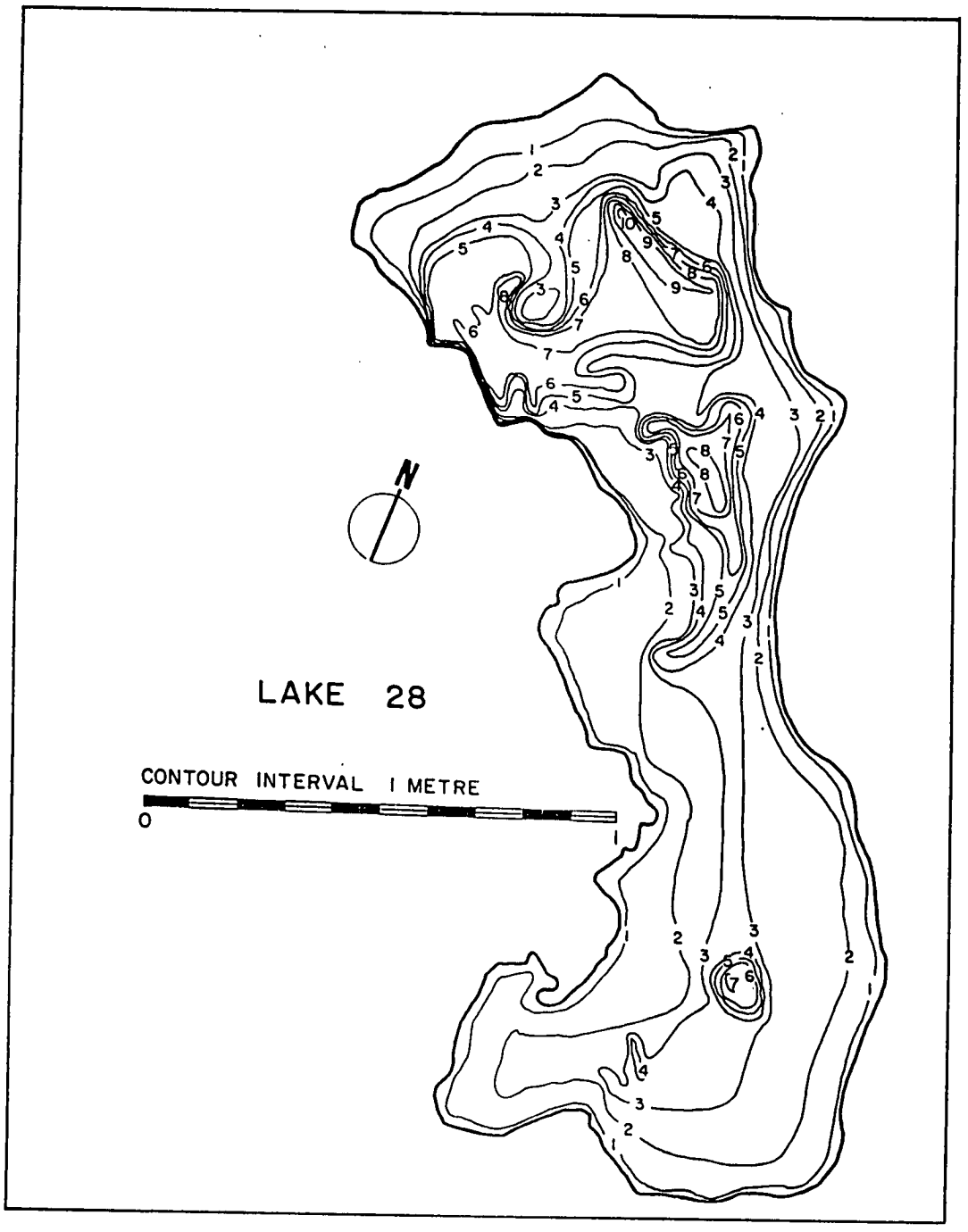

Figure 40. Bathymetric map of Kukjuktuk Lake 28 (Figure from Fallis unpublished in Fee et al. 1990).

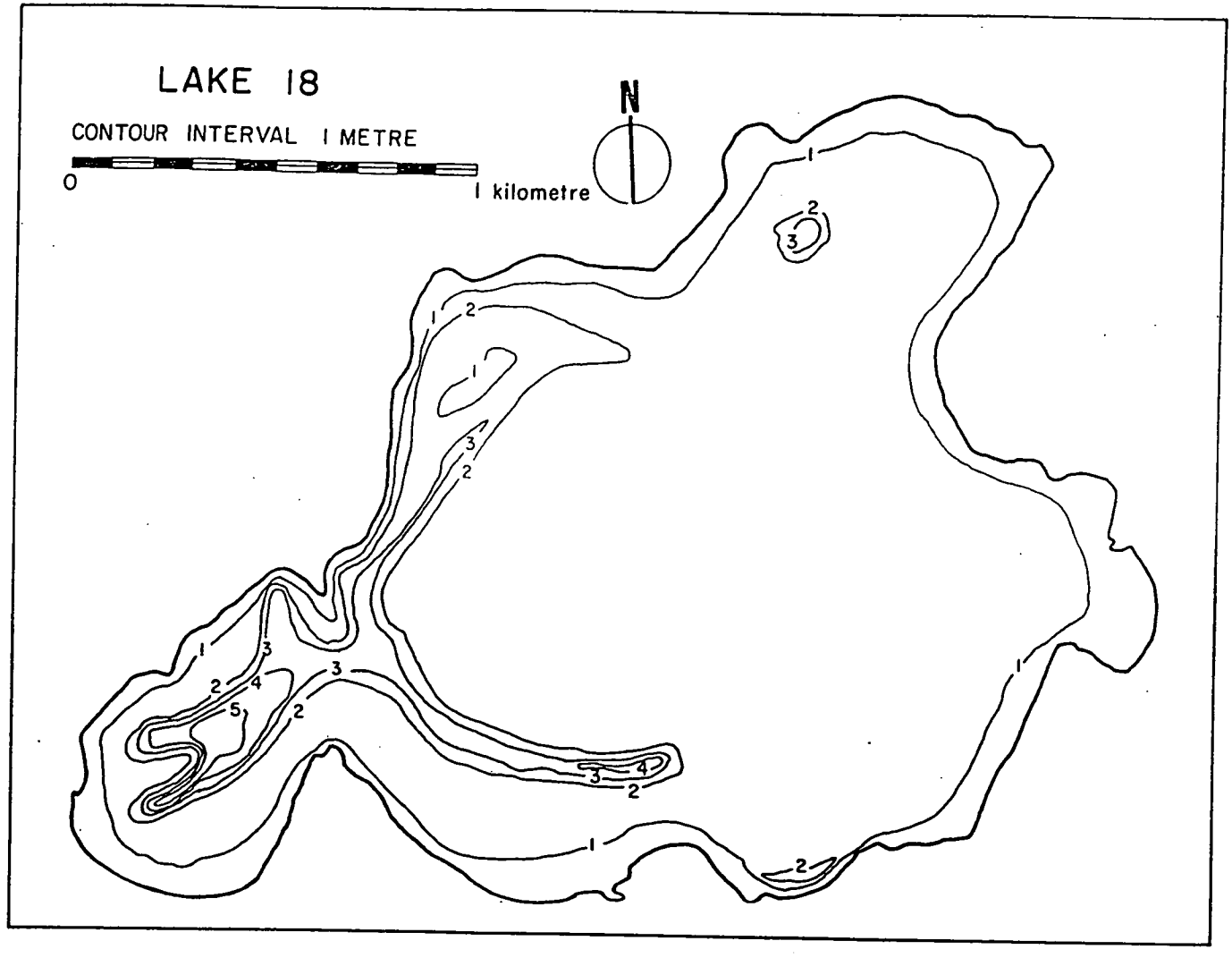

Figure 41. Bathymetric map of Kukjujktuk Lake 18 (figure from Fallis unpublished in Fee et al. 1988).

Documented Fish Presence in Open Water: Fish collections in the Kukjuktuk Creek drainage consist of only open-water catches; however, such information is helpful in further determining probable species overwintering in the drainage. Considering the catches of Fallis (unpublished) and Chang-Kue and Jessop (1990) (and eliminating incidental catches of the latter), the list of fish species known to utilise overwintering areas in the Kukjuktuk drainage can be further reduced as follows:

Documented to occur in the Kukjuktuk Creek drainage	Eastern portion	Not reported from the Kukjuktuk Creek drainage
Lake trout - R	Lake trout - R	Arctic grayling
Northern pike - R	Broad whitefish - R	Inconnu
Lake whitefish - R,M	Least cisco - R	
Broad whitefish - R,M	Burbot - R	
Least cisco - R,M		
Burbot - R		

R = resident; M = migratory

We are thus reduced to consideration of six species from our original list of thirteen.

Synthesis: Figure 42 illustrates the suspected fish overwintering potential of all lakes and ponds in the Kukjuktuk Creek drainage, based on information presented above. Important specific habitat features are water depth and connections to the sea. These, combined with general and specific knowledge of fish distributions, allows rather specific predictions to be made concerning each waterbody in the system. It should be noted that no winter fish collections have been made in the drainage; hence, definitive information on fish overwintering is lacking. However, this example is appropriate, since no information is available in winter fish distribution on the vast majority of waterbodies in the study area.

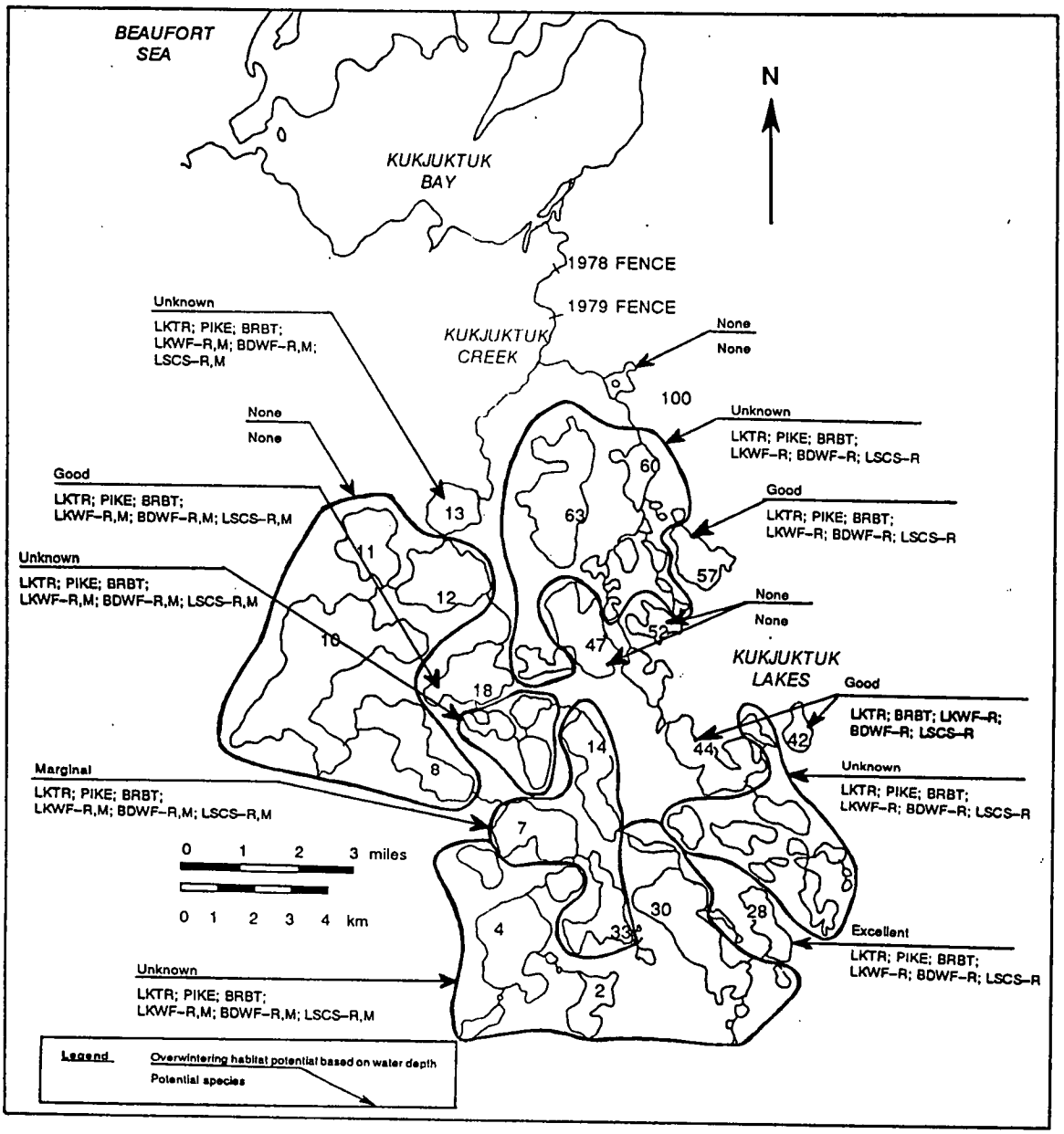

Figure 42. Suspected overwintering potential of lakes and ponds in the Kukjuktuk Creek drainage based on present knowledge of lake depths, connection to the sea and distribution of fish species during the open-water season.

Chang-Kue and Jessop (1992) reported results of fish counts at a fish trap on Kukjuktuk Creek during 1978 and 1979. They documented that the drainage as a whole was extremely important to anadromous broad whitefish and secondarily to anadromous least cisco and lake whitefish as follows:

		Fish Counts		
Fish Species	**Year**	**Upstream**	**Downstream**	
Broad whitefish	1978	65,000	23,000	(excluding fish <200 mm)
	1979	1,170,000	85,000	(including fish <200 mm)
Lake whitefish	1978	7,000	3,000	
	1979	6,000	9,000	
Least cisco	1979	14,000	7,000	(excluding fish <200 mm)
	1979	14,000	1,600	(excluding fish <200 mm)

They reported that broad whitefish use the drainage as a nursery and rearing area for several years before migrating out of the system, presumably to spawn in the Mackenzie River system. In contrast, only older juveniles and adult lake whitefish and least cisco migrated through Kukjuktuk Creek; some individuals only remained in the system for the summer but some remained to overwinter. While this study does not provide any specific information on lakes which may be important overwintering areas for these fishes, the data suggest that the Kukjuktuk Creek drainage may have regional importance to broad whitefish and perhaps other species. It thus flags the area for further attention if developments are proposed in the drainage.

CONSIDERATION OF SPECIFIC HABITAT VARIABLES

As we have seen, water depth and connections to the sea or to other waterbodies are important in determining the overwintering distributions of fish in the study area. While general knowledge indicates that other features of the habitat such as temperature, salinity and dissolved oxygen concentration obviously have

critical importance in determining the suitability of overwintering habitat, definitive information on the winter requirements or preferences of species (and their various life stages) in relation to these parameters is lacking. Nonetheless, such factors are obviously important and should also be considered when attempting to describe overwintering habitat.

We have found that eight general types of habitat in the study area support somewhat different assemblages of overwintering fishes. While this is useful in providing a first estimate of the species of fish that might inhabit waterbodies over the winter, it does not provide great insight into the quality of overwintering habitat that might be present. Table 42 is a preliminary ranking of overwintering habitat suitability for various species/groups of fishes in the study area in relation to specific habitat parameters. As shown, habitat suitability is ranked as high, moderate or low suitability on the basis of water depth, temperature, salinity and dissolved oxygen. High suitability is defined as habitat with no limitations to overwintering fish; whereas moderate suitability is that which poses some limitations or stress to overwintering fish populations, such as slight decreases in dissolved oxygen concentrations over the winter or a reduction in living space. Low habitat suitability is defined as that which imposes severe constraints to fish populations. Such areas can be characterised by intermittent fish winter kills due to overcrowding and oxygen depletion or salinity changes which impose high degrees of stress.

While the above habitat categories are easily defined, it is extremely difficult to set discrete limits for individual habitat variables because of lack of precise data, differences in species and their life stages, and inter-relationships among variables. Due to these difficulties, all material in Table 42 must be regarded as preliminary and subject to modification.

Table 42. A preliminary classification of overwintering habitat suitability in relation to fish species/groups and habitat variables.

Fish Species/ Group	Habitat Variable	Habitat Suitability		
		High	Moderate	Low
Arctic char	Temperature (° C)	2 - 10?	0.5-2; 10-12	< 0; 0-0.5
	Depth (m) in perennial springs	> 1.0	0.5 - 1.0	< 0.5
	D.O. (mg/L)	> 5.0	2.0 - 5.0	1.0 - 2.0
	Salinity (ppt)	0	0.1 - 1.0	>1.0
Freshwater Resident—Sensitive				
Lake trout	Temperature (° C)	0 - 2	-	< 0
Arctic grayling	Depth (m)	> 5	3.0 - 5.0	2.0 - 3.0
Burbot?	D.O. (mg/L)	> 8	4.0 - 8.0	< 4.0
	Salinity (ppt)	0	0 - 1.0	> 1.0
Freshwater Resident—Resistant				
Northern Pike	Temperature (° C)	0 - 2	-	< 0
	Depth (m)	> 3.0	2.5 - 3.0	2.0 - 2.5
	D.O. (mg/L)	> 4.0	2.0 - 4.0	0.5 - 2.0
	Salinity (ppt)	0	0 - 1	> 1
Freshwater Anadromous and Resident				
Least cisco	Temperature (° C)	0 - 2	-	< 0
Broad whitefish	Depth (m)	> 3	2.5 - 3.0	2.0 - 2.5
Lake whitefish	D.O. (mg/L)	> 6.0	3.0 - 6.0	< 3.0
Inconnu	Salinity (ppt)	0	0 - 1	> 1
Coastal Estuarine				
Arctic cisco	Temperature (° C)	0 - 2?	?	< 0?
Rainbow smelt	Depth (m)	> 3	2.5 - 3.0	2.0 - 2.5
	D.O. (mg/L)	> 4.0	1.0 - 4.0	1.0 - 2.0
	Salinity (ppt)	10 - 20	5 - 10; 20 - 25	< 5; > 25
Marine				
Saffron cod	Temperature (° C)	-1 - +2	<-1.5—1.0?	< -1.5?
Pacific herring	Depth (m)	> 3	2.5 - 3.0	2.0 - 2.5
	D.O. (mg/L)	> 7.0	5.0 - 6.0	< 5.0
	Salinity (ppt)	> 25	20 - 25?	10 - 20?

Water Depth

While water depth is obviously of great importance in determining overwintering habitat suitability, there are no data available with which to set limits quantitatively and objectively. For this reason, only broad categories can be rather subjectively assigned, based on the general distribution of fishes over the entire year, the few data on fish winterkills that are available (e.g., Fallis pers. comm; Chihuly et al. 1979; Bendock and Burr 1989; Schmidt et al. 1989), and the given that habitat becomes more unsuitable as space decreases.

Temperature

Temperature does not appear to be a particularly useful variable in defining overwintering habitat suitability for most species of fish, because there is relatively little variation in most winter water temperatures. Temperature can be used to define overwintering habitat for marine versus freshwater fish, since the latter group are not, on the whole, adapted to withstand temperatures below 0° C (Dunbar 1968; De Vries and Lin 1977). Thus, as reflected in Table 42, temperatures below 0° C provide low habitat suitability for all freshwater fish, while temperatures warmer than about -1.5° C provide at least moderate habitat for marine species.

Dissolved Oxygen

It is well known that different species of fishes have different levels of tolerance to levels of dissolved oxygen; however, extremely few data exist on oxygen requirements of fish in overwintering areas or on the behavioural responses of fish to various levels of dissolved oxygen in winter. The best documented case of fish kills in the Arctic is contained in Schmidt et al. (1989). Through SCUBA diver observations and sample collections, they reported 23 round whitefish, 1 Arctic cisco, 1 broad whitefish, 1 least cisco and 3 burbot killed in an isolated pool in the Sagavanirktok River Delta in Alaska in early spring, when dissolved oxygen levels

ranged from 0.3 to 2.7 mg/L, temperatures were slightly above 0° C and salinity was approximately 5 ppt. Previous sampling in mid- and early winter indicated similar temperatures and salinities but dissolved oxygen concentrations were high—approximately 10 mg/L. The fish kill was attributed to hypoxia.

The limits for dissolved oxygen for the various fish species groups were set in consideration of data in Davis (1975), who listed levels of dissolved oxygen which produced an incipient oxygen response (IOR) for many (but not all) Canadian fishes. The IOR is defined as the dissolved oxygen concentration that first produces an observable behavioural response in the fish—such as flaring of the gills or increased opercular movement. In general, oxygen concentrations in the low habitat suitability category in Table 42 would all produce an IOR; those listed in the moderate category would probably not produce an IOR, but could alter metabolic rates and functions and produce some stress. It is, however, unknown how IORs established in laboratory conditions compare with what fish undergo in natural overwintering habitats. Despite the above limitations, it is useful to consider that:

1. Arctic char and northern pike are quite tolerant of low oxygen levels;

2. Lake trout, and perhaps Arctic grayling and marine species are sensitive to low oxygen levels; and

3. Most whitefishes and ciscoes can be classified as moderately sensitive to low oxygen levels.

Salinity

Salinity is one of the most important variables in determining the suitability of overwintering habitat for major groups of fish in the study area (Table 42). Sharp distinctions can be made between marine, freshwater and estuarine types of fishes, according to the salinities of their overwintering habitats. However, for all practical purposes and by definition, the salinity of fresh water does not vary. Because of the

sensitivity of freshwater and most anadromous fishes to salinity in winter, when water temperatures are low (sometimes less than 0.0° C) the salinity ranges for high and moderate habitat suitability are quite small. The response of marine species to freshened water in winter is unknown. It is unlikely that deleterious effects would be produced by moderately freshened water; hence, somewhat broader ranges in salinities are listed in Table 42 for these species.

In contrast to marine and especially freshwater fishes, estuarine fishes are likely to be quite insensitive to changing salinities (Table 42). However, they do react to salinity extremes. For example, Schmidt et al. (1989) reported relatively high catches of Arctic cisco (2.61/gillnet/h) in early winter at a sample site on the edge of the Sagavanirktok Delta in early winter when salinity was 19.8 ppt. Salinity increased to 29.0 ppt in later sampling periods and gillnet catches were near zero. During the latter period, there were corresponding increases in catches of Arctic cisco in upstream sampling sites where salinities were lower. These data were interpreted by Schmidt et al. (1989) as a movement of Arctic cisco to avoid the more saline marine water which was intruding into the delta region as winter progressed.

Other Variables

Variables other than those listed in Table 42 are undoubtedly important in determining the suitability of fish overwintering habitat. The importance of good connections between fresh, brackish and marine water is obviously important for anadromous species and has already been discussed. Biological variables, such as inter- and intraspecific competition are undoubtedly also extremely important. For example, the presence of piscivorous species, such as inconnu, northern pike and burbot, could severely limit the suitability of overwintering habitat for other species, especially if space were limited. Physiological effects of crowding in overwintering areas are unknown but are perhaps important, at least for some species. Behavioural or physiological responses of fish to differences in light intensities in overwintering areas are unknown. Lack of information precludes discussion of many factors that

could influence suitability of overwintering areas. However, to our knowledge, the information put forward in Table 42 is the first attempt to quantify overwintering fish habitat of northern and Arctic regions. If the classification proves to be useful, it will undoubtedly be modified extensively as more information becomes available.

RECOMMENDATIONS

This is the first major study that attempts to define overwintering habitats for Arctic fishes in at least a partially quantitative manner. As such, results of the present study must be regarded as preliminary and subject to modification. The following material discusses priorities for future research. It also identifies a few areas where knowledge is sufficient and no new programs are recommended.

SPECIES

Future research should concentrate on species presently and potentially of importance to residents of the area and secondarily on those of more scientific interest. Important species in future efforts are identified as broad whitefish, inconnu and Arctic cisco. The latter species was identified due to its international importance, It should be also noted that northern pike are beginning to have economic importance in southern NWT commercial fisheries. If this trend continues, its importance in the study area could increase.

Arctic char have been extensively studied in comparison with other species and their overwintering habitats and requirements are well known.

AREAS AND HABITAT TYPES

Future research should concentrate on areas where hydrocarbon developments might occur and large gaps in our knowledge of overwintering habitats exist. A priority for future research is identified as the outer delta lakes-channels and estuarine coastal habitats described in this study. This especially includes the areas adjacent to Richards Island, where large concentrations of important species (e.g., broad whitefish and Arctic cisco and perhaps inconnu) are suspected to occur.

Areas of second priority were major rivers and inner delta lakes-channels. These habitats are used by a large number of important species for overwintering.

They were noted as second priority areas mainly because a moderate amount of knowledge exists in relation to locations of overwintering areas in these habitat types.

Although relatively little specific information exists on fish overwintering in upland lakes, such waterbodies contain largely resident fish populations. Because of this feature our predictive capability in relation to potential fish overwintering in such waterbodies is reasonably good by consideration of:

1. generalised fish distribution in the region; and
2. open-water fish catches.

For this reason, research in relation to this habitat type is also of lower priority.

RESEARCH STRATEGIES

Thought should be given to the following:

1. Scientific information could be obtained in conjunction with normal fish harvesting efforts in winter. This strategy could give rise to a substantial amount of valuable information with relatively little cost.

2. Free water is obviously critical for overwintering fish. Remote sensing techniques should be investigated to determine their utility in determining lake depth. Such a technique would be extremely powerful in identifying lakes and ponds with no or limited overwintering potential.

3. Information from seasons other than winter should be examined for useful indirect data on overwintering fish. For example, all fish catches from upland lakes would be especially useful in determining winter fish use, since they contain largely resident populations. Stream flow records and information on connections with other waterbodies would also be useful.

4. Predictions on overwintering habitat types and fish assemblages proposed in the present study should be tested with well-designed field studies. Such studies would greatly improve predictive capability. Such a test could be performed most economically using Freshwater Creek as a study area and Tuktoyaktuk as a base.

5. Laboratory research on physiological requirements of important northern fish species (e.g., broad whitefish, inconnu, Arctic cisco) in relation to overwintering should be supported. Studies on salinity tolerances and preferences may be especially helpful.

6. Biological factors (e.g., competition for food and space, predator-prey interactions, stress from crowding, etc.) are undoubtedly extremely important in determining overwintering distribution of fish. This is an unstudied area, where minimal effort could yield considerable new information.

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APPENDIX I

DATA SHEETS

FISH OVERWINTERING STUDY
DATA SHEET 1

Reference Information

Citation Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.

Type of publication unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate > 1000 est. by aerial survey

Sampling gear aerial survey

CPUE

Location of study Fish Creek, Yukon, 69°27' N, 140°18' W

Date of Sampling October 5, 1972

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments Stream frozen except at location of study

FISH OVERWINTERING STUDY
DATA SHEET 2

Reference Information

Citation Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char-3.1 fish/m^2

# of samples/population estimate 8600 est by cumulative catch method

Sampling gear Aerial survey, gillnet

CPUE

Location of study Firth Spring, Yukon, 69°27' N, 139°42' W

Date of Sampling November 9 1972, April 16 1973

Effort

Water quality/quantity information 0.8 mi long; 5 m wide; 0.35 m^3/sec discharge

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments Unnamed spring flows into Firth River delta-juveniles collected

FISH OVERWINTERING STUDY
DATA SHEET 4

Reference Information

Citation Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate

Sampling gear Aerial survey, gillnet

CPUE

Location of study Firth Delta, Yukon, 69°27' N, 139°30' W

Date of Sampling September 7,11, November 8, 1972, April 11,1973

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments no flowing water at pipeline crossing in April 1973 -fry and juveniles collected November [fish probably moved or perished]

FISH OVERWINTERING STUDY
DATA SHEET 5

Reference Information

Citation Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate 1000 est. by aerial survey

Sampling gear Aerial survey, gillnet

CPUE

Location of study Joe Creek, Yukon, 68°55' N, 140°59' W

Date of Sampling March 24, May 10, 22, June 6, October 5, 1972

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments adult char observed October; juveniles collected March-October

FISH OVERWINTERING STUDY
DATA SHEET 6

Reference Information

Citation L. Stergenberger, DOE, Vancouver, pers. comm. (In: Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.)

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate 100-1000 est. by aerial survey

Sampling gear Aerial survey; gillnet

CPUE

Location of study Firth River, Yukon 68°53'N, 140°28'W

Date of Sampling October 1973

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) good

Comments [probably frozen in late winter]; -juveniles and mature non-spawners collected September

FISH OVERWINTERING STUDY
DATA SHEET 7

Reference Information

Citation Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate 1000 est. by aerial survey

Sampling gear aerial survey; gillnet

CPUE

Location of study Firth River, Yukon, 68°39 N; 140°55'W

Date of Sampling May 13,17, June 6-12, 1972

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments see also Glova and McCart 1974 and de Bruyn and McCart 1974; -fry, juveniles and adults collected—one of the larger concentrations observed

FISH OVERWINTERING STUDY
DATA SHEET 8

Reference Information

Citation Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate

Sampling gear Aerial survey; gillnet

CPUE

Location of study Babbage River, Yukon, 68°38'N, 139°20'W

Date of Sampling March 24, May 5, 24, June 28

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments above 27' waterfall impassable barrier to upstream migration; -spawned-out char collected September; fry, juveniles and residual adults collected March 24, May 5,24, June 28 and September 29

FISH OVERWINTERING STUDY
DATA SHEET 9

Reference Information

Citation Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate > 1000

Sampling gear Aerial survey, gillnet

CPUE

Location of study Fish-Hole Creek (Canoe River) 68°37'N; 138°42'W

Date of Sampling May 21, November 10, 1972

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments Fry and juveniles August 17, 28, anadromous adults May 21, August 17, September 26, November 10; aerial September 18

FISH OVERWINTERING STUDY
DATA SHEET 10

Reference Information

Citation Craig, P. and P.J. McCart. 1974. Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973. Arctic Gas Biol. Rep. Ser. 15(3). 36 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate > 1000

Sampling gear aerial survey, gillnet

CPUE

Location of study Cache Creek 68°17'N 136°22'W

Date of Sampling October 10, November 11, 1972; April 19, 1973

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments See also McCart and Bain 1974

FISH OVERWINTERING STUDY
DATA SHEET 11

Reference Information

Citation deBruyn, M. and P. McCart. 1974. Life history of the grayling (*Thymallus arcticus*) in Beaufort Sea drainages in the Yukon Territory. Arctic Gas Biol. Rep. Series 15(2): 39 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic grayling

# of samples/population estimate

Sampling gear

CPUE

Location of study Upper Firth River 68°40'N, 140°55'W

Date of Sampling June 1972

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments No details given

FISH OVERWINTERING STUDY
DATA SHEET 12

Reference Information

Citation deBruyn, M. and P. McCart. 1974. Life history of the grayling (*Thymallus arcticus*) in Beaufort Sea drainages in the Yukon Territory. Arctic Gas Biol. Rep. Series 15(2): 39 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic grayling

# of samples/population estimate

Sampling gear

CPUE

Location of study Joe Creek 68°56'N, 141°00'W

Date of Sampling June 1972

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments No details given

FISH OVERWINTERING STUDY
DATA SHEET 13

Reference Information

Citation deBruyn, M. and P. McCart. 1974. Life history of the grayling (*Thymallus arcticus*) in Beaufort Sea drainages in the Yukon Territory. Arctic Gas Biol. Rep. Series 15(2): 39 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic grayling, Arctic char

# of samples/population estimate

Sampling gear

CPUE

Location of study Canoe Creek 68°37'N; 138°42'W

Date of Sampling June 1972

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments No details given

FISH OVERWINTERING STUDY
DATA SHEET 14

Reference Information

Citation deBruyn, M. and P. McCart. 1974. Life history of the grayling (*Thymallus arcticus*) in Beaufort Sea drainages in the Yukon Territory. Arctic Gas Biol. Rep. Series 15(2): 39 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic grayling

# of samples/population estimate

Sampling gear

CPUE

Location of study Firth Delta 69°30'N, 139°40'W

Date of Sampling June 1972

Effort

Water quality/quantity information 0.5-0.7 m free water; DO 9.4 ppm

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments possible overwintering site 2 miles upstream of pipeline crossing in April 1973

FISH OVERWINTERING STUDY
DATA SHEET 15

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate

Sampling gear

CPUE

Location of study Fish Creek spring 17; milepost 217.8; 69°27' N, 140°18' W

Date of Sampling April 18, 1973

Effort

Water quality/quantity information 3.0 m wide, 1 channel, 0.03-0.1 m deep, 0.014 $m^3 sec^{-1}$; 2°C, 5.0 ppm DO, pH 8.4; conductivity 300 μmhos/cm.

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments Important spawning and overwintering area for Arctic char

FISH OVERWINTERING STUDY
DATA SHEET 16

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char/32 fish

# of samples/population estimate

Sampling gear electrofisher?

CPUE

Location of study Unnamed spring Firth River 17; milepost 231.5; 69°27' N, 139°42' W

Date of Sampling April 16, 1973

Effort

Water quality/quantity information 5 m wide, 3 channels, 0.54 m deep, 0.06 m^3 sec^{-1}; 2°C, 6.2 ppm DO, pH 8.3; conductivity 420 μmhos/cm.

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments Discharge in river per se is 35 m^3 sec^{-1}; fish length - 57-282 mm immature

FISH OVERWINTERING STUDY
DATA SHEET 17

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Arctic char, Arctic grayling

# of samples/population estimate None given

Sampling gear
CPUE

Location of study Cache Creek milepost 338.5, 68°17'N 136°22'W

Date of Sampling April 19 1973

Effort

Water quality/quantity information open water, 8 m wide, 1 channel, 0.09 m deep, 0.13/0.23 m^3/sec; 15,14°C, DO 0.5, 4.0; pH 8.3, 8.4; conductivity 4500 µmhos/cm

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS)

Comments Isolated population of char above falls, anadromous char and grayling overwinter below falls.

FISH OVERWINTERING STUDY
DATA SHEET 22

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Peel River, milepost 475, 67°30'N, 134°57'W

Date of Sampling April 14 1973

Effort

Water quality/quantity information no open water, 1 channel, 0°C, D0 8.8-9.0 ppm, pH 8.3, conductivity 135-200 μmhos/cm, clear, colourless,some deposits on filter paper.

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments Conditions appear suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 23

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Mackenzie River, milepost 503, 67°33'N, 133°50'W

Date of Sampling April 12 1973

Effort

Water quality/quantity information no open water, 1 channel, 13.10 m deep, 1.20 m ice, 0.45 m snow, 0°C, D0 10.2 ppm, pH 8.4, conductivity 153 μmhos/cm, clear, colourless, some deposit on filter paper.

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments Conditions suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 24

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Clearwater Lake, milepost 510, 67°33'N, 133°34'W

Date of Sampling April 11 1973

Effort

Water quality/quantity information no open water, 0.66-1.57 m deep, 0.99-1.1 m ice, 0.20-0.31 m snow, 0°C, D0 7.0 ppm, pH 6.9, conductivity 71 μmhos/cm, slightly yellowish, velocity 0.12 m/sec; some overflow water (0.8 ft) between hard ice and snow.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Conditions appear to be suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 25

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Peter Lake, East Mackenzie 33.5, 68°46'N, 134°09'W

Date of Sampling April 20 1973

Effort

Water quality/quantity information no open water, 1.42 m ice, 0.38 m snow, 1°C, D0 13 ppm, pH 7.5, conductivity 27 μmhos/cm, clear, colourless, light deposit on filter paper.

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments Conditions appear suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 26

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Unnamed (Island) Lake, East Mackenzie 47, 68°56'N, 133°50'W

Date of Sampling April 20 1973

Effort

Water quality/quantity information No open water, 1.3 m deep, 1.2 m ice, 0.33 m snow, 0°C, DO 7.0 ppm, pH 6.9, conductivity 90 μmhos/cm, clear, colourless, some deposit on filter paper.

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments Conditions appear suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 27

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study High Point Lake, milepost 107.5, 67°53'N, 132°28'W

Date of Sampling April 11 1973

Effort

Water quality/quantity information No open water, 17.2 m deep, 1.1 m ice, 0.45 m snow, 0°C, DO 12.4 ppm, pH 7.4, conductivity 41 μmhos/cm, clear, colourless, light deposit on filter paper.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Conditions appear suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 28

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Point Lake, milepost 113 ; 67°48'N, 132°24'W

Date of Sampling April 11 1973

Effort

Water quality/quantity information No open water, 21.6 m deep, 0.91 m ice, 0.31 m snow, 0°C, DO 11.0 ppm, pH 8.1, conductivity 45 μmhos/cm, clear, colourless.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Conditions appear suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 29

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Jiggle Lake, milepost 125, 67°41'N, 132°06'W

Date of Sampling April 20 1973

Effort

Water quality/quantity information No open water, 2.2 m deep, 1.0 m ice, 0.50 m snow, 2°C, DO 7.2 ppm, pH 7.9, conductivity 185 μmhos/cm, clear, colourless, slight deposit on filter paper.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Conditions appear suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 30

Reference Information

Citation McCart, P. 1974. Late winter surveys of lakes and streams in Canada and Alaska along the gas pipeline routes under consideration by Canadian Arctic Gas Study Limited 1972-1973. Arctic Gas. Biol. Rep. Ser. 15(1): 183 p + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Deep Lake, milepost 125; 67°40'N, 132°25'W

Date of Sampling April 11 1973

Effort

Water quality/quantity information No open water, 237.7 m deep, 1.1 m ice, 0.31 m snow, 0°C, D0 10.4 ppm, pH 8.35, conductivity 65 μmhos/cm, clear, colourless, light deposit on filter paper.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Conditions appear suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 31

Reference Information

Citation McCart, P. and H. Bain. 1974. An isolated population of Arctic char (Salvelinus alpinus) inhabiting a warm mineral spring above a waterfall at Cache Creek, Northwest Territories. Arctic Gas Biol. Rep. Ser. 15(7): 14 p + plates.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8 604 656-0127, WB Griffiths

Format of information Report

Classification/Mapping Information

Species 11,50, 70 Arctic char

# of samples/population estimate

Sampling gear Seine, electrofisher

CPUE

Location of study Cache Creek, 68°17'N 136°22'W

Date of Sampling November 11 1972, April 19, May 10, 1973

Effort

Water quality/quantity information open water present, 0.31-0.33 m^3/sec, 15-15.5°C, D0 0.5-2.0 ppm, pH 7.7-7.8, conductivity 4546-4531 μmhos/cm, Ca 95-102 mg/L, Mg 22.1-17.8,Na 824-760,K 17.5-16, HCO3 267-272, SO4 417-367, Cl 1036-1030, TDS 2698.1-2585.0.

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments Water quality data from November and April

FISH OVERWINTERING STUDY
DATA SHEET 32

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Arctic char, Arctic grayling

# of samples/population estimate

Sampling gear

CPUE

Location of study Craig Creek, 69°35'N, 140°54'W, milepost 197.5, map 1, at crossing

Date of Sampling 4 April 1973

Effort

Water quality/quantity information No open water present

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments Possible overwintering area

FISH OVERWINTERING STUDY
DATA SHEET 33

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Lake trout, Arctic grayling

# of samples/population estimate

Sampling gear

CPUE

Location of study Island Lake, Creek outlet to Eskimo lakes, 68°56'N, 133°50'W, milepost 65, map 3

Date of Sampling 4 April 1973

Effort

Water quality/quantity information No open water, 1.3 m deep, 1.2 m ice, 0.33 m snow, 0°C, DO 7.0 ppm, pH 6.9, conductivity 90 μmhos/cm.

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments Overwintering area

FISH OVERWINTERING STUDY
DATA SHEET 34

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Lake trout, humpback whitefish, broad whitefish, northern pike

# of samples/population estimate

Sampling gear

CPUE

Location of study High Point Lake, milepost 120, 67°53'N, 132°28'W

Date of Sampling 11 April 1973

Effort

Water quality/quantity information No open water, 17.2 m deep, 1.1 m ice, 0.45 m snow, 0°C, DO 12.4 ppm, pH 7.4, conductivity 41 μmhos/cm.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 35

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Lake trout, Arctic grayling, humpback whitefish, broad whitefish, least cisco, northern pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Point Lake, milepost 125, 67°49'N, 132°23'W

Date of Sampling 11 April 1973

Effort

Water quality/quantity information No open water, 21.6 m deep, 0.91 m ice, 0.31 m snow, 0°C, D0 11.0 ppm, pH 8.1, conductivity 45 μmhos/cm.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good
Comments Overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 36

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Lake trout, humpback whitefish, least cisco, northern pike, burbot

# of samples/population estimate

Sampling gear

CPUE

Location of study Jiggle Lake, milepost 140, 67°41'N, 132°06'W

Date of Sampling 20 April 1973

Effort

Water quality/quantity information No open water, 2.2 m deep, 1.0 m ice, 0.50 m snow, 2°C, DO 7.2 ppm, pH 7.9, conductivity 185 μmhos/cm.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 37

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Lake trout, humpback whitefish, least cisco, northern pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Deep Lake, milepost 140, 67°40'N, 132°15'W

Date of Sampling 11 April 1973

Effort

Water quality/quantity information No open water, 237.7 m deep, 1.1 m ice, 0.31m snow, 0°C, DO 10.4 ppm, pH 8.3, conductivity 65 μmhos/cm.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Conditions are suitable for overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 38

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species longnose sucker

# of samples/population estimate

Sampling gear

CPUE

Location of study Travaillant River, milepost 167, 67°37'N, 131°54'W

Date of Sampling 20 April 1973

Effort

Water quality/quantity information Open water, 2.64 m^3/sec, 1°C, D0 13.4 ppm, pH 8.2, conductivity 150 μmhos/cm.

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Good

Comments Possible overwintering habitat.

FISH OVERWINTERING STUDY
DATA SHEET 39

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Arctic grayling, broad whitefish, lake trout, humpback whitefish, least cisco, longnose sucker, ninespine stickleback, pond smelt

# of samples/population estimate

Sampling gear

CPUE

Location of study Travaillant Lake, milepost 167, 67°41'N, 131°49'W

Date of Sampling 11 April 1973

Effort

Water quality/quantity information Open water, 0.61 m snow, 0.71 m ice, 4.7 m deep, 0°C, DO 11.4 ppm, pH 87.7, conductivity 65 μmhos/cm.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Possible overwintering habitat-the lake is fished domestically year round.

FISH OVERWINTERING STUDY
DATA SHEET 40

Reference Information

Citation McCart, P., W. Griffiths, C. Gossen, H. Bain and D. Tripp. 1974. Catalogue of lakes and streams in Canada along routes of the proposed Arctic Gas pipeline from the Alaskan/Canadian border to the 60th parallel. Arctic Gas Biol. Rep Ser. 16: 251 p + maps.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Arctic grayling, lake trout, humpback whitefish, broad whitefish, round whitefish, northern pike, longnose sucker, pond smelt

# of samples/population estimate

Sampling gear

CPUE

Location of study Thunder River and headwater lakes, milepost 195, 67°32.5'N, 130°56'W

Date of Sampling 20 April 1973

Effort

Water quality/quantity information No open water, 0.3 m snow, 0.75 m ice.

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments Possible overwintering habitat in headwater lakes.

FISH OVERWINTERING STUDY
DATA SHEET 42

Reference Information

Citation Fallis B. (pers. comm. cited in Lawrence, M.J., G. Lacho and S. Davies. 1984. A survey of the coastal fishes of the southeastern Beaufort Sea. Can. Tech. Rep. Fish. Aquat. Sci. 1220: 178 p.).

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species Arctic flounder, saffron cod

# of samples/population estimate

Sampling gear

CPUE

Location of study Kukjuktuk Bay; 69°39'N, 132°30'W

Date of Sampling March- June 1978

Effort

Water quality/quantity information

Habitat classification estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 44

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 4 least cisco,1 herring,1 Arctic grayling

# of samples/population estimate

Sampling gear Gill net 3 m, 1" and 1.5" mesh

CPUE 0.066 fish/h

Location of study Mackenzie Delta Moose Channel Station 2, 68°47'N 136°30'W

Date of Sampling 1 October 1974

Effort 45.5 h

Water quality/quantity information <1 cm snow, 10 cm ice, 3 m deep, 1°C, turbidity 17 FTU, TSS 16.9 mg/L, pH 8.5, conduct 650 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 45

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 2 humpback whitefish, 2 broad whitefish, 4 inconnu, 3 northern pike, 1 Arctic grayling

# of samples/population estimate

Sampling gear Gill net 3 m, 1",2.5", 3" and 4" mesh

CPUE 0.143 fish/h

Location of study Mackenzie Delta Moose Channel Station 2, 68°47'N 136°30'W

Date of Sampling November 9,1974

Effort 21 h

Water quality/quantity information 28 cm snow, 32 cm ice, 3 m deep, 0°C, DO 11.8 mg/L, turbidity 5.8 FTU, TSS 4.9 mg/L, pH 7.7, conduct 285 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 46

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 2 humpback whitefish, 1 inconnu, 1 northern pike

# of samples/population estimate

Sampling gear Gill net 2 m, 4.5" mesh

CPUE 0.083 fish/h

Location of study Mackenzie Delta Unnamed Channel Station 7; 68°49.5'N, 136°05.5'W

Date of Sampling October 1, 1974

Effort 48 h

Water quality/quantity information 0 cm snow, 5-10 cm ice, 4 m deep, 20 m wide, 0°C, turbidity 26 FTU, TSS 42.9 mg/L, pH 8.5, conduct 290 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments freeze-over October 2

FISH OVERWINTERING STUDY
DATA SHEET 47

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 4 humpback whitefish, 1 least cisco, 1 inconnu, 1 northern pike

# of samples/population estimate

Sampling gear Gill net 1.5 m, 1" and 2.5" mesh

CPUE 0.152 fish/h

Location of study Mackenzie Delta Unnamed Lake Station 16; 68°57.5'N, 135°20'W

Date of Sampling November 7, 1974

Effort 23 h

Water quality/quantity information 25 cm snow, 33 cm ice, 1.5 m deep, 0°C, DO 11.6 mg/L, turbidity 5.6 FTU, TSS 0 mg/L, pH 8.2, conduct 185 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 48

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 1 humpback whitefish, 1 inconnu, 1 least cisco

# of samples/population estimate

Sampling gear Gill net 2.5 m, 1" 2.5" and 3.0" mesh

CPUE 0.050 fish/h

Location of study Mackenzie Delta Unnamed Channel Station 17; 68°59'N, 135°18'W

Date of Sampling April 5, 1975

Effort 20 h

Water quality/quantity information 20 cm light snow, 85 cm ice, 2.5 m deep, 40 m wide, 0°C, DO 7.4 mg/L, turbidity 4.9 FTU, TSS 3.7 mg/L, pH 7.0, conduct 195 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 49

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 8 humpback whitefish, 1 inconnu, 1 northern pike

# of samples/population estimate

Sampling gear Gill net 2.5 m, 1", 1.5" and 3.5" mesh

CPUE 0.152 fish/h

Location of study Mackenzie Delta Unnamed Lake Station 18; 69°00N, 135°08'W, flow from Middle Channel

Date of Sampling November 7, 1974

Effort 22 h

Water quality/quantity information 40 cm snow, 20-35 cm ice, 2.2 m deep, 0°C, DO 11.8 mg/L, turbidity 6.5 FTU, TSS 5.8 mg/L, pH 7.4, conduct 158 µmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 50

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 4 humpback whitefish, 1 least cisco

# of samples/population estimate

Sampling gear Gill net 2.5 m, 1", 2.5" and 3" mesh

CPUE 0.032 fish/h

Location of study Mackenzie Delta Unnamed Channel Station19; 69°02.5'N, 135°10'W, flow from Langley Channel

Date of Sampling April 4, 1975

Effort 21 h

Water quality/quantity information 50 cm snow, 98 cm ice, 2.5 m deep, 0°C, DO 12.4 mg/L, turbidity 6.3 FTU, TSS 9.7 mg/L, pH 7.0, conduct 175 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 51

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 1 humpback whitefish, 1 inconnu, 1 burbot, 1 boreal smelt

# of samples/population estimate

Sampling gear Gill net 7 m, 1.5", 2" and 3" mesh

CPUE 0.070 fish/h

Location of study Mackenzie Delta Middle Channel Station 20; 69°03.5'N, 135°04'W

Date of Sampling April 3, 1975

Effort 19 h

Water quality/quantity information 25 cm snow, 110-125 cm ice, 7 m deep, 0°C, DO 13.2 mg/L, turbidity 5.6 FTU, TSS 3.7 mg/L, pH 8.8, conduct 160 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 52

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 3 least cisco

# of samples/population estimate

Sampling gear Gill net 3 m, 2" 2.5", 3" and 3.5" mesh

CPUE 0.136 fish/h

Location of study Mackenzie Delta West Twin Channel Station 21 at junction with East Twin Channel; 69°02'N, 135°00'W

Date of Sampling October 4, 1974

Effort 5.5 h

Water quality/quantity information 0 cm snow, 0 cm ice, 4 m deep, 100 m wide, 3°C, turbidity 21 FTU, TSS 42.1 mg/L, pH 8.0, conduct 290 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 53

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 1 least cisco

# of samples/population estimate

Sampling gear Gill net 3-8 m, 1.5"and 3" mesh

CPUE 0.025 fish/h

Location of study Mackenzie Delta East Twin Channel Station 22; 69°02'N, 134°58'W

Date of Sampling November 6, 1974

Effort 20 h

Water quality/quantity information 42 cm snow, 31 cm ice, 3-9 m deep, 75 m wide, 0°C, DO 11.2 mg/L, turbidity 6.3 FTU, TSS 3.3 mg/L, pH 7.5, conduct 150 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 54

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Unpublished

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 3 humpback whitefish, 1 inconnu

# of samples/population estimate

Sampling gear Gill net 17.5 m, 1.5", 2.5" and 3" mesh

CPUE 0.059 fish/h

Location of study Mackenzie Delta West Tununuk Channel Station 24; 69°05'N, 134°53'W

Date of Sampling April 7, 1975

Effort 18 h

Water quality/quantity information 25 cm snow, 100 cm ice, 4-11.5 m deep, 0°C, turbidity 6.1 FTU, TSS 3.7 mg/L, pH 7.4, conduct 210 μmhos/cm

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

FISH OVERWINTERING STUDY
DATA SHEET 55

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 4 least cisco

# of samples/population estimate

Sampling gear gill net 8-18.5 m, 1", 2" and 3" mesh

CPUE 0.067 fish/h

Location of study Mackenzie Delta Unnamed Lake Station 27 (Immed south of Ya-Ya Lake); 69°06'N, 134°45'W

Date of Sampling November 11, 1974

Effort 20 h

Water quality/quantity information 35 cm snow, 32 cm ice, 18.5 m deep, 1°C, DO 11.0 mg/L, pH 7.4, conduct 90 μmhos/cm

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 56

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 3 least cisco, 1 broad whitefish, 1 burbot

# of samples/population estimate

Sampling gear gill net 2 m, 4 meshes

CPUE 0.250 fish/h

Location of study Mackenzie Delta East Channel Station 28; 69°01.5'N, 134°38'W

Date of Sampling October 4, 1974

Effort 5 h

Water quality/quantity information 0 cm snow, 0 cm ice, 3 m deep, 1°C, turbidity 32FTU, TSS 62.1 mg/L, pH 8.1, conduct 280 μmhos/cm

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 57

Reference Information

Citation Mann, G.J. 1975. Winter fisheries survey across the Mackenzie Delta. Arctic Biol. Rep. Ser. 34(3): 54 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T., X1A 2P8, 403 873-2090, AD Sekerak

Format of information Report

Classification/Mapping Information

Species 1 longnose sucker

# of samples/population estimate

Sampling gear gill net 6 m, 1", 1.5", 2.5" and 3" mesh

CPUE 0.011 fish/h

Location of study Mackenzie Delta East Channel Station 28; 69°01.5'N, 134°38'W

Date of Sampling November 11, 1974

Effort 23 h

Water quality/quantity information 35 cm snow, 3 m deep, 0°C, DO 11.6 mg/L, turbidity 4.7 FTU, TSS 10.7 mg/L, pH 8.3, conduct 155 μmhos/cm

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 58

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 71 broad whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Peel River, 67°20'N, 134°52'W

Date of Sampling 24-25 October 1983

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 59

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 26 broad whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Horseshoe Bend, Mackenzie Delta, 68°14'N, 134°15'W

Date of Sampling mid-October 1984

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 60

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 51 broad whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Horseshoe Bend, Mackenzie Delta, 68°14'N, 134°15'W

Date of Sampling 7-11 November 1984

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 61

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 13 broad whitefish, 126 lake whitefish, 1 inconnu, 13 northern pike, 11 burbot, 1 longnose sucker

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study East Channel (Inuvik), Mackenzie Delta, 68°21'N, 133°46'W

Date of Sampling 27 October-2, 5-11 November 1984

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 62

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 60 broad whitefish, 1 lake whitefish, 4 burbot, 3 longnose sucker

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Arctic Red River, 67°11'N, 133°32'W

Date of Sampling 4-10 November 1984

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 63

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 49 broad whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE not given (Reist in prep)

Location of study Mackenzie River, 67°27'N, 133°46'W

Date of Sampling 2-6 November 1984

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 64

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 18 broad whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Peel River, 67°16'N, 134°56'W

Date of Sampling late October 1984

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 66

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 50 broad whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Mackenzie River, 67°18'N, 132°26'W

Date of Sampling early-mid November 1984

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 67

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 51 broad whitefish, 1 lake whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Travaillant River, 67°44'N, 131°51'W

Date of Sampling 1-7 November 1984

Effort

Water quality/quantity information none

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 68

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 50 broad whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Anderson River, 68°19'N, 128°33'W

Date of Sampling mid-late October 1984

Effort

Water quality/quantity information none

Habitat classification Major river?

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 70

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 27 broad whitefish, 18 lake whitefish, 10 least cisco, 33 inconnu, 30 northern pike

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Campbell Lake, 68°16'N, 133°17'W

Date of Sampling 31 October-9 November 1985

Effort

Water quality/quantity information none

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 71

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 1 lake whitefish, 3 least cisco, 6 inconnu, 1 lake trout, 1 burbot

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Dolomite Lake, 68°17.5'N, 133°33'W

Date of Sampling 3-5 November 1985

Effort

Water quality/quantity information none

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 72

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 51 broad whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study West Channel (Aklavik), 68°13'N, 135°00'W

Date of Sampling early November 1985

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 73

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 50 lake whitefish

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Arctic Red River, 67°27'N, 133°46'W

Date of Sampling end October 1985

Effort

Water quality/quantity information none

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 74

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 4 broad whitefish,1 Arctic grayling, 11 burbot,31 longnose sucker

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Miner River, 69°05'N, 131°03'W

Date of Sampling 2-4 November 1985

Effort

Water quality/quantity information none

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 75

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 50 broad whitefish

# of samples/population estimate

Sampling gear gill net (D. Metner)

CPUE not given (Reist in prep)

Location of study Kugaluk River, 69°07'N, 130°55'W

Date of Sampling 5-7 November 1985

Effort

Water quality/quantity information none

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 76

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 1 least cisco,16 Arctic cisco, 6 inconnu

# of samples/population estimate

Sampling gear gill net (M. Lawrence)

CPUE not given (Reist in prep)

Location of study Toker Point, 69°40'N, 132°43'W

Date of Sampling 18-22 May 1986

Effort

Water quality/quantity information none

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 77

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 13 Arctic cisco, 5 inconnu

# of samples/population estimate

Sampling gear gill net (M.Lawrence)

CPUE not given (Reist in prep)

Location of study Tibjak Point, 69°33'N, 133°00'W

Date of Sampling 18-22 May 1986

Effort

Water quality/quantity information none

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 80

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 10 broad whitefish, 38 lake whitefish, 12 northern pike

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Long Lake, Rat River, 67°43'N, 136°25'W

Date of Sampling 29 October-5 November 1986

Effort

Water quality/quantity information 3 m

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 81

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 3 broad whitefish, 22 lake whitefish, 9 northern pike

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Ogilvie Lake, Rat River, 67°43'N, 136°26'W

Date of Sampling 30 October-5 November 1986

Effort

Water quality/quantity information 3 m

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 82

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 10 broad whitefish, 4 lake whitefish, 7 northern pike

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Twin Lake S., Rat River, 67°44'N, 136°24'W

Date of Sampling 30 October-5 November 1986

Effort

Water quality/quantity information 5.3 m

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 83

Reference Information

Citation Reist, J.D. 1987. Western Arctic fish collections 1983-1986: sample-processing procedures and basic data on individual specimens. Can. Data Rep. Fish. Aquat. Sci. 669: 69 p.

Type of publication Published

Location of study, document or map Applied Environmental Services, P.O. Box 1148, Yellowknife, N.W.T. X1A 2P8 403 873-2090. A.D. Sekerak.

Format of information Report

Classification/Mapping Information

Species 1 Arctic char

# of samples/population estimate

Sampling gear gill net

CPUE not given (Reist in prep)

Location of study Canoe Lake, Fish River, 68°14'N, 135°53'W

Date of Sampling 1-5 November 1986

Effort

Water quality/quantity information 1.5 m

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 85

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake whitefish, lake trout, jackfish, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, Kugaluk River, 67°51'N, 131°25'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 86

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake whitefish, lake trout, jackfish, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, Kugaluk River, 67°51'N, 130°50'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 87

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake whitefish, lake trout, jackfish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, Kugaluk River, 67°55'N, 131°32.5'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 88

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake whitefish, lake trout, jackfish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, Kugaluk River, 67°55'N, 130°45'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 89

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Travaillant River, 67°44'N, 131°51'W

Date of Sampling October, November

Effort

Water quality/quantity information

Habitat classification Moderate river?

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 90

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Travaillant River, 67°37'N, 131°52'W

Date of Sampling November- April

Effort

Water quality/quantity information

Habitat classification Moderate river?

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 91

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake whitefish, lake trout, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Deep Lake, 67°40'N, 132°15'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 92

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loche, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Loche Lake, 67°35'N, 132°21'W

Date of Sampling November- April

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 93

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake trout, jackfish, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study In and Out Lake, 67°32.5'N, 132°42'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 94

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, lake trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Odizen Lake, 67°45'N, 132°45'W

Date of Sampling October, November

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 95

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish, lake trout, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Sunny Lake, 67°51'N, 132°40'W

Date of Sampling December

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 96

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, lake trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Caribou Lake, 67°58'N, 132°55'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 97

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish, whitefish, loche, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Fishing Bear Lake, 67°30.8'N, 133°17'W

Date of Sampling December- April

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 98

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish, loche, jackfish, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Rengleng River, 67°41.5'N, 133°32'W

Date of Sampling December-March

Effort

Water quality/quantity information

Habitat classification Moderate river?

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 99

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species jackfish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Clearwater Lake, 67°32.5'N, 133°36'W

Date of Sampling November- April

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 100

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish, lake trout, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Mackenzie River at Arctic Red River, 67°27.5'N, 133°45'W

Date of Sampling November- April

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 101

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake whitefish, jackfish, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Nerejo Lake, 67°18'N, 134°07.5'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 102

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Winterand spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species bluefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Swan Lake, 67°07'N, 133°45'W

Date of Sampling November- June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 103

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, conni, jackfish, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Attoe Lake, 67°25'N, 133°10'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 104

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, jackfish, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Whirl Lake, 67°28'N, 133°13'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 105

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, crooked back, jackfish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Fishing Bear Lake, 67°29'N, 133°15'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 106

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, lake trout, crooked back, jackfish, grayling

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Travaillant Lake, 67°41'N, 131°47'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 107

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Pierre Creek, Mackenzie River, 67°20.5'N, 133°17.5'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 108

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, grayling, jackfish, crooked back, lake trout

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Sunny Lake, 67°51'N, 132°40'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 109

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, lake trout, crooked back, inconnu

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Mackenzie River, 67°47'N, 133°15'W

Date of Sampling May -June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 110

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, lake trout, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, 67°49'N, 132°30'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 111

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, conni, herring, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Mackenzie River, 67°27'N, 133°46'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments Mackenzie River migration

FISH OVERWINTERING STUDY
DATA SHEET 112

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species sucker, jackfish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Rat Lake (=Big Lake), 67°27.5'N, 132°00'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 113

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Tregnantchiez Lake, 67°46'N, 132°05'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 114

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Crossing Creek Lake,67°48'N, 132°01'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 115

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, conni, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Arctic Red River, 67°05'N, 133°21'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments upriver migration to The Forks

FISH OVERWINTERING STUDY
DATA SHEET 116

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study David Lake, 67°50'N, 132°08.5'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 117

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Fish Trap Lake, 67°56'N, 132°12'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 118

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, conni, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Arctic Red River, 67°27'N, 133°45'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Poor

Comments Arctic Red River migration

FISH OVERWINTERING STUDY
DATA SHEET 119

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, lake whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Wood Bridge Lake, 67°53'N, 132°13'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 120

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Hill Lake, 67°58'N, 132°33'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 121

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Big Lake, Richards Island, 69°25'N, 134°54'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 122

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake trout, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed river and lakes, Kittigazuit, 69°15'N, 133°35'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 123

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species herring (cisco?)

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Tuktoyaktuk, 69°25'N, 133°00'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 124

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species herring (cisco)

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Bay between Topkak and Beluga Point, 69°30'N, 132°58'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 125

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed lakes, SW of Tuktoyaktuk, 69°20'N, 133°40'W

Date of Sampling October-mid-April

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 126

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species herring (cisco)

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Hutchinson Bay, 69°39'N, 132°12'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 127

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake trout, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Itkrilik Lake, 69°35'N, 132°00'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 128

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake trout

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Eskimo Lakes (north), 69°23'N, 132°00'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 129

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake trout

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Eskimo Lakes (south), 69°00'N, 133°05'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 130

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species not specified

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Urquhart Lake, 69°06'N, 132°04'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 131

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed lakes, Tibjak Point, 69°32'N, 132°54'W

Date of Sampling October-mid-April

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 132

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loche, conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Miner and Kugaluk rivers inlet, 69°21'N, 130°50'W

Date of Sampling October-mid-April

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 133

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Miner and Kugaluk rivers inlet, 69°10'N, 131°00'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 134

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species not specified

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed lakes, Tuktoyaktuk Peninsula, 69°39'N, 131°00'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 135

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species not specified

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Sitigi Lake, 68°31'N, 132°45'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 136

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed lakes, Tuktoyaktuk Peninsula, Johnson Bay, 70°03'N, 129°40'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 137

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Wood Bay, Nicholson Peninsula, 69°50'N, 128°55'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 138

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake trout

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, Smoke River headwater area, 68°47'N, 129°02'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 139

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study West Round Lake, 68°42'N, 133°56'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 140

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake (=Wolverine Lakes), 68°51'N, 134°13'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 141

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake (=Wolverine Lakes), 68°53'N, 134°11'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 142

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake (Peter Lake), 68°46.5'N, 134°11'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 143

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study East Round Lake, 68°41.5'N, 133°52'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 144

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Bonnet Plume Lake, 68°36'N, 133°48'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 145

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Jimmy Lake, 68°38'N, 133°31'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 146

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, 68°37.5'N, 133°22'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 147

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Noell Lake, 68°32'N, 133°32.5'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 148

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Sitigi Lake, 68°31'N, 132°45'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 149

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Hyndman Lake, 68°14'N, 131°10'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 150

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, jackfish, crooked back, loche, conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Middle Channel, Mackenzie Delta, 68°52'N to 67°31'N, 135°42'W to 134°20'W; mid-point 68°30'N, 134°07'W

Date of Sampling November-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 151

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species conni, jackfish, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Channel, Mackenzie Delta (Inuvik to River proper), 68°10'N, 133°48'W (mid point)

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Major river?

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 152

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species lake trout, conni, jackfish, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Kalinek Channel, Mackenzie Delta 68°10'N, 134°10'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 153

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, trout, jackfish, crooked back, loche, grayling

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Wood Bridge Lake, 67°54'N, 132°13'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 154

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Sandy Lake, 67°47'N, 132°15'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 155

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Tregnantchiez Lake, 67°46'N, 132°05'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 156

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Giggle (=Jiggle?) Lake, 67°41'N, 132°06'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 157

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Bathing Lake, 67°40'N, 132°25'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 158

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Travaillant Lake, 67°41'N, 131°47'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 159

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Deep Lake, 67°40'N, 132°20'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 160

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species conni, jackfish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Caribou Lake, 67°58'N, 133°00'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 161

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, whitefish, conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Shotgun Lake, 68°08.5'N, 131°28'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 162

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Trout Lake, 67°51'N, 131°22'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 163

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, jackfish, conni, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Tenlen Lake, 67°51'N, 131°06'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 164

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species trout, whitefish, conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed lake, Iroquois River, 67°55'N, 130°16'W

Date of Sampling November-December

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 165

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, 68°05'N, 130°55'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 166

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Star Lake, 68°05'N, 130°35'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 167

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species trout, crooked back, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Kittigazuit lakes, 69°17'N, 133°30'W

Date of Sampling Winter and spring

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 168

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake trout, conni, jackfish, loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, 67°52'N, 130°50'W

Date of Sampling Spring

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 169

Reference Information

Citation Draper, M. et al. 1990. Seasonal land use map 1: Inuvik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake trout

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Eskimo Lakes 69°10'N, 132°35'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 170

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species pike, loche, coney, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Husky Lake, 67°31'N, 135°06'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 171

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species pike, loche, coney, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed lakes, 67°35'N, 135°12'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 172

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, jackfish, crooked back

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed lakes (Frog Creek), 67°34'N, 134°37'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 173

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species grayling

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study James Creek, 67°07'N, 135°55'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 174

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species coney, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Husky Channel, 67°55'N, 135°17'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 175

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species herring, grayling

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Stony Creek, 67°20'N, 135°15'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments nursery/rearing area

FISH OVERWINTERING STUDY
DATA SHEET 176

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species coney, whitefish, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Frog Creek, 67°26'N, 134°12'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments nursery/rearing area

FISH OVERWINTERING STUDY
DATA SHEET 177

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Vittrekwa River, 67°07'N, 135°30'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments nursery/rearing area

FISH OVERWINTERING STUDY
DATA SHEET 178

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species grayling, trout

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study James Creek, 67°07'N, 135°55'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 179

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Peel River, 67°10'N, 135°00'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 180

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Peel River, 67°17'N, 134°52.5'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 181

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species coney

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Neyando Lake, 67°30'N, 134°27.2'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 182

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Peel River, 67°37'N, 134°50'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 183

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loche

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Peel River, 67°41.5'N, 134°34'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 184

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loche, trout

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Rat River, 67°41.5'N, 135°28'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 185

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake trout, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study "Dark Water Lake", 67°26'N, 134°40'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 186

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species Trout, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study "Narrow Lake"(=Stolen Nets Lake), 67°25'N, 134°37.5'W

Date of Sampling November-April

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 187

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species trout, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study "Nigger Lake" (=Deep Water Lake), 67°24'N, 134°28'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 188

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, conni, crooked back, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Mackenzie River, Middle Channel, 67°55'N, 134°34'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 189

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, conni, crooked back, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Mackenzie River, Middle Channel, 68°15'N, 134°25'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 190

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, conni, crooked back, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Mackenzie River, Middle Channel, 68°32'N, 134°15'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 191

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, conni, crooked back, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Mackenzie River, Middle Channel, 68°45'N, 134°30'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 192

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, conni, crooked back, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Mackenzie River, Middle Channel, 68°55'N, 135°47'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 193

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, herring, conni, chum salmon

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study West Channel, Mackenzie Delta, 68°15'N, 134°43'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 193

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, herring, conni, chum salmon

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study West Channel, Mackenzie Delta, 68°30'N, 135°39'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 195

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, herring, conni, chum salmon

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study West Channel, Mackenzie Delta, 68°39'N, 135°45'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 196

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, crooked back, conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Husky Channel, Mackenzie Delta, 68°00'N, 135°20'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 197

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, crooked back, conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Peel Channel, Mackenzie Delta, 68°10'N, 135°10'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 198

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, pike, loush, crooked back, conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Enoch Channel, Mackenzie Delta, 68°10'N, 135°00'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 199

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Philips Channel, Mackenzie Delta, 68°00'N, 135°00'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 200

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Aklavik Channel, Mackenzie Delta, 68°09'N, 134°39'W

Date of Sampling mid-April-mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 201

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Raymond Channel, Mackenzie Delta, 68°20'N, 134°30'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 202

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species loush

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Taylor Channel, Mackenzie Delta, 68°24'N, 134°45'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 203

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species not specified

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Cache Creek, 68°38'N, 136°15'W

Date of Sampling mid-April-mid-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 204

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species not specified

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Little Fish River, 68°15'N, 136°15'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 205

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species trout, char

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Fish Creek "Fishing Hole", 67°49'N, 136°17'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 206

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species jackfish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Husky Lake "Jackfish Lake #1", 67°30'N, 135°08'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 207

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species jackfish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study "Jackfish Lake #2", 67°31'N, 134°57'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 208

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, coney, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Channel, 67°40'N, 134°35'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 209

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, coney, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Peel Channel, 67°40'N, 134°37'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 210

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, coney, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Dry River, 67°40'N, 134°40'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 211

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, coney, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Moonshine Lake, 67°44.5'N, 134°45'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 212

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish, coney, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Peel River, 67°36'N, 134°45'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 218

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Nigger Lake (=Deep Water Lake), 67°24'N, 134°25'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments NW migration

FISH OVERWINTERING STUDY
DATA SHEET 219

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, 67°05'N, 134°35'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments NW migration

FISH OVERWINTERING STUDY
DATA SHEET 220

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Unnamed Lake, 67°13'N, 134°50'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Good

Comments NW migration

FISH OVERWINTERING STUDY
DATA SHEET 221

Reference Information

Citation Firth, W., K. Firth, J. Martin and E. Firth. 1989. Seasonal land use map 1: Fort McPherson-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Dzee Creek, 66°55'N, 134°50'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 222

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Raymond, Napoiak and Schooner Channel, Mackenzie Delta, 68°25'N, 134°30'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 223

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Fish River, Mackenzie Delta, 68°23.5'N, 136°41'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 224

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species pike, grayling

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Canoe Lake, 68°13'N, 135°53'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 225

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species pike

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study "Divide" Lake, 68°17.5'N, 135°48'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 226

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish, herring, conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Shoalwater Bay, 68°52.5'N, 136°15'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 227

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species trout, grayling

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Fish River, 68°27.5'N, 136°30'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 228

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species not specified

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Cache Creek, 68°38'N, 136°15'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 229

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species not specified

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Little Fish River, 68°26'N, 134°30'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 230

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species coney, whitefish, crooked back, loush, pike

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Husky Channel, Mackenzie Delta, 67°55'N, 135°15'W

Date of Sampling November - mid-April

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 231

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Peel Channel, Mackenzie Delta, 68°12'N, 135°05'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Inner delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 232

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species conni

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study West Channel, Mackenzie Delta, 68°18'N, 135°12'W

Date of Sampling November - mid-June

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 233

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species char

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Herschel Island, 69°30'N, 139°00'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 234

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species char

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Kay Point, 69°18'N, 138°20'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 235

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species char

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study King Point, 69°07'N, 138°00'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 236

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species char

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Shingle Point, 69°01'N, 137°35'W

Date of Sampling mid-April - mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 237

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species char, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Herschel Island, 69°30'N, 139°00'W

Date of Sampling November - mid-April

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 238

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species char, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Kay Point, 69°18'N, 138°20'W

Date of Sampling November - mid-April

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 239

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species char, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study King Point, 69°07'N, 138°00'W

Date of Sampling November - mid-April

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 240

Reference Information

Citation Thrasher, J. and T. McDonald. 1989. Seasonal land use map 1: Aklavik-Winter. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species char, herring

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Shingle Point, 69°01'N, 137°35'W

Date of Sampling November - mid-April

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 241

Reference Information

Citation Bond, W.A. and R.N. Erickson. 1985. Life history studies of anadromous coregonid fishes in two freshwater lake systems on the Tuktoyaktuk Peninsula, Northwest Territories. Can. Tech. Rep. Fish. Aquat. Sci. 1336: 61 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 8289 broad whitefish, 1469 lake whitefish, 1405 least cisco

# of samples/population estimate

Sampling gear Fish trap

CPUE 38.76 fish/h

Location of study Freshwater Creek, Tuk Peninsula, 69°27'N, 132°52'W

Date of Sampling 1-12 October 1982

Effort 12 days

Water quality/quantity information

Habitat classification Moderate river

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 242

Reference Information

Citation Bond, W.A. and R.N. Erickson. 1985. Life history studies of anadromous coregonid fishes in two freshwater lake systems on the Tuktoyaktuk Peninsula, Northwest Territories. Can. Tech. Rep. Fish. Aquat. Sci. 1336: 61 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 4 northern pike

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Lake 5, Mayogiak System, Tuk Peninsula, 69°20'N, 132°54'W

Date of Sampling 5 May 1982

Effort

Water quality/quantity information area=440 ha, length=5.3 km, width=2.2 km, max depth=4 m, mean depth=1.1 m, volume=4778 m^3, shoreline length = 17.9 km, shoreline development factor=2.4; 0°C, pH=6.9, DO=5 mg/L, ice=1.6 m, water under ice=1 m, DN=690 μg/L, DP=11μg/L, chl *a*=1.3 μg/L, SuspSi=0.752 mg/L, TSS=7 mg/L, SuspP=19 μg/L, SuspN=251 μg/L, SuspC=1540 μg/L, DC=1420 μmole/L

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 243

Reference Information

Citation Bond, W.A. and R.N. Erickson. 1985. Life history studies of anadromous coregonid fishes in two freshwater lake systems on the Tuktoyaktuk Peninsula, Northwest Territories. Can. Tech. Rep. Fish. Aquat. Sci. 1336: 61 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 6 broad whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Lake 3, Freshwater System, Tuk Peninsula, 69°27'N, 132°37'W

Date of Sampling 14 May 1982

Effort

Water quality/quantity information area=180.7 ha, length=2 km, width=1.9 km, max depth=5 m, mean depth=1.2 m, volume=2238 m^3, shoreline length = 7.6 km, shoreline development factor=1.6; 0°C, pH=6.96, DO=2 mg/L, ice=1.8 m, water under ice=0.5 m, DN=290 µg/L, DP=11µg/L, chl *a*=7.2 µg/L, SuspSi=0.583 mg/L, TSS=45 mg/L, SuspP=75 µg/L,SuspN=606 µg/L, SuspC=3840 µg/L, DC=1210 µmole/L

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY

DATA SHEET 244

Reference Information

Citation Bond, W.A. and R.N. Erickson. 1985. Life history studies of anadromous coregonid fishes in two freshwater lake systems on the Tuktoyaktuk Peninsula, Northwest Territories. Can. Tech. Rep. Fish. Aquat. Sci. 1336: 61 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 4 broad whitefish, 2 lake whitefish,1 least cisco, 3 northern pike, 1 burbot

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Lake 8, Freshwater System, Tuk Peninsula, 69°19'N, 132°50'W

Date of Sampling 12 may 1982

Effort

Water quality/quantity information area=1235.5 ha, length=8.8 km, width=3.4 km, max depth=8 m, mean depth=1.5 m, volume=11807 m^3, shoreline length = 34 km, shoreline development factor=2.6; 0°C, pH=6.93, DO=7 mg/L, ice=1.7 m, water under ice=1.2 m, DN=530 µg/L, DP=8 µg/L, chl *a*=2.1 µg/L, SuspSi=0.551 mg/L, TSS=1 mg/L, SuspP=6 µg/L, SuspN=111 µg/L, SuspC=590 µg/L, DC=1090 µmole/L

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY

DATA SHEET 245

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 4 Arctic char

# of samples/population estimate

Sampling gear angling

CPUE

Location of study Babbage River Site 1, 68°38'N, 139°40'W

Date of Sampling 24 March 1972

Effort

Water quality/quantity information water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 246

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 96 Arctic char (33 juv, 63 mature)

# of samples/population estimate

Sampling gear electrofisher

CPUE

Location of study Babbage River Site 1, 68°38'N, 139°40'W

Date of Sampling 21 May 1972

Effort

Water quality/quantity information width=12 m, depth=0.18 m, velocity=0.17 m/s, discharge=0.37 m^3/s; water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 247

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 11 Arctic char (YOY)

# of samples/population estimate

Sampling gear electrofisher, surber

CPUE

Location of study Babbage River Site 1, 68°38'N, 139°40'W

Date of Sampling 24 May1972

Effort

Water quality/quantity information width=9 m, depth=0.1 m, velocity=0.16 m/s, discharge=0.14 m^3/s; water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 248

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 13 Arctic char (juv)

# of samples/population estimate

Sampling gear electrofisher

CPUE

Location of study Babbage River Site 1, 68°38'N, 139°40'W

Date of Sampling 1 Jun 1972

Effort

Water quality/quantity information water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 249

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 30 Arctic char (YOY)

# of samples/population estimate

Sampling gear surber

CPUE

Location of study Babbage River Site 1, 68°38'N, 139°40'W

Date of Sampling 11 May 1973

Effort

Water quality/quantity information T=7°C; water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 250

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 25 Arctic char (YOY)

# of samples/population estimate

Sampling gear electrofisher

CPUE

Location of study Babbage River Site 1, 68°38'N, 139°40'W

Date of Sampling 10 June 1973

Effort

Water quality/quantity information water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 251

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 9 Arctic char (adult anadromous)

# of samples/population estimate

Sampling gear angling

CPUE

Location of study Fish Hole Creek Site 4, 68°35'N, 139°43'W

Date of Sampling 21 May 1972

Effort

Water quality/quantity information water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 252

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 62 Arctic char (47 YOY and 1 mature resident, 9 juv and 5 adult anadromous)

# of samples/population estimate

Sampling gear angling, surber

CPUE

Location of study Fish Hole Creek Site 4, 68°35'N, 139°43'W

Date of Sampling 11 May 1973

Effort

Water quality/quantity information 5°C; water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 253

Reference Information

Citation Bain, H. 1974. Life histories and systematics of Arctic char (*Salvelinus alpinus* L.) in the Babbage River system, Yukon Territory. Arctic Gas Biol. Rep. Ser. 18(1): 156 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 56 Arctic char (YOY)

# of samples/population estimate

Sampling gear electrofisher

CPUE

Location of study Fish Hole Creek Site 4, 68°35'N, 139°43'W

Date of Sampling 10 June 1973

Effort

Water quality/quantity information water quality information available for10 Nov, 27 Jun and 24 Sep only

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 254

Reference Information

Citation Chiperzak, D.B., G.E. Hopky and M.J. Lawrence. (In Prep.) Fish catch data from the landfast ice of the Mackenzie estuary, March 1985 and May 1986, 1987. Can. Data. Rep. Fish. Aquat. Sci. xxx: v + xx p.

Type of publication Published

Location of study, document or map Freshwater Institute, DFO, 501 University Cres., Winnipeg, Man., R3T 2N6 204 983-5000 D.B. Chiperzak

Format of information Report

Classification/Mapping Information

Species 3 fourhorn sculpin, 2 sculpins

# of samples/population estimate

Sampling gear Gill net, bottom, 35 mesh

CPUE 0.114 fish/h

Location of study Station 85050, off Tuk Peninsula, 69°51'N, 132°31'W

Date of Sampling 26-27 March 1985

Effort

Water quality/quantity information depth 8.8 m, ice 2 m, salinity 28.53 ppt, T=-0.85°C, density 1022.91

Habitat classification nearshore marine

Specificity of Information (Potential for use in GIS) Good

Comments measurements at bottom, where net set

FISH OVERWINTERING STUDY
DATA SHEET 255

Reference Information

Citation Chiperzak, D.B., G.E. Hopky and M.J. Lawrence. (In Prep.) Fish catch data from the landfast ice of the Mackenzie estuary, March 1985 and May 1986, 1987. Can. Data. Rep. Fish. Aquat. Sci. xxx: v + xx p.

Type of publication Published

Location of study, document or map Freshwater Institute, DFO, 501 University Cres., Winnipeg, Man., R3T 2N6 204 983-5000 D.B. Chiperzak

Format of information Report

Classification/Mapping Information

Species 20 Arctic cisco, 96 fourhorn sculpin, 13 saffron cod, 6 inconnu, 10 rainbow smelt, 6 pacific herring, 1 least cisco, 1 Arctic flounder

# of samples/population estimate

Sampling gear Gill net, bottom, variable mesh, 6 sets

CPUE 0.374 fish/h (computed from individual figures)

Location of study Station 86030, off Tuk Peninsula, 69°40.4'N, 132°43.2'W

Date of Sampling 16-23 May 1986

Effort

Water quality/quantity information depth 5 m, ice 2 m, salinity 0.36 ppt

Habitat classification estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments measurements at bottom, where net set

FISH OVERWINTERING STUDY
DATA SHEET 256

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Kittigazuit Inlet, 69°20'N, 133°55'W

Date of Sampling 30 Sep-11 Nov 1986

Effort

Water quality/quantity information

Habitat classification estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments Fish tagged in Canyanek and Kittigazuit creeks, July 1986

FISH OVERWINTERING STUDY
DATA SHEET 257

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Kittigazuit Bay, 69°23'N, 133°44'W

Date of Sampling 26 Nov-2 Dec 1984, 30 Jan 1985

Effort

Water quality/quantity information

Habitat classification estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend 29 Aug 1984

FISH OVERWINTERING STUDY
DATA SHEET 258

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Middle Channel, Mackenzie Delta, 67°40'N, 134°10 to 68°07'N, 134°10'W

Date of Sampling 25 Sep-20 Nov 1984

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments fish tagged at Horseshoe Bend 29 Aug 1984

FISH OVERWINTERING STUDY
DATA SHEET 259

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Middle Channel, Mackenzie Delta, 68°14'N, 134°10 to 68°07'N, 134°10'W

Date of Sampling 22 Nov 1983-15 March 1984

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

FISH OVERWINTERING STUDY
DATA SHEET 260

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Shallow Bay, 68°54'N, 136°00

Date of Sampling 15 Oct-30 Jan 1984/85

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1984

FISH OVERWINTERING STUDY
DATA SHEET 261

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Ellice Island, 69°12.5'N, 136°00'W

Date of Sampling 30 Jan 1985

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1984

FISH OVERWINTERING STUDY
DATA SHEET 262

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study East Channel inlet, Mackenzie Delta, 69°12'N, 133°55

Date of Sampling 22 Nov 1983-15 March 1984

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments fish tagged at Horseshoe Bend fall 1983

FISH OVERWINTERING STUDY
DATA SHEET 263

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Kittigazuit Inlet, 69°18'N, 133°44'W

Date of Sampling 26 Nov 1984-30 Jan 1985

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1984

FISH OVERWINTERING STUDY
DATA SHEET 264

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Middle Channel, Mackenzie Delta, 68°00'N, 134°30'W to 67°38'N, 134°10'W

Date of Sampling Oct, Nov 1982, 83, 84

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Poor

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

FISH OVERWINTERING STUDY
DATA SHEET 265

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Mackenzie River, 67°28'N, 133°45'W

Date of Sampling Nov 1982, 84

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

FISH OVERWINTERING STUDY
DATA SHEET 266

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Peel River, 67°25'N, 134°54'W

Date of Sampling 2 Nov 1983

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

FISH OVERWINTERING STUDY
DATA SHEET 267

Reference Information

Citation Poulin, V.A. 1977. 1976 early winter fisheries survey of the Hans Bay region, N.W.T. Unpubl. Rep. by F.F. Slaney and Co. Ltd. for Gulf Oil Canada Limited, Calgary, Alberta. 13 p.

Type of publication Unpublished

Location of study, document or map FF Slaney & Co. Ltd., 500 330 9th Ave SW, Calgary, Alta T2P 1K7 403 265-3750.

Format of information Report

Classification/Mapping Information

Species 4 least cisco, 7 pike

# of samples/population estimate

Sampling gear gillnet 45.6 m

CPUE 0.242 fish/h

Location of study Zed Lake (Z24), 68°56'42"N, 133°29'45"W

Date of Sampling 7 November 1976

Effort 45.5 h

Water quality/quantity information area 18.1 ha, vol 67.9 Ha-m, max depth 7.9 m, mean depth 3.7 m,shoreline 3.06 km, shoreline dev 1.36, ice 0.3 m, snow 0.1 m, 5°C, 50 μmhos, TSS 1 mg/L, TDS 115 mg/L, N 1 mg/L, P 0.08 mg/L, C 11 mg/L, DO 12.2 mg/L, hardness 68.4 mg/L, pH 7.5

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY
DATA SHEET 268

Reference Information

Citation Poulin, V.A. 1977. 1976 early winter fisheries survey of the Hans Bay region, N.W.T. Unpubl. Rep. by F.F. Slaney and Co. Ltd. for Gulf Oil Canada Limited, Calgary, Alberta. 13 p.

Type of publication Unpublished

Location of study, document or map FF Slaney & Co. Ltd., 500 330 9th Ave SW, Calgary, Alta T2P 1K7 403 265-3750.

Format of information Report

Classification/Mapping Information

Species 3 Humpback whitefish, 10 least cisco, 1 pike, 1 burbot

# of samples/population estimate

Sampling gear gillnet 45.6 m

CPUE 0.544 fish/h

Location of study Lake E54, Eskimo Lakes, 68°47'31"N, 133°36'40"W

Date of Sampling 10 November 1976

Effort 27.6 h

Water quality/quantity information area 109 ha, max depth 8 m, shoreline 7.8 km, shoreline dev 21, ice 0.3 m, snow 0.12-0.19 m, 0.3°C, 182 μmhos, TSS 1 mg/L, TDS 45 mg/L, N 3 mg/L, P 0.08 mg/L, C 16 mg/L, Si 0.22 mg/L, DO 14.6 mg/L, hardness 68.4 mg/L, pH 7.0

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY
DATA SHEET 269

Reference Information

Citation Poulin, V.A. 1977. 1976 early winter fisheries survey of the Hans Bay region, N.W.T. Unpubl. Rep. by F.F. Slaney and Co. Ltd. for Gulf Oil Canada Limited, Calgary, Alberta. 13 p.

Type of publication Unpublished

Location of study, document or map FF Slaney & Co. Ltd., 500 330 9th Ave SW, Calgary, Alta T2P 1K7 403 265-3750.

Format of information Report

Classification/Mapping Information

Species 7 least cisco, 5 pike

# of samples/population estimate

Sampling gear gillnet 45.6 m

CPUE 0.529fish/h

Location of study Lake E58, Eskimo Lakes, 68°47'45"N, 133°42'34"W

Date of Sampling 10 November 1976

Effort 22.7 h

Water quality/quantity information area 99 ha, max depth 3.7 m, shoreline 5.66 km, shoreline dev 1.61, ice 0.27 m, snow 0.17 m, 1.5°C, 225 μmhos, TSS 2 mg/L, TDS 93 mg/L, N 7 mg/L, P 0.08 mg/L, C 15 mg/L, Si 0.22 mg/L, DO 14.2 mg/L, hardness 51.3 mg/L, pH 7.5

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY
DATA SHEET 270

Reference Information

Citation Poulin, V.A. 1977. 1976 early winter fisheries survey of the Hans Bay region, N.W.T. Unpubl. Rep. by F.F. Slaney and Co. Ltd. for Gulf Oil Canada Limited, Calgary, Alberta. 13 p.

Type of publication Unpublished

Location of study, document or map FF Slaney & Co. Ltd., 500 330 9th Ave SW, Calgary, Alta T2P 1K7 403 265-3750.

Format of information Report

Classification/Mapping Information

Species 1 least cisco

# of samples/population estimate

Sampling gear gillnet 45.6 m

CPUE 0.044 fish/h

Location of study Lake E13, Eskimo Lakes, 68°56'42"N, 133°29'45"W

Date of Sampling 11 November 1976

Effort 22.7 h

Water quality/quantity information area 226.9 ha, max depth 2.4 m, shoreline 7.7 km, shoreline dev 1.14, ice 0.29 m, snow 0.08 m, 1°C, 50 µmhos, TSS 7 mg/L, TDS 56 mg/L, N 3 mg/L, P 0.11mg/L, C 11 mg/L, Si 0.23 mg/L, DO 15 mg/L, hardness 68.4 mg/L, pH 7.5

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY
DATA SHEET 271

Reference Information

Citation Poulin, V.A. 1977. 1976 early winter fisheries survey of the Hans Bay region, N.W.T. Unpubl. Rep. by F.F. Slaney and Co. Ltd. for Gulf Oil Canada Limited, Calgary, Alberta. 13 p.

Type of publication Unpublished

Location of study, document or map FF Slaney & Co. Ltd., 500 330 9th Ave SW, Calgary, Alta T2P 1K7 403 265-3750.

Format of information Report

Classification/Mapping Information

Species 5 least cisco, 4 pike

# of samples/population estimate

Sampling gear gillnet 45.6 m

CPUE 0.350 fish/h

Location of study Lake E35, Eskimo Lakes, 68°49'17"N, 133°34'11"W

Date of Sampling 12 November 1976

Effort 27.75 h

Water quality/quantity information area 180 ha, max depth 2.9 m, shoreline 8.4 km, shoreline dev 1.76, ice 0.31 m, snow 0.19 m, 1.6°C, 50 μmhos, TSS 5 mg/L, TDS 166 mg/L, N 4 mg/L, P 0.15 mg/L, C 9 mg/L, Si 0.02 mg/L, hardness 51.3 mg/L, pH 7.5

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY
DATA SHEET 272

Reference Information

Citation Poulin, V.A. 1977. 1976 early winter fisheries survey of the Hans Bay region, N.W.T. Unpubl. Rep. by F.F. Slaney and Co. Ltd. for Gulf Oil Canada Limited, Calgary, Alberta. 13 p.

Type of publication Unpublished

Location of study, document or map FF Slaney & Co. Ltd., 500 330 9th Ave SW, Calgary, Alta T2P 1K7 403 265-3750.

Format of information Report

Classification/Mapping Information

Species 1 humpback whitefish, 5 lake trout, 8 least cisco, 1 northern pike

# of samples/population estimate

Sampling gear gillnet 45.6 m

CPUE 0.612 fish/h

Location of study Parsons Lake PL-3, Eskimo Lakes, 68°57'30"N, 133°36'40"W

Date of Sampling 9 November 1976

Effort 26.25 h

Water quality/quantity information area 6610 ha, vol 17820 Ha-m, max depth 8 m, mean depth 2.7 m, shoreline 51.2 km, shoreline dev 1.79, ice 0.38 m, snow 0.15 m, 1°C, 26 μmhos, TSS 28 mg/L, TDS 170 mg/L, N 3 mg/L, P 0.08 /L, C 4 mg/L, Si 0.02 mg/L, DO 16.2 mg/L, hardness 68.4 mg/L, pH 7.5

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY
DATA SHEET 273

Reference Information

Citation Poulin, V.A. 1977. 1976 early winter fisheries survey of the Hans Bay region, N.W.T. Unpubl. Rep. by F.F. Slaney and Co. Ltd. for Gulf Oil Canada Limited, Calgary, Alberta. 13 p.

Type of publication Unpublished

Location of study, document or map FF Slaney & Co. Ltd., 500 330 9th Ave SW, Calgary, Alta T2P 1K7 403 265-3750.

Format of information Report

Classification/Mapping Information

Species 14 fourhorn sculpin, 3 humpback whitefish, 6 lake trout, 1 least cisco, 38 pacific herring

# of samples/population estimate

Sampling gear gillnet 45.6 m

CPUE 2.531 fish/h

Location of study Hans Bay HB-2, 68°51'54"N, 133°33'32"W

Date of Sampling 8 November 1976

Effort 24.5 h

Water quality/quantity information area 598.3 ha, vol 4527 Ha-m, max depth 32 m, mean depth 7.5 m, shoreline 19.5 km,, ice 0.28 m, snow 0.10 m, -0.9°C, 2100 μmhos, TSS 1 mg/L, TDS 2918 mg/L, N 7 mg/L, P 0.08 mg/L, C 13 mg/L, Si 0.06 mg/L, DO 12.8 mg/L, pH 8, salinity 1 ppt

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY

DATA SHEET 274

Reference Information

Citation Poulin, V.A. 1977. 1976 early winter fisheries survey of the Hans Bay region, N.W.T. Unpubl. Rep. by F.F. Slaney and Co. Ltd. for Gulf Oil Canada Limited, Calgary, Alberta. 13 p.

Type of publication Unpublished

Location of study, document or map FF Slaney & Co. Ltd., 500 330 9th Ave SW, Calgary, Alta T2P 1K7 403 265-3750.

Format of information Report

Classification/Mapping Information

Species 29 fourhorn sculpin, 6 humpback whitefish, 3 lake trout, 2 least cisco, 19 pacific herring

# of samples/population estimate

Sampling gear gillnet 45.6 m

CPUE 2.489 fish/h

Location of study Hans Bay HB-9 (mouth of Hans Creek), 68°51'54"N, 133°28'51"W

Date of Sampling 13 November 1976

Effort 23.7 h

Water quality/quantity information area 598.3 ha, vol 4527 Ha-m, max depth 32 m, mean depth 7.5 m, shoreline 19.5 km,, ice 0.28 m, snow 0.10 m, -0.9°C, 2100 μmhos, TSS 1 mg/L, TDS 2918 mg/L, N 7 mg/L, P 0.08 mg/L, C 13 mg/L, Si 0.06 mg/L, DO 12.8 mg/L, pH 8, salinity 1 ppt

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY
DATA SHEET 275

Reference Information

Citation Griffiths, W., P. Craig, G. Walder and G. Mann. 1974. Fisheries investigations in a coastal region of the Beaufort Sea (Nunaluk Lagoon, Yukon Territory). Arctic Gas Biol. Rep. Series 34(2): 209 p.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Report

Classification/Mapping Information

Species 25 Arctic char, 20 Arctic cisco

# of samples/population estimate

Sampling gear gillnet

CPUE 1.875 fish/h

Location of study Nunaluk Lagoon (mouth of Firth River), 69°33'N, 139°35'W

Date of Sampling 20 June 1974

Effort 24 h

Water quality/quantity information width 300-1200 m, max depth 0.15 m, ice present, 2.7°C, 5787 µmhos, N 196 µg/L, P 4.4 µg/L, pH 8.4, salinity 3.8 ppt, Ca 70 mg/L, Mg 89.5 mg/L, Na 715 mg/L, K 75 mg/L, SO_4 216.5 mg/L, Cl 1474 mg/L, $CaCO_3$ 1.75 mg/L

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments more chemistry, benthos, zooplankton etc. data available

FISH OVERWINTERING STUDY
DATA SHEET 276

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Eskimo Lakes (North), 69°30'N, 131°45'W

Date of Sampling February-May

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 277

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, cisco, grayling, inconnu, sea herring

# of samples/population estimate

Sampling gear

CPUE

Location of study Kugaluk Inlet, 69°15'N, 131°00'W

Date of Sampling Fall and winter

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 278

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, grayling, pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Crossley Lakes I, 68°42'N, 129°33'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 279

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, grayling, pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Crossley Lakes II, 68°38'N, 129°31'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 280

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, grayling, pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Crossley Lakes III, 68°32'N, 129°35'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 281

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, grayling, pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Hyndman Lake, 68°14'N, 131°10'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 282

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, grayling, pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Unnamed Lake, 68°09'N, 131°00'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 283

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, grayling, pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Unnamed Lake, 68°05'N, 130°55'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 284

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, grayling, pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Unnamed Lake, 68°05'N, 130°35'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 285

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, grayling, pike

# of samples/population estimate

Sampling gear

CPUE

Location of study Unnamed Lake, 68°06'N, 130°05'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 286

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Whitefish, cisco, inconnu, burbot

# of samples/population estimate

Sampling gear

CPUE

Location of study Tuktoyaktuk Harbour, 69°25'N, 132°59'W

Date of Sampling Year round

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 287

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Inconnu

# of samples/population estimate

Sampling gear

CPUE

Location of study Toker Point Bay, 69°37.5'N, 132°45'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 288

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Eskimo Lakes (south), 69°10'N, 132°45'W

Date of Sampling February-May

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Poor

Comments

FISH OVERWINTERING STUDY
DATA SHEET 289

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Tuk Pen Lake, 69°16'N, 133°00'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 290

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Tuk Pen Lake, 69°17'N, 132°51'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 291

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Tuk Pen Lake, 69°22.5'N, 132°15'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 292

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Tuk Pen Lake, 69°23'N, 132°33'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 293

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Tuk Pen Lake, 69°26'N, 132°21'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 294

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Tuk Pen Lake, 69°32'N, 132°30'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 295

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Tuk Pen Lake, 69°37'N, 132°13'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 296

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Inconnu, humpback whitefish, arctic cisco, broad whitefish, burbot

# of samples/population estimate

Sampling gear gillnet under ice

CPUE

Location of study Mackenzie River at Arctic Red River, 67°27'N, 133°45'W

Date of Sampling Early October - end November

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 297

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Inconnu, humpback whitefish, arctic cisco, broad whitefish, burbot

# of samples/population estimate

Sampling gear gillnet under ice

CPUE

Location of study Mackenzie River, 67°29'N, 133°47'W

Date of Sampling Early October - end November

Effort

Water quality/quantity information

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 298

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Sandy Lake, 67°47'N, 132°15'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 299

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Sunny Lake, 67°51'N, 132°40'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 300

Reference Information

Citation INAC. 1972. Land use information series. Prep. by Indian and Northern Affairs, Department of the Environment.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information Maps

Classification/Mapping Information

Species Not specified

# of samples/population estimate

Sampling gear

CPUE

Location of study Unnamed Lake, 67°48'N, 132°02'W

Date of Sampling Winter

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 301

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear gill net

CPUE

Location of study Mason River Inlet, 69°57'N, 128°22.5'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 302

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species herring (cisco)

# of samples/population estimate

Sampling gear gill net

CPUE

Location of study Maitland Point, 70°09'N, 128°10'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 303

Reference Information

Citation Anaviak, G. et al. (19 others). 1989. Seasonal land use map 1: Tuktoyaktuk-Winter and Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Maps

Classification/Mapping Information

Species herring (cisco)

# of samples/population estimate

Sampling gear gill net

CPUE

Location of study Harrowby Bay, 70°15'N, 128°15'W

Date of Sampling October-mid-June

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments

FISH OVERWINTERING STUDY
DATA SHEET 304

Reference Information

Citation Percy, R. 1975. Fishes of the outer Mackenzie Delta. Beaufort Sea Project Tech. Rep. No. 8. 114 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 1 inconnu

# of samples/population estimate

Sampling gear gill net

CPUE 0.008

Location of study Tent Island, 68°58'N, 136°10'W

Date of Sampling 15 February 1974

Effort 120 h

Water quality/quantity information Depth 2 m

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 305

Reference Information

Citation Percy, R. 1975. Fishes of the outer Mackenzie Delta. Beaufort Sea Project Tech. Rep. No. 8. 114 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 1 inconnu, 1 burbot, 4 boreal smelt

# of samples/population estimate

Sampling gear gill net

CPUE 0.065

Location of study Swimming Point, East Channel, 69°07'N, 134°22'W

Date of Sampling 24 March 1974

Effort 92

Water quality/quantity information pH 8.5

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 306

Reference Information

Citation Percy, R. 1975. Fishes of the outer Mackenzie Delta. Beaufort Sea Project Tech. Rep. No. 8. 114 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 1 humpback whitefish

# of samples/population estimate

Sampling gear gill net

CPUE 0.010

Location of study Harry Channel, 69°11'N, 135°00'W

Date of Sampling 8 March 1975

Effort 96

Water quality/quantity information Depth 1.5 m, pH 8, hardness 9

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 307

Reference Information

Citation Percy, R. 1975. Fishes of the outer Mackenzie Delta. Beaufort Sea Project Tech. Rep. No. 8. 114 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 1 northern pike

# of samples/population estimate

Sampling gear gill net

CPUE 0.026

Location of study Big Horn Point, 69°24'N, 134°40'W

Date of Sampling 9 March 1975

Effort 38

Water quality/quantity information Depth 1.8 m, pH 8.5, hardness 8

Habitat classification Outer delta lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 308

Reference Information

Citation Percy, R. 1975. Fishes of the outer Mackenzie Delta. Beaufort Sea Project Tech. Rep. No. 8. 114 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 16 inconnu, 12 fourhorn sculpin, 25 least cisco, 2 boreal smelt, 1 Arctic cisco, 1 burbot, 4 Pacific herring, 4 Arctic flounder, 1 starry flounder, 1 broad whitefish

# of samples/population estimate

Sampling gear gill net

CPUE 0.663

Location of study Mallik Bay, 69°28'N, 134°30'W

Date of Sampling 10 March 1975

Effort 101

Water quality/quantity information Depth 4.2 m, salinity 4.9, 7.9, pH 8.5, 9, hardness 8

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 309

Reference Information

Citation Percy, R. 1975. Fishes of the outer Mackenzie Delta. Beaufort Sea Project Tech. Rep. No. 8. 114 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 3 fourhorn sculpin

# of samples/population estimate

Sampling gear gill net (damaged)

CPUE

Location of study Mason Bay, 69°34'N, 134°05'W

Date of Sampling 11 March 1975

Effort 48

Water quality/quantity information Depth 4.2 m, pH 9.6, conductivity 6.7

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 310

Reference Information

Citation Percy, R. 1975. Fishes of the outer Mackenzie Delta. Beaufort Sea Project Tech. Rep. No. 8. 114 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 1 least cisco, 1 boreal smelt, 1 humpback whitefish

# of samples/population estimate

Sampling gear gill net

CPUE 0.042

Location of study Hendrickson Island, Kugmallit Bay, 69°28'N, 133°24'W

Date of Sampling 14 March 1975

Effort 72

Water quality/quantity information Depth 1 m, salinity 0.2, conductivity 0.1, pH 7.7, hardness 9

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 311

Reference Information

Citation Percy, R. 1975. Fishes of the outer Mackenzie Delta. Beaufort Sea Project Tech. Rep. No. 8. 114 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 1 humpback whitefish, 1 boreal smelt

# of samples/population estimate

Sampling gear gill net

CPUE 0.091

Location of study Swimming Point, 69°07'N, 134°22'W

Date of Sampling 18 March 1975

Effort 22

Water quality/quantity information pH 7.5, hardness 6

Habitat classification Major river

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 312

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study North Caribou Lake, 68°06'N, 132°42.5'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 313

Reference Information

Citation Andre, G. and G. Macleod. 1989. Seasonal land use map 2: Arctic Red River-Spring. Prep. from interviews by Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Type of publication Unpublished

Location of study, document or map Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission, Inuvik, N.W.T.

Format of information Map

Classification/Mapping Information

Species lake trout, crooked back, whitefish

# of samples/population estimate

Sampling gear Gill net

CPUE

Location of study Tenlen Lake, 67°52'N, 131°06'W

Date of Sampling May-June

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 314

Reference Information

Citation Chiperzak, D.B., G.E. Hopky and M.J. Lawrence. In prep. Fish catch data from the landfast ice of the Mackenzie estuary, March 1985 and May 1986, 1987. Can. Data Rep. Fish. Aquat. Sci. xxx: xx p.

Type of publication Published (in prep)

Location of study, document or map Freshwater Institute, DFO, 501 University Cres. Winnipeg, Man., R3T 2N6, 204 983-5000, DB Chiperzak.

Format of information Report

Classification/Mapping Information

Species 11 Arctic cisco, 3 fourhorn sculpin, 8 inconnu, 38 rainbow smelt, 4 burbot, 1 pacific herring, 2 least cisco

# of samples/population estimate

Sampling gear Gill net, bottom, variable mesh, 5 lifts

CPUE 0.17 (computed from individual CPUEs)

Location of study Station 86031, Beaufort Shelf 69°32.8'N, 133°01.5'W

Date of Sampling May 17-23 1986

Effort

Water quality/quantity information depth 4.8, salinity 0.23, ice 2.2

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 315

Reference Information

Citation Chiperzak, D.B., G.E. Hopky and M.J. Lawrence. In prep. Fish catch data from the landfast ice of the Mackenzie estuary, March 1985 and May 1986, 1987. Can. Data Rep. Fish. Aquat. Sci. xxx: xx p.

Type of publication Published (in prep)

Location of study, document or map Freshwater Institute, DFO, 501 University Cres. Winnipeg, Man., R3T 2N6, 204 983-5000, DB Chiperzak.

Format of information Report

Classification/Mapping Information

Species 12 Arctic cisco, 6 fourhorn sculpin, 9 inconnu, 41 rainbow smelt, 3 burbot, 3 lake whitefish, 3 least cisco

# of samples/population estimate

Sampling gear Gill net, bottom, variable mesh, 5 lifts

CPUE 0.23 (computed from individual CPUEs)

Location of study Station 87011, Beaufort Shelf 69°33.8'N, 133°3'W

Date of Sampling May 13-18 1987

Effort

Water quality/quantity information depth 4.8, salinity 0.13, ice 1.6, T=0°C, density 999.95

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 316

Reference Information

Citation Bond, W.A. 1982. A study of the fishery resources of Tuktoyakyuk Harbour, southern Beaufort Sea coast, with special reference to life histories of anadromous coregonids. Can. Tech. Rep. Fish. Aquat. Sci. 1119: 90 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 2 broad whitefish, 11 lake whitefish, 26 arctic cisco, 5 least cisco, 12 inconnu, 34 Pacific herring, 3 saffron cod, 6 starry flounder, 9 arctic flounder, 12 fourhorn sculpin, 3 burbot

# of samples/population estimate

Sampling gear Swedish gill net, variable mesh

CPUE 0.051 fish/min

Location of study Tuktoyaktuk Harbour area, 69°25'N, 133°00'W

Date of Sampling 13 April - 2 June 1980

Effort 120 min per set, 4 sets per site, 5 sites

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments For more detail see publication

FISH OVERWINTERING STUDY
DATA SHEET 317

Reference Information

Citation Bond, W.A. 1982. A study of the fishery resources of Tuktoyakyuk Harbour, southern Beaufort Sea coast, with special reference to life histories of anadromous coregonids. Can. Tech. Rep. Fish. Aquat. Sci. 1119: 90 p.

Type of publication Published (in prep)

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 40 arctic cisco, 2 least cisco, 6 inconnu, 5 Pacific herring, 1 rainbow smelt

# of samples/population estimate

Sampling gear Swedish gill net, variable mesh

CPUE 0.113 fish/min

Location of study West entrance to Tuktoyaktuk Harbour, 69°27'N, 133°02.5'W

Date of Sampling 13 April - 2 June 1980

Effort 120 min per set, 4 sets

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments For more detail see publication

FISH OVERWINTERING STUDY
DATA SHEET 318

Reference Information

Citation Bond, W.A. 1982. A study of the fishery resources of Tuktoyakyuk Harbour, southern Beaufort Sea coast, with special reference to life histories of anadromous coregonids. Can. Tech. Rep. Fish. Aquat. Sci. 1119: 90 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 3 lake whitefish, 12 arctic cisco, 4 least cisco, 3 inconnu, 4 Pacific herring, 1 burbot

# of samples/population estimate

Sampling gear Swedish gill net, variable mesh

CPUE 0.025 fish/min

Location of study Kugmallit Bay, 69°28'N, 133°05'W

Date of Sampling 13 April - 2 June 1980

Effort 120 min per set, 9 sets

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments For more detail see publication

FISH OVERWINTERING STUDY
DATA SHEET 319

Reference Information

Citation Bond, W.A. 1982. A study of the fishery resources of Tuktoyakyuk Harbour, southern Beaufort Sea coast, with special reference to life histories of anadromous coregonids. Can. Tech. Rep. Fish. Aquat. Sci. 1119: 90 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 4 lake whitefish, 20 arctic cisco, 2 inconnu, 36 Pacific herring, 3 saffron cod, 7 arctic flounder, 1 fourhorn sculpin

# of samples/population estimate

Sampling gear Swedish gill net, variable mesh

CPUE 0.101 fish/min

Location of study Tuktoyaktuk Harbour area, 69°25'N, 133°00'W

Date of Sampling 7 January - 23 March 1981

Effort 720 min

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments For more detail see publication

FISH OVERWINTERING STUDY
DATA SHEET 320

Reference Information

Citation Bond, W.A. 1982. A study of the fishery resources of Tuktoyakyuk Harbour, southern Beaufort Sea coast, with special reference to life histories of anadromous coregonids. Can. Tech. Rep. Fish. Aquat. Sci. 1119: 90 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 1 broad whitefish, 3 lake whitefish, 6 arctic cisco, 1 least cisco, 5 inconnu, 1 Pacific herring, 7 fourhorn sculpin, 1 burbot

# of samples/population estimate

Sampling gear Swedish gill net, variable mesh

CPUE 0.036 fish/min

Location of study Entrance to Tuktoyaktuk Harbour, 69°25'N, 133°00'W

Date of Sampling 7 January - 23 March 1981

Effort 695 min

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments For more detail see publication

FISH OVERWINTERING STUDY
DATA SHEET 321

Reference Information

Citation Bond, W.A. 1982. A study of the fishery resources of Tuktoyakyuk Harbour, southern Beaufort Sea coast, with special reference to life histories of anadromous coregonids. Can. Tech. Rep. Fish. Aquat. Sci. 1119: 90 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species 3 arctic cisco, 3 least cisco, 1 inconnu

# of samples/population estimate

Sampling gear Swedish gill net, variable mesh

CPUE 0.036 fish/min

Location of study Kugmallit Bay, 69°28'N, 133°05'W

Date of Sampling 7 January - 23 March 1981

Effort 195 min

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Good

Comments For more detail see publication

FISH OVERWINTERING STUDY
DATA SHEET 322

Reference Information

Citation McCart, P.J. 1980. A review of the systematics and ecology of Arctic char, *Salvelinus alpinus*, in the western Arctic. Can. Tech. Rep. Fish. Aquat. Sci. 935: 89 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate

Sampling gear

CPUE

Location of study Firth River 69°03'N, 140°28'W

Date of Sampling

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 323

Reference Information

Citation McCart, P.J. 1980. A review of the systematics and ecology of Arctic char, *Salvelinus alpinus*, in the western Arctic. Can. Tech. Rep. Fish. Aquat. Sci. 935: 89 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate

Sampling gear

CPUE

Location of study Firth River 69°19'N, 139°36'W

Date of Sampling

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 324

Reference Information

Citation McCart, P.J. 1980. A review of the systematics and ecology of Arctic char, *Salvelinus alpinus*, in the western Arctic. Can. Tech. Rep. Fish. Aquat. Sci. 935: 89 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate

Sampling gear

CPUE

Location of study Lake 103, Firth Delta 69°26'N, 139°34'W

Date of Sampling

Effort

Water quality/quantity information

Habitat classification Interior upland lake

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 325

Reference Information

Citation McCart, P.J. 1980. A review of the systematics and ecology of Arctic char, *Salvelinus alpinus*, in the western Arctic. Can. Tech. Rep. Fish. Aquat. Sci. 935: 89 p.

Type of publication Published

Location of study, document or map LGL Limited, 9768 Second St., Sidney, BC V8L 3Y8, 604 656-0127. WB Griffiths.

Format of information Report

Classification/Mapping Information

Species Arctic char

# of samples/population estimate

Sampling gear

CPUE

Location of study Lake 104, Firth Delta 69°26'N, 139°36'W

Date of Sampling

Effort

Water quality/quantity information

Habitat classification Perennial springs

Specificity of Information (Potential for use in GIS) Good

Comments

FISH OVERWINTERING STUDY
DATA SHEET 326

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Reindeer Channel, 68°55'N, 135°30

Date of Sampling 15 Oct-30 Jan 1984/85

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

FISH OVERWINTERING STUDY
DATA SHEET 327

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Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Shallow Bay, 68°47.5'N, 135°34'W

Date of Sampling 15 Oct-30 Jan 1984/85

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

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Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Shallow Bay, 68°53'N, 136°14'W

Date of Sampling 15 Oct-30 Jan 1984/85

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

FISH OVERWINTERING STUDY
DATA SHEET 329

Reference Information

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Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Tent Island, 68°55'N, 136°34'W

Date of Sampling 15 Oct-30 Jan 1984/85

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

FISH OVERWINTERING STUDY
DATA SHEET 330

Reference Information

Citation Chang-Kue, K. 1987. A summary of existing data on spawning areas and migration routes of whitefish in the Mackenzie Delta. Unpubl. MS for Department of Fisheries and Oceans, Winnipeg, Man. 2 p. + maps.

Type of publication Unpublished

Location of study, document or map LGL Limited, 9768 Second Street, Sidney, B.C. V8L 3Y8 604 656-0127. WB Griffiths

Format of information MS

Classification/Mapping Information

Species broad whitefish

# of samples/population estimate

Sampling gear radio tagging

CPUE

Location of study Reindeer Channel, 68°54'N, 136°40'W

Date of Sampling 15 Oct-30 Jan 1984/85

Effort

Water quality/quantity information

Habitat classification Estuarine coastal

Specificity of Information (Potential for use in GIS) Moderate

Comments fish tagged at Horseshoe Bend fall 1982, 1983 and 1984

APPENDIX II

FREQUENCIES AND LOCATIONS OF FISH CATCHES

BY TIME PERIOD AND SPECIES

FROM INUVIALUIT HARVEST DATA

AND

LAND USE MAPS DATA

INTRODUCTION

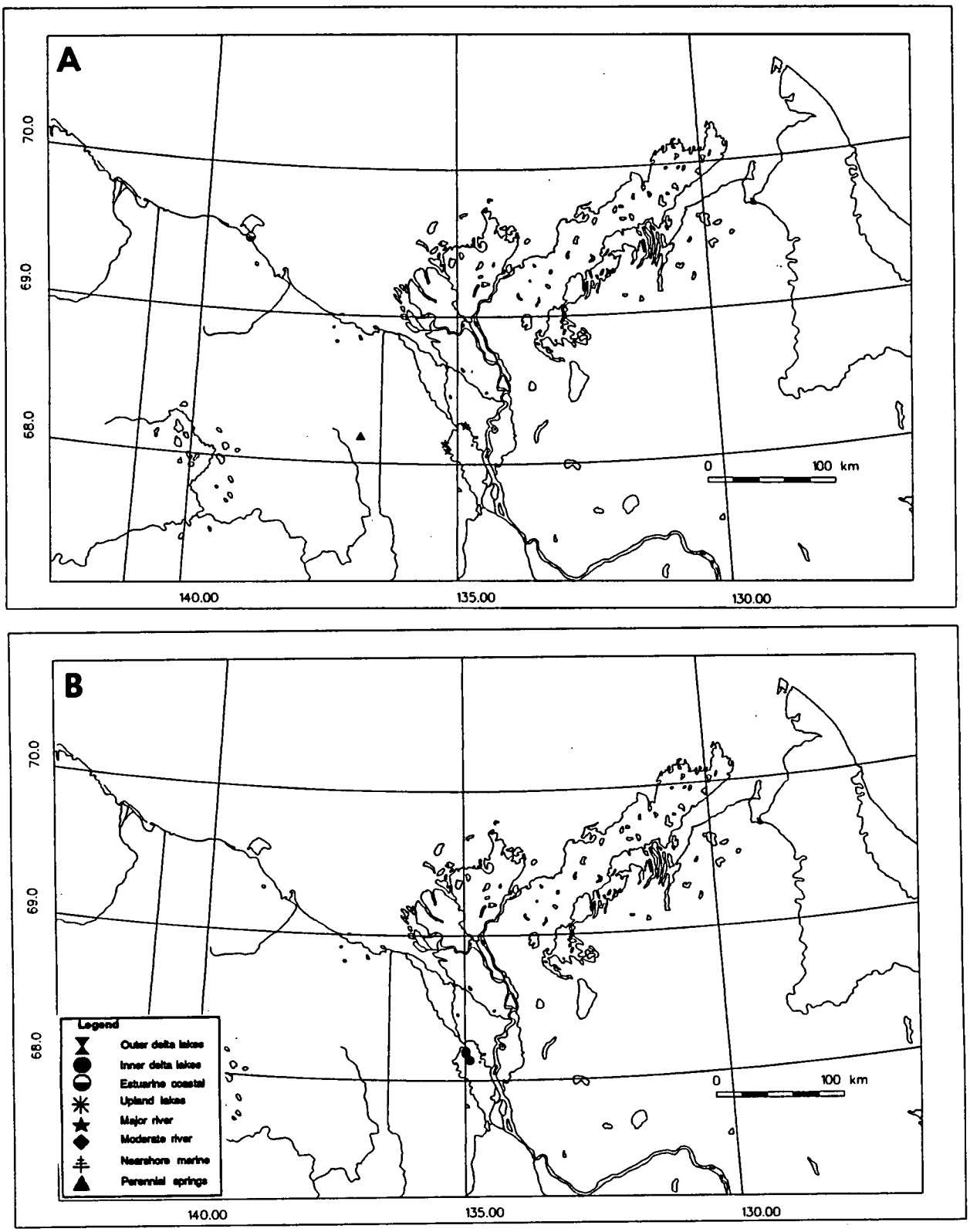
The following maps and tables give information on frequencies and locations of fish catches from fish harvest data available in the study area. Numerical and letter codes in relation to fishing sites correspond to those found in the original data sets. Frequency of fish catches per area were not given as part of the Land Use Map Data; "X" denotes that a particular site is fished but does not convey any information of effort.

The 264 IHD harvesting sites correspond to circled areas shown on maps prepared as part of the Inuvialuit Harvest Study. Each entry in the following tables is regarded as a separate area, even though in some cases, no differences are apparent in coordinates.

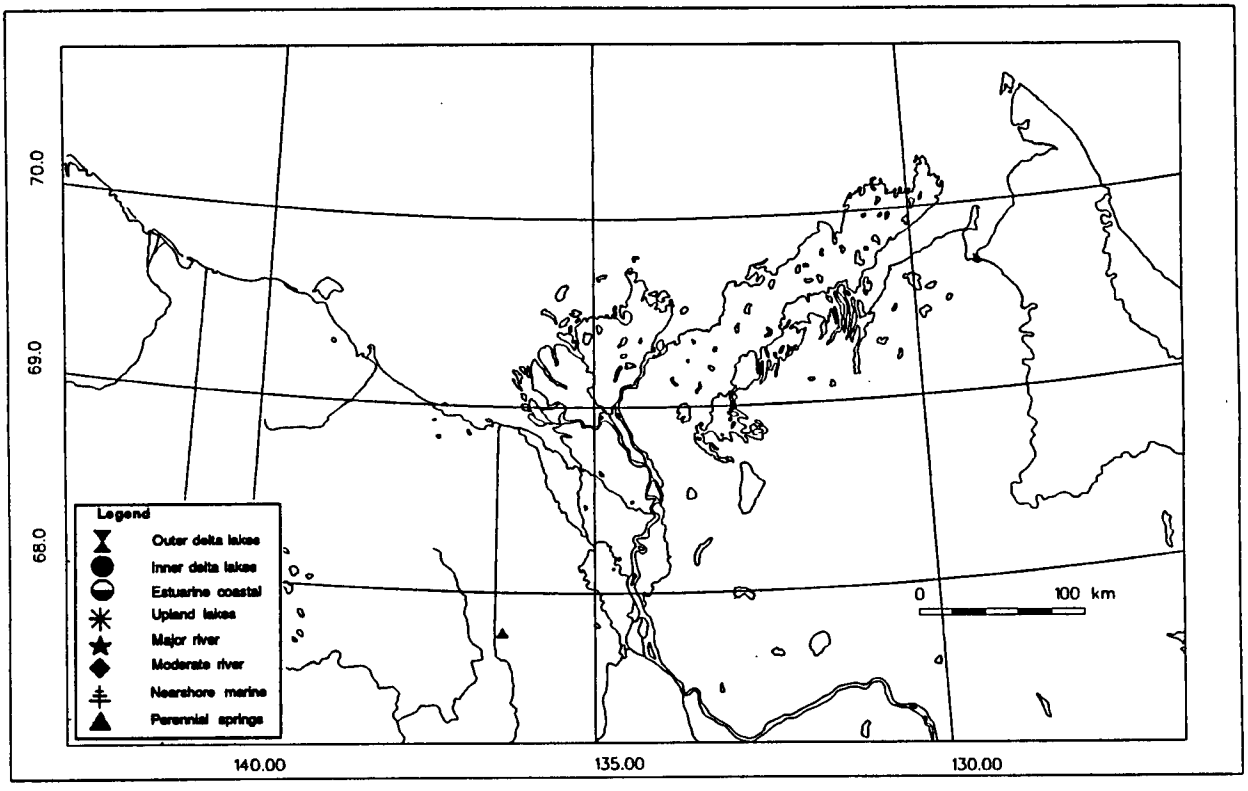
All data in the following tables are not point-source information. Coordinates are derived from centre-points of fishing areas shown on topographic maps of the area.

Appendix Table II-1. Frequencies of catches of Arctic char in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
052 A	Ptarmigan Bay	69.500	139.117	1			EC
029 A	Pokiak Channel	68.142	134.909			1	IDL
042 A	Hudson Bay Lake	68.189	134.982			1	IDL
048 A	Hudson Bay Lake	68.203	134.985			1	IDL
005 A	Peel River	68.135	135.230	1			MAJR
050 A	Aklavik River	68.259	135.067	1			MAJR
056 A	Aklavik River	68.257	134.849	1			MAJR
092 A	Fish Hole	68.180	136.825	1			PS
TOTAL IHD				5	0	3	
LUMD Sheet	Site						
205	21 Fish Creek	67.783	136.333			X	PS



Appendix Figure II-1. Documented locations of overwintering habitat for Arctic char in the study area in A. October and November and B. May and June according to IHD.



Appendix Figure II-2. Documented locations of overwintering habitat for Arctic char in the study area in May and June according to LUMD.

Appendix Table II-2. Frequencies of catches of broad whitefish in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
023 A	Shingle Point	68.989	137.367			1	EC
018 T	Topkak Point	69.500	133.000	1			EC
027 T	Kaliptat	69.590	133.000			1	EC
029 T	Tuk Harbour	69.471	133.019	1	1		EC
031 T	Galiptat	69.556	132.938			1	EC
587 T	Tuk Harbour	69.448	132.987	2	1		EC
005 A	Hudson Bay Lake	68.210	135.000			1	IDL
006 A	Archie's	68.257	135.085			1	IDL
010 A	Martins	68.442	135.122			1	IDL
011 A	6 Miles	68.270	135.194			1	IDL
016 A	Andrew Joe's Camp (Shingle Point)	68.453	134.355			1	IDL
027 A	James Maring's Camp	68.135	134.621	2		1	IDL
029 A	Pokiak Channel	68.142	134.909	2		1	IDL
030 A	Phillip's Channel	68.005	134.933	2			IDL
031 A	Joe Arey's	68.210	134.818			1	IDL
033 A	Peter Arey	68.210	134.891			2	IDL
037 A	Delta/Running River	68.483	135.121		1	1	IDL
040 A	Charlie's Camp	67.942	135.029			1	IDL
048 A	Hudson Bay Lake	68.203	134.985			2	IDL
098 A	Jimmy Maring's Camp	68.192	134.546	1			IDL
103 A	Arthurs	68.169	134.830		1		IDL
794 A	HIS Camp	68.164	134.649			1	IDL
858 A	Taylor Channel Camp	68.471	134.636	1			IDL
007 I	Big Rock	68.000	134.000	2			IDL
014 I	Big Rock	68.056	133.852	1			IDL
017 I	Near Kalinek Channel	68.329	134.076	1			IDL
065 I	Kisoun Point	68.689	134.244	2	1		IDL
067 I	David Roland's	68.750	134.348	1			IDL
090 I	Napoiyak	68.534	134.744	1			IDL
095 I	Kaps	68.372	133.756	1			IDL
116 I	Tumma Channel	68.568	134.250	2			IDL
198 I	John Keeviks	68.592	134.000	1		1	IDL
250 I	Big Jim's	68.579	134.793	1			IDL
251 I	David Roland's Camp	68.750	134.378			1	IDL
257 I	Kalinek	68.180	134.177	1			IDL
263 I	Kasook Channel	68.374	134.250	1		1	IDL
284 I	Harrison	68.597	134.110			1	IDL
285 I	Luker Channel	68.500	134.009	1			IDL
296 I	Akulik	68.613	134.262	1			IDL
313 I	Airport Creek	68.327	133.652			1	IDL
319 I	Crooked Channel	68.601	134.622	1			IDL
334 I	Barge Lake	68.288	133.700			1	IDL
339 I	Above Jimmy Adams	68.295	133.773			1	IDL
389 I	Big Jim Channel	68.534	134.768	1			IDL
411 I	Kalinek Channel	68.545	134.256	1			IDL
428 I	Kalinek Channel	68.180	134.061	2			IDL
800 I	Kasooks	68.381	134.363	1			IDL
945 I	Kalinek Channel	68.545	134.232	2			IDL
953 I	Across Cliff Moore's	68.430	134.134	1			IDL
003 A	Peel River	68.453	135.636			2	MAJR
004 A	West Channel	68.475	135.624	1			MAJR
005 A	Peel River	68.135	135.230	2	1	2	MAJR

continued ...

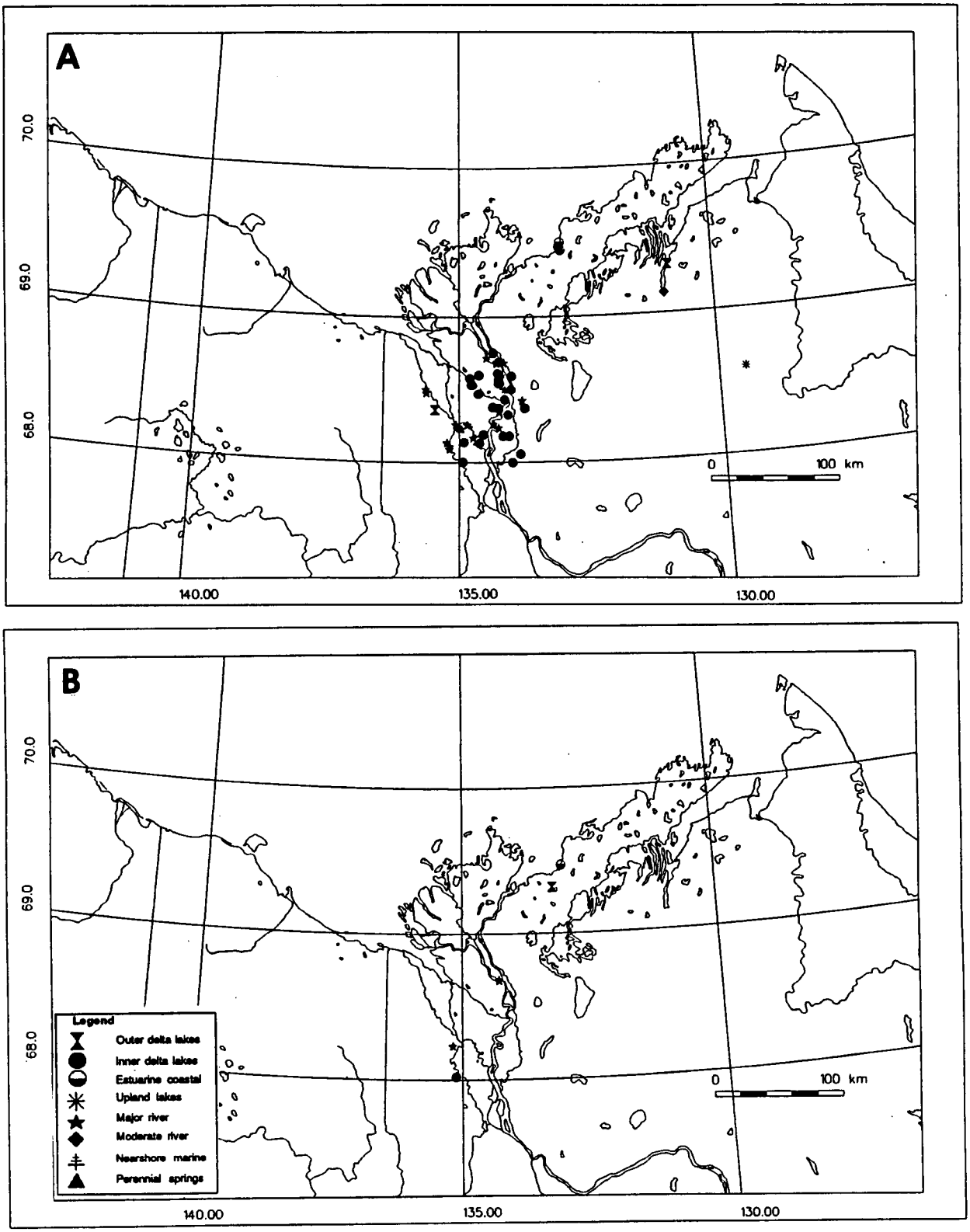
Appendix Table II-2 (contd). Frequencies of catches of broad whitefish in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (cont.)							
007 A	Aklavik River	68.261	134.349	2			MAJR
012 A	Aklavik	68.237	134.982			1	MAJR
021 A	Mackenzie River	68.345	134.252	1			MAJR
029 A	Peel/Aklavik River	68.124	134.909			1	MAJR
047 A	Peel River	68.108	135.176	2		1	MAJR
050 A	Aklavik River	68.259	135.067	3	1		MAJR
056 A	Aklavik River	68.257	134.849	2	1		MAJR
067 A	Aklavik River	68.230	134.957	1			MAJR
078 A	West Channel	68.500	135.636	1			MAJR
088 A	Peel River	68.135	135.230	2		1	MAJR
759 A	Jackfish Creek	68.230	134.982	2	1		MAJR
784 A	Aklavik River	68.237	135.012	1		2	MAJR
799 A	Peel River	68.230	135.182			1	MAJR
803 A	Aklavik River	68.169	134.739	1		1	MAJR
865 A	Aklavik River Bank	68.261	134.349			1	MAJR
867 A	Near HIS Fish Camp	68.220	135.091			1	MAJR
A	Peel River	68.230	135.182		1		MAJR
A	Pokiak Channel	68.237	135.012			1	MAJR
056 I	Reindeer Station	68.680	134.146	1		1	MAJR
081 I	Mackenzie	68.716	134.476	2			MAJR
280 I	Mackenzie River	68.676	134.287	1	1	1	MAJR
281 I	Colin Allen's Camp	68.685	134.293	2	3	3	MAJR
301 I	Mackenzie River	68.671	134.159			1	MAJR
303 I	Mackenzie River	68.577	134.213	1		1	MAJR
312 I	Swimming Point	69.074	134.500			1	MAJR
318 I	Mackenzie	68.545	134.238			1	MAJR
344 I	East Channel	68.419	133.805	1			MAJR
358 I	Mackenzie River	68.237	134.256	1			MAJR
364 I	Mackenzie River	68.500	134.134	1			MAJR
150 T	Kugallik River	69.135	130.969	1	1		MODR
008 A	Joseph's	68.324	135.546			1	ODL
096 A	Joseph's	68.363	135.455	1			ODL
050 T	Ikalusak	69.322	133.209		1		ODL
516 T	Nallok	69.324	130.875	1			ODL
020 T	Crossley Lakes	68.595	129.491	1			UL
Total IHD				73	16	50	
LUMD Sheet	Site						
226	61	Shoalwater Bay	68.875	136.250	X	X	X	EC
301	74	Mason River Inlet	69.958	128.375	X	X	X	EC
170	45	Husky Lake	67.517	135.100	X	X		IDL
171	46	Unnamed Lakes	67.583	135.200	X	X		IDL
172	47	Unnamed Lakes (Frog Creek)	67.567	134.617	X	X		IDL
174	48	Husky Channel	67.917	135.283	X	X		IDL
185	50	Dark Water Lake	67.433	134.667	X	X		IDL
186	51	Narrow Lake	67.417	134.625	X	X		IDL
187	52	Deep Water Lake (Nigger Lake)	67.400	134.467		X	X	IDL
196	48	Husky Channel	68.000	135.333	X	X	X	IDL
197	55	Peel Channel	68.167	135.167	X	X	X	IDL

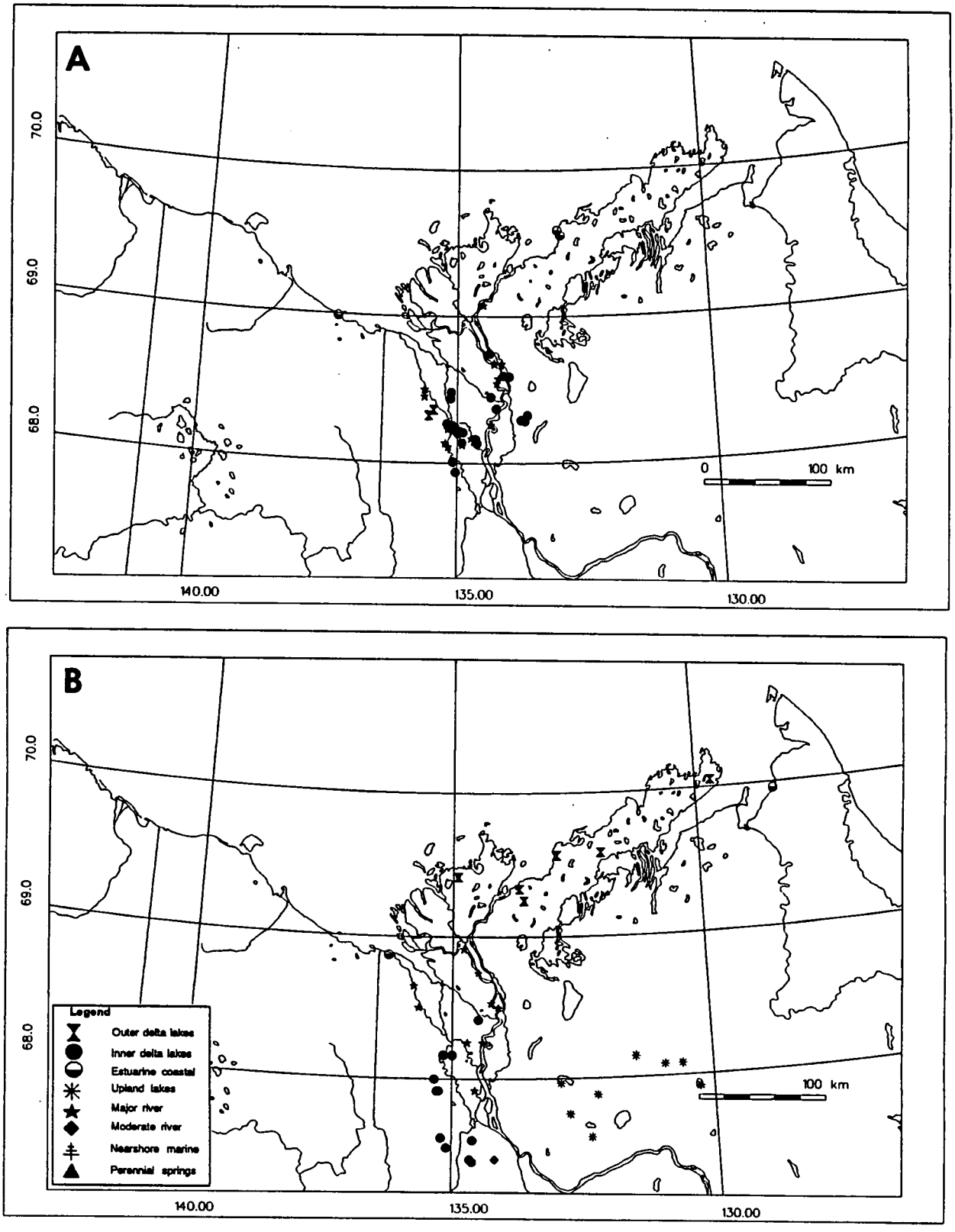
continued ...

Appendix Table II-2 (contd). Frequencies of catches of broad whitefish in three time periods.

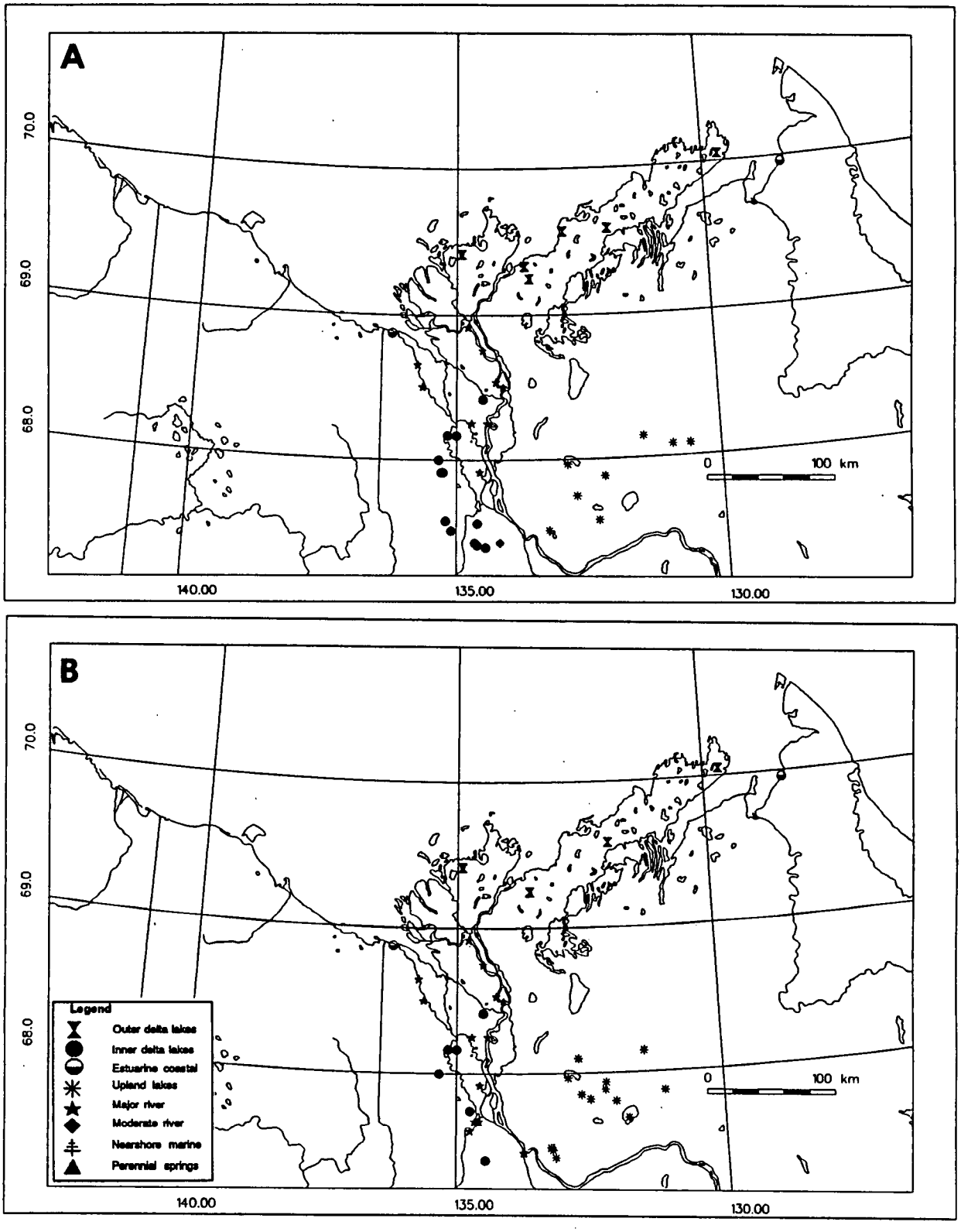
Area		Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
LUMD (cont.)								
198	56	Enoch Channel	68.167	135.000	X	X	X	IDL
211	58	Moonshine Lake	67.742	134.750			X	IDL
222	60	Raymond, Napoiyak & Schooner Ch.	68.417	134.500	X	X	X	IDL
230	48	Husky Channel	67.917	135.250	X	X		IDL
111	11	Mackenzie River	67.450	133.767			X	MAJR
118	10	Arctic Red River	67.450	133.750			X	MAJR
150	40	Middle Channel	68.500	134.117	X	X	X	MAJR
188	40	Mackenzie River, Middle Channel	67.917	134.567	X	X	X	MAJR
189	40	Mackenzie River, Middle Channel	68.250	134.417	X	X	X	MAJR
190	40	Mackenzie River, Middle Channel	68.533	134.250	X	X	X	MAJR
191	40	Mackenzie River, Middle Channel	68.750	134.500	X	X	X	MAJR
192	40	Mackenzie River, Middle Channel	68.917	134.783	X	X	X	MAJR
193	54	West Channel	68.250	134.717	X	X	X	MAJR
194	54	West Channel	68.500	135.650	X	X	X	MAJR
195	54	West Channel	68.650	135.750	X	X	X	MAJR
208	57	Unnamed Delta Channel	67.667	134.583			X	MAJR
209	57	Peel River	67.667	134.617			X	MAJR
210	57	Dry River	67.667	134.667			X	MAJR
212	59	Peel River	67.600	134.750			X	MAJR
115	10	Arctic Red River	67.083	133.350			X	MODR
176	49	Frog Creek	67.433	134.200	X	X		MODR
121	34	Big Lake, Richards Island	69.417	134.900	X	X	X	ODL
122	35	Unnamed River & Lakes, Kittigazuit	69.250	133.583	X	X	X	ODL
125	36	Unnamed Lakes, Tuk Pen	69.333	133.667	X	X		ODL
127	37	Itkrilik Lake	69.583	132.000	X	X	X	ODL
131	38	Unnamed Lakes, Tibjak Point	69.567	132.900	X	X		ODL
136	39	Unnamed Lakes, Tuk Pen	70.050	129.667	X	X	X	ODL
92	23	Loche Lake	67.583	132.350	X	X		UL
94	24	Odizen Lake	67.750	132.750	X	X		UL
96	25	Caribou Lake	67.967	132.917	X	X	X	UL
97	26	Fishing Bear Lake	67.514	133.283		X		UL
103	27	Attoe Lake	67.417	133.167			X	UL
104	28	Whirl lake	67.467	133.217			X	UL
105	26	Fishing Bear Lake	67.483	133.250			X	UL
106	3	Travaillant Lake	67.683	131.792			X	UL
108	29	Sunny Lake	67.850	132.667			X	UL
110	2	Unnamed Lake	67.817	132.500			X	UL
114	31	Crossing Creek Lake	67.800	132.017			X	UL
117	32	Fish Trap Lake	67.933	132.200			X	UL
119	33	Wood Bridge Lake	67.883	132.217			X	UL
153	33	Wood Bridge Lake	67.883	132.217	X	X	X	UL
161	41	Shotgun Lake	68.147	131.467	X	X	X	UL
164	42	Unnamed Lake, Iroquois River	67.917	130.267	X	X		UL
165	43	Unnamed Lake	68.083	130.917	X	X		UL
166	44	Star Lake	68.083	130.583	X	X		UL
312	70	North Caribou Lake	68.100	132.708			X	UL
313	71	Tenlen Lake	67.867	131.100			X	UL
Total LUMD					37	39	42	



Appendix Figure II-3. Documented locations of overwintering habitat for broad whitefish in the study area in A. October and November and B. December to April according to IHD.



Appendix Figure II-4. Documented locations of overwintering habitat for broad whitefish in the study area in A. May and June according to IHD and B. October and November according to LUMD.



Appendix Figure II-5. Documented locations of overwintering habitat for broad whitefish in the study area in A. December to April and B. May and June according to LUMD.

Appendix Table II-3. Frequencies of catches of lake whitefish in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
029 T	Tuk Harbour	69.471	133.019		3		EC
582 T	Tuk Harbour	69.451	133.045	1			EC
587 T	Tuk Harbour	69.448	132.987	2	2		EC
009 A	Around corner from Knute Lang's	68.306	135.333			1	IDL
010 A	Martins	68.442	135.122			1	IDL
016 A	Andrew Joe's Camp (Shingle Point)	68.453	134.355			1	IDL
027 A	James Maring's Camp	68.135	134.621	2		1	IDL
028 A	Arthur Lake	68.169	134.830	1			IDL
029 A	Pokiak Channel	68.142	134.909	2		1	IDL
031 A	Joe Arey's	68.210	134.818			1	IDL
042 A	Hudson Bay Lake	68.189	134.982			1	IDL
048 A	Hudson Bay Lake	68.203	134.985			2	IDL
053 A	Archie's	68.293	135.152	1			IDL
069 A	Across Knute Lang's	68.032	135.083	1			IDL
098 A	Jimmy Maring's Camp	68.192	134.546	2			IDL
761 A	Below Knut Lang's	68.005	135.000			1	IDL
794 A	HIS Camp	68.164	134.649			1	IDL
858 A	Taylor Channel Camp	68.471	134.636	1			IDL
007 I	Big Rock	68.000	134.000	2			IDL
014 I	Big Rock	68.056	133.852	1			IDL
017 I	Near Kalinek Channel	68.329	134.076	1			IDL
065 I	Kisoun Point	68.689	134.244	3			IDL
067 I	David Rolands	68.750	134.348	1			IDL
090 I	Napoiyak	68.534	134.744	1			IDL
095 I	Kaps	68.372	133.756	1			IDL
116 I	Tumma Channel	68.568	134.250	1			IDL
198 I	John Keeviks	68.592	134.000	1		1	IDL
250 I	Big Jim's	68.579	134.793	1			IDL
251 I	David Roland's Camp	68.750	134.378			1	IDL
257 I	Kalinek	68.180	134.177	1			IDL
260 I	Noel Lake	68.545	133.594	1	1		IDL
284 I	Harrison	68.597	134.110			1	IDL
285 I	Luker Channel	68.500	134.009	1			IDL
296 I	Akulik	68.613	134.262	1			IDL
334 I	Barge Lake	68.288	133.700			1	IDL
389 I	Big Jim Channel	68.534	134.768	1			IDL
728 I	Kalinek Channel	68.180	134.061	2			IDL
945 I	Kalenek Channel	68.545	134.232	2			IDL
I	Tumma Channel	68.568	134.250	1			IDL
003 A	Peel River	68.453	135.636		1		MAJR
004 A	West Channel	68.475	135.624	1			MAJR
005 A	Peel River	68.135	135.230	2			MAJR
007 A	Aklavik River	68.261	134.349	1			MAJR
012 A	Aklavik	68.237	134.982			1	MAJR
029 A	Peel/Aklavik River	68.124	134.909			1	MAJR
047 A	Peel River	68.108	135.176	2		1	MAJR
050 A	Aklavik River	68.259	135.067	2	1		MAJR
056 A	Aklavik River	68.257	134.849	2	1		MAJR
067 A	Aklavik River	68.230	134.957	1			MAJR
078 A	West Channel	68.500	135.636	1			MAJR
088 A	Peel River	68.135	135.230			1	MAJR
097 A	Aklavik River	68.261	134.349	1			MAJR

continued ...

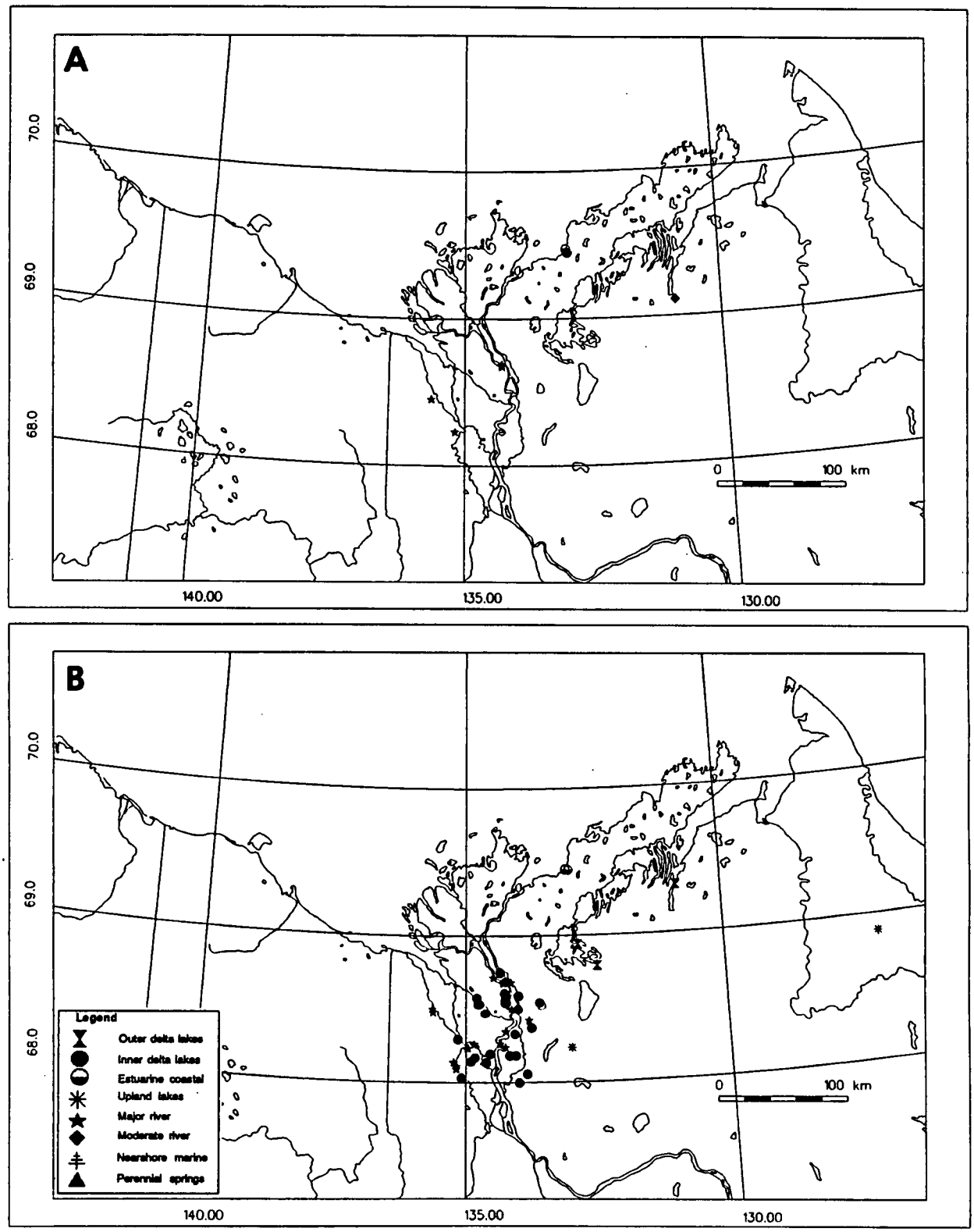
Appendix Table II-3 (cont). Frequencies of catches of lake whitefish in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (contd.)							
104 A	Aklavik River	68.261	134.349	1			MAJR
759 A	Jackfish Creek	68.230	134.982	2	1		MAJR
784 A	Aklavik River	68.237	135.012			1	MAJR
799 A	Peel River	68.230	135.182			1	MAJR
A	Peel River	68.230	135.182		2		MAJR
A	West Channel	68.500	135.636			1	MAJR
056 I	Reindeer Station	68.680	134.146	1			MAJR
081 I	Mackenzie	68.716	134.476	1			MAJR
280 I	Mackenzie River	68.676	134.287	1	1		MAJR
281 I	Colin Allen's Camp	68.685	134.293	2	3	3	MAJR
303 I	Mackenzie River	68.577	134.213	1			MAJR
312 I	Swimming Point	69.074	134.500			1	MAJR
318 I	Mackenzie	68.545	134.238			1	MAJR
344 I	East Channel	68.419	133.805	1			MAJR
358 I	Mackenzie River	68.237	134.256	1			MAJR
364 I	Mackenzie River	68.500	134.134	1			MAJR
017 T	Kugalik	69.112	130.894		1		MODR
304 I	Sitidgi Lake	68.664	132.781		1		ODL
382 I	Kugalik Lake	69.297	130.806			1	ODL
092 T	Husky Lakes	68.793	132.469	1			ODL
516 T	Nallok	69.324	130.875	1			EC
568 T	Husky Lakes	68.942	132.836	3			ODL
297 I	Ed Dillon's Camp	68.232	133.000	1			UL
075 T	Rendevous Lake	68.881	127.000	1			UL
TOTAL IHD				68	18	28	
LUMD Sheet	Site						
172	55 Unnamed Lakes (Frog Creek)	67.567	134.617	X	X		IDL
196	56 Husky Channel	68.000	135.333	X	X	X	IDL
197	57 Peel Channel	68.167	135.167	X	X	X	IDL
198	58 Enoch Channel	68.167	135.000	X	X	X	IDL
218	59 Deep Water Lake (Nigger Lake)	67.400	134.417			X	IDL
219	60 Unnamed Lake	67.083	134.583			X	IDL
220	60 Unnamed Lake	67.217	134.833			X	IDL
230	56 Husky Channel	67.917	135.250	X	X		IDL
100	35 Mackenzie R. at Arctic Red River	67.458	133.750	X	X		MAJR
111	35 Mackenzie River	67.450	133.767			X	MAJR
150	53 Middle Channel	68.500	134.117	X	X	X	MAJR
188	53 Mackenzie River, Middle Channel	67.917	134.567	X	X	X	MAJR
189	53 Mackenzie River, Middle Channel	68.250	134.417	X	X	X	MAJR
190	53 Mackenzie River, Middle Channel	68.533	134.250	X	X	X	MAJR
191	53 Mackenzie River, Middle Channel	68.750	134.500	X	X	X	MAJR
192	53 Mackenzie River, Middle Channel	68.917	134.783	X	X	X	MAJR
89	17 Travaillant River	67.733	131.850	X	X		MODR
90	28 Travaillant River	67.617	131.867	X	X		MODR
98	34 Rengleng River	67.692	133.533		X		MODR
107	39 Pierre Cr., Mackenzie River	67.342	133.292			X	MODR
139	44 West Round Lake	68.700	133.933	X	X	X	ODL
140	45 Unnamed Lake -Wolverine Lakes	68.850	134.217	X	X	X	ODL
141	46 Unnamed Lake -Wolverine Lakes	68.883	134.183	X	X	X	ODL

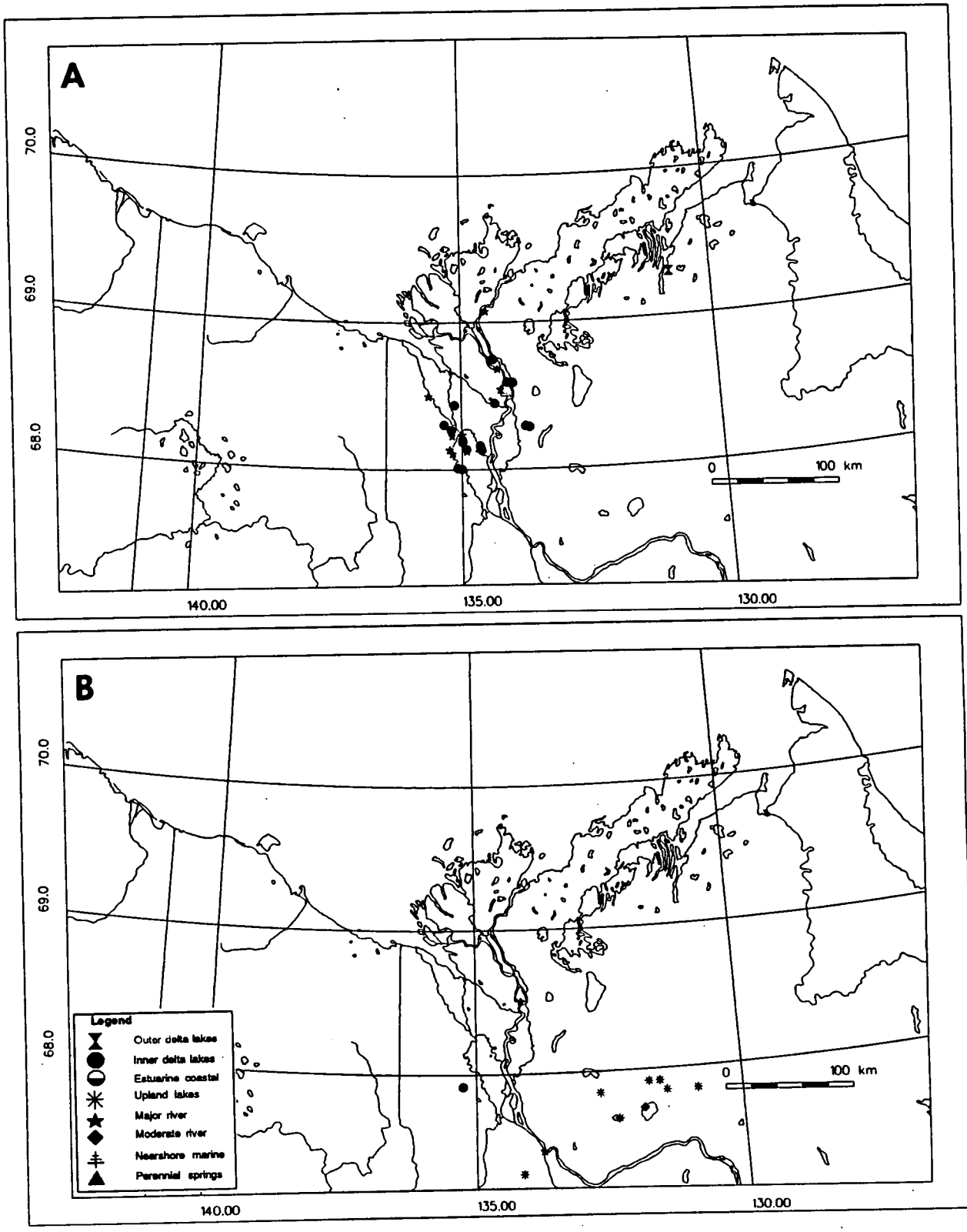
continued ...

Appendix Table II-3 (cont). Frequencies of catches of lake whitefish in three time periods.

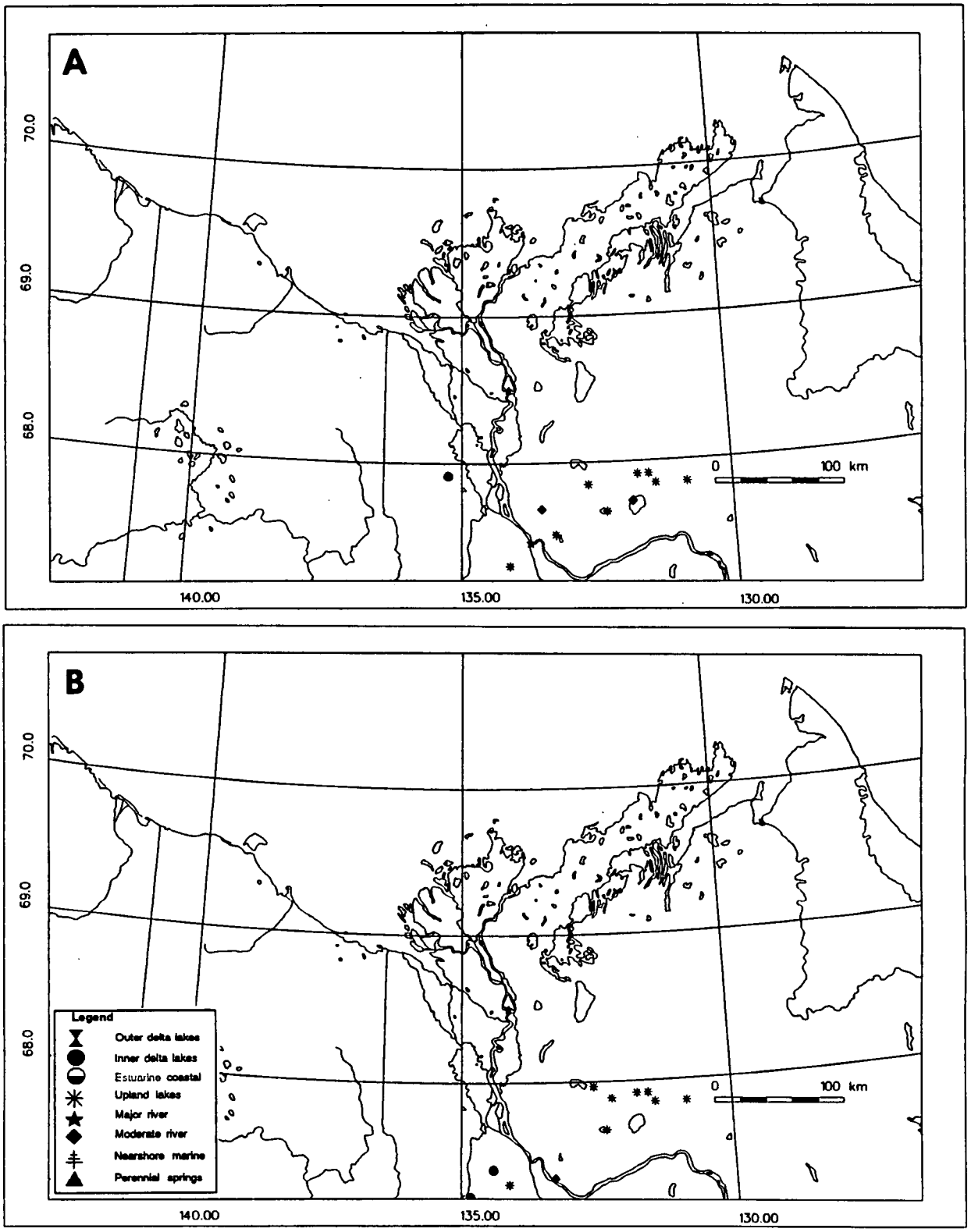
Area		Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
LUMD (contd.)								
142	47	Unnamed Lake - Peter Lake	68.775	134.183	X	X	X	ODL
143	48	East Round Lake	68.692	133.867	X	X	X	ODL
144	49	Bonnet Plume Lake	68.600	133.800	X	X	X	ODL
145	50	Jimmy Lake	68.633	133.517	X	X	X	ODL
146	51	Unnamed Lake	68.625	133.367	X	X	X	ODL
147	52	Noell Lake	68.533	133.542	X	X	X	ODL
167	54	Kittigazuit Lakes	69.283	133.500	X	X	X	ODL
85	24	Trout Lake, Kugaluk River	67.850	131.417	X	X	X	UL
86	25	Unnamed Lake, Kugaluk River	67.850	130.833	X	X	X	UL
87	26	Unnamed Lake, Kugaluk River	67.917	131.542	X	X	X	UL
88	27	Unnamed Lake, Kugaluk River	67.917	131.750	X	X	X	UL
91	4	Deep Lake	67.667	132.333	X	X	X	UL
93	29	In and Out Lake	67.542	132.700	X	X	X	UL
94	30	Odizen Lake	67.750	132.750	X	X		UL
95	31	Sunny Lake	67.850	132.667	X	X		UL
96	32	Caribou Lake	67.967	132.917	X	X	X	UL
97	33	Fishing Bear Lake	67.514	133.283		X		UL
101	36	Nerejo Lake	67.300	134.125	X	X	X	UL
103	37	Attoe Lake	67.417	133.167			X	UL
104	38	Whirl lake	67.467	133.217			X	UL
105	33	Fishing Bear Lake	67.483	133.250			X	UL
106	5	Travaillant Lake	67.683	131.792			X	UL
108	31	Sunny Lake	67.850	132.667			X	UL
110	2	Unnamed Lake	67.817	132.500			X	UL
113	41	Tregnantchiez Lake	67.767	132.083			X	UL
119	42	Wood Bridge Lake	67.883	132.217			X	UL
120	43	Hill Lake	67.967	132.550			X	UL
153	41	Wood Bridge Lake	67.883	132.217	X	X	X	UL
313	69	Tenlen Lake	67.867	131.100			X	UL
TOTAL LUMD					35	37	43	



Appendix Figure II-6. Documented locations of overwintering habitat for lake whitefish in the study area in A. October and November and B. December to April according to IHD.



Appendix Figure II-7. Documented locations of overwintering habitat for lake whitefish in the study area in A. May and June according to IHD and B. October and November according to LUMD.



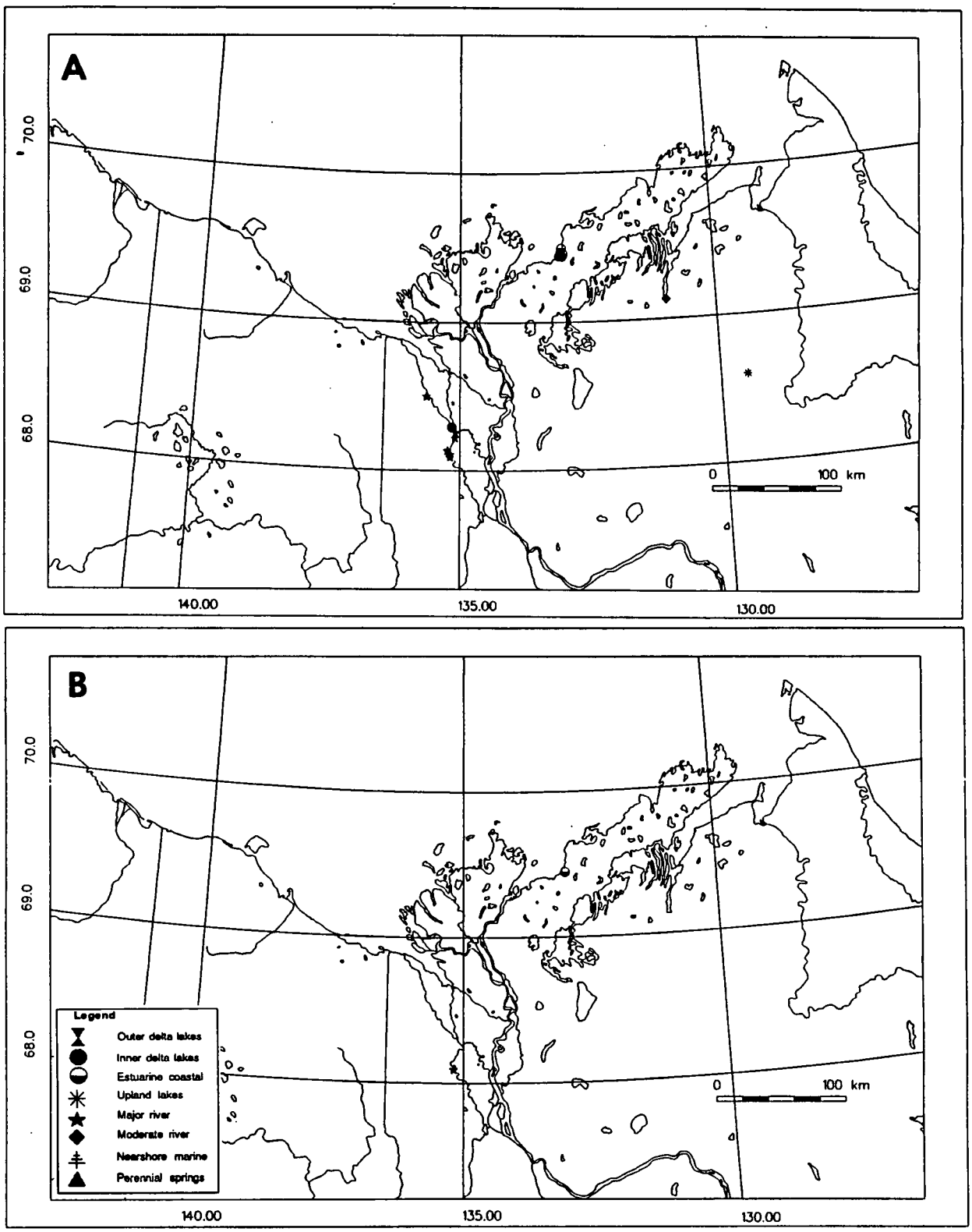
Appendix Figure II-8. Documented locations of overwintering habitat for lake whitefish in the study area in A. December to April and B. May and June according to LUMD.

Appendix Table II-4. Frequencies of catches of whitefish in three time periods.

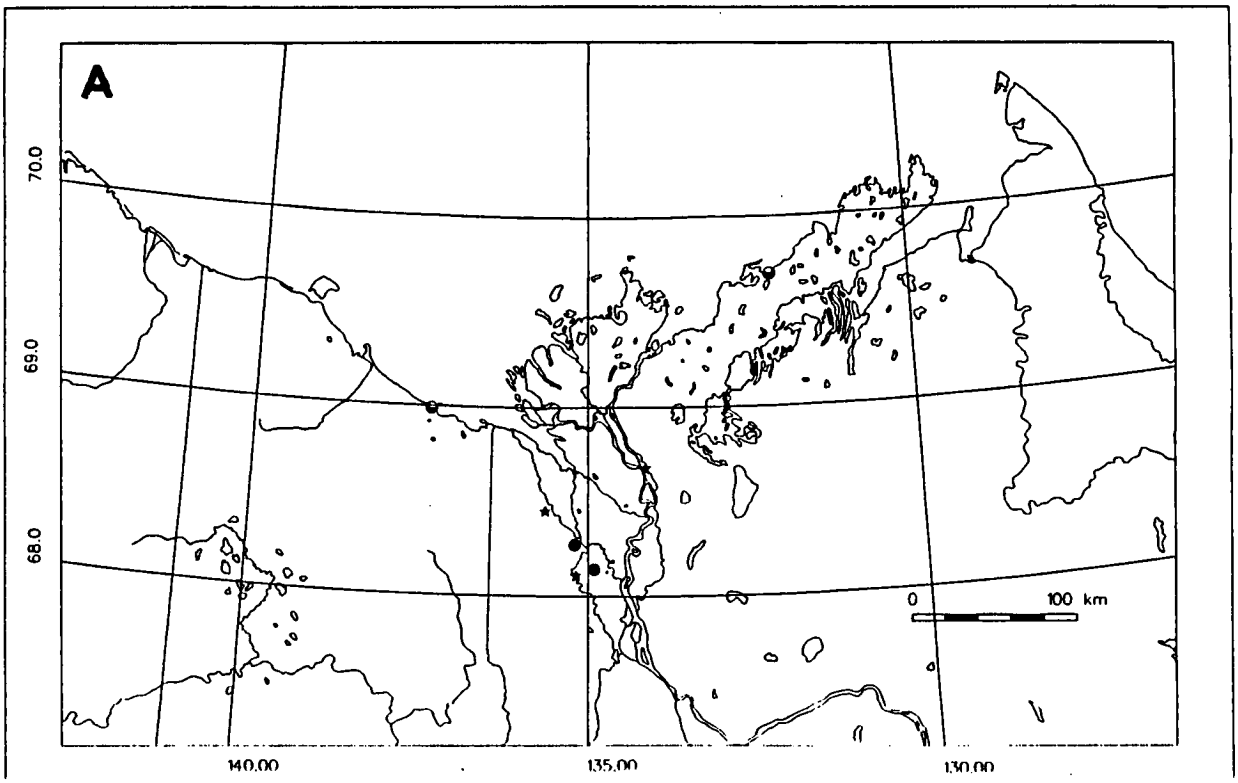
Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
029 T	Tuk Harbour	69.471	133.019			1	EC
582 T	Tuk Harbour	69.451	133.045	1			EC
699 T	Tuk Harbour	69.464	132.968	1			EC
028 A	Arthur Lake	68.169	134.830		1		IDL
048 A	Hudson Bay Lake	68.203	134.985			1	IDL
055 A	Hudson Bay	68.180	135.073	1			IDL
058 I	Jimmy Adams	68.284	133.833	1			IDL
251 I	David Roland's Camp	68.750	134.378			1	IDL
830 A	Taylor's HIS Camp	68.487	135.000			1	IDL
921 I	Kalenik Channel	68.324	134.009	1			IDL
976 I	Rangling River - mouth of	68.795	134.131	1			IDL
050 A	HIS Camp	68.090	135.182			1	MAJR
303 I	Mackenzie River	68.577	134.213			1	MAJR
210 I	Campbell Creek	68.113	133.500			1	MODR
723 T	Tiktaliktok	69.390	132.855		1		ODL
746 T	Ikalusauq	69.297	133.171	2			ODL
TOTAL IHD				8	2	7	

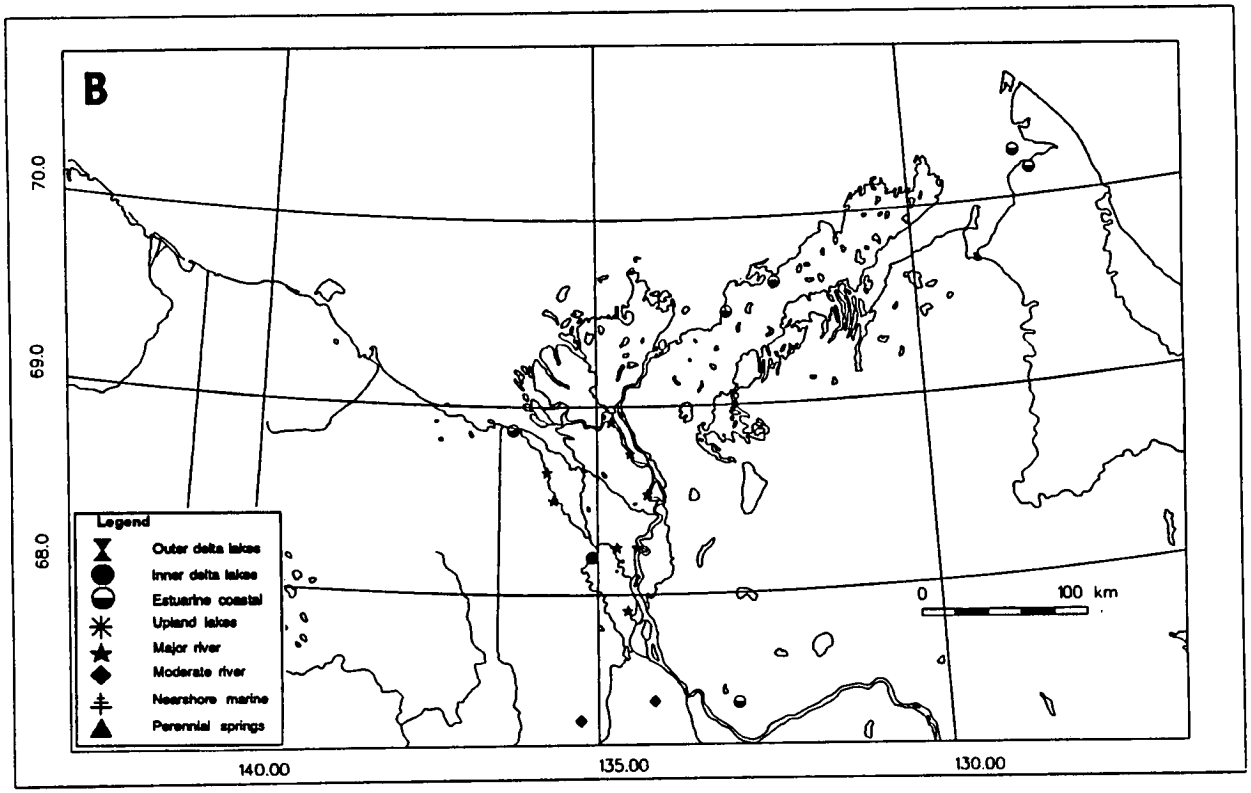
Appendix Table II-5. Frequencies of catches of cisco in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
023 A	Shingle Point	68.989	137.367			1	EC
018 T	Topkak Point	69.500	133.000	1			EC
029 T	Tuk Harbour	69.471	133.019	1			EC
587 T	Tuk Harbour	69.448	132.987	4	1		EC
610 T	Hutchinson Bay	69.701	132.169			1	EC
699 T	Tuk Harbour	69.464	132.968	1			EC
011 A	6 Miles	68.270	135.194			1	IDL
029 A	Pokiak Channel	68.142	134.909			1	IDL
053 A	Archie's	68.293	135.152	1			IDL
003 A	Peel River	68.453	135.636			1	MAJR
005 A	Peel River	68.135	135.230	1			MAJR
006 A	Archie's	68.257	135.085	1			MAJR
020 A	West Channel	68.220	135.091	1			MAJR
047 A	Peel River	68.108	135.176	1		1	MAJR
050 A	Aklavik River	68.259	135.067	2	1		MAJR
078 A	West Channel	68.500	135.636	1			MAJR
088 A	Peel River	68.135	135.230	1			MAJR
056 I	Reindeer Station	68.680	134.146			1	MAJR
150 T	Kugallik River	69.135	130.969	1			MODR
020 T	Crossley Lakes	68.595	129.491	1			UL
TOTAL IHD				18	2	7	
LUMD							
Sheet	Site						
123	1 Tuktoyaktuk	67.417	133.000	X	X	X	EC
124	2 Topkak/Beluga Point Bay	69.500	132.967	X	X	X	EC
126	3 Hutchinson Inlet	69.650	132.200	X	X	X	EC
226	4 Shoalwater Bay	68.875	136.250	X	X	X	EC
302	5 Maitland Point	70.150	128.017	X	X	X	EC
303	6 Harrowby Bay	70.250	128.250	X	X	X	EC
211	7 Moonshine Lake	67.742	134.750			X	IDL
231	8 Peel Channel	68.200	135.083	X	X	X	IDL
111	9 Mackenzie River	67.450	133.767			X	MAJR
118	10 Arctic Red River	67.450	133.750			X	MAJR
188	11 Mackenzie River, Middle Channel	67.917	134.567	X	X	X	MAJR
189	11 Mackenzie River, Middle Channel	68.250	134.417	X	X	X	MAJR
190	11 Mackenzie River, Middle Channel	68.533	134.250	X	X	X	MAJR
191	11 Mackenzie River, Middle Channel	68.750	134.500	X	X	X	MAJR
192	11 Mackenzie River, Middle Channel	68.917	134.783	X	X	X	MAJR
193	12 West Channel	68.250	134.717	X	X	X	MAJR
194	12 West Channel	68.500	135.650	X	X	X	MAJR
195	12 West Channel	68.650	135.750	X	X	X	MAJR
208	13 Unnamed Delta Channel	67.667	134.583			X	MAJR
209	13 Peel River	67.667	134.617			X	MAJR
210	13 Dry River	67.667	134.667			X	MAJR
212	16 Peel River	67.600	134.750			X	MAJR
115	17 Arctic Red River	67.083	133.350			X	MODR
175	18 Stony Creek	67.333	135.250	X	X		MODR
176	19 Frog Creek	67.433	134.200	X	X		MODR
177	20 Vittrekwa River	67.117	135.500	X	X		MODR
TOTAL LUMD				18	18	23	

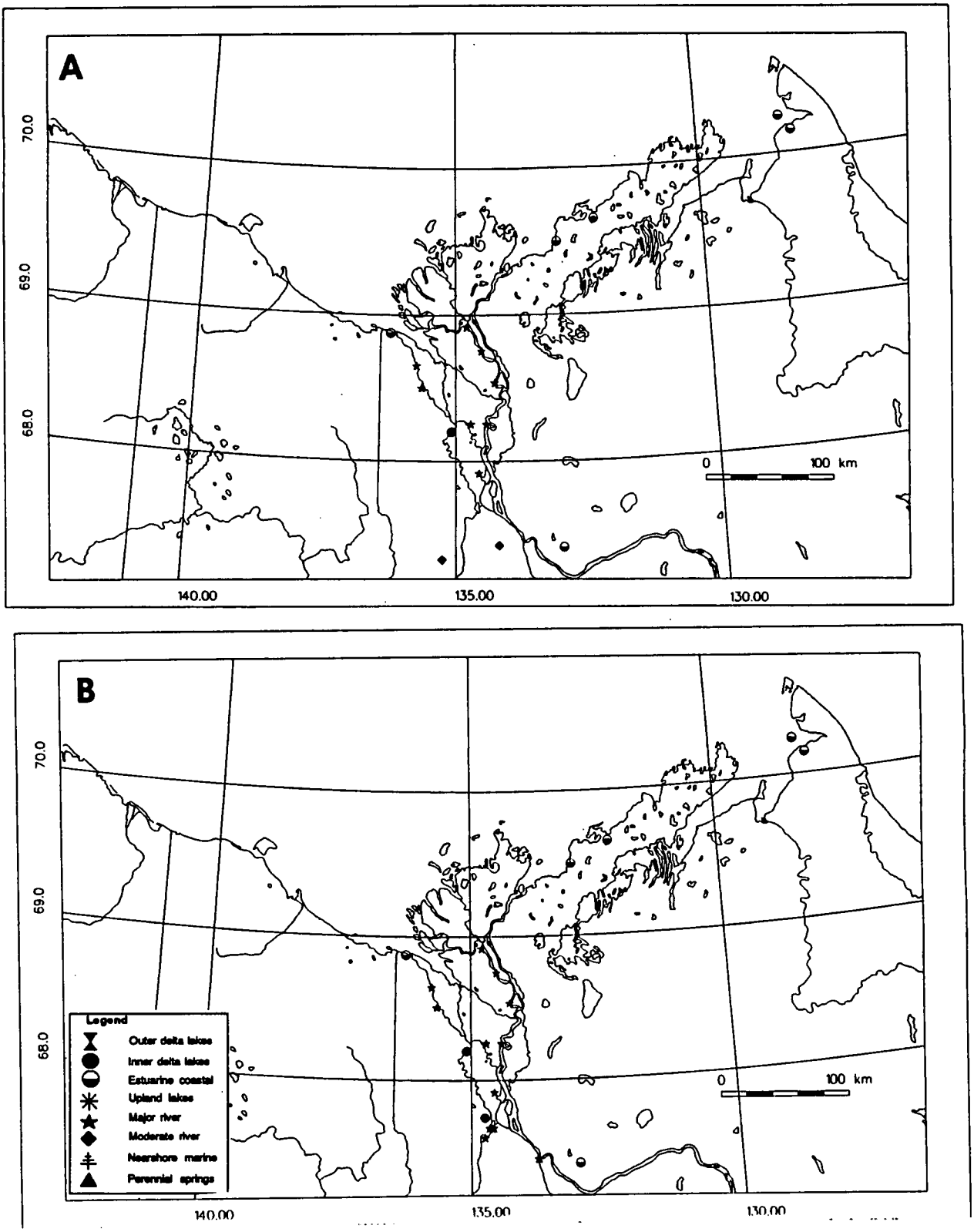


Appendix Figure II-9. Documented locations of overwintering habitat for ciscoes in the study area in A. October and November and B. December to April according to IHD.





Appendix Figure II-10. Documented locations of overwintering habitat for ciscoes in the study area in A. May and June according to IHD and B. October and November according to LUMD.



Appendix Figure II-11. Documented locations of overwintering habitat for ciscoes in the study area in A. December to April and B. May and June according to LUMD.

Appendix Table II-6. Frequencies of catches of inconnu in three time periods.

Area IHD	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
368 I	Shallow Bay	68.775	135.049	2			EC
018 T	Topkak Point	69.500	133.000	1			EC
029 T	Tuk Harbour	69.471	133.019	2	4		EC
582 T	Tuk Harbour	69.451	133.045	1			EC
587 T	Tuk Harbour	69.448	132.987	3	2		EC
610 T	Hutchinson Bay	69.701	132.169			2	EC
699 T	Tuk Harbour	69.464	132.968	1			EC
005 A	Hudson Bay Lake	68.210	135.000			1	IDL
006 A	Archie's	68.257	135.085		1	1	IDL
009 A	Around corner from Knute Lang's	68.306	135.333			1	IDL
010 A	Martins	68.442	135.122			1	IDL
011 A	6 Miles	68.270	135.194	1			IDL
016 A	Andrew Joe's Camp (Shingle Point)	68.453	134.355			1	IDL
018 A	Taylor Channel	68.417	134.937	1			IDL
019 A	Bush Camp	68.400	135.333	1			IDL
026 A	Jake Peffers	68.383	134.867	1			IDL
027 A	James Maring's Camp	68.135	134.621			1	IDL
028 A	Arthur Lake	68.169	134.830		1		IDL
029 A	Pokiak Channel	68.142	134.909			1	IDL
030 A	Phillip's Channel	68.005	134.933	2			IDL
031 A	Joe Arey's	68.210	134.818	1		1	IDL
032 A	Martin's	68.266	134.933		1		IDL
033 A	Peter Arey	68.210	134.891			1	IDL
037 A	Delta/Running River	68.483	135.121	1		1	IDL
038 A	Martin's	68.306	134.921			1	IDL
040 A	Charlies' Camp	67.942	135.029			1	IDL
042 A	Hudson Bay Lake	68.189	134.982			1	IDL
043 A	Peter & Joe Arey	68.442	134.833	1			IDL
048 A	Hudson Bay Lake	68.203	134.985			2	IDL
050 A	HIS Camp	68.090	135.182			1	IDL
053 A	Archie's	68.293	135.152	1			IDL
055 A	Hudson Bay	68.180	135.073	1			IDL
056 A	Leland Channel	68.500	135.333	2			IDL
060 A	Jackfish Creek	68.214	135.030	1			IDL
066 A	Hudson Lake	68.144	134.982	1			IDL
067 A	Jackfish Creek	68.230	134.957		1		IDL
071 A	Jake Peffers	68.363	134.752	1			IDL
079 A	Archie's	68.250	135.083	1			IDL
090 A	Jake Peffers	68.383	134.874	2	1		IDL
092 A	Taylor Channel	68.417	134.937	1			IDL
098 A	Jimmy Maring's Camp	68.192	134.546	2			IDL
115 A	Jake Peffer's	68.383	134.867	1			IDL
758 A	Joe Arey's Camp	68.396	134.782	1			IDL
789 A	HIS Camp	68.207	134.879			1	IDL
855 A	Martin Creek	68.257	134.866	1			IDL
858 A	Taylor Channel Camp	68.471	134.636	1			IDL
007 I	Big Rock	68.000	134.000	1			IDL
010 I	Axle River	68.169	134.830	1			IDL
014 I	Big Rock	68.056	133.852	1			IDL
017 I	Near Kalinek Channel	68.329	134.076	1			IDL
052 I	Thrasher Channel	68.500	134.445	1			IDL
055 I	Kaomayuk 1	68.520	134.213		1		IDL

continued ...

Appendix Table II-6 (cont). Frequencies of catches of inconnu in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (cont.)							
057 I	Sam Arey's	68.297	133.908	1			IDL
058 I	Jimmy Adams	68.284	133.833	1			IDL
060 I	John Dillon's	68.367	134.037	1			IDL
063 I	Amagovik	68.613	134.403	1	1		IDL
065 I	Kisoun Point	68.689	134.244	2	1		IDL
067 I	David Rolands	68.750	134.348	2			IDL
069 I	Navy Creek	68.453	133.793	1			IDL
116 I	Tumma Channel	68.568	134.250	1			IDL
198 I	John Keeviks	68.592	134.000			1	IDL
250 I	Big Jim's	68.579	134.793	1			IDL
251 I	David Roland's Camp	68.750	134.378	1		1	IDL
252 I	East Branch	68.079	133.864	1			IDL
255 I	Emgokbik Channel	68.601	134.399	1			IDL
257 I	Kalinek	68.180	134.177	2			IDL
263 I	Kassok Channel	68.374	134.250	1		1	IDL
282 I	Tuma	68.572	134.348	1			IDL
284 I	Harrison	68.597	134.110	2		1	IDL
285 I	Luker Channel	68.500	134.009	1			IDL
296 I	Akulik	68.613	134.262	1			IDL
302 I	Crooked Channel	68.574	134.433	1			IDL
313 I	Airport Creek	68.327	133.652			1	IDL
319 I	Crooked Channel	68.601	134.622	1			IDL
334 I	Barge Lake	68.288	133.700			1	IDL
339 I	Above Jimmy Adams	68.295	133.773			1	IDL
354 I	William's Island	68.743	134.256	2			IDL
357 I	Thrasher Channel	68.511	134.439	4			IDL
389 I	Big Jim Channel	68.534	134.768	1			IDL
411 I	Kalinek Channel	68.545	134.256	1			IDL
420 I	Bombardier Channel	68.453	133.878	1			IDL
499 I	Big Lake	68.324	133.803	1			IDL
800 I	Kasooks	68.381	134.363	1			IDL
803 I	Airport Lake	68.295	133.530			1	IDL
911 I	Thrasher River	68.714	134.165	1			IDL
920 I	John Dillon Channel	68.392	134.049	1			IDL
926 I	Chicksi Channel	68.667	134.274	1			IDL
927 I	North End Crooked Channel	68.640	134.671	1			IDL
945 I	Kalenek Channel	68.545	134.232	2			IDL
004 A	West Channel	68.475	135.624	2			MAJR
005 A	Peel River	68.135	135.230	2	1		MAJR
006 A	Archie's	68.257	135.085	1			MAJR
012 A	Aklavik	68.237	134.982			1	MAJR
029 A	Peel/Aklavik River	68.124	134.909			1	MAJR
047 A	Peel River	68.108	135.176	2		1	MAJR
050 A	Aklavik River	68.259	135.067	3	1		MAJR
056 A	Aklavik River	68.257	134.849	2	1		MAJR
067 A	Aklavik River	68.230	134.957	1			MAJR
078 A	West Channel	68.500	135.636			1	MAJR
088 A	Peel River	68.135	135.230	1		1	MAJR
759 A	Jackfish Creek	68.230	134.982	2	1		MAJR
784 A	Aklavik River	68.237	135.012			1	MAJR
799 A	Peel River	68.230	135.182			1	MAJR

continued ...

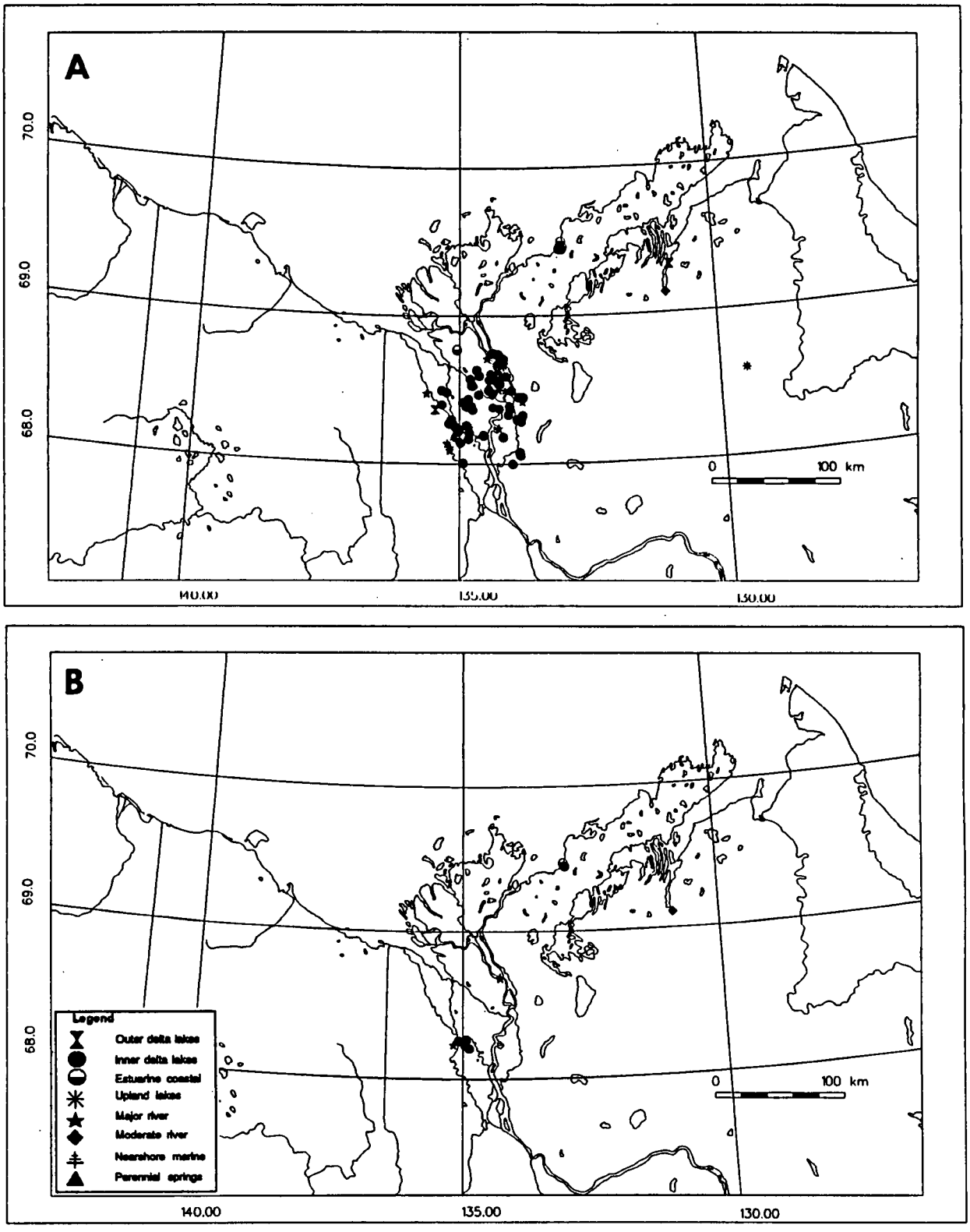
Appendix Table II-6 (cont). Frequencies of catches of inconnu in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (cont.)							
803 A	Aklavik River	68.169	134.739			1	MAJR
865 A	Aklavik River Bank	68.261	134.349			1	MAJR
867 A	Near HIS Fish Camp	68.220	135.091			1	MAJR
A	Peel River	68.230	135.182		2		MAJR
054 I	Mackenzie River	68.500	134.256	1			MAJR
056 I	Reindeer Station	68.680	134.146	1			MAJR
081 I	Mackenzie	68.716	134.476	1			MAJR
280 I	Mackenzie River	68.676	134.287	1	1		MAJR
281 I	Colin Allen's Camp	68.685	134.293	2	3	3	MAJR
301 I	Mackenzie River	68.671	134.159	1			MAJR
303 I	Mackenzie River	68.577	134.213	1			MAJR
312 I	Swimming Point	69.074	134.500			1	MAJR
318 I	Mackenzie	68.545	134.238			1	MAJR
344 I	East Channel	68.419	133.805	1			MAJR
358 I	Mackenzie River	68.237	134.256	1			MAJR
364 I	Mackenzie River	68.500	134.134	1			MAJR
411 I	Mackenzie River	68.295	134.256			1	MAJR
017 T	Kugalik	69.112	130.894		2		MODR
150 T	Kugallik River	69.135	130.969	1	1		MODR
008 A	Joseph's	68.324	135.546			1	ODL
051 A	Joseph's	68.363	135.455	1			ODL
372 I	Devil's Creek	68.858	134.439			1	ODL
516 T	Nallok	69.324	130.875	2		1	EC
020 T	Crossley Lakes	68.595	129.491	1			UL
TOTAL IHD				114	27	46	
LUMD Sheet	Site						
132	16 Kugaluk Inlet	69.350	130.833	X	X		EC
133	16 Kugaluk Inlet	69.167	131.000	X	X	X	EC
137	17 Wood Bay, Nicholson Pen	69.833	128.917	X	X	X	EC
226	50 Shoalwater Bay	68.875	136.250	X	X	X	EC
152	22 Kalinek Channel	68.167	134.167	X	X	X	IDL
170	35 Husky Lake	67.517	135.100	X	X		IDL
171	36 Unnamed Lakes	67.583	135.200	X	X		IDL
174	37 Husky Channel	67.917	135.283	X	X		IDL
181	39 Neyando Lake	67.500	134.453	X	X		IDL
196	37 Husky Channel	68.000	135.333	X	X	X	IDL
197	41 Peel Channel	68.167	135.167	X	X	X	IDL
198	42 Enoch Channel	68.167	135.000	X	X	X	IDL
199	43 Philips Channel	68.000	135.000		X	X	IDL
200	44 Aklavik Channel	68.150	134.650		X	X	IDL
201	45 Raymond Channel	68.333	134.540		X	X	IDL
211	47 Moonshine Lake	67.742	134.750			X	IDL
230	37 Husky Channel	67.917	135.250	X	X		IDL
111	14 Mackenzie River	67.450	133.767			X	MAJR
118	15 Arctic Red River	67.450	133.750			X	MAJR
150	20 Middle Channel	68.500	134.117	X	X	X	MAJR
151	21 East Channel	68.167	133.800	X	X	X	MAJR
188	20 Mackenzie River, Middle Channel	67.917	134.567	X	X	X	MAJR
189	20 Mackenzie River, Middle Channel	68.250	134.417	X	X	X	MAJR

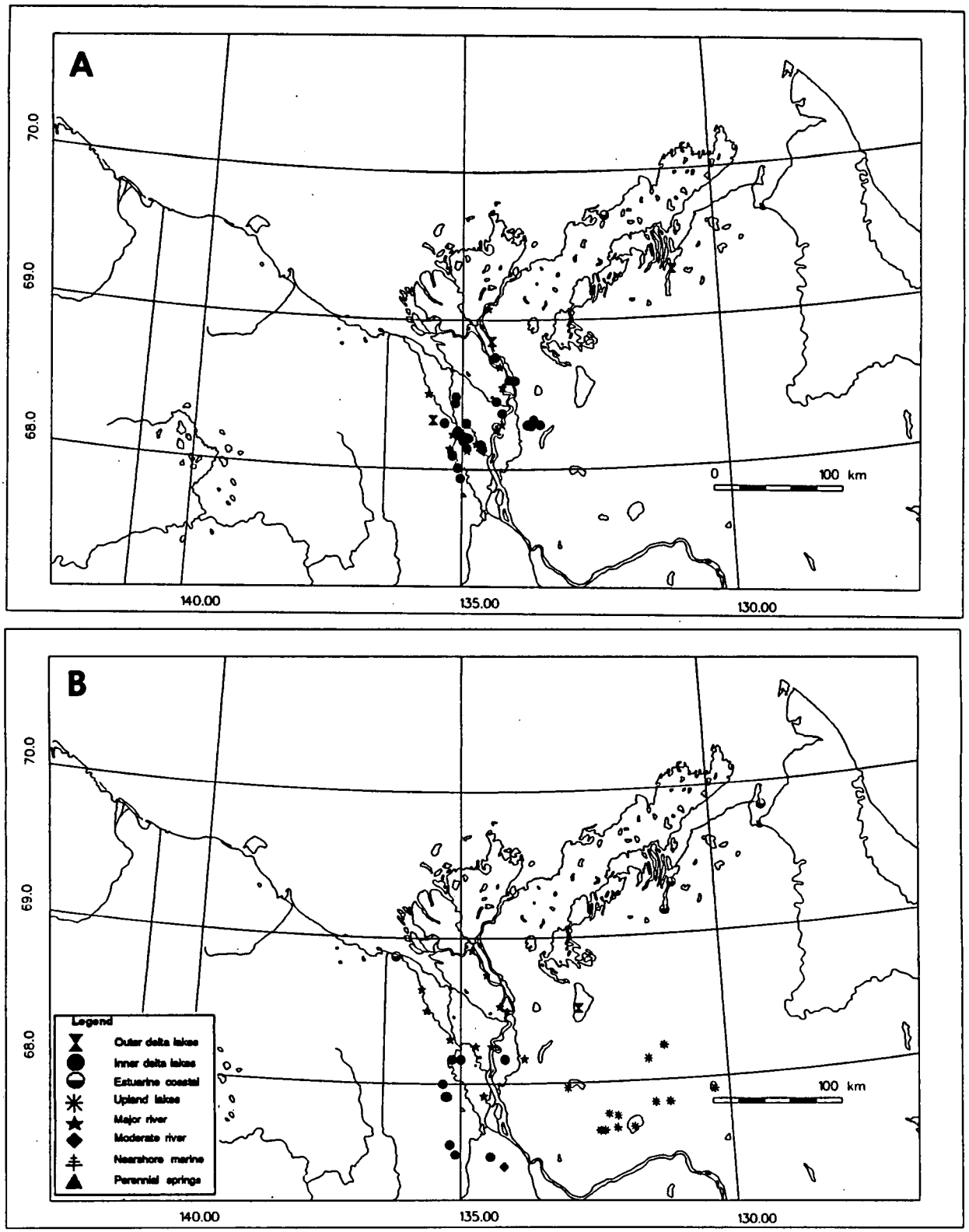
continued ...

Appendix Table II-6 (cont). Frequencies of catches of inconnu in three time periods.

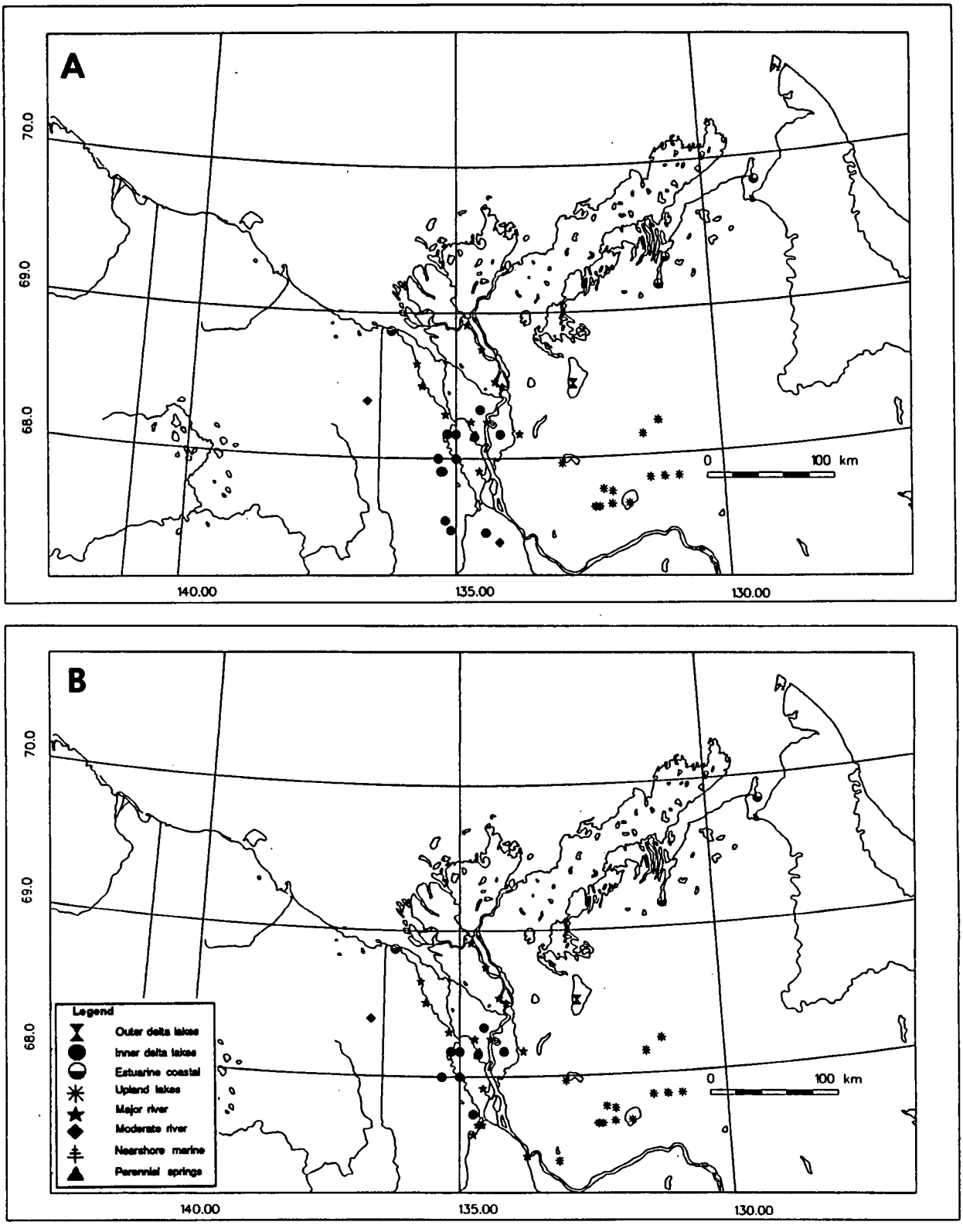
Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
LUMD (cont.)							
190	20 Mackenzie River, Middle Channel	68.533	134.250	X	X	X	MAJR
191	20 Mackenzie River, Middle Channel	68.750	134.500	X	X	X	MAJR
192	20 Mackenzie River, Middle Channel	68.917	134.783	X	X	X	MAJR
193	40 West Channel	68.250	134.717	X	X	X	MAJR
194	40 West Channel	68.500	135.650	X	X	X	MAJR
195	40 West Channel	68.650	135.750	X	X	X	MAJR
208	46 Unnamed Delta Channel	67.667	134.583			X	MAJR
209	46 Peel River	67.667	134.617			X	MAJR
210	46 Dry River	67.667	134.667			X	MAJR
212	48 Peel River	67.600	134.750			X	MAJR
232	40 West Channel	68.300	135.200	X	X	X	MAJR
115	15 Arctic Red River	67.083	133.350			X	MODR
176	38 Frog Creek	67.433	134.200	X	X		MODR
223	49 Fish River	68.392	136.683		X	X	MODR
148	18 Sitigi Lake	68.517	132.750	X	X	X	ODL
103	13 Attoe Lake	67.417	133.167			X	UL
149	19 Hyndman Lake	68.233	131.167	X	X	X	UL
154	23 Sandy Lake	67.783	132.250	X	X	X	UL
155	24 Tregnantchiez Lake	67.767	132.083	X	X	X	UL
156	25 Jiggle Lake (Giggle Lake)	67.683	132.100	X	X	X	UL
157	26 Bathing Lake	67.667	132.417	X	X	X	UL
158	27 Travaillant Lake	67.683	131.783	X	X	X	UL
159	28 Deep Lake	67.667	132.333	X	X	X	UL
160	29 Caribou Lake	67.967	133.000	X	X	X	UL
161	30 Shotgun Lake	68.147	131.467	X	X	X	UL
162	31 Trout Lake	67.850	131.367	X	X	X	UL
163	32 Tenlen Lake	67.850	131.100	X	X	X	UL
164	33 Unnamed Lake, Iroquois River	67.917	130.267	X	X		UL
168	34 Unnamed Lake	67.850	130.833	X	X	X	UL
TOTAL LUMD				39	43	44	



Appendix Figure II-12. Documented locations of overwintering habitat for inconnu in the study area in A. October and November and B. December to April according to IHD.



Appendix Figure II-13. Documented locations of overwintering habitat for inconnu in the study area in A. May and June according to IHD and B. October and November according to LUMD.



Appendix Figure II-14. Documented locations of overwintering habitat for inconnu in the study area in A. December to April and B. May and June according to LUMD.

Appendix Table II-7. Frequencies of catches of lake trout in three time periods.

Area IHD	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
010 A	Martins	68.442	135.122			1	IDL
260 I	Noel Lake	68.545	133.594	1			IDL
803 I	Airport Lake	68.295	133.530			1	IDL
799 A	Peel River	68.230	135.182			1	MAJR
056 I	Reindeer Station	68.680	134.146			1	MAJR
150 T	Kugallik River	69.135	130.969	1			MODR
707 T	Dennis Creek	68.806	132.406			1	MODR
068 I	Husky Lakes - Stanley Point	68.874	132.813			1	ODL
291 I	Wolverine Lakes	68.863	134.183		1		ODL
293 I	Husky Lakes	68.795	133.500		1	1	ODL
304 I	Sitidgi Lake	68.664	132.781		1		ODL
308 I	Sitigi Lakes	68.464	132.733		1		ODL
356 I	Jimmy Lake	68.617	133.594		1	2	ODL
382 I	Kugaluk Lake	69.297	130.806			1	ODL
001 T	Ikenelik	69.045	132.766		2	1	ODL
007 T	Kikogyuak	69.101	132.867			2	ODL
022 T	Husky Lake	69.257	132.574		1	2	ODL
028 T	Grubens Lodge	69.135	132.563		1	2	ODL
034 T	Face Point	68.836	132.894		1	1	ODL
041 T	Stanley Cabin	68.847	132.750		1	1	ODL
042 T	Bonnieville Point	68.851	133.488			1	ODL
044 T	Ikinelik - Husky Lakes	69.079	132.949		1		ODL
045 T	Kukutak	68.946	132.911		1	1	ODL
047 T	Zeman	68.919	132.785			1	ODL
092 T	Husky Lakes	68.793	132.469	1			ODL
126 T	Husky Lake	69.214	132.779			1	ODL
506 T	Husky Lakes	69.250	132.684			1	ODL
011 T	Noah's Island	68.975	133.063			1	ODL
529 T	Zeman	68.953	132.880		1	1	ODL
558 T	Husky Lakes	68.975	133.063		2	1	ODL
562 T	Husky Lakes	69.106	132.911		1		ODL
563 T	Husky Lakes	69.061	132.892		3	2	ODL
565 T	Bonniville Point	68.840	133.425		1	1	ODL
568 T	Husky Lakes	68.942	132.836	3	1	1	ODL
571 T	Zeman	68.987	132.962		1	1	ODL
572 T	Husky Lakes	69.034	133.051		1		ODL
573 T	Zeman	68.993	132.880		2	1	ODL
574 T	Zeman area	68.964	132.975			1	ODL
584 T	Zeman	68.948	132.779		1	2	ODL
585 T	Stanley Cabin	68.872	132.731			1	ODL
590 T	Dennis Creek	68.829	133.625			1	ODL
591 T	Husky Lakes	68.820	133.075			1	ODL
592 T	Dennis Creek	68.829	132.969		1	3	ODL
593 T	Husky Lakes	68.881	132.988		1	2	ODL
594 T	Husky Lakes	68.883	133.613			1	ODL
595 T	South of Stanley Point	68.829	132.713			1	ODL
598 T	Husky Lakes	68.840	132.969			1	ODL
605 T	Husky Lakes	68.881	132.875			1	ODL
615 T	Husky Lakes	68.820	133.544			1	ODL
620 T	Husky Lakes	68.896	133.563			1	ODL
627 T	Husky Lakes	69.079	132.836			2	ODL
628 T	Husky Lakes	68.935	132.734		1	2	ODL

continued...

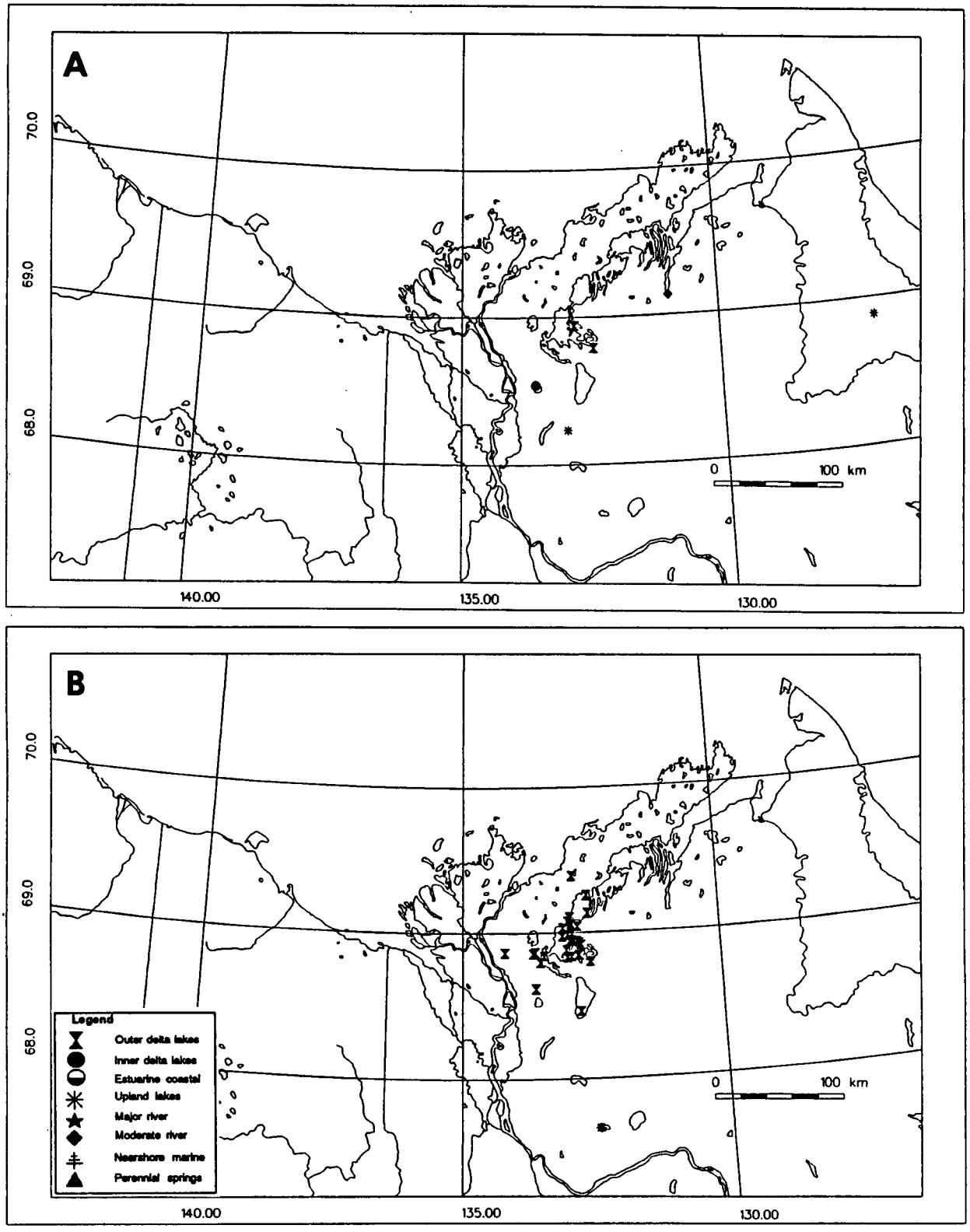
Appendix Table II-7 (cont.). Frequencies of catches of lake trout in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (cont.)							
690 T	Husky Lakes	69.212	132.551		1		ODL
698 T	S. Husky Lakes	68.865	133.594		1	2	ODL
700 T	Husky Lakes	69.056	133.038			1	ODL
703 T	S. Husky Lakes	68.930	133.188			1	ODL
711 T	East of Stanley Point	68.856	133.638		1	1	ODL
718 T	Dennis Creek	68.800	132.525		1	1	ODL
723 T	Tiktaliktok	69.390	132.855		1		ODL
725 T	Five Hundred Lakes	68.917	132.703		1	1	ODL
736 T	Husky Lakes	68.942	133.133			1	ODL
737 T	Zeman Bay	68.957	133.038			1	ODL
297 I	Ed Dillon's Camp	68.232	133.000	1			UL
340 I	Trout Lake	67.840	131.387			1	UL
347 I	Bathing Lake	67.662	132.429		1		UL
348 I	Bathing Lake	67.662	132.455		1		UL
075 T	Rendezvous Lake	68.881	127.000	1			UL
TOTAL IHD				5	25	40	
LUMD Sheet	Site						
152	35 Kalinek Channel	68.167	134.167	X	X	X	IDL
185	47 Dark Water Lake	67.433	134.667	X	X		IDL
186	48 Narrow Lake	67.417	134.625	X	X		IDL
187	49 Deep Water Lake (Nigger Lake)	67.400	134.467		X	X	IDL
100	17 Mackenzie R. at Arctic Red River	67.458	133.750	X	X		MAJR
178	45 James Creek	67.117	135.917			X	MODR
184	46 Rat River	67.692	135.467	X	X		MODR
227	51 Fish River	68.458	136.500	X	X	X	MODR
122	19 Unnamed River & Lakes, Kittigazuit	69.250	133.583	X	X	X	ODL
127	20 Itkrilik Lake	69.583	132.000	X	X	X	ODL
128	21 Husky Lakes (N)	69.383	132.000	X	X	X	ODL
129	22 Husky Lakes (S)	69.000	133.083	X	X	X	ODL
139	24 West Round Lake	68.700	133.933	X	X	X	ODL
140	25 Unnamed Lake -Wolverine Lakes	68.850	134.217	X	X	X	ODL
141	26 Unnamed Lake -Wolverine Lakes	68.883	134.183	X	X	X	ODL
142	27 Unnamed Lake - Peter Lake	68.775	134.183	X	X	X	ODL
143	28 East Round Lake	68.692	133.867	X	X	X	ODL
144	29 Bonnet Plume Lake	68.600	133.800	X	X	X	ODL
145	30 Jimmy Lake	68.633	133.517	X	X	X	ODL
146	31 Unnamed Lake	68.625	133.367	X	X	X	ODL
147	32 Noell Lake	68.533	133.542	X	X	X	ODL
148	33 Sitigi Lake	68.517	132.750	X	X	X	ODL
167	43 Kittigazuit Lakes	69.283	133.500	X	X	X	ODL
205	50 Fish Creek	67.783	136.333			X	PS
85	9 Trout Lake, Kugaluk River	67.850	131.417	X	X	X	UL
86	10 Unnamed Lake, Kugaluk River	67.850	130.833	X	X	X	UL
87	11 Unnamed Lake, Kugaluk River	67.917	131.542	X	X	X	UL
88	12 Unnamed Lake, Kugaluk River	67.917	131.750	X	X	X	UL
91	5 Deep Lake	67.667	132.333	X	X	X	UL
93	13 In and Out Lake	67.542	132.700	X	X	X	UL
94	14 Odizen Lake	67.750	132.750	X	X		UL
95	15 Sunny Lake	67.850	132.667	X	X		UL
96	16 Caribou Lake	67.967	132.917	X	X	X	UL

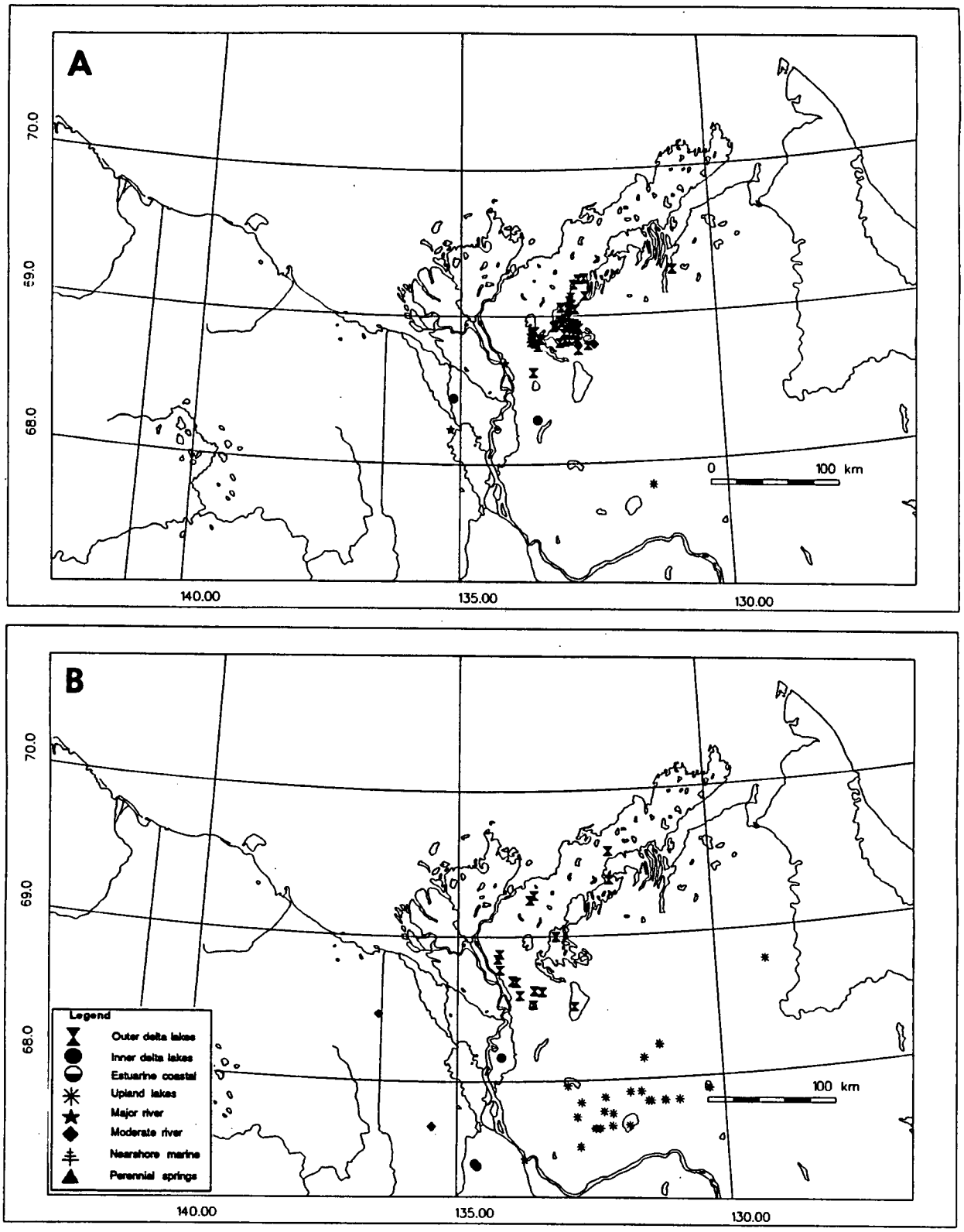
continued...

Appendix Table II-7 (cont.). Frequencies of catches of lake trout in three time periods.

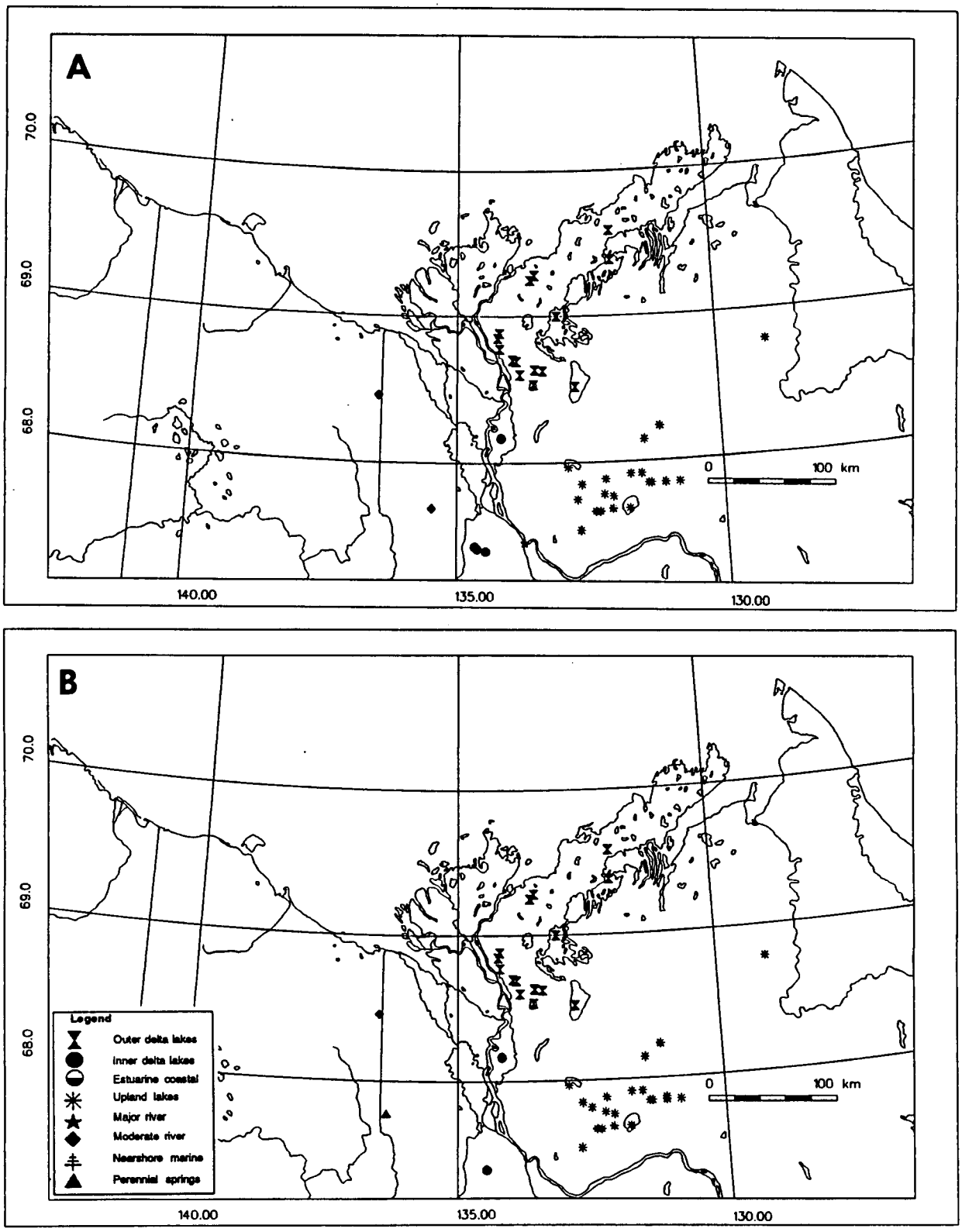
Area		Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
LUMD (cont.)								
106	6	Travaillant Lake	67.683	131.792			X	UL
108	15	Sunny Lake	67.850	132.667			X	UL
110	18	Unnamed Lake	67.817	132.500			X	UL
138	23	Unnamed L., Smoke R headwaters	68.783	129.033	X	X	X	UL
149	34	Hyndman Lake	68.233	131.167	X	X	X	UL
153	36	Wood Bridge Lake	67.883	132.217	X	X	X	UL
154	37	Sandy Lake	67.783	132.250	X	X	X	UL
155	38	Tregnantchiez Lake	67.767	132.083	X	X	X	UL
156	4	Jiggle Lake (Giggle Lake)	67.683	132.100	X	X	X	UL
157	39	Bathing Lake	67.667	132.417	X	X	X	UL
158	6	Travaillant Lake	67.683	131.783	X	X	X	UL
159	5	Deep Lake	67.667	132.333	X	X	X	UL
161	40	Shotgun Lake	68.147	131.467	X	X	X	UL
162	9	Trout Lake	67.850	131.367	X	X	X	UL
163	41	Tenlen Lake	67.850	131.100	X	X	X	UL
164	42	Unnamed Lake, Iroquois River	67.917	130.267	X	X		UL
168	10	Unnamed Lake	67.850	130.833	X	X	X	UL
313	41	Tenlen Lake	67.867	131.100			X	UL
TOTAL LUMD					44	44	44	



Appendix Figure II-15. Documented locations of overwintering habitat for lake trout in the study area in A. October and November and B. December to April according to IHD.



Appendix Figure II-16. Documented locations of overwintering habitat for lake trout in the study area in A. May and June according to IHD and B. October and November according to LUMD.



Appendix Figure II-17. Documented locations of overwintering habitat for lake trout in the study area in A. December to April and B. May and June according to LUMD.

Appendix Table II-8. Frequencies of catches of burbot in three time periods.

Area IHD	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
368 I	Shallow Bay	68.775	135.049	1			EC
013 T	Tuk Harbour	69.471	133.019		1		EC
029 T	Tuk Harbour	69.471	133.019	1	3		EC
582 T	Tuk Harbour	69.451	133.045	2			EC
587 T	Tuk Harbour	69.448	132.987	2	2		EC
005 A	Hudson's Bay Lake	68.210	135.000			1	IDL
006 A	Archie's	68.257	135.085	2			IDL
009 A	Around corner from Knute Lang's	68.306	135.333	1			IDL
010 A	Martin's	68.442	135.122	1		1	IDL
011 A	6 Miles	68.270	135.194	1		1	IDL
015 A	Jackfish Creek	68.210	135.000	1			IDL
019 A	Bush Camp	68.400	135.333	1			IDL
027 A	James Maring's Camp	68.135	134.621	1	1		IDL
028 A	Arthur Lake	68.169	134.830		1		IDL
029 A	Pokiak Channel	68.142	134.909	2			IDL
030 A	Phillip's Channel	68.005	134.933	2			IDL
031 A	Joe Arey's	68.210	134.818	1			IDL
032 A	Martin's	68.266	134.933		1		IDL
034 A	Kendi's	68.180	135.152	1			IDL
037 A	Delta/Running River	68.483	135.121			1	IDL
038 A	Martin's	68.306	134.921	2			IDL
045 A	McLeod's Camp	68.034	135.182	1			IDL
048 A	Hudson Bay Lake	68.203	134.985			1	IDL
050 A	HIS Camp	68.090	135.182			1	IDL
053 A	Archies	68.293	135.152	2	1		IDL
055 A	Hudson Bay	68.180	135.073	1			IDL
056 A	Leland Channel	68.500	135.333	2			IDL
060 A	Jackfish Creek	68.214	135.030	2	2		IDL
065 A	Martins	68.269	134.835	1			IDL
066 A	Hudson Lake	68.144	134.982	1			IDL
067 A	Jackfish Creek	68.230	134.957	1	2		IDL
071 A	Jake Peffers	68.363	134.752	1			IDL
079 A	Archie's	68.250	135.083	1			IDL
090 A	Jake Peffers	68.383	134.874	1			IDL
098 A	Jummy Maring's Camp	68.192	134.546	2			IDL
101 A	Kendi's	68.180	135.152	1			IDL
107 A	Jackfish Creek	68.230	134.957	2			IDL
754 A	Archies	68.259	135.091	1			IDL
762 A	Malcolm Firth's Camo	68.221	134.758	1			IDL
781 A	Leland Channel- Bush Camp	68.484	135.333	1			IDL
789 A	HIS Camp	68.207	134.879			1	IDL
798 A	Jackfish Creek	68.207	134.879	1			IDL
855 A	Martin Creek	68.257	134.866	1	1		IDL
999 A	Jackfish Creek	68.230	134.879	1			IDL
007 I	Big Rock	68.000	134.000	2			IDL
010 I	Axle River	68.169	134.830	1			IDL
014 I	Big Rock	68.056	133.852	2			IDL
017 I	Near Kalinek Channel	68.329	134.076	1			IDL
022 I	John Keevik's Point	68.592	134.000	1			IDL
023 I	John Keevik's Point	68.592	134.000	1			IDL
031 I	Bombadier	68.453	133.878	2			IDL
052 I	Thrasher Channel	68.500	134.445	1			IDL

continued ...

Appendix Table II-8 (cont). Frequencies of catches of burbot in three time periods.

Area	Location	Lat.	Long	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (cont.)							
057 I	Sam Arey's	68.297	133.908	1			IDL
058 I	Jimmy Adams	68.284	133.833	2			IDL
059 I	Joe Adams	68.243	133.833	2			IDL
060 I	John Dillon's	68.367	134.037	1			IDL
064 I	Bombadier	68.516	133.844	1			IDL
065 I	Kisoun Point	68.689	134.244	2	1		IDL
067 I	David Rolands	68.750	134.348	1			IDL
090 I	Napoiyak	68.534	134.744	1			IDL
198 I	John Keeviks	68.592	134.000	2			IDL
250 I	Big Jim's	68.579	134.793	1			IDL
252 I	East Branch	68.079	133.864	1			IDL
255 I	Emgokbik Channel	68.601	134.399	1			IDL
257 I	Kalinek	68.180	134.177	2			IDL
258 I	Sam Arey's	68.327	133.967	2			IDL
260 I	Noel Lake	68.545	133.594	1	1		IDL
263 I	Kasook Channel	68.374	134.250	1			IDL
276 I	Bonbardier	68.516	133.950	2			IDL
282 I	Tuma	68.572	134.348	1			IDL
284 I	Harrison	68.597	134.110	3			IDL
285 I	Luker Channel	68.500	134.009	1			IDL
296 I	Akulik	68.613	134.262	2			IDL
302 I	Crooked Channel	68.574	134.433	1			IDL
354 I	William's Island	68.743	134.256	2			IDL
357 I	Thrasher Channel	68.511	134.439	4			IDL
389 I	Big Jim Channel	68.534	134.768	1			IDL
411 I	Kalinak Channel	68.545	134.256	2			IDL
420 I	Bombardier Channel	68.453	133.878	1			IDL
428 I	Kalinek Channle	68.180	134.061	1			IDL
499 I	Big Lake	68.324	133.803	2			IDL
801 I	Kaglik's Campl	68.586	134.085	1			IDL
814 I	Sam Arey's	68.351	133.896	1			IDL
904 I	David Roland's Camp	68.750	134.366	1			IDL
910 I	Thrasher Channel	68.500	134.092	1			IDL
911 I	Thrasher River	68.714	134.165	1			IDL
920 I	John Dillon Channel	68.392	134.049	1			IDL
921 I	Kalenik Channel	68.324	134.009	1			IDL
926 I	Chicksi Channel	68.667	134.274	1			IDL
943 I	Bessie Irish Creek	68.590	134.018	1			IDL
945 I	Kalenek Channel	68.545	134.232	1			IDL
969 I	Bombardier Channel	68.396	133.939	1			IDL
004 A	West Channel	68.475	135.624	1			MAJR
005 A	Peel River	68.135	135.230	2	1	1	MAJR
006 A	Archie's	68.257	135.085	1			MAJR
047 A	Peel River	68.108	135.176	2		1	MAJR
050 A	Aklavik River	68.259	135.067	2	1		MAJR
056 A	Aklavik River	68.257	134.849	1			MAJR
067 A	Aklavik River	68.230	134.957	1			MAJR
088 A	Peel River	68.135	135.230	1			MAJR
759 A	Jackfish Creek	68.230	134.982	2	1		MAJR
784 A	Aklavik River	68.237	135.012	1		1	MAJR
A	Peel River	68.230	135.182		1		MAJR
A	West Channel	68.500	135.636			1	MAJR

continued ...

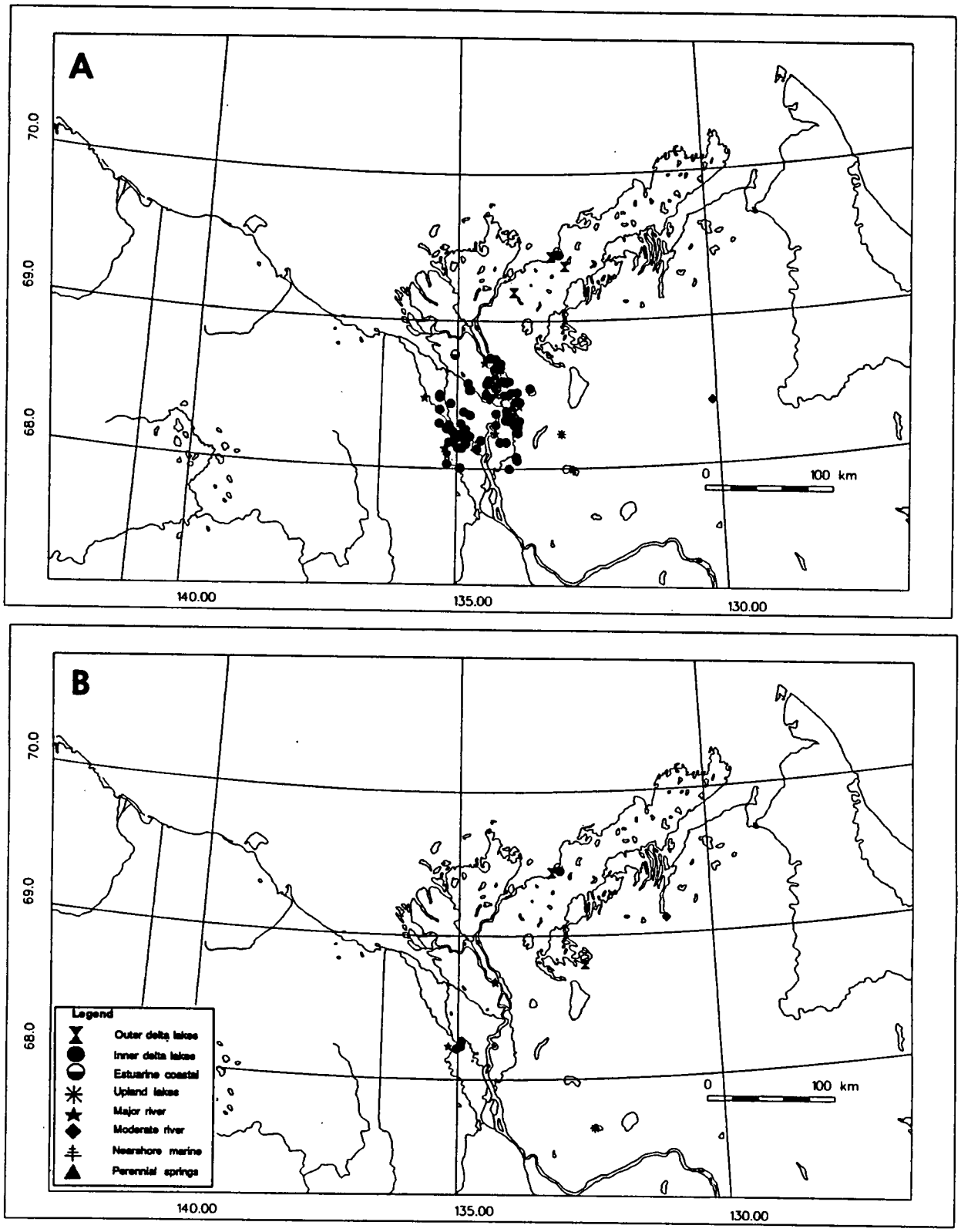
Appendix Table II-8 (cont). Frequencies of catches of burbot in three time periods.

Area	Location	Lat.	Long	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (cont.)							
054 I	Mackenzie River	68.500	134.256	1			MAJR
056 I	Reindeer Station	68.680	134.146	1			MAJR
081 I	Mackenzie	68.716	134.476	2			MAJR
280 I	Mackenzie River	68.676	134.287	1	1		MAJR
281 I	Colin Allen's Camp	68.685	134.293	1	2		MAJR
301 I	Mackenzie River	68.671	134.159	1			MAJR
303 I	Mackenzie River	68.577	134.213	1			MAJR
344 I	East Channel	68.419	133.805	2			MAJR
358 I	Mackenzie River	68.237	134.256	1			MAJR
362 I	Mackenzie	68.498	134.244	1			MAJR
364 I	Mackenzie River	68.500	134.134	1			MAJR
411 I	Mackenzie River	68.295	134.256			1	MAJR
425 I	Mackenzie River	68.574	134.201	1			MAJR
017 T	Kugalik	69.112	130.894		2		MODR
021 T	Wolverine	68.433	130.080	1			MODR
718 T	Dennis Creek	68.800	132.525		1		MODR
304 I	Sitidgi Lake	68.664	132.781		1		ODL
064 T	(Tuk Hanger)	69.435	133.148	1	2		ODL
065 T	Tuk Pen Lakes?	69.192	133.892	1			ODL
069 T	Tuktoyaktuk Airport	69.435	133.148		1		ODL
122 T	Tiktalik	69.369	132.874	2			ODL
061 A	Martin Creek	68.250	134.866	2			UL
061 I	Caribou Lakes	67.989	132.792	1			UL
297 I	Ed Dillon's Camp	68.232	133.000	1			UL
347 I	Bathing Lake	67.662	132.429		1		UL
TOTAL IHD				151	32	12	
LUMD							
Sheet	**Site**						
132	15 Kugaluk Inlet	69.350	130.833	X	X		EC
152	29 Kalinek Channel	68.167	134.167	X	X	X	IDL
170	40 Husky Lake	67.517	135.100	X	X		IDL
171	41 Unnamed Lakes	67.583	135.200	X	X		IDL
196	48 Husky Channel	68.000	135.333	X	X	X	IDL
197	49 Peel Channel	68.167	135.167	X	X	X	IDL
198	50 Enoch Channel	68.167	135.000	X	X	X	IDL
202	51 Taylor Channel	68.400	134.750		X	X	IDL
230	48 Husky Channel	67.917	135.250	X	X		IDL
150	27 Middle Channel	68.500	134.117	X	X	X	MAJR
151	28 East Channel	68.167	133.800	X	X	X	MAJR
179	42 Peel River	67.167	135.000	X	X		MAJR
180	43 Peel River	67.283	134.875	X	X		MAJR
182	44 Peel River	67.617	134.833	X	X		MAJR
183	45 Peel River	67.692	134.567	X	X		MAJR
188	27 Mackenzie River, Middle Channel	67.917	134.567	X	X	X	MAJR
189	27 Mackenzie River, Middle Channel	68.250	134.417	X	X	X	MAJR
190	27 Mackenzie River, Middle Channel	68.533	134.250	X	X	X	MAJR
191	27 Mackenzie River, Middle Channel	68.750	134.500	X	X	X	MAJR
192	27 Mackenzie River, Middle Channel	68.917	134.783	X	X	X	MAJR
193	47 West Channel	68.250	134.717	X	X	X	MAJR
194	47 West Channel	68.500	135.650	X	X	X	MAJR

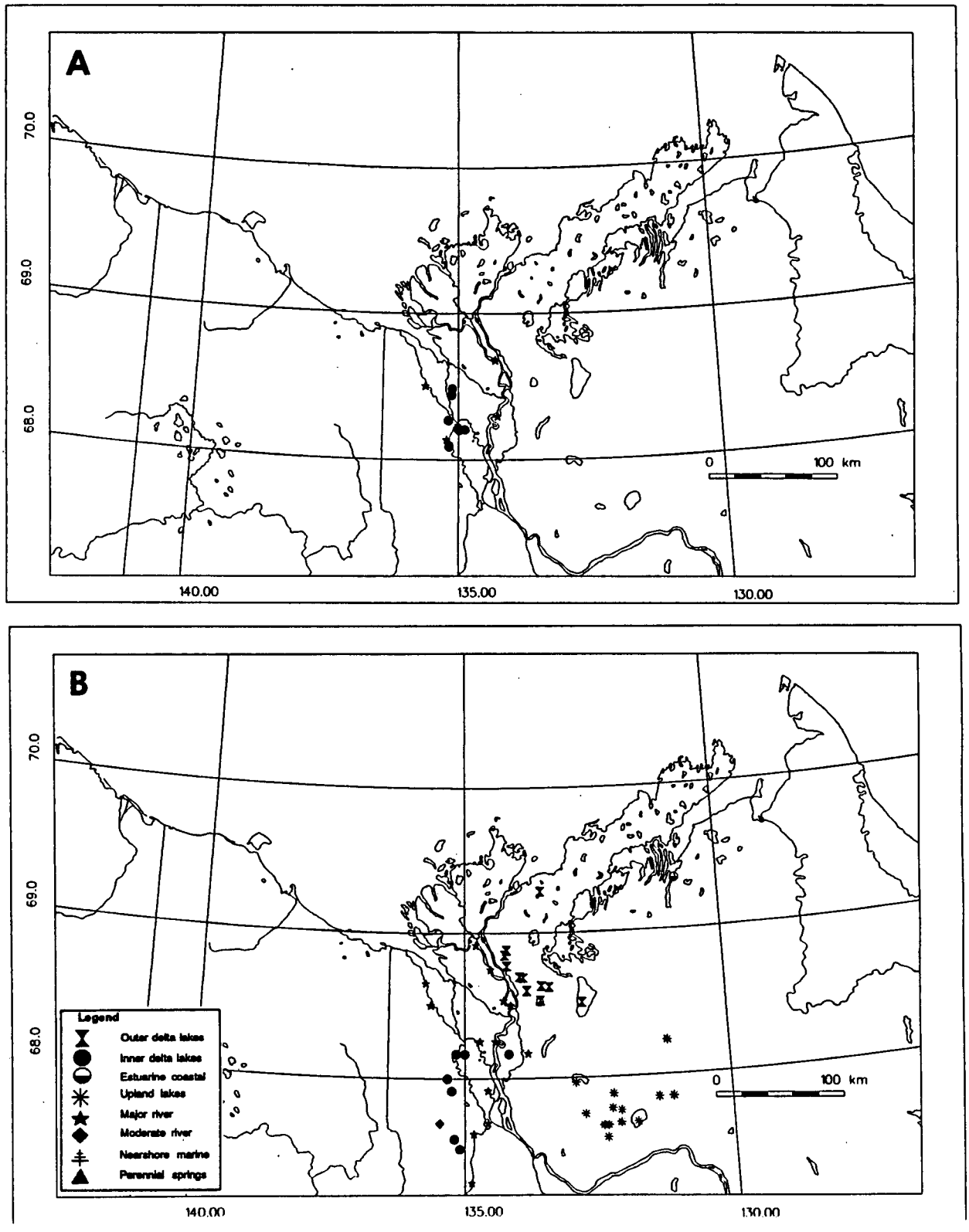
continued ...

Appendix Table II-8 (cont). Frequencies of catches of burbot in three time periods.

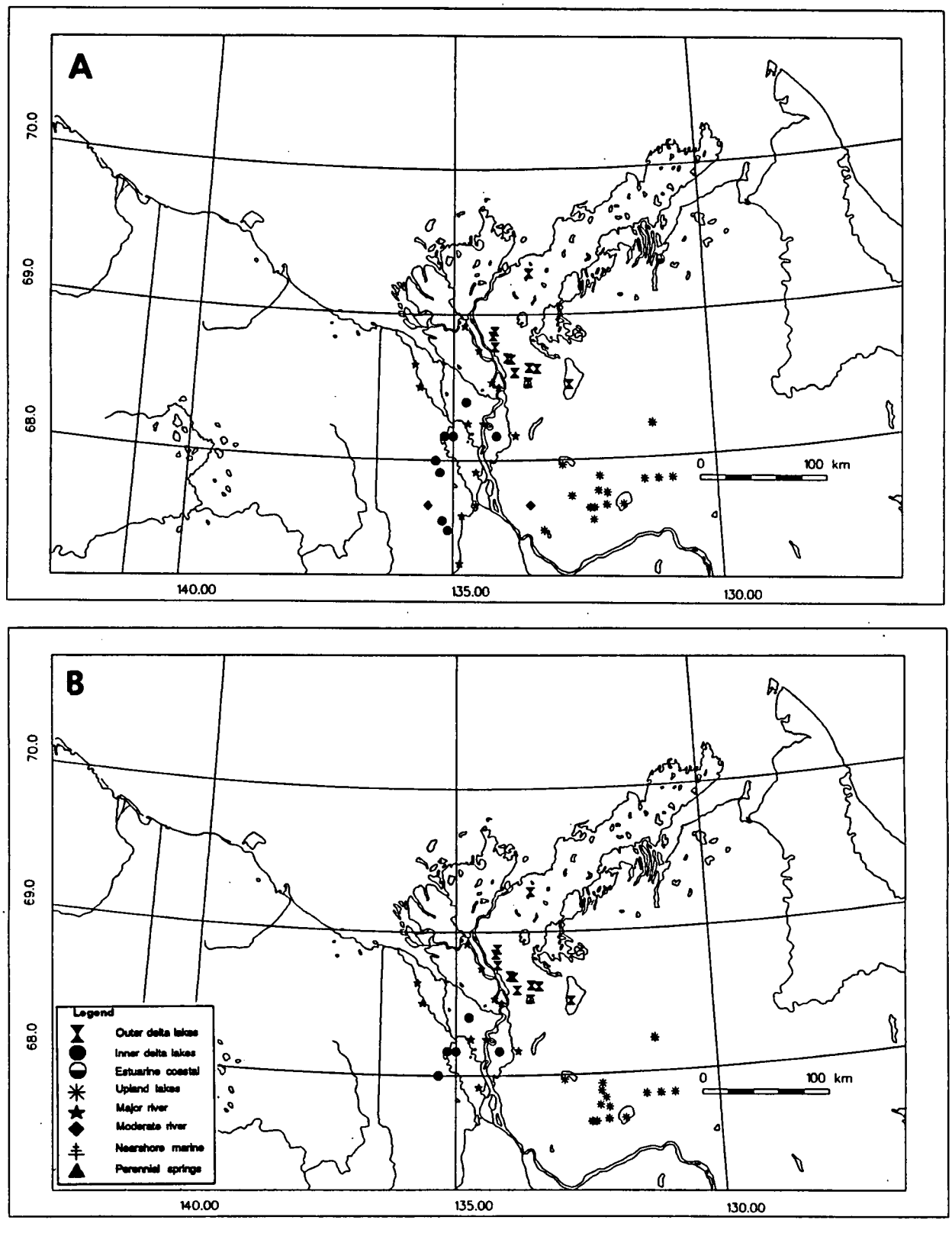
Area		Location	Lat.	Long	Oct–Nov	Dec–Apr	May–Jun	Habitat
LUMD (cont.)								
195	47	West Channel	68.650	135.750	X	X	X	MAJR
98	12	Rengleng River	67.692	133.533		X		MODR
184	46	Rat River	67.692	135.467	X	X		MODR
139	16	West Round Lake	68.700	133.933	X	X	X	ODL
140	17	Unnamed Lake -Wolverine Lakes	68.850	134.217	X	X	X	ODL
141	18	Unnamed Lake -Wolverine Lakes	68.883	134.183	X	X	X	ODL
142	19	Unnamed Lake - Peter Lake	68.775	134.183	X	X	X	ODL
143	20	East Round Lake	68.692	133.867	X	X	X	ODL
144	21	Bonnet Plume Lake	68.600	133.800	X	X	X	ODL
145	22	Jimmy Lake	68.633	133.517	X	X	X	ODL
146	23	Unnamed Lake	68.625	133.367	X	X	X	ODL
147	24	Noell Lake	68.533	133.542	X	X	X	ODL
148	25	Sitigi Lake	68.517	132.750	X	X	X	ODL
167	38	Kittigazuit Lakes	69.283	133.500	X	X	X	ODL
92	8	Loche Lake	67.583	132.350	X	X		UL
94	9	Odizen Lake	67.750	132.750	X	X		UL
96	10	Caribou Lake	67.967	132.917	X	X	X	UL
97	11	Fishing Bear Lake	67.514	133.283		X		UL
116	13	David Lake	67.833	132.143			X	UL
117	14	Fish Trap Lake	67.933	132.200			X	UL
149	26	Hyndman Lake	68.233	131.167	X	X	X	UL
153	30	Wood Bridge Lake	67.883	132.217	X	X	X	UL
154	31	Sandy Lake	67.783	132.250	X	X	X	UL
155	32	Tregnantchiez Lake	67.767	132.083	X	X	X	UL
156	1	Jiggle Lake (Giggle Lake)	67.683	132.100	X	X	X	UL
157	33	Bathing Lake	67.667	132.417	X	X	X	UL
158	34	Travaillant Lake	67.683	131.783	X	X	X	UL
159	35	Deep Lake	67.667	132.333	X	X	X	UL
162	36	Trout Lake	67.850	131.367	X	X	X	UL
163	37	Tenlen Lake	67.850	131.100	X	X	X	UL
168	39	Unnamed Lake	67.850	130.833	X	X	X	UL
TOTAL LUMD					48	51	40	



Appendix Figure II-18. Documented locations of overwintering habitat for burbot in the study area in A. October and November and B. December to April according to IHD.



Appendix Figure II-19. Documented locations of overwintering habitat for burbot in the study area in A. May and June according to IHD and B. October and November according to LUMD.



Appendix Figure II-20. Documented locations of overwintering habitat for burbot in the study area in A. December to April and B. May and June according to LUMD.

Appendix Table II-9. Frequencies of catches of northern pike in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
368 I	Shallow Bay	68.775	135.049	2			EC
005 A	Hudson Bay Lake	68.210	135.000		1		IDL
006 A	Archie's	68.257	135.085	1		2	IDL
009 A	Around corner from Knute Lang's	68.306	135.333	1		1	IDL
010 A	Martins	68.442	135.122	1		1	IDL
027 A	James Maring's Camp	68.135	134.621	1	1	1	IDL
029 A	Pokiak Channel	68.142	134.909	2		1	IDL
030 A	Phillip's Channel	68.005	134.933	2			IDL
031 A	Joe Arey's	68.210	134.818	1		1	IDL
033 A	Peter Arey	68.210	134.891			2	IDL
038 A	Martin's	68.306	134.921	2			IDL
040 A	Charlies' Camp	67.942	135.029			1	IDL
042 A	Hudson Bay Lake	68.189	134.982			1	IDL
048 A	Hudson Bay Lake	68.203	134.985			1	IDL
049 A	Martha Dick	68.327	135.224	1			IDL
050 A	HIS Camp	68.090	135.182			1	IDL
053 A	Archie's	68.293	135.152	2			IDL
055 A	Hudson Bay	68.180	135.073	1	1		IDL
056 A	Leland Channel	68.500	135.333	2			IDL
059 A	Taylor Channel	68.374	134.830		1		IDL
060 A	Jackfish Creek	68.214	135.030	2			IDL
065 A	Martins	68.269	134.835	1			IDL
066 A	Hudson Lake	68.144	134.982	1			IDL
067 A	Jackfish Creek	68.230	134.957		1		IDL
069 A	Across Knute Lang's	68.032	135.083	1			IDL
071 A	Jake Peffers	68.363	134.752	1			IDL
079 A	Archie's	68.250	135.083	1			IDL
090 A	Jake Peffers	68.383	134.874	1	1		IDL
098 A	Jimmy Maring's Camp	68.192	134.546	2			IDL
101 A	Kendi's	68.180	135.152	1			IDL
107 A	Jackfish Creek	68.230	134.957		1		IDL
761 A	Below Knut Lang's	68.005	135.000			1	IDL
762 A	Malcolm Firth's Camp	68.221	134.758	1			IDL
789 A	HIS Camp	68.207	134.879	1		1	IDL
794 A	HIS Camp	68.164	134.649			1	IDL
798 A	Jackfish Creek	68.207	134.879	1	1		IDL
830 A	Taylor's HIS Camp	68.487	135.000			1	IDL
855 A	Martin Creek	68.257	134.866	1			IDL
999 A	Jackfish Creek	68.230	134.879	1			IDL
007 I	Big Rock	68.000	134.000	2			IDL
010 I	Axle River	68.169	134.830	1			IDL
014 I	Big Rock	68.056	133.852	1			IDL
017 I	Near Kalinek Channel	68.329	134.076	1			IDL
052 I	Thrasher Channel	68.500	134.445	1			IDL
055 I	Kaomayuk 1	68.520	134.213		1		IDL
057 I	Sam Arey's	68.297	133.908	1			IDL
058 I	Jimmy Adams	68.284	133.833	2			IDL
059 I	Joe Adams	68.243	133.833	2			IDL
060 I	John Dillon's	68.367	134.037	1			IDL
063 I	Amagovik	68.613	134.403	1			IDL
064 I	Bombadier	68.516	133.844		1		IDL
065 I	Kisoun Point	68.689	134.244	1			IDL

continued ...

Appendix Table II-9 (cont.). Frequencies of catches of northern pike in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (cont.)							
067 I	David Rolands	68.750	134.348	2			IDL
069 I	Navy Creek	68.453	133.793	1			IDL
090 I	Napoiyak	68.534	134.744	1			IDL
198 I	John Keeviks	68.592	134.000	2		1	IDL
250 I	Big Jim's	68.579	134.793	1			IDL
251 I	David Roland's Camp	68.750	134.378			2	IDL
257 I	Kalinek	68.180	134.177	2			IDL
258 I	Sam Arey's	68.327	133.967	2			IDL
260 I	Noel Lake	68.545	133.594	1			IDL
276 I	Bombardier	68.516	133.950	1			IDL
282 I	Tuma	68.572	134.348	1			IDL
284 I	Harrison	68.597	134.110	2		1	IDL
285 I	Luker Channel	68.500	134.009	1			IDL
296 I	Akulik	68.613	134.262	2			IDL
302 I	Crooked Channel	68.574	134.433	1			IDL
334 I	Barge Lake	68.288	133.700			1	IDL
339 I	Above Jimmy Adams	68.295	133.773			1	IDL
354 I	William's Island	68.743	134.256	1			IDL
357 I	Thrasher Channel	68.511	134.439	4			IDL
389 I	Big Jim Channel	68.534	134.768	1			IDL
411 I	Kalinek Channel	68.545	134.256	2			IDL
420 I	Bombardier Channel	68.453	133.878	1			IDL
499 I	Big Lake	68.324	133.803	1			IDL
801 I	Kaglik's Camp	68.586	134.085		1		IDL
802 I	Schooner Channel	68.444	134.531		1	1	IDL
920 I	John Dillon Channel	68.392	134.049	1			IDL
945 I	Kalenek Channel	68.545	134.232	2			IDL
003 A	Peel River	68.453	135.636		1		MAJR
004 A	West Channel	68.475	135.624	2			MAJR
005 A	Peel River	68.135	135.230	2	1		MAJR
006 A	Archie's	68.257	135.085	1			MAJR
007 A	Aklavik River	68.261	134.349	1			MAJR
020 A	West Channel	68.220	135.091	1			MAJR
029 A	Peel/Aklavik River	68.124	134.909			1	MAJR
047 A	Peel River	68.108	135.176	2		1	MAJR
050 A	Aklavik River	68.259	135.067	2	1		MAJR
056 A	Aklavik River	68.257	134.849	2	1		MAJR
067 A	Aklavik River	68.230	134.957	1			MAJR
078 A	West Channel	68.500	135.636	1			MAJR
088 A	Peel River	68.135	135.230	1		1	MAJR
097 A	Aklavik River	68.261	134.349	1			MAJR
104 A	Aklavik River	68.261	134.349	1			MAJR
759 A	Jackfish Creek	68.230	134.982	2	1		MAJR
784 A	Aklavik River	68.237	135.012	1			MAJR
799 A	Peel River	68.230	135.182			1	MAJR
865 A	Aklavik River Bank	68.261	134.349			1	MAJR
867 A	Near HIS Fish Camp	68.220	135.091			1	MAJR
A	Peel River	68.230	135.182		1		MAJR
A	West Channel	68.500	135.636			1	MAJR
056 I	Reindeer Station	68.680	134.146	1		1	MAJR
081 I	Mackenzie	68.716	134.476	2			MAJR
280 I	Mackenzie River	68.676	134.287	1	1		MAJR

continued ...

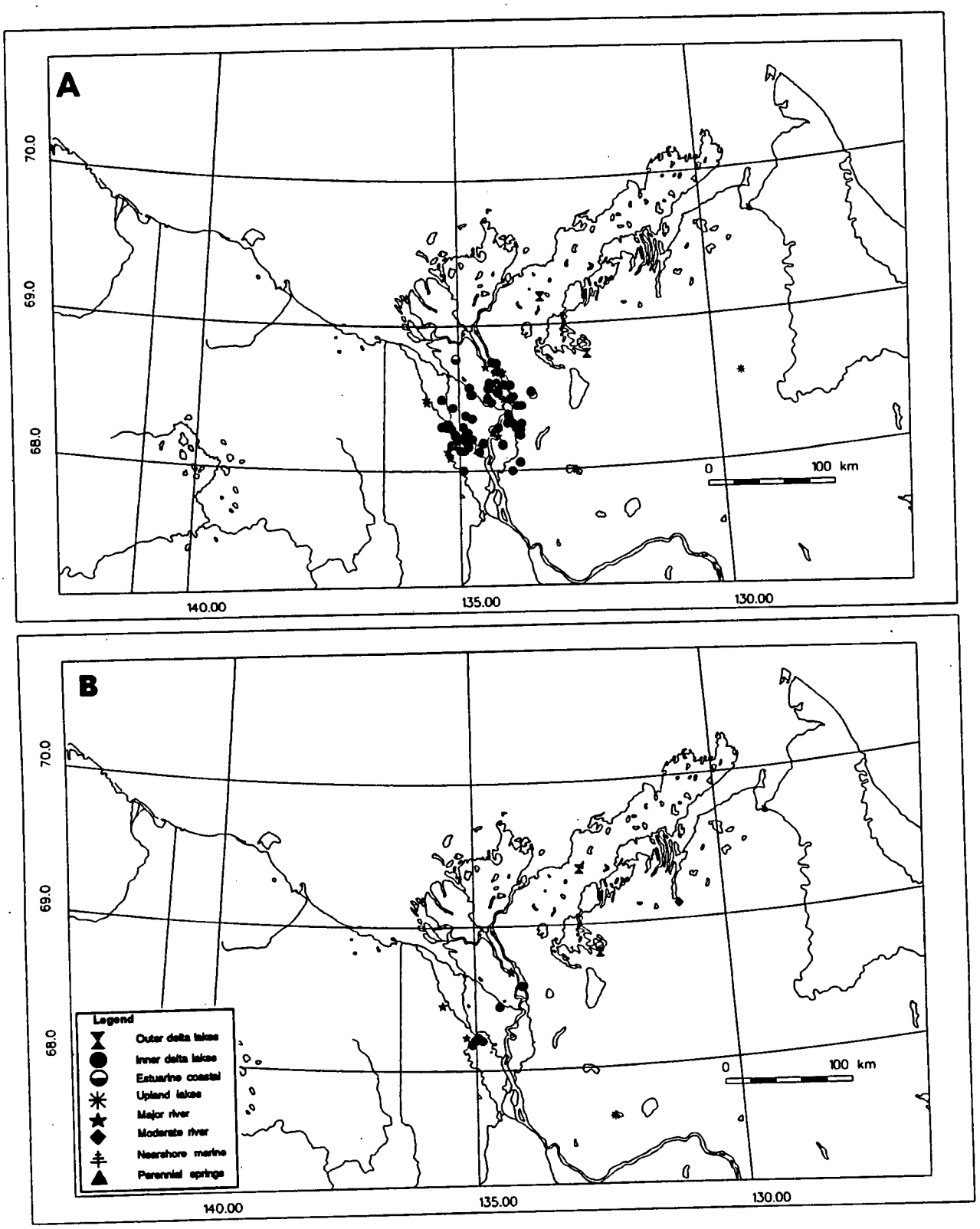
Appendix Table II-9 (cont.). Frequencies of catches of northern pike in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD (cont.)							
281 I	Colin Allen's Camp	68.685	134.293	2	3	2	MAJR
301 I	Mackenzie River	68.671	134.159	1			MAJR
303 I	Mackenzie River	68.577	134.213	1			MAJR
312 I	Swimming Point	69.074	134.500			1	MAJR
318 I	Mackenzie	68.545	134.238			1	MAJR
358 I	Mackenzie River	68.237	134.256	1			MAJR
364 I	Mackenzie River	68.500	134.134	1			MAJR
411 I	Mackenzie River	68.295	134.256			1	MAJR
425 I	Mackenzie River	68.574	134.201	1			MAJR
210 I	Campbell Creek	68.113	133.500			1	MODR
017 T	Kugalik	69.112	130.894		1		MODR
718 T	Dennis Creek	68.800	132.525		1		MODR
382 I	Kugalik Lake	69.297	130.806			1	ODL
037 T	Ikalusiak	69.192	133.348	1			ODL
092 T	Husky Lakes	68.793	132.469	1			ODL
723 T	Tiktaliktok	69.390	132.855		1		ODL
061 A	Martin Creek	68.250	134.866	1			UL
061 I	Caribou Lakes	67.989	132.792	1			UL
347 I	Bathing Lake	67.662	132.429		1		UL
020 T	Crossley Lakes	68.595	129.491	1			UL
TOTAL IHD				119	26	39	
LUMD							
Sheet	Site						
152	44 Kalinek Channel	68.167	134.167	X	X	X	IDL
170	50 Husky Lake	67.517	135.100	X	X		IDL
171	51 Unnamed Lakes	67.583	135.200	X	X		IDL
172	52 Unnamed Lakes (Frog Creek)	67.567	134.617	X	X		IDL
196	54 Husky Channel	68.000	135.333	X	X	X	IDL
197	55 Peel Channel	68.167	135.167	X	X	X	IDL
198	56 Enoch Channel	68.167	135.000	X	X	X	IDL
206	50 Husky Lake (Jackfish L. #1)	67.500	135.133			X	IDL
207	57 Jackfish Lake #2	67.517	134.950			X	IDL
230	54 Husky Channel	67.917	135.250	X	X		IDL
150	42 Middle Channel	68.500	134.117	X	X	X	MAJR
151	43 East Channel	68.167	133.800	X	X	X	MAJR
188	42 Mackenzie River, Middle Channel	67.917	134.567	X	X	X	MAJR
189	42 Mackenzie River, Middle Channel	68.250	134.417	X	X	X	MAJR
190	42 Mackenzie River, Middle Channel	68.533	134.250	X	X	X	MAJR
191	42 Mackenzie River, Middle Channel	68.750	134.500	X	X	X	MAJR
192	42 Mackenzie River, Middle Channel	68.917	134.783	X	X	X	MAJR
193	53 West Channel	68.250	134.717	X	X	X	MAJR
194	53 West Channel	68.500	135.650	X	X	X	MAJR
195	53 West Channel	68.650	135.750	X	X	X	MAJR
98	22 Rengleng River	67.692	133.533		X		MODR
139	31 West Round Lake	68.700	133.933	X	X	X	ODL
140	32 Unnamed Lake -Wolverine Lakes	68.850	134.217	X	X	X	ODL
141	33 Unnamed Lake -Wolverine Lakes	68.883	134.183	X	X	X	ODL
142	34 Unnamed Lake - Peter Lake	68.775	134.183	X	X	X	ODL
143	35 East Round Lake	68.692	133.867	X	X	X	ODL
144	36 Bonnet Plume Lake	68.600	133.800	X	X	X	ODL

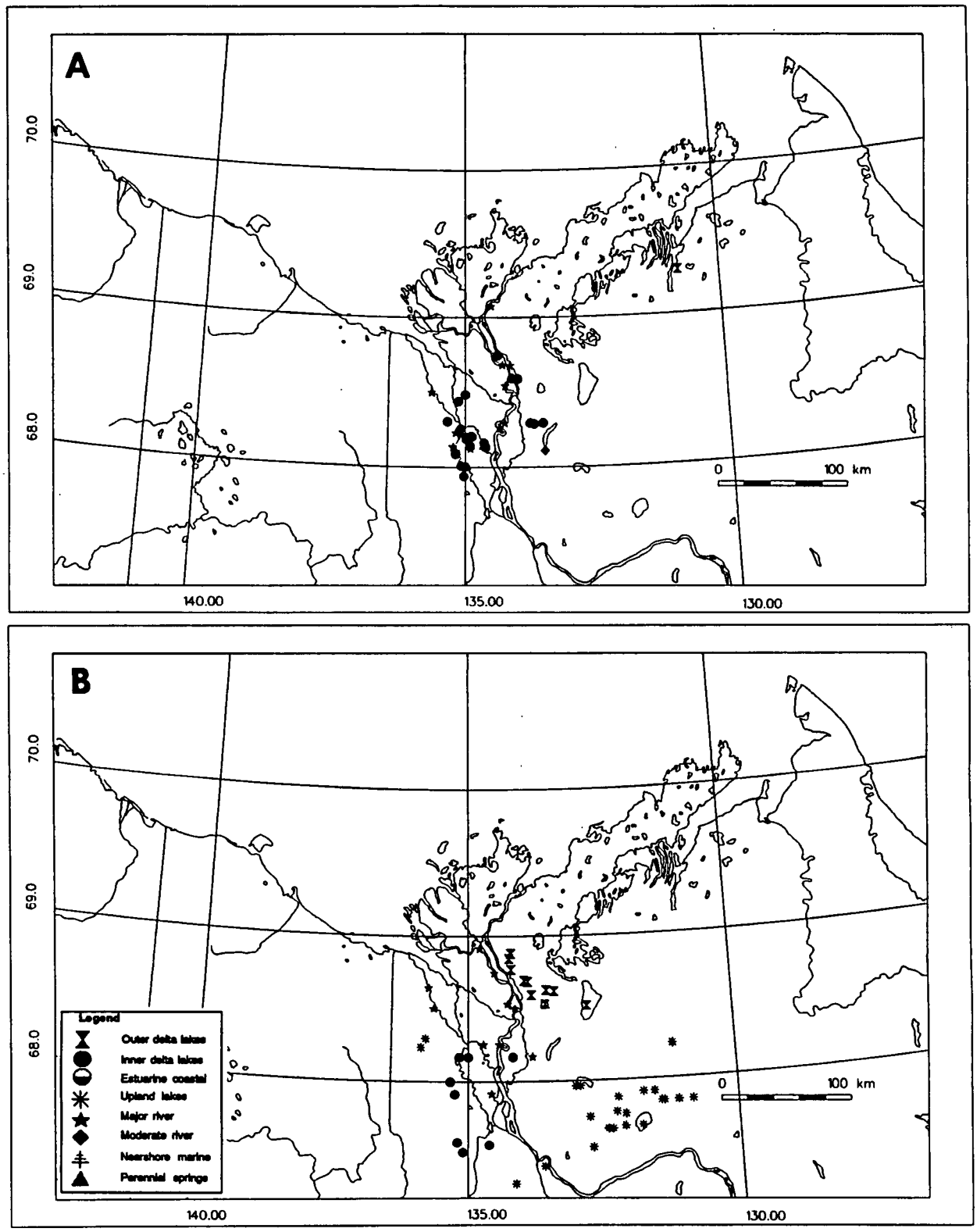
continued ...

Appendix Table II-9 (cont.). Frequencies of catches of northern pike in three time periods.

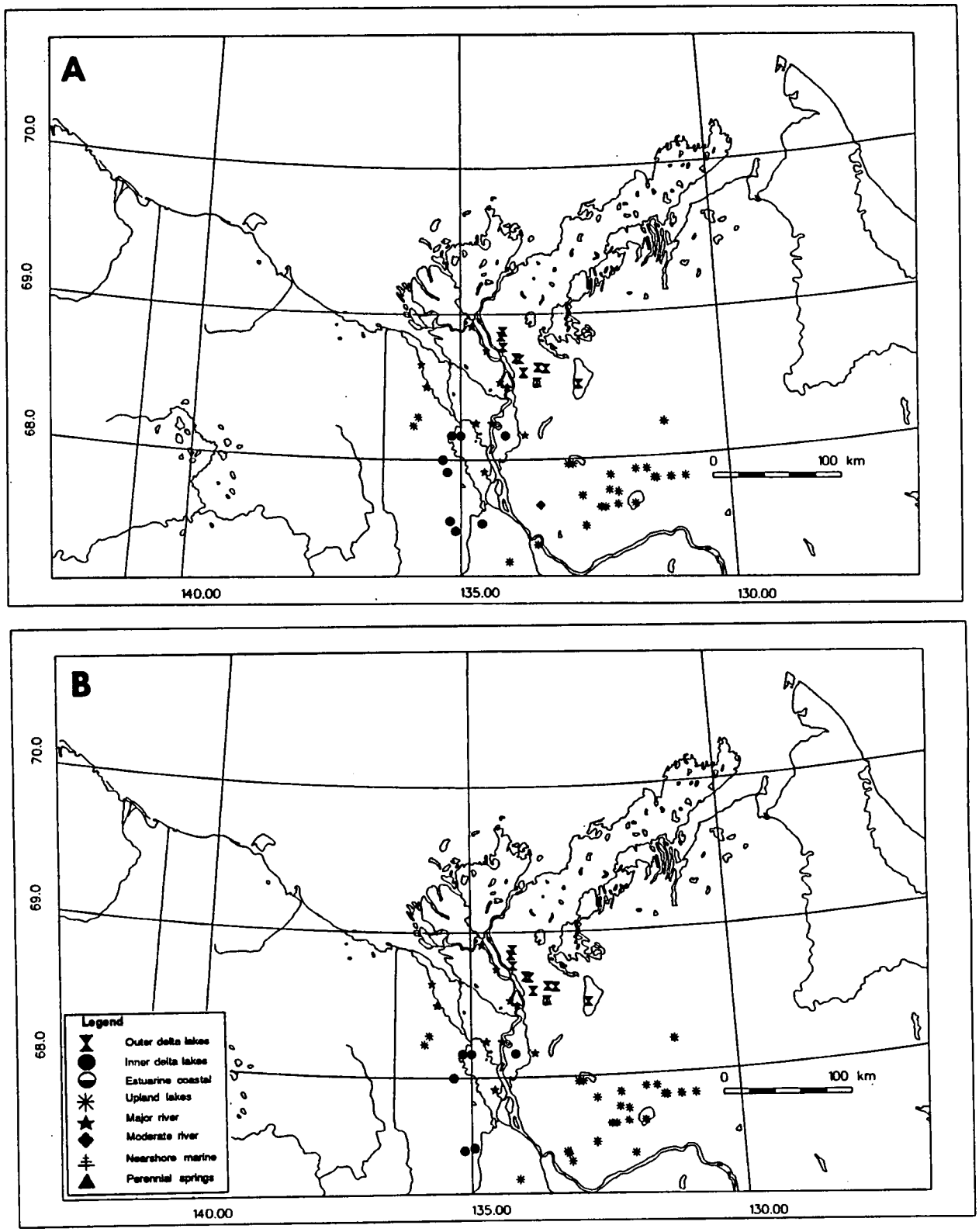
Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
LUMD (cont.)							
145	37 Jimmy Lake	68.633	133.517	X	X	X	ODL
146	38 Unnamed Lake	68.625	133.367	X	X	X	ODL
147	39 Noell Lake	68.533	133.542	X	X	X	ODL
148	40 Sitigi Lake	68.517	132.750	X	X	X	ODL
85	15 Trout Lake, Kugaluk River	67.850	131.417	X	X	X	UL
86	16 Unnamed Lake, Kugaluk River	67.850	130.833	X	X	X	UL
87	17 Unnamed Lake, Kugaluk River	67.917	131.542	X	X	X	UL
88	18 Unnamed Lake, Kugaluk River	67.917	131.750	X	X	X	UL
93	19 In and Out Lake	67.542	132.700	X	X	X	UL
94	20 Odizen Lake	67.750	132.750	X	X		UL
96	21 Caribou Lake	67.967	132.917	X	X	X	UL
99	23 Clearwater Lake	67.417	133.600	X	X		UL
101	24 Nerejo Lake	67.300	134.125	X	X	X	UL
103	25 Attoe Lake	67.417	133.167			X	UL
104	26 Whirl lake	67.467	133.217			X	UL
105	27 Fishing Bear Lake	67.483	133.250			X	UL
106	28 Travaillant Lake	67.683	131.792			X	UL
108	29 Sunny Lake	67.850	132.667			X	UL
112	30 Rat Lake (Big Lake)	67.458	132.000			X	UL
149	41 Hyndman Lake	68.233	131.167	X	X	X	UL
153	45 Wood Bridge Lake	67.883	132.217	X	X	X	UL
154	46 Sandy Lake	67.783	132.250	X	X	X	UL
155	47 Tregnantchiez Lake	67.767	132.083	X	X	X	UL
156	3 Jiggle Lake (Giggle Lake)	67.683	132.100	X	X	X	UL
157	48 Bathing Lake	67.667	132.417	X	X	X	UL
158	28 Travaillant Lake	67.683	131.783	X	X	X	UL
159	4 Deep Lake	67.667	132.333	X	X	X	UL
160	21 Caribou Lake	67.967	133.000	X	X	X	UL
162	15 Trout Lake	67.850	131.367	X	X	X	UL
163	49 Tenlen Lake	67.850	131.100	X	X	X	UL
168	16 Unnamed Lake	67.850	130.833	X	X	X	UL
224	58 Canoe Lake	68.233	135.883	X	X	X	UL
225	59 Divide Lake	68.292	135.800	X	X	X	UL
TOTAL LUMD				51	52	53	



Appendix Figure II-21. Documented locations of overwintering habitat for northern pike in the study area in A. October and November and B. December to April according to IHD.



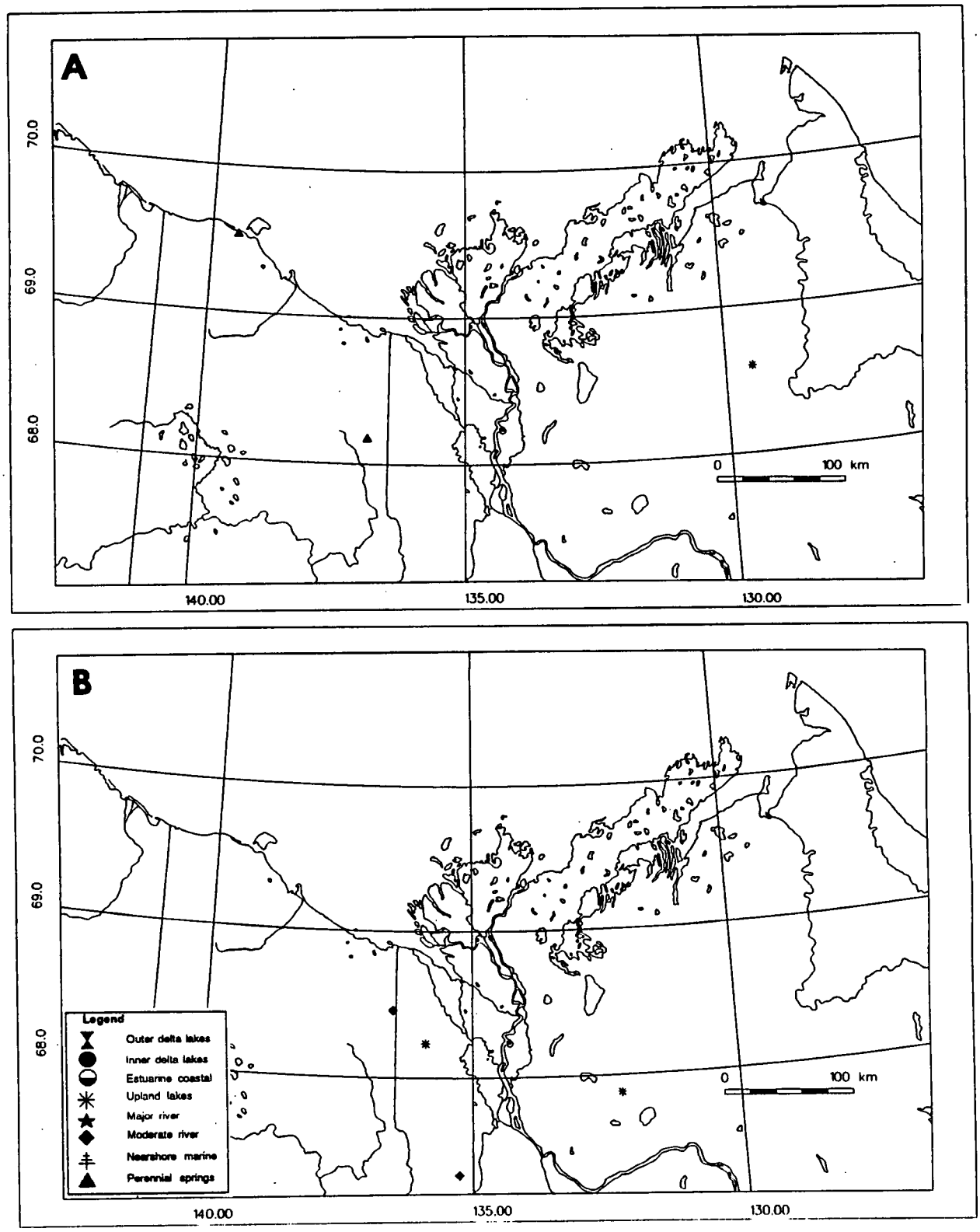
Appendix Figure II-22. Documented locations of overwintering habitat for northern pike in the study area in A. May and June according to IHD and B. October and November according to LUMD.



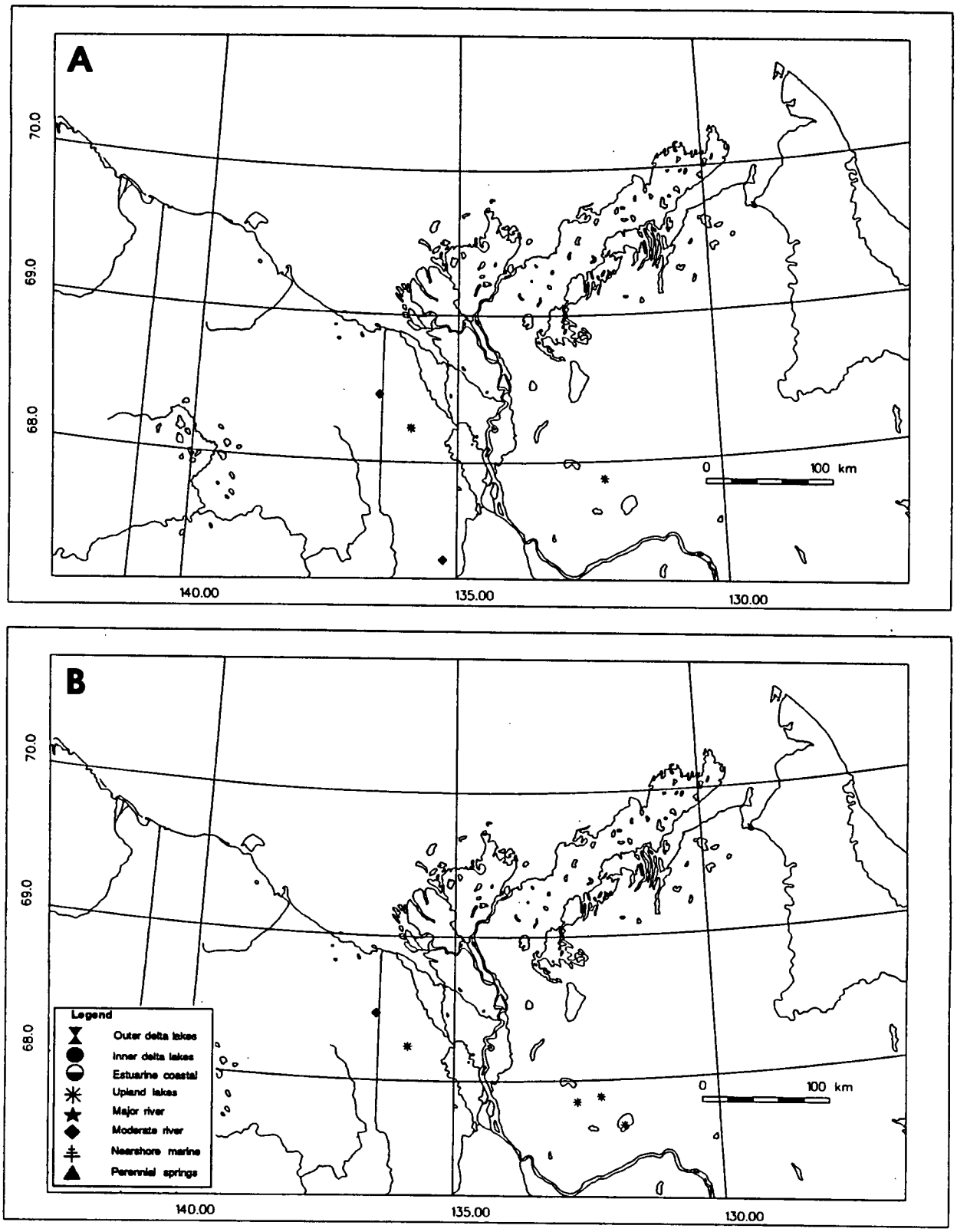
Appendix Figure II-23. Documented locations of overwintering habitat for northern pike in the study area in A. December to April and B. May and June according to LUMD.

Appendix Table II-10. Frequencies of catches of Arctic grayling in three time periods.

Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
020 T	Crossley Lakes	68.595	129.491	1			UL
092 A	Fish Hole	68.180	136.825	1			PS
064 A	Firth River	69.542	139.483	1			PS
TOTAL IHD				3	0	0	
LUMD							
Sheet	Site						
173	18 James Creek	67.117	135.917	X	X		MODR
175	19 Stony Creek	67.333	135.250	X	X		MODR
178	18 James Creek	67.117	135.917			X	MODR
227	20 Fish River	68.458	136.500	X	X	X	MODR
106	4 Travaillant Lake	67.683	131.792			X	UL
108	6 Sunny Lake	67.850	132.667			X	UL
153	7 Wood Bridge Lake	67.883	132.217	X	X	X	UL
224	27 Canoe Lake	68.233	135.883	X	X	X	UL
TOTAL LUMD				5	5	6	



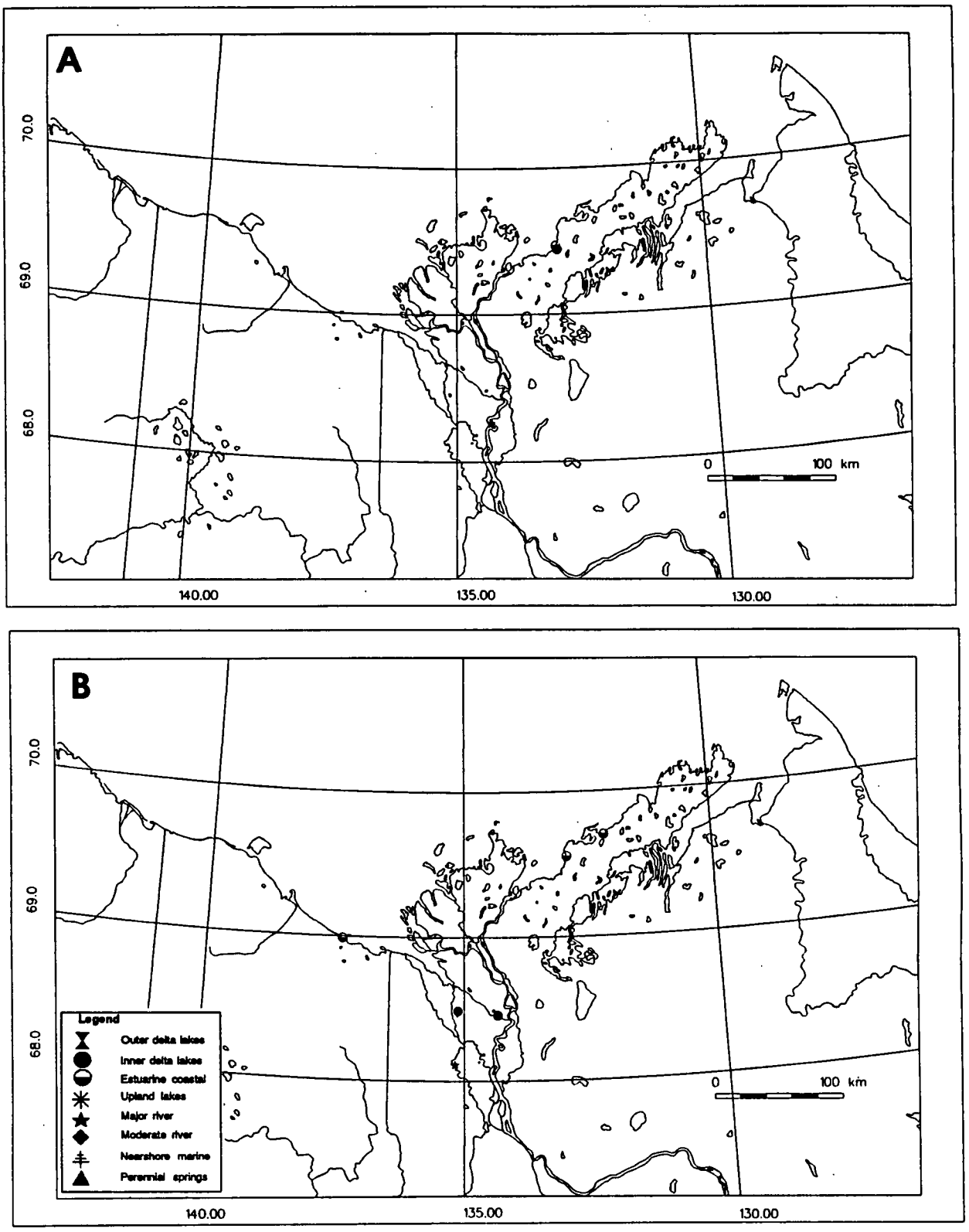
Appendix Figure II-24. Documented locations of overwintering habitat for Arctic grayling in the study area in October and November A. according to IHD and B. according to LUMD.



Appendix Figure II-25. Documented locations of overwintering habitat for in the study area in A. December to April and B. May and June according to LUMD.

Appendix Table II-11. Frequencies of catches of Pacific herring in three time periods.

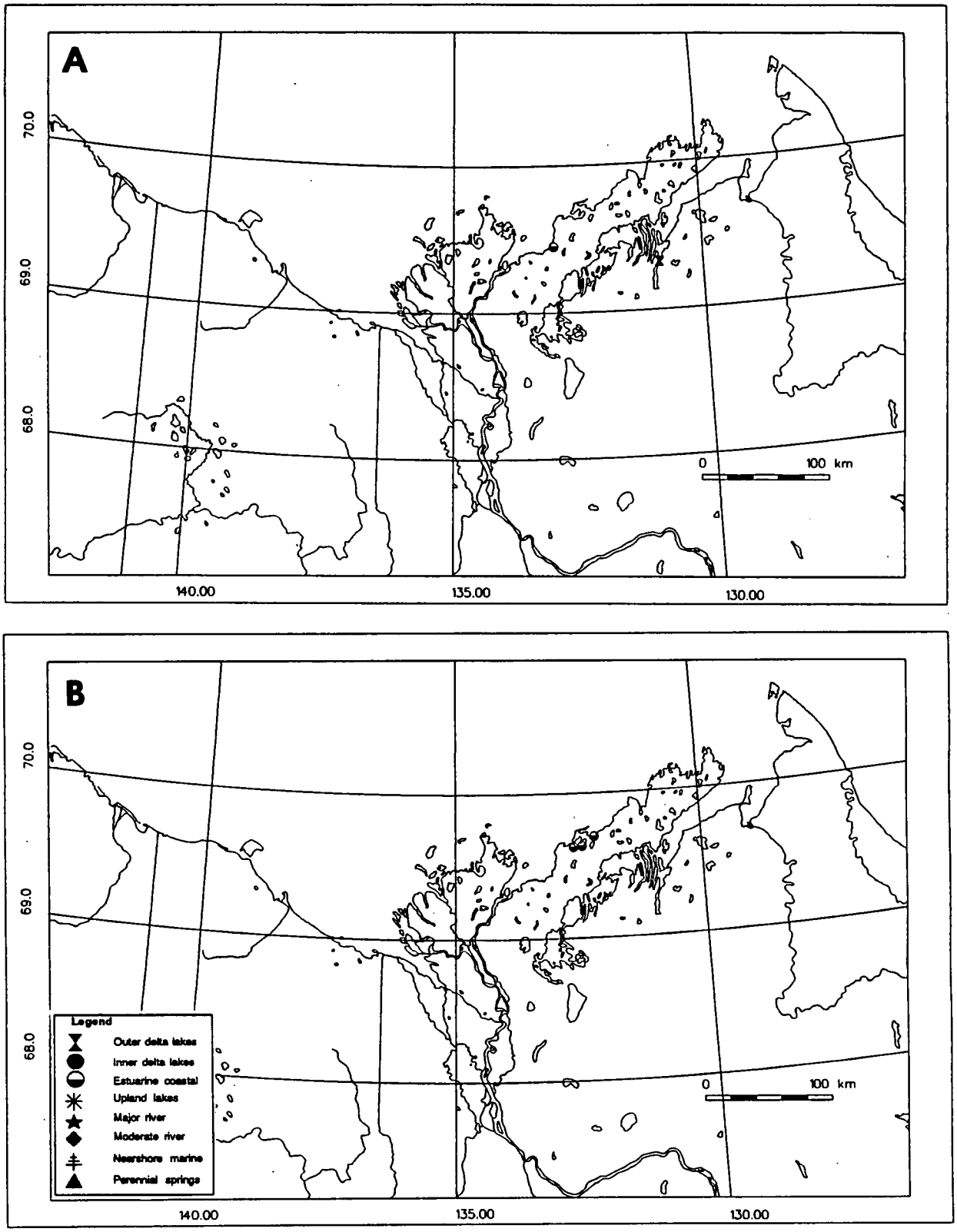
Area	Location	Lat.	Long.	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
814 A	Shingle Point	68.989	137.367			1	EC
029 T	Tuk Harbour	69.471	133.019	2			EC
031 T	Galiptat	69.556	132.938			1	EC
587 T	Tuk Harbour	69.448	132.987	3	1		EC
610 T	Hutchinson Bay	69.701	132.169			1	EC
016 A	Andrew Joe's Camp (Shingle Point)	68.453	134.355			1	IDL
037 A	Delta/Running River	68.483	135.121			1	IDL
024 A	Aklavik River	68.261	134.349	1			MAJR
047 A	Peel River	68.108	135.176			1	MAJR
TOTAL IHD				6	1	6	



Appendix Figure II-26. Documented locations of overwintering habitat for Pacific herring in the study area in A. October and November and B. May and June according to IHD.

Appendix Table II-12. Frequencies of catches of saffron cod in three time periods.

Area	Location	Lat.	Long	Oct–Nov	Dec–Apr	May–Jun	Habitat
IHD							
008 T	Kugyuktok	69.635	132.422			1	EC
113 T	Kokyuktok	69.628	132.594			1	EC
587 T	Tuk Harbour	69.448	132.987	1			EC
610 T	Hutchinson Bay	69.701	132.169			2	EC
516 T	Nallok	69.324	130.875	1			ODL
TOTAL IHD				1	0	4	



Appendix Figure II-28. Documented locations of overwintering habitat for saffron cod in the study area in A. October and November and B. May and June according to IHD.

This publication is printed on paper containing recovered waste.