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RELATIVE ABUNDANCE, SPATIAL AND TEMPORAL DISTRIBUTION, AGE AND GROWTH OF FISHES IN TUKTOYAKTUK HARBOUR, N.W.T., 28 JUNE TO 5 SEPTEMBER, 1981

by

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PREFACE

This report is a summary of work completed under the terms of Department of Supply and Services contracts let separately to each of the authors. The work was done on behalf of the Resource Impact Division, Fish Habitat Section, Freshwater Institute, Fisheries and Oceans, Western Region. This report is published upon recommendation by Mr. M.J. Lawrence, Scientific Authority for this study.

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ABSTRACT

Hopky, G.E., and R.A. Ratynski. 1983. Relative abundance, spatial and temporal distribution, age and growth of fishes in Tuktoyaktuk Harbour, N.W.T., 28 June to 5 September, 1981. Can. Manuscr. Rep. Fish. Aquat. Sci. 1713: v + 71 p.

A study of the fishes in Tuktoyaktuk Harbour, N.W.T., was conducted from 28 June to 5 September, 1981. The objective was to provide additional baseline data prior to anticipated increases in industrial development within the harbour. Offshore areas were sampled with otter trawls and experimental gillnets at various depths. Inshore areas were sampled with experimental gillnets and trapnets.

Twenty fish species were captured and included freshwater, marine and anadromous forms. Total numbers caught inshore, in both trapnets and gillnets, consisted predominately of coregonids, particularly least cisco (Coregonus sardinella) and lake whitefish (C. clupeaformis). In offshore gillnet catches, Pacific herring (Clupea harengus pallasi) and rainbow smelt (Osmerus mordax) were predominant. Otter trawl catches were dominated by rainbow smelt, least cisco and Arctic cisco (C. autumnalis). Bottom otter trawls also captured large numbers of zoarcids (eelpouts) and lumpenids (blennies).

Total catch-per-unit-effort (CPUE) for all species combined was greatest in the north harbour area for all gear types. In offshore gillnets, total CPUE was higher at midwater than at the surface or bottom. This was largely the result of a midwater concentration of Pacific herring and rainbow smelt. Seasonally, total trapnet CPUE in the north harbour declined from mid-July to September, while in the south harbour it was relatively more constant. Highest in- and offshore gillnet, and otter trawl CPUE was observed in early July and late August.

Species specific length-frequency distributions are indicated by gear and season, with results suggesting that for certain species, particularly the coregonids, there was gear-specific size selection. Length at age data, by sex, is presented for the major species captured. Samples of Pacific herring were dominated by the four and eleven year old age groups. The blackline prickleback (Acatholumpenus mackayi) population was dominated by three, six and thirteen year olds. Weight-length relationships are also provided.

Key words: Arctic; Mackenzie River; estuaries; fish community; anadromous species; coregonidae; Clupea harengus pallasi; Osmerus mordax; abundance, seasonal; length-weight relationships; length-frequency distributions.

RESUME

Hopky, G.E., and R.A. Ratynski. 1983. Relative abundance, spatial and temporal distribution, age and growth of fishes in Tuktoyaktuk Harbour, N.W.T., 28 June to 5 September, 1981. Can. Manuscr. Rep. Fish. Aquat. Sci. 1713: v + 71 p.

Entre le 28 juin et le 5 septembre 1981, on a effectué une étude sur les poissons du port de Tuktoyaktuk (T.N.-O.) afin d'obtenir des données de base supplémentaires avant que l'on n'accroisse l'aménagement industriel du port. On a procédé à l'échantillonnage des poissons à diverses profondeurs en haute mer à l'aide de chaluts à panneaux et de filets maillants expérimentaux, et en eaux côtières à l'aide de filets maillants et de parcs en filet expérimentaux.

Les prises incluaient vingt espèces de poissons, soit d'eau douce, soit d'eau salée, ainsi que des espèces anadromes. Parmi les poissons pris dans les eaux côtières, tant dans les filets maillants que dans les parcs en filet, on retrouvait surtout des corégones, notamment le cisco sardinelle (Coregonus sardinella) et le grand corégone (C. clupeaformis). Les prises aux filets maillants en haute mer se composaient surtout de harengs du Pacifique (Clupea harengus pallasi) et d'éperlans arc-en-ciel (Osmerus mordax), alors que celles aux chaluts à panneaux se composaient surtout d'éperlans arc-en-ciel, de ciscos sardinelles et de ciscos arctiques (C. autumnalis). Ont également été pris dans les chaluts à panneaux de fond des quantités importantes de zoarces (lottes) et de poissons de la famille des lumps (blennies).

La prise par unité d'effort pour l'ensemble des espèces était plus élevée dans la partie nord du port, quel que soit l'engin de pêche employé. En haute mer, la prise par unité d'effort pour les filets maillants s'est avérée plus élevée entre deux eaux qu'en surface et au fond, principalement en raison du nombre important de harengs du Pacifique et d'éperlans arc-en-ciel qui se trouvent à cette profondeur. Dans le nord du port, cependant, la prise par unité d'effort pour les parcs en filet a connu une baisse saisonnière entre la mi-juillet et le mois de septembre, tandis que celle dans le sud du port est demeurée relativement stable. Les prises par unité d'effort les plus importantes pour les filets maillants et les chaluts à panneaux, tant côtiers que hauturiers, ont été enregistrées au début de juillet et à la fin d'août.

Les données sur la répartition longueur-nombre des espèces sont indiquées selon l'engin de pêche et la saison, ce qui suggérerait que pour certaines espèces, surtout les corégones, la taille des poissons varie en fonction de l'engin de pêche. Les données sur le rapport longueur-âge, selon le sexe, ont égalementété relevées pour les espèces les plus nombreuses. Parmi les échantillons de harengs du Pacifique, on retrouve surtout des poissons de quatre et de onze ans, alors que les prises de terrassiers à six lignes (Acatholumpenus mackayi) se composaient surtout de poissons âgés de trois, six et treize ans. Le rapport comprend, en outre, des données sur le rapport poids-longueur.

Mots-clés: Arctique; fleuve Mackenzie, estuaires; population de poissons; espèces anadromes; corégones; Clupea harengus pallasi; Osmerus mordax; abondance saisonnière; rapports longueur-poids; répartition longueur-nombre.

INTRODUCTION

The purpose of this study was to broaden the understanding of the fish resources of Tuktoyaktuk Harbour, N.W.T. (Fig. 1). Tuktoyaktuk Harbour is utilized as a supply base for oil and gas exploration activities in the southern Beaufort Sea. Consequently, industrial development of the harbour area has resulted; wharves have been constructed, vessel and barge traffic has increased, dredging has occurred, and there have been oil spills. Industry related activity in the harbour is expected to increase. Baseline data is required so that the effects of these developments on the fishes occurring in Tuktoyaktuk Harbour, both transients and residents, can be assessed and appropriate measures taken to minimize the loss and degradation of fish habitat.

Tuktoyaktuk Harbour has been subject to several previous fisheries investigations. The Arctic Biological Station collected data as part of its fisheries activities in 1955, 1958, 1961, 1970, 1971 and from 1973 to 1976 (Hunter and Leach 1981); Riske (1960) examined meristic characters and body proportions of Pacific herring; Galbraith and Hunter (1976) included 1974-75 data from the harbour in their report on the fish populations of the southeastern Beaufort Sea. Several environmental consulting firms have also collected data (F.F. Slaney and Co. Ltd. 1973; Beak Consultants Ltd. 1975; Byers and Kashino 1980). However, these studies were often limited in scope because of the short period during which data was obtained and/or limited types of gear fished. More recently, Bond (1982) described seasonal changes (July 1979-March 1981) in the fish community and assessed the significance of the harbour as a spawning, feeding, rearing and overwintering area for marine and anadromous fishes.

The present study was an extension of this work. However, sampling was conducted at a greater diversity of habitats using a variety of fishing gear to enable capture of both demersal and pelagic species. Intensive fishing was performed at several locations and at different depths within the harbour from 28 June to 5 September, 1981. Information was obtained on relative abundance, vertical and horizontal distribution, movements, age, growth, maturity and diet of fishes. Twenty fish species were captured (Table 1) including freshwater, marine and anadromous forms. Information on maturity is not included in this report and stomachs have yet to be examined.

METHODS

CAPTURE METHODS AND SAMPLING FREQUENCY

Sampling stations were located throughout the harbour. However, sites were chosen such that the north and south areas of the harbour received proportionately equal fishing effort. These two areas were arbitrarily designated as shown in Fig. 2.

Trapnets

Beamish trapnets (Beamish 1973) were utilized to sample fish inshore. Net dimensions were: box - 2x1x1 m; opening to box - 12x12 cm; leads - 1 to 1.5 m deep of various lengths. Trapnets were fished at two locations in each of the south (Tern Island; Reindeer Point) and north (Driftwood Cove; Tuktoyaktuk Island) areas of the harbour (Fig. 2). Two trapnets were set as close as possible at each location with the objective that each would capture fishes moving from one direction only, and each trapnet was considered a separate station (Fig. 2). At Tern Island, the initial stations (54 and 55) were abandoned after one week because of adverse conditions at the site. Thereafter, sampling took place at Stations 62 and 63 (Fig. 2). Trapnets were positioned perpendicular to shore with the box at a depth of 2 to 2.5 m. Tides and storm surges caused depth fluctuations of 1 m or more.

Trapnets were fished simultaneously for approximately 24 hours and generally opened between 08:00 and 12:00 h. They were fished and checked daily, from 4 July to 10 July and twice weekly from 15 July to 5 September. Sampling was not conducted from 28 July to 9 August.

Gillnets

Swedish gillnets were fished in standard gangs consisting of six 10 m panels of 10, 19, 33, 45, 55 and 60 mm mesh sizes (bar measure) respectively. Panels were approximately 1.8 m deep and sewn together. They were fished for approximately two hours between 13:00 and 17:00 h. All stations were sampled almost simultaneously with equal effort.

Offshore: Adjacent surface, midwater and bottom sets were made in both the south (Station 50) and north (Station 51) areas of the harbour (Fig. 2). Floating type gillnets were utilized for surface and midwater sets with the latter positioned in the water column at the halocline. Halocline depth was determined each week, prior to sampling, from salinity readings measured with a salinometer (G.M. Manufacturing and Instrument Corporation, Model #249). Small anchors were attached by the appropriate measure of rope along the length of the midwater net leadline to ensure that the entire net fished at the desired depth. The leadline was at a depth of 1.8 m (with the floatline at the surface) during surface sets and usually positioned at a depth of 8 m during midwater sets. During bottom sets, the leadline rested on the substrate at an average depth of 11-12 m at Station 50 and 13-14 m at Station 51. Sampling began 28 June and was conducted once each week from 11 July to 4 September with the exception of the week of 1 August.

Inshore: Floating type gillnets were positioned parallel to shore, adjacent to trapnet locations, at a depth of approximately 2 m. Sampling was performed once each week, beginning 11 July, at Stations 65 (south harbour), 66 and 67 (north harbour), and beginning 18 July, at Station 68 (south harbour) (Fig. 2). Sampling continued until 4 September, except during the week of 1 August.

Trawls

A 4.9 m otter trawl with a 0.6 mm mesh (bar measure) size at the cod end was utilized to obtain samples from the south (Station 52) and north (Station 53) areas of the harbour (Fig. 2). Trawling was performed at the bottom and near the surface, in the vicinity of the offshore gillnet stations. Tows were generally of ten minutes duration with two replications per station. Velocity was as constant as possible for all tows. Surface sampling was made possible by attaching buoys to the otter boards with a 2 m length of rope, thus allowing the trawl to fish approximatly 2 m below the surface. However, this device caused high water turbulence which may have enabled fish to avoid capture. Average depth range during bottom trawls was 7-16 m at Station 52 and 8-14 m at Station 53. Trawling was performed between 13:00 and 17:00 h each week from 1 July to 3 September except during the week of 1 August.

ANALYSES

Data collection

Lengths, either fork or total depending on caudal fin shape, were measured on all captured specimens to the nearest mm. Weights (g) were determined and sex ascertained from all dead sampled specimens, with a subsample of these selected for ageing. Scales and otoliths were obtained from coregonids and otoliths from all other species. Scales were removed from the left side, at a location above the lateral line and below the dorsal fin.

Catch summaries

Total catches were summarized separately for each species by gear, location, station and depth.

Beamish trapnet catch-per-unit-effort (CPUE) was expressed as number of fish caught per hour. Values were compared: 1) between north and south areas of the harbour, 2) among the four locations, and 3) between stations at a location. The mean number of species caught at each station was calculated.

Gillnet CPUE was also expressed as the number of fish caught per hour. Comparisons were made between: 1) north and south areas of the harbour and among depths for offshore stations; 2) north and south areas of the harbour for inshore stations, and 3) offshore and inshore samples.

Otter trawl CPUE was expressed as the number of fish caught per ten minute trawl. Comparisons were made between: 1) north and south areas of the harbour, and 2) between depths.

Length-frequency distributions

Percent length-frequency distributions were constructed, by gear type for the periods of 28 June to 31 July, and 9 August to 5 September. Length intervals were 50 mm for burbot and inconnu and 25 mm for all other species. Sex of fishes, as indicated in the length-frequency distribution figures, was designated in the following manner: N = not sexed; U = sexed, but unidentifiable; M = male; and F = female.

Age

Scales of coregonids were placed between two slides and read on a Leitz projector. Ages of rainbow smelt, Pacific herring, slender eelblenny and blackline prickleback were obtained from otoliths prepared by grinding and read on a dissecting microscope. If available, approximately 16 fish (8 from each sex) from every length interval, as described above, were aged. Fish were aged once by a reader and then a subsample independently re-aged by a second reader. Both readers were generally in close agreement. If not, the fish was aged again and a final age agreed upon. Sex-specific tables of age at length were constructed for preliminary growth analyses.

Weight-length relationships

Weight-length relationships were determined by the least squares method and the equation: $\log_{10} W = \log_{10} a + b \log_{10} L$ where $\underline{W}$ is the weight (g), $\underline{L}$ is the length (mm), $\log_{10} \underline{a}$ is the y - intercept, and $\underline{b}$ is the slope. For each species, this relationship was calculated for the total sample and separately for males and females. Sample sizes, y - intercepts, regression coefficients and their standard errors, and the r-square values were calculated.

RESULTS

CATCH SUMMARIES

Total catch

Trapnets: A total of 4 504 fish were captured (Table 2). Coregonids, particularly least cisco and lake whitefish, were predominant. Catches of Arctic cisco and broad whitefish were considerably less. Of the non-coregonid species, Arctic flounder, rainbow smelt, fourhorn sculpin and saffron cod were relatively important (Table 2). Fewer starry flounder were captured than Arctic flounder.

Gillnets: Non-coregonids were the most abundant species caught offshore. Of 727 fish captured, Pacific herring were the first and rainbow smelt the second most abundant species (Table 3). Less than half as many Arctic cisco were captured and few lake whitefish, broad whitefish, or inconnu. This situation was reversed for inshore sets where coregonids made up most of the catch of 299. Least cisco, Arctic cisco, broad whitefish and inconnu were first, second, third and fourth most abundant species respectively (Table 3).

Trawls: The overall catch was 1 449. Rainbow smelt were the most abundant species followed by least cisco and Arctic cisco (Table 4). Only three Pacific herring were captured. Large numbers of eelpout, slender eelblenny and blackline prickleback were captured (Table 4) compared to none or insignificant numbers in gillnets (Table 3).

Total catch-per-unit-effort

Trapnets: Total CPUE (locations and species combined) was higher in the north (1.680) than in the south (0.706) area of the harbour (Table 5). Both north harbour locations had the highest total CPUE (Table 5), particularly Tuktoyaktuk Island (1.957) at the harbour entrance (Fig. 2). Conversely, the location farthest from the entrance, Reindeer Point, had the lowest CPUE (0.407) (Table 5). CPUE values of the least cisco, lake whitefish, Arctic cisco and broad whitefish ranked 1, 2, 3 and 4 respectively for the north harbour area and for the harbour as a whole. In the south area of the harbour CPUE of lake whitefish ranked 1 and least cisco, 2 (Table 5). Arctic flounder were relatively abundant throughout the harbour while rainbow smelt were considerably more abundant in the north (Table 5). CPUE of Pacific herring was low at all trapnet locations (Table 5).

Gillnets: In the offshore gillnets, total CPUE (species and depths combined) was higher in the north (7.27) than in the south (5.94) of the harbour (Table 6). Midwater sets had the highest total CPUE (species combined) throughout the harbour as a result of large catches of Pacific herring and rainbow smelt (Table 6). Rainbow smelt were more abundant in the north area at all depths. CPUE for Arctic cisco was highest in the south harbour area, particularly at the bottom. However, the highest CPUE value for Arctic cisco in the north area of the harbour was at the surface (Table 6). Most least cisco were captured at the surface (Table 6).

Total CPUE for inshore gillnets (stations and species combined), 4.58, was lower than for the offshore gillnets (stations, depths and species combined), 6.60 (Table 6). Once more, total CPUE was higher in the north (5.58) than in the south (3.49) of the harbour. Pacific herring and rainbow smelt were significantly less abundant inshore. However, coregonids, with the exception of Arctic cisco, were much more abundant inshore.

Trawls: Total CPUE (species and depths combined) was similar for the entire harbour, although it was again higher in the north area (Table 7). Catches at the bottom were significantly greater than those at the surface. For the bottom trawls (stations combined), Arctic cisco and eelpout had the highest CPUE values while blackline prickleback was the next highest (Table 7). CPUE values for rainbow smelt and least cisco were first and second, respectively, for surface tows (Table 7).

Catch-per-unit-effort by season

Species combined: Total trapnet CPUE at both north harbour locations was greatest in mid-July and gradually declined by September (Fig. 3). In the south harbour, CPUE at Reindeer Point was uniformly low, while at Tern Island CPUE fluctuated seasonally with an early August peak (Fig. 3). Within locations, inter-station CPUE differences were readily apparent at only the Tern Island (Fig. 4) and Tuktoyaktuk Island (Fig. 5) locations. The mean number of species captured per trapnet lift, by period and in total, was largest in the north harbour area, especially at Tuktoyaktuk Island (Table 8). Mean number of species per lift was lowest at Reindeer Point.

Highest gillnet catches were observed in the first half of July and latter part of August (Fig. 6). Seasonal fluctuations in offshore catches were greater than those inshore (Fig. 6). Otter trawl CPUE was highest at the beginning of July and latter part of August (Fig. 7).

Species specific: Data has been tabulated for trapnets by location (Tables 9, 10) and station (Tables 11-14), offshore gillnets (Tables 15, 16), inshore gillnets (Tables 17, 18), and trawls (Tables 19, 20).

STARRY FLOUNDER: Throughout the harbour, starry flounder trapnet CPUE was highest from early July to mid-August. During this period north harbour locations had the highest catches, while those at south harbour locations were greatest later in the season. Within locations, consistent inter-station trapnet CPUE differences were observed at Reindeer Point and Tern Cove. Offshore, starry flounder were not abundant in gillnets and there was only one caught after 25 July. Almost all were caught at the bottom. Inshore, starry flounder were captured only at the Reindeer Point and Tuktoyaktuk Island stations (Stations 65 and 67). In the bottom otter trawls, highest CPUE was observed at the beginning and end of the sampling season, and at the north harbour station.

ARCTIC FLOUNDER: Except for the Tuktoyaktuk Island location, Arctic flounder trapnet CPUE declined from early July to mid-August, then increased by late August. Overall, their CPUE was highest in the north harbour. Inter-station trapnet CPUE differences were observed at the Tern Cove, Driftwood Cove and Tuktoyaktuk Island locations. No Arctic flounder were captured in offshore gillnets. Inshore, they were captured at Reindeer Point and Tuktoyaktuk Island, and CPUE was low. In the bottom trawls, CPUE for Arctic flounder were highest at the end of the sampling season, and at the north harbour station.

PACIFIC HERRING: Trapnet CPUE of Pacific herring was consistently low throughout the season, irrespective of location (Fig. 8). Highest catches were at Reindeer Point in early July. Pacific herring were most abundant in offshore gillnets in early July and the latter part of August (Fig. 9). Highest CPUE values were generally at the midwater depth. Inshore, gillnet catches were much lower. Very few Pacific herring were captured by otter trawl.

RAINBOW SMELT: Trapnet CPUE was considerably greater in the north harbour, particularly at Tuktoyaktuk Island. Seasonally, catches were uniform at the south harbour locations but declined in the north with a mid-August peak at Tuktoyaktuk Island. At the latter location, Station 61 catches contributed most to that location's total CPUE. In the offshore gillnets, rainbow smelt were most abundant in mid-July with an increase in CPUE also occurring near the end of August. CPUE was higher in the north area of the harbour. Inshore gillnet catches of rainbow smelt were much less. In the otter trawls, the highest CPUE value was obtained on 10 and 11 July at the surface in the north part of the harbour. CPUE for bottom trawls increased at the end of the sampling season especially in the north.

SAFFRON COD: With the exception of large catches in late July at Tern Cove and Tuktoyaktuk Island, saffron cod trapnet CPUE was relatively constant throughout the season and generally greatest in the south area of the harbour. Consistent inter-station differences were observed at Tuktoyaktuk Island. Few saffron cod were captured by gillnet; catches were also low in the trawls.

FOURHORN SCULPIN: Trapnet CPUE of fourhorn sculpin was considerably greater in the north area of the harbour, particularly at Tuktoyaktuk Island. During the course of the sampling season, catches tended to increase at all locations. However, erratic CPUE changes were observed at Tuktoyaktuk Island. Within locations, inter-station CPUE differences were apparent at all locations. Except for a large catch in the north area of the harbour on 11 July, fourhorn sculpin were not abundant in the offshore gillnets. Fourhorn sculpin CPUE, as determined by the inshore gillnets, was low. Comparatively more fourhorn sculpin were captured in the bottom otter trawls with CPUE values usually highest in the north area of the harbour.

ARCTIC CISCO: Trapnet CPUE of Arctic cisco was greatest from early to mid-July at all locations, but particularly in the north area of the harbour (Fig. 10). Subsequent catches remained uniformly low, although Tern Island catches were greater than those at the other locations throughout August. Catches of Arctic cisco were low in the offshore gillnets until the latter part of August, when an influx was observed in the south area catches (Fig. 11). Most of the Arctic cisco were captured in the bottom gillnets. CPUE in the inshore gillnets was highest at the beginning and end of the sampling season in the north area of the harbour. No Arctic cisco were captured in surface otter trawls except in mid-July in the south of the harbour. The influx of Arctic cisco to the south at the end of the sampling season was also apparent in the CPUE values of bottom trawls (Fig. 12).

LEAST CISCO: Trapnet CPUE was greatest in the north harbour locations until mid-July, after which differences between harbour areas were negligible (Fig. 13). After mid-July, least cisco trapnet CPUE tended to increase at all locations. Within locations, consistent inter-station CPUE differences were observed at Tern Island and Tuktoyaktuk Island. Least cisco were most abundant in the offshore gillnets at the beginning of July, usually at the surface. Inshore gillnet CPUE values were highest at the beginning and end of the sampling season, and in the north of the harbour. In both the surface and bottom otter trawls, CPUE was higher for the south area with bottom trawl CPUE highest at the end of August.

INCONNU: CPUE for inconnu was low for all gear types. None were captured offshore by gillnet until the end of August when several were captured at the surface. Inshore, a few were captured in gillnets throughout the sampling period. CPUE for otter trawls was low, while very few were captured in trapnets.

LAKE WHITEFISH: CPUE of lake whitefish in trapnets, at the north harbour locations, declined over the sampling season. South harbour CPUE values were more consistent, with the exception of a very large catch in early August at Tern Island (Fig. 14). Note that this 'pulse' was also observed at the north harbour locations. Inter-station trapnet CPUE differences were observed at both locations in the south harbour area. By gillnet, only one lake whitefish was captured offshore. Inshore, CPUE was higher. Only two were captured by surface trawl. However, bottom trawl catches were greater and CPUE increased by the end of August, especially in the south area of the harbour.

BROAD WHITEFISH: Trapnet CPUE was highest at the north harbour locations until mid-August after which CPUE at south harbour locations, especially Reindeer Point, became greater. Seasonal trends were not readily apparent. Broad whitefish were rare in the offshore gillnets with only two captured all season. They were relatively more abundant in the inshore gillnet catches. None were captured by trawling.

BURBOT: Caught almost exclusively by trapnets, burbot were most abundant in the north area, especially at Tuktoyaktuk Island. However, CPUE fluctuated greatly. They were rarely captured at either Tern Island or Reindeer Point.

POND SMELT: Virtually all pond smelt were captured by trapnets in midsummer, at the Tuktoyaktuk Island location in the north of the harbour.

SLENDER EELBLENNY, BLACKLINE PRICKLEBACK, AND EELPOUT: These species were captured almost entirely by bottom trawling. Of these, slender eelblenny were the least and eelpout the most abundant species. Slender eelblenny were slightly more abundant in the south area. CPUE of blackline prickleback was also higher for the south area (Fig. 15). Conversely, eelpout were more abundant in the north area (Fig. 16), with CPUE highest at the beginning and end of the sampling season.

LENGTH-FREQUENCY DISTRIBUTIONS

Percent length-frequency distributions are shown (Fig. 17-29) for the major species captured. A greater percentage of large starry flounder were captured by otter trawls, as compared to trapnets and offshore gillnets, during 28 June to 31 July (Fig. 17). Most of the large individuals were female. Length-frequency distributions for Pacific herring were bimodal for all gillnet catches (Fig. 18). Rainbow smelt captured by trapnets and gillnets (Fig. 19) and by trawls (Fig. 20) had similar length-frequency distributions. Small Arctic cisco made up the largest percentage of the trapnet catches while gillnets, both in- and offshore, captured a greater percentage of large individuals (Fig.

21). Otter trawls also captured predominantly small Arctic cisco (Fig. 20). Trapnets and otter trawls captured smaller lake whitefish while gillnets, again, captured larger fish (Fig. 22). There was little overlap in the length-frequency distributions of broad whitefish captured by trapnet and gillnet with the former capturing small broad whitefish and the latter, large ones (Fig. 23).

AGE

Length distributions of various age groups are presented for each species aged (Tables 21-29). Of particular interest were catches of Pacific herring which were dominated by the four and eleven-year old age groups (Table 22). Samples of blackline prickleback were dominated by three, six and thirteen year olds (Table 29). The data indicated sexual dimorphism in growth of blackline prickleback, with mature males attaining longer lengths than mature females of the same age (Table 29). This was also apparent in the length distributions (Fig. 29).

WEIGHT-LENGTH RELATIONSHIPS

Weight-length relationships are given for the various species captured in Tuktoyaktuk Harbour during 1981 (Table 30).

DISCUSSION

Coregonids dominated the fish fauna of Tuktoyaktuk Harbour, N.W.T. during 28 June to 5 September, 1981. The catch of least cisco, pooled over all gear types, was highest (1 816) followed by lake whitefish (1 504) and Arctic cisco (789). Rainbow smelt (633), fourhorn sculpin (345) and Pacific herring (318) were next in abundance. Least cisco also dominated between 25 July, 1979 and 23 March, 1981, but lake whitefish was only sixth in overall abundance (Bond 1982). Further, Bond (1982) found that Arctic cisco was second in abundance followed by broad whitefish, ninespine stickleback and fourhorn sculpin. Ninespine stickleback were captured entirely by seining (Bond 1982), a capture method not utilized in the present study.

There were spatial differences in distribution of fish species captured. In general, coregonids were more abundant inshore where they comprised 82% of the total trapnet catch. Gillnet CPUE of least cisco was almost three times higher inshore than offshore. Broad whitefish and lake whitefish were thirty-one times and inconnu eight times more abundant in gillnets nearshore than offshore. A similar preference by these species for the inshore waters of the harbour has been previously documented (Bond 1982). Arctic cisco showed a slight preference for offshore waters, while Bond (1982) reported comparable catches of this species from both nearshore and offshore locations. In otter trawls, least and Arctic cisco were the only coregonids captured in appreciable numbers, particularly in the south part of the harbour (Table 7).

Bond (1982) reported that Pacific herring abundance was greatest in the deeper, more saline waters of the harbour. However, inshore locations were apparently not adequately sampled. Results from our study, in which all areas were extensively sampled, confirm a preference by Pacific herring for deeper, offshore waters. It was the dominant species caught in offshore gillnets with greatest abundance at midwater (Fig. 9). CPUE was almost seven times higher than in gillnets nearshore (Table 6).

Rainbow smelt were found throughout the harbour, but were most predominant offshore. They were the second most abundant species in the offshore gillnets and the most abundant species in the otter trawls. Rainbow smelt gillnet CPUE was almost nine times higher offshore than nearshore (Table 6), with total gillnet CPUE highest at midwater.

Eelpout, blackline prickleback and slender eelblenny were confined almost exclusively to the deeper, more saline waters of the harbour near the bottom. They were captured almost entirely by bottom otter trawling. No lumpenids and only a single eelpout were captured between July, 1979 and March, 1981 during sampling by seine and gillnet (Bond 1982). Eelpout, along with Arctic cisco, was the most abundant species captured by bottom trawling, followed by blackline prickleback (Table 7). The blackline prickleback was about two and one half times as abundant as the slender eelblenny. Galbraith and Hunter (1976) also captured more blackline prickleback than slender eelblenny in the harbour. They captured none of these species in the offshore waters outside the harbour.

Total CPUE was greatest in the north of the harbour (Fig. 2) for all gear types, particularly for the trapnets and nearshore gillnets in which coregonids, especially least cisco, dominated the catch. Bond (1982) suggested that some species (e.g. least cisco and broad whitefish) temporarily utilized the harbour while passing through along a migration route. The greatest concentration of these transient fishes should be toward the harbour entrance with fewer individuals moving into the south of the harbour. This would explain the greater overall CPUE in the north harbour area. For example, least cisco were more numerous in the north of the harbour for all sampling equipment except otter trawls. Rainbow smelt tended to remain closer to the harbour entrance. They were more abundant in the north of the harbour in all gear (Tables 5, 6, 7). The mean number of species captured at each trapnet location also supports this hypothesis. Seasonally, and in total, mean values were greatest at Tuktoyaktuk Island, nearest the harbour entrance, and lowest at Reindeer Point, furthest from the harbour entrance (Table 8). Clearly, the eastern entrance of the harbour, the navigation channel, is a site of significant fish activity. Note that other species, such as Arctic cisco and Pacific herring, were abundant in all parts of the harbour. Tuktoyaktuk Harbour has also been identified as a destination or origin of migration for these two fish species (Bond 1982).

There were seasonal fluctuations in CPUE during the study period. For many species, catches were lowest in midsummer. Arctic cisco exhibited greatest abundance during the first half of July, in trapnets and trawls (Fig. 10, 12), and during the latter part of August, in offshore gillnets and trawls (Fig. 11, 12). High abundance of Arctic cisco during the same periods was observed in 1980 (Bond 1982). A large movement of Arctic cisco into the south end of the harbour occurred in late August, 1981 (Fig. 11). Although Pacific herring were abundant in offshore gillnets during early July, few were captured in midsummer (Fig. 9). Their CPUE increased during the latter half of August. Similar fluctuations in Pacific herring abundance also occurred in 1980 (Bond 1982). Bond (1982) suggested that these abundance fluctuations represent a midsummer movement of Pacific herring out of the harbour to offshore feeding areas. CPUE of eelpout in bottom trawls was also low during midsummer, with peak abundance occurring in mid-July and in early September (Fig. 12). Because this species is not present in the offshore waters of adjacent Kugmallit Bay (Galbraith and Hunter 1976), the cause of the midsummer decline in eelpout CPUE cannot be the result of an out migration from the harbour and must be related to other unknown factors.

Other species exhibited erratic changes in abundance. Few saffron cod were captured by gillnet or trawls. In the trapnets, saffron cod abundance was relatively constant except for a large, unexplained increase in late July at Tern Island (Table 9) and Tuktoyaktuk Island (Table 10). A large influx of lake whitefish to the south end of the harbour at Tern Island in early August was observed in the trapnets (Fig. 14). Lake whitefish were generally abundant in early July but, unlike other coregonids, did not increase in abundance in late August.

The pairwise setting of trapnets at each location provided equivocal information about directional fish movements in the nearshore region of the harbour. In terms of total CPUE and for certain species, particularly the coregonids, there were differences between stations, at each of the four locations. At the Tern Island and Tuktoyaktuk Island locations, catches were always greater at one station than at the other (Tables 11, 14). For example, at Tuktoyaktuk Island catches were usually higher at Station 61 which was nearest to the eastern entrance of the harbour (Fig. 2). At Reindeer Point and Driftwood Cove, catches were generally higher during early to midsummer at the station nearest to where major drainages enter the harbour (Fig. 2, Tables 12, 13). In late summer, this trend was reversed. Coregonids in particular are known to make seasonal movements through the harbour and into and out of the harbour drainage systems (Bond 1982), and the present results may be indicative of this.

Ages were estimated for subsamples of Pacific herring, rainbow smelt, coregonids, blackline prickleback and slender eelblenny. Pacific herring ranged in age from 2 to 13, but the age distribution was bimodal with age groups four and eleven particularly abundant (Table 22). These modes were also apparent in the length frequency distributions (Fig. 18). In 1980, Pacific herring ranged in age from 2 to 15, with most aged from 4 to 5 or 12 to 13 years (Bond 1982). Rainbow smelt ranged in age from 1 to 13, but most were age 2 and ages 6 to 8 (Table 21). In 1980, 62% of aged rainbow smelt were estimated to be age 7 or 8 (Bond 1982). Coregonids of a wide range in age were captured with no particular peaks in the age distributions. Younger age groups were generally more numerous. Arctic cisco ranged in age from 0 to 13 (Table 23), least cisco from 0 to 10 (Table 24), lake whitefish from 0 to 16 (Table 25), inconnu from 0 to 11 (Table 26) and broad whitefish from 0 to 14 (Table 27). Similar ranges have been previously reported for coregonids from the harbour, except that inconnu ranged up to 17 years (Bond 1982).

Lumpenids were long lived, with slender eelblenny ranging in age from 3 to 17 years (Table 28) and blackline prickleback from 2 to 16 (Table 29). The sample of blackline prickleback was dominated by three, six and thirteen year olds. There was sexual dimorphism in growth with mature males attaining greater lengths than mature females of the same age (Table 29). This was also apparent in the length-frequency distributions (Fig. 29). The distributions probably reflect the true age and length structure of the blackline prickleback population in the harbour, and not gear selection. In 1974-1975, samples consisted mostly of eight year olds (Galbraith and Hunter 1976). This year class is the same one we have aged at 13, six years later. It still formed a significant proportion of the population in 1981. Survival of the species in the harbour apparently depends on a spawning population consisting of few strong year classes.

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Table 1. Fish species captured in Tuktoyaktuk Harbour during 1981.[1]

Common Name	Latin Name	Abbreviation
Starry Flounder	*Platichthys stellatus* (Pallas)	STFL
Arctic Flounder	*Liopsetta glacialis* (Pallas)	ARFL
Pacific Herring	*Clupea harengus* Valenciennes	PCHR
Rainbow Smelt	*Osmerus mordax* (Mitchill)	RNSM
Arctic Cod	*Boreogadus saida* (Lepechin)	ARCD
Saffron Cod	*Eleginus gracilis* (Tilesius)	SFCD
Burbot	*Lota lota* (Linnaeus)	BRBT
Fourhorn Sculpin	*Myoxocephalus quadricornis* (Linnaeus)	FHSC
Arctic Cisco	*Coregonus autumnalis* (Pallas)	ARCS
Least Cisco	*C. sardinella* Valenciennes	LSCS
Lake Whitefish	*C. clupeaformis* (Mithill)	LKWT
Broad Whitefish	*C. nasus* (Pallas)	BDWT
Inconnu	*Stenodus leucichthys* (Güldenstadt)	INCO
Eelpout (or Shulupaoluk)	*Lycodes jugoricus* Knipowitsch	ELPT
Slender Eelblenny	*Lumpenus fabricii* (Valenciennes)	SLEB
Blackline Prickleback	*Acantholumpenus mackayi* (Gilbert)	BLPB
Northern Pike	*Esox lucius* Linnaeus	NRPK
Longnose Sucker	*Catostomus catostomus* (Forster)	LNSK
Pond Smelt	*Hypomesus olidus* (Pallas)	PDSM
Ninespine stickleback	*Pungitius pungitius* (Linnaeus)	NSSB

[1] Common and scientific names are those recommended by Robins et al. (1980) except in one instance where we have utilized the common name suggested by Legendre et al. (1975) for *Acantholumpenus mackayi*.

Table 2. Summary of trapnet catches for each species by harbour area, location and station.

Species	South Harbour							North Harbour					Harbour Total
	Tern Island				Reindeer Point		Total	Driftwood Cove		Tuktoyaktuk Island		Total	
	54	55	62	63	56	57		58	59	60	61		
STFL	0	0	18	3	5	1	27	33	3	10	12	58	85
ARFL	0	4	27	3	14	9	57	50	15	22	40	127	184
PCHR	0	0	0	1	4	3	8	1	2	1	0	4	12
RNSM	0	0	8	3	2	8	21	46	5	11	94	156	177
SFCD	0	1	18	9	6	5	39	4	3	20	35	62	101
FHSC	1	0	16	7	7	2	33	26	16	25	45	112	145
ARCS	0	8	36	12	27	31	114	86	24	72	143	325	439
LSCS	0	31	168	74	34	86	393	378	80	251	457	1 166	1 559
INCO	0	0	0	0	0	1	1	2	0	1	1	4	5
LKWT	0	9	276	168	32	62	547	274	113	219	296	902	1 449
BDWT	0	0	16	14	13	29	72	74	21	46	46	187	259
BLPB	0	0	0	0	0	0	0	0	0	0	2	2	2
BRBT	0	0	1	0	2	0	3	4	5	20	37	66	69
PDSM	0	0	0	0	0	0	0	1	0	4	9	14	14
LNSK	0	0	0	0	0	0	0	0	1	0	1	2	2
NRPK	0	1	0	0	0	0	1	0	0	0	0	0	1
NSSB	0	0	0	0	0	0	0	0	0	0	1	1	1
Grand Total	1	54	584	294	146	237	1 316	979	288	702	1 219	3 188	4 504
Total Sets	2	2	15	15	18	18	70	19	17	19	19	74	144
Total Hours Fished	72	65	394	392	471	469	1 863	473	444	492	491	1 898	3 761

Table 3. Summary of gillnet catches for each species by harbour area and depth for offshore sets, and harbour area and station fcr inshore sets.

Species	Offshore Sets									Inshore Sets					
	South Harbour (Station 50)				North Harbour (Station 51)				Harbour Total	South Harbour Station		North Harbour Station		Harbour Total	Grand Total
	Depth(m)			Total	Depth(m)			Total							
	B[1]	M[2]	S[3]		B	M	S			65	68	66	67		
STFL	15	0	0	15	10	2	0	12	27	7	0	0	6	13	40
ARFL	0	0	0	0	0	0	0	0	0	5	0	0	3	8	8
PCHR	18	108	16	142	48	75	13	136	278	5	3	10	7	25	303
RNSM	8	32	12	52	40	79	51	170	222	0	1	7	7	15	237
ARCD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SFCD	0	0	0	0	1	0	0	1	1	0	0	0	1	1	2
FHSC	5	2	0	7	26	0	0	26	33	2	2	0	5	9	42
ARCS	50	31	2	83	3	6	13	22	105	6	3	7	30	46	151
LSCS	2	5	14	21	0	7	18	25	46	6	9	21	43	79	125
INCO	1	0	7	8	0	0	1	1	9	21	7	7	6	41	50
LKWT	1	0	0	1	0	0	0	0	1	5	3	2	10	20	21
BDWT	0	0	0	0	0	0	2	2	2	18	7	8	9	42	44
ELPT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLEB	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1
BLPB	2	0	0	2	0	0	0	0	2	0	0	0	0	0	2
Grand Total	102	178	51	331	129	169	98	396	727	75	35	62	127	299	1 026
Total Hours Fished	20.37	18.71	16.66	55.74	19.24	18.19	17.06	54.49	110.23	16.95	14.51	16.84	17.05	65.35	175.58

[1]Bottom set.

[2]Midwater set.

[3]Surface set.

Table 4. Summary of otter trawl catches for each species by harbour area and depth.

Species	South Harbour (Station 52) Depth (m) B[1]	S[2]	Total	North Harbour (Station 53) Depth (m) B	S	Total	Harbour Total Depth (m) B	S	Total
STFL	23	0	23	62	1	63	85	1	86
ARFL	26	1	27	44	0	44	70	1	71
PCHR	1	1	2	1	0	1	2	1	3
RNSM	42	4	46	109	64	173	151	68	219
ARCD	3	0	3	10	0	10	13	0	13
SFCD	8	0	8	12	0	12	20	0	20
FHSC	53	0	53	105	0	105	158	0	158
ARCS	152	11	163	36	0	36	188	11	199
LSCS	151	37	188	17	2	19	168	39	207
INCO	3	0	3	0	0	0	3	0	3
LKWT	26	2	28	6	0	6	32	2	34
BDWT	0	0	0	0	0	0	0	0	0
ELPT	55	0	55	133	0	133	188	0	188
SLEB	45	1	46	24	0	24	69	1	70
BLPB	156	0	156	21	0	21	177	0	177
BRBT	1	0	1	0	0	0	1	0	1
Grand Total	745	57	802	580	67	647	1 325	124	1 449
Total Minutes Fished	196	144	340	153	116	269	349	260	609

Note: Three unidentified smelt are not included in the above.

[1]Bottom trawl

[2]Surface trawl

Table 5. Total trapnet CPUE for each species by harbour area and location.

Species	South Harbour: Location: Tern Island	South Harbour: Location: Reindeer Point	South Harbour: Total	South Harbour: Species Rank	North Harbour: Location: Driftwood Cove	North Harbour: Location: Tuktoyaktuk Island	North Harbour: Total	North Harbour: Species Rank	Harbour Total	Species Rank
STFL	0.023	0.006	0.014	8	0.039	0.022	0.031	10	0.023	9
ARFL	0.037	0.024	0.031	5	0.071	0.063	0.067	6	0.049	5
PCHR	0.001	0.007	0.004	10	0.003	0.001	0.002	12	0.003	12
RNSM	0.012	0.011	0.011	9	0.056	0.107	0.082	5	0.047	6
SFCD	0.030	0.012	0.021	6	0.008	0.056	0.033	8	0.029	8
FHSC	0.026	0.010	0.018	7	0.046	0.071	0.059	7	0.039	7
ARCS	0.061	0.062	0.061	3	0.120	0.219	0.171	3	0.117	3
LSCS	0.265	0.128	0.211	2	0.500	0.721	0.614	1	0.414	1
INCO		0.001	0.001	12	0.002	0.002	0.002	12	0.001	13
LKWT	0.491	0.100	0.294	1	0.422	0.524	0.475	2	0.385	2
BDWT	0.033	0.045	0.039	4	0.104	0.094	0.099	4	0.069	4
BLPB						0.002	0.001	13	0.001	13
BRBT	0.001	0.002	0.002	11	0.010	0.058	0.035	9	0.018	10
PDSM					0.001	0.013	0.007	11	0.004	11
LNSK					0.001	0.001	0.001	13	0.001	13
NRPK	0.001		0.001	12					<0.001	14
NSSP						0.001	0.001	13	<0.001	14
Total	1.011	0.407	0.706		1.382	1.957	1.680		1.197	

Table 6. Total gillnet CPUE for each species by harbour area and depth for offshore sets, and by harbour area and station for inshore sets.

Species	Offshore Sets									Inshore Sets						
	South Harbour (Station 50)				North Harbour (Station 51)					South Harbour			North Harbour			
	Depth(m)			Total	Depth(m)			Total	Harbour Total	Station		Total	Station		Total	Harbour Total
	B[1]	M[2]	S[3]		B	M	S			65	68		66	67		
STFL	0.74			0.27	0.52	0.11		0.22	0.24	0.41		0.22		0.35	0.18	0.20
ARFL										0.29		0.16		0.18	0.09	0.12
PCHR	0.88	5.77	0.96	2.55	2.49	4.12	0.76	2.50	2.52	0.29	0.21	0.25	0.59	0.41	0.50	0.38
RNSM	0.39	1.71	0.72	0.93	2.08	4.34	2.99	3.12	2.01		0.07	0.03	0.42	0.41	0.41	0.23
ARCD																
SFCD					0.05			0.02	0.01					0.06	0.03	0.02
FHSC	0.25	0.11		0.13	1.35			0.48	0.30	0.12	0.14	0.13		0.29	0.15	0.14
ARCS	2.45	1.66	0.12	1.49	0.16	0.33	0.76	0.40	0.95	0.35	0.21	0.29	0.42	1.76	1.09	0.70
LSCS	0.10	0.27	0.84	0.38		0.38	1.06	0.46	0.42	0.35	0.62	0.48	1.25	2.52	1.89	1.21
INCO	0.05		0.42	0.14			0.06	0.02	0.08	1.24	0.48	0.89	0.42	0.35	0.38	0.63
LKWT	0.05			0.02					0.01	0.29	0.21	0.25	0.12	0.59	0.35	0.31
BDWT							0.12	0.04	0.02	1.06	0.48	0.79	0.48	0.53	0.50	0.64
ELPT																
SLEB					0.05			0.02	0.01							
BLPB	0.10			0.04					0.02							
Total	5.01	9.51	3.06	5.94	6.70	9.29	5.74	7.27	6.60	4.42	2.41	3.49	3.68	7.44	5.58	4.58

[1]Bottom set.

[2]Midwater set.

[3]Surface set.

Table 7. Total otter trawl CPUE for each species by harbour area and depth.

Species	South Harbour (Station 52) Depth(m) B[1]	S[2]	Total	North Harbour (Station 53) Depth(m) B	S	Total	Harbour Total Depth(m) B	S	Total
STFL	1.17		0.68	4.05	0.09	2.34	2.44	0.04	1.41
ARFL	1.33	0.07	0.79	2.88		1.64	2.01	0.04	1.17
PCHR	0.05	0.07	0.06	0.07		0.04	0.06	0.04	0.05
RNSM	2.14	0.28	1.35	7.12	5.52	6.43	4.33	2.62	3.60
ARCD	0.15		0.09	0.65		0.37	0.37		0.21
SFCD	0.41		0.24	0.78		0.45	0.57		0.33
FHSC	2.70		1.56	6.86		3.90	4.53		2.59
ARCS	7.76	0.76	4.79	2.35		1.34	5.39	0.42	3.27
LSCS	7.70	2.57	5.52	1.11	0.17	0.71	4.81	1.50	3.39
INCO	0.15		0.09				0.09		0.05
LKWT	1.33	0.14	0.82	0.39		0.22	0.92	0.08	0.56
BDWT									
ELPT	2.81		1.62	8.69		4.94	5.39		3.09
SLEB	2.30	0.07	1.35	1.57		0.89	1.98	0.04	1.15
BLPB	7.96		4.59	1.37		0.78	5.07		2.91
BRBT	0.05		0.03				0.03		0.02
Total	38.01	3.96	23.59	37.90	5.78	24.05	37.96	4.77	23.79

[1]Bottom trawl.

[2]Surface trawl.

Table 8. Trapnet mean number of species (±S.D.) and number of lifts (n) by harbour area and location.

Period	South Harbour			North Harbour		
	Tern Island	Reindeer Point	Total	Driftwood Cove	Tuktoyaktuk Island	Total
July 4-10	1.8(±2.87) n=4	4.1(±1.73) n=8	3.3(±2.35) n=12	6.5(±2.78) n=8	7.5(±1.85) n=8	7.0(±2.34) n=16
July 15-23	4.8(±2.12) n=8	3.5(±2.56) n=8	4.1(±2.36) n=16	5.3(±1.49) n=8	6.6(±1.77) n=8	5.9(±1.73) n=16
July 27-28	3.5(±1.73) n=4	1.5(±1.00) n=4	2.5(±1.69) n=8	3.5(±2.08) n=4	7.3(±2.75) n=4	5.4(±3.02) n=8
Aug. 10-13	4.3(±3.27) n=6	1.3(±1.26) n=4	3.1(±3.00) n=10	4.7(±2.66) n=6	6.7(±1.63) n=6	5.7(±2.35) n=12
Aug. 18-20	6.0(±1.16) n=4	3.0(±3.16) n=4	4.5(±2.73) n=8	1.0(±1.41) n=2	5.3(±4.03) n=4	3.8(±3.87) n=6
Aug. 24-27	3.5(±1.73) n=4	4.5(±1.73) n=4	4.0(±1.69) n=8	3.0(±1.16) n=4	6.0(±1.83) n=4	4.5(±2.14) n=8
Sept. 4- 5	6.5(±2.08) n=4	2.5(±1.29) n=4	4.5(±2.67) n=8	4.5(±1.73) n=4	2.3(±0.96) n=4	3.4(±1.77) n=8
Season Total	4.4(±2.29) n=34	3.1(±2.15) n=36	3.7(±2.40) n=70	4.7(±2.43) n=36	6.2(±2.50) n=38	5.5(±2.57) n=74

Table 9. Seasonal trapnet CPUE for each species at south harbour locations.

Species	Tern Island Period July 4-10	July 15-23	July 27-28	Aug. 10-13	Aug. 18-20	Aug. 24-27	Sept. 4-5	Reindeer Point Period July 4-10	July 15-23	July 27-28	Aug. 10-13	Aug. 18-20	Aug. 24-27	Sept. 4-5
STFL		0.031	0.010	0.062	0.014	0.010	0.019		0.010		0.011		0.031	
ARFL	0.029	0.066	0.021	0.028	0.020	0.021	0.056	0.054	0.025	0.010			0.031	0.029
PCHR						0.010		0.030					0.010	
RNSM		0.026		0.021			0.028	0.025	0.015			0.013		
SFCD	0.007	0.020	0.093	0.035	0.041	0.010	0.018	0.005	0.030			0.020	0.010	
FHSC	0.007	0.010	0.021	0.014	0.061	0.031	0.047		0.005	0.010		0.007	0.042	0.020
ARCS	0.058	0.143		0.278	0.034	0.042	0.066	0.148	0.111	0.010		0.020	0.010	0.010
LSCS	0.227	0.270	0.186	0.208	0.300	0.281	0.659	0.192	0.106	0.115	0.032	0.107	0.115	0.182
INCO												0.007		
LKWT	0.066	0.511	0.125	1.736	0.232	0.208	0.264	0.182	0.106		0.021	0.054	0.146	0.115
BDWT		0.046	0.010	0.069	0.020	0.010	0.057	0.095	0.030			0.040	0.115	
BLPB														
BRBT							0.009				0.011	0.007		
PDSM														
LNSK														
NRPK	0.007													
NSSB														
Total	0.402	1.124	0.464	2.201	0.722	0.624	1.224	0.729	0.439	0.145	0.074	0.275	0.510	0.355

Table 10. Seasonal trapnet CPUE for each species at north harbour locations.

Species	Driftwood Cove Period July 4-10	July 15-23	July 27-28	Aug. 10-13	Aug. 18-20	Aug. 24-27	Sept. 4-5	Tuktoyaktuk Island Period July 4-10	July 15-23	July 24-27	Aug. 10-13	Aug. 18-20	Aug. 24-27	Sept. 4-5
STFL	0.078	0.073	0.031					0.035	0.020	0.072	0.028			
ARFL	0.179	0.078	0.031	0.021		0.010	0.020	0.123	0.020	0.093	0.078	0.065	0.042	
PCHR	0.005		0.010				0.010				0.007			
RNSM	0.151	0.068	0.010	0.014				0.311	0.079	0.010	0.028	0.138	0.021	
SFCD	0.005	0.005	0.010	0.021			0.010		0.010	0.516		0.007	0.021	
FHSC	0.023	0.064	0.042	0.042	0.022	0.104	0.020	0.044	0.010	0.165	0.113	0.058	0.157	0.038
ARCS	0.422	0.036		0.021			0.070	0.824	0.198	0.010	0.021	0.015	0.021	
LSCS	1.228	0.552		0.071		0.073	0.519	1.485	1.253	0.093	0.233	0.283	0.575	0.172
INCO	0.009							0.005			0.007			
LKWT	0.902	0.588	0.094	0.240	0.044	0.042	0.120	1.016	0.758	0.134	0.586	0.261	0.251	
BDWT	0.224	0.109	0.021	0.099			0.060	0.168	0.084	0.072	0.190	0.022	0.042	
BLPB												0.015		
BRBT	0.009	0.014		0.014		0.021		0.030	0.094	0.134	0.028	0.029	0.084	0.029
PDSM				0.007				0.010		0.031	0.028	0.029		
LNSK	0.005							0.005						
NRPK														
NSSB												0.007		
Total	3.238	1.587	0.250	0.552	0.066	0.250	0.828	4.055	2.526	1.331	1.347	0.928	1.213	0.239

Table 11. Seasonal trapnet CPUE for each species at the Tern Island location by station.

Species	Period													
	July 4-10		July 15-23		July 27-28		Aug. 10-13		Aug. 18-20		Aug. 24-27		Sept. 4-5	
	Stn 54	Stn 55	Stn 62	Stn 63	Stn 62	Stn 63	Stn 62	Stn 63	Stn 62	Stn 63	Stn 62	Stn 63	Stn 62	Stn 63
STFL			0.031	0.031	0.020		0.125		0.027		0.021		0.038	
ARFL		0.061	0.132		0.041		0.056		0.027	0.014	0.042		0.075	0.038
PCHR												0.021		
RNSM			0.051				0.139	0.028					0.038	0.019
SFCD		0.015	0.041		0.102	0.083	0.056	0.014	0.054	0.027		0.021	0.019	0.019
FHSC	0.014		0.020		0.020	0.021	0.139	0.014	0.095	0.027	0.042	0.021	0.056	0.038
ARCS		0.123	0.254	0.031			0.028	0.028	0.041	0.027	0.083		0.038	0.094
LSCS		0.476	0.468	0.072	0.266	0.104	0.306	0.111	0.368	0.231	0.500	0.062	0.678	0.641
INCO														
LKWT		0.138	0.834	0.185	0.245		1.778	1.694	0.272	0.191	0.333	0.083	0.339	0.188
BDWT			0.071	0.021	0.020		0.042	0.097	0.014	0.027	0.021		0.056	0.057
BLPB														
BRBT													0.019	
PDSM														
LNSK														
NRPK		0.015												
NSSB														
Total	0.014	0.830	1.902	0.339	0.715	0.208	2.417	1.986	0.899	0.545	1.042	0.208	1.356	1.093

Table 12. Seasonal trapnet CPUE for each species at the Reindeer Point location by station.

Species	July 4-10		July 15-23		July 27-28		Aug. 10-13		Aug. 18-20		Aug. 24-27		Sept. 4-5	
	Stn 56	Stn 57	Stn 56	Stn 57	Stn 56	Stn 57	Stn 56	Stn 57	Stn 56	Stn 57	Stn 56	Stn 57	Stn 56	Stn 57
STFL			0.020				0.021				0.042	0.021		
ARFL	0.049	0.059	0.050		0.021						0.021	0.042	0.038	0.019
PCHR	0.039	0.020										0.021		
RNSM		0.049	0.010	0.020					0.013	0.013				
SFCD	0.010		0.040	0.020						0.040	0.021			
FHSC			0.010		0.021				0.013		0.042	0.042	0.038	
ARCS	0.098	0.198	0.131	0.091	0.021				0.013	0.027	0.021		0.019	
LSCS	0.088	0.296	0.101	0.111	0.126	0.105	0.021	0.042		0.215	0.146	0.083	0.019	0.346
INCO										0.013				
LKWT	0.098	0.267	0.151	0.060				0.042		0.107	0.104	0.188	0.038	0.192
BDWT	0.059	0.128	0.061						0.013	0.067		0.230		
BLPB														
BRBT							0.021		0.013					
PDSM														
LNSK														
NRPK														
NSSB														
Total	0.442	1.017	0.575	0.302	0.188	0.105	0.063	0.085	0.067	0.483	0.395	0.626	0.153	0.558

Table 13. Seasonal trapnet CPUE for each species at the Driftwood Cove location by station.

Species	July 4-10		July 15-23		July 27-28		Aug. 10-13		Aug. 18-20		Aug. 24-27		Sept. 4-5	
	Stn 58	Stn 59	Stn 58	Stn 59	Stn 58	Stn 59	Stn 58	Stn 59	Stn 58	Stn 59	Stn 58	Stn 59	Stn 58	Stn 59
STFL	0.113	0.023	0.160		0.042	0.021								
ARFL	0.210	0.129	0.160	0.008	0.062		0.028	0.014				0.021	0.020	0.020
PCHR	0.008					0.021								0.020
RNSM	0.248		0.130	0.017		0.021		0.028						
SFCD	0.008			0.008		0.021	0.028	0.014					0.020	
FHSC	0.038		0.100	0.034	0.062	0.021	0.071	0.014	0.044		0.042	0.167		0.040
ARCS	0.556	0.211	0.070	0.008			0.028	0.014					0.060	0.080
LSCS	1.811	0.317	1.138	0.059			0.113	0.028			0.083	0.063	0.219	0.819
INCO	0.015													
LKWT	1.105	0.587	0.968	0.269	0.083	0.104	0.241	0.240	0.088		0.021	0.063	0.120	0.120
BDWT	0.316	0.082	0.240			0.042	0.133	0.085						0.120
BLPB														
BRBT		0.023		0.025			0.028				0.042			
PDSM							0.014							
LNSK		0.012												
NRPK														
NSSB														
Total	4.426	1.394	2.965	0.428	0.250	0.250	0.666	0.438	0.132	0.000	0.188	0.314	0.439	1.218

Table 14. Seasonal trapnet CPUE for each species at the Tuktoyaktuk Island location by station.

Species	Period													
	July 4-10		July 15-23		July 27-28		Aug. 10-13		Aug. 18-20		Aug. 24-27		Sept. 4-5	
	Stn 60	Stn 61	Stn 60	Stn 61	Stn 60	Stn 61	Stn 60	Stn 61	Stn 60	Stn 61	Stn 60	Stn 61	Stn 60	Stn 61
STFL	0.049	0.020	0.020	0.020	0.041	0.103	0.014	0.042						
ARFL	0.128	0.119	0.030	0.010	0.083	0.103	0.028	0.127		0.131		0.084		
PCHR							0.014							
RNSM	0.010	0.615	0.040	0.118	0.021			0.014	0.030	0.247		0.042		
SFCD			0.010	0.010	0.372	0.659			0.014			0.042		
FHSC	0.069	0.020	0.020		0.165	0.165	0.042	0.169	0.014	0.102	0.042	0.272	0.019	0.057
ARCS	0.490	1.161	0.189	0.207	0.145	0.021	0.042			0.029		0.042		
LSCS	1.452	1.519	0.716	1.785	0.021	0.165	0.155	0.311	0.073	0.493	0.230	0.920	0.057	0.287
INCO	0.010							0.014						
LKWT	0.755	1.281	0.866	0.651	0.021	0.124	0.508	0.664	0.043	0.479	0.188	0.314		
BDWT	0.186	0.149	0.090	0.079		0.124	0.212	0.169		0.044	0.042	0.042		
BLPB														
BRBT	0.020	0.040	0.100	0.089	0.041	0.226	0.056	0.028		0.058	0.042	0.125	0.038	0.019
PDSM	0.020				0.041	0.021		0.056		0.058				
LNSK		0.010												
NRPK										0.015				
NSSB										0.029				
Total	3.188	4.933	2.080	2.968	0.952	1.709	1.100	1.595	0.174	1.683	0.544	1.882	0.115	0.363

Table 15. Seasonal offshore gillnet CPUE for each species in the south harbour area (Station 50) by depth.

Depth	Species	Date								
		June 28	July 11	July 18	July 25	Aug. 8	Aug. 15	Aug. 23	Aug. 29	Sept. 4
Surface	STFL									
	ARFL									
	PCHR		1.55	4.00		0.89		1.56	0.99	
	RNSM		4.14	2.67						
	ARCD									
	SFCD									
	FHSC									
	ARCS		0.52						0.50	
	LSCS		3.63			0.44	1.04		1.49	0.50
	INCO							0.52	2.48	0.50
	LKWT									
	BDWT									
	ELPT									
	SLEB									
	BLPB									
	Total	0.00	9.84	6.67	0.00	1.33	1.04	2.08	5.45	1.00
Midwater	STFL									
	ARFL									
	PCHR	24.55	3.37	2.29	0.49	2.07		10.10	10.91	2.08
	RNSM	0.60	7.69					1.92	2.27	2.50
	ARCD									
	SFCD									
	FHSC					0.83				
	ARCS		0.96	0.57		0.83		5.29	4.55	2.08
	LSCS		0.96					0.96		0.42
	INCO									
	LKWT									
	BDWT									
	ELPT									
	SLEB									
	BLPB									
	Total	25.15	12.98	2.86	0.49	3.72	0.00	18.27	17.73	7.08
Bottom	STFL	0.63	3.04	1.20	1.84					
	ARFL									
	PCHR	2.53	1.30	0.40		1.65	1.33	0.40	0.82	
	RNSM					0.41		0.40		2.70
	ARCD									
	SFCD									
	FHSC					0.41	1.33			0.45
	ARCS		0.43			0.41	0.89	6.40	10.70	1.80
	LSCS									0.90
	INCO								0.41	
	LKWT								0.41	
	BDWT									
	ELPT									
	SLEB									
	BLPB									0.90
	Total	3.16	4.77	1.60	1.84	2.89	3.55	7.20	12.35	6.75

Table 16. Seasonal offshore gillnet CPUE for each species in the north harbour area (Station 51) by depth.

Depth	Species	Date								
		June 28	July 11	July 18	July 25	Aug. 8	Aug. 15	Aug. 23	Aug. 29	Sept. 4
Surface	STFL									
	ARFL									
	PCHR		0.39	1.43	0.52	0.96			0.53	3.21
	RNSM	2.82	3.89	22.86			0.52			2.14
	ARCD									
	SFCD									
	FHSC									
	ARCS	0.70	1.17					0.50	0.53	3.74
	LSCS	2.11	2.33				1.04	1.00	1.60	1.07
	INCO							0.50		
	LKWT									
	BDWT									1.07
	ELPT									
	SLEB									
	BLPB									
	Total	5.63	7.78	24.29	0.52	0.96	1.56	2.00	2.66	11.23
Midwater	STFL									0.92
	ARFL									
	PCHR	0.70		3.53		3.50	3.85	7.50	12.93	3.23
	RNSM	1.41	3.37	28.24				1.50	5.17	2.30
	ARCD									
	SFCD									
	FHSC									
	ARCS	0.70	0.74						0.86	0.46
	LSCS	1.41	1.87							
	INCO									
	LKWT									
	BDWT									
	ELPT									
	SLEB									
	BLPB									
	Total	4.22	5.98	31.76	0.00	3.50	3.85	9.00	18.96	6.91
Bottom	STFL	4.67	0.92	0.53						
	ARFL									
	PCHR			0.53		0.44	3.72	11.16	3.72	0.89
	RNSM		8.29	3.68				6.01		0.44
	ARCD									
	SFCD			0.53						
	FHSC		9.22	1.05			1.24	0.43		
	ARCS							0.43	0.41	0.44
	LSCS									
	INCO									
	LKWT									
	BDWT									
	ELPT									
	SLEB	0.67								
	BLPB									
	Total	5.33	18.43	6.32	0.00	0.44	4.96	18.03	3.13	1.78

Table 17. Seasonal inshore gillnet CPUE for each species in the south harbour area (Stations 65 and 68).

Station	Species	Date								
		June 28	July 11	July 18	July 25	Aug. 8	Aug. 15	Aug. 23	Aug. 29	Sept. 4
Reindeer Point (65)	STFL	not fished	1.36		1.50	1.00			0.48	
	ARFL				1.00				0.96	
	PCHR		0.45	0.92		0.50		0.50		
	RNSM									
	ARCD									
	SFCD									
	FHSC		0.45							0.40
	ARCS					1.50	0.50	0.50	0.48	
	LSCS		0.45		1.50	0.50				1.20
	INCO		1.82	1.38	0.50	2.00		1.50		2.00
	LKWT				1.00	0.50	0.50		0.48	
	BDWT				0.50	0.50		1.00	1.92	3.20
	ELPT									
	SLEB									
	BLPB									
	TOTAL		4.54	2.30	6.00	6.50	1.00	3.50	4.33	6.80
Tern Island (68)	STFL	not fished	not fished							
	ARFL									
	PCHR			1.00		0.52				
	RNSM			0.50						
	ARCD									
	SFCD									
	FHSC								0.92	
	ARCS			0.50					0.46	0.40
	LSCS			3.00		0.52			0.46	0.40
	INCO				1.00		0.50	1.04		0.80
	LKWT					1.04			0.46	
	BDWT				0.50	2.08				0.80
	ELPT									
	SLEP									
	BLPB									
	TOTAL			5.00	1.50	4.17	0.50	1.04	2.30	2.40

Table 18. Seasonal inshore gillnet CPUE for each species in the north harbour area (stations 66 and 67).

Station	Species	June 28	July 11	July 18	July 25	Aug. 8	Aug. 15	Aug. 23	Aug. 29	Sept. 4
Driftwood Cove (66)	STFL	not fished								
	ARFL									
	PCHR		0.48	2.76		1.56				
	RNSM		1.92	0.46	0.50					0.40
	ARCD									
	SFCD									
	FHSC									
	ARCS		0.96	0.46				0.50	1.38	2.80
	LSCS		2.88	0.92	0.50	1.04			1.84	0.40
	INCO			0.46	0.50	0.52			1.38	
	LKWT			0.46		0.52				
	BDWT					0.52	0.50		0.92	1.60
	ELPT									
	SLEP									
	BLPB									
	TOTAL		6.25	5.53	1.50	4.17	0.50	0.50	5.53	5.20
Tuktoyaktuk Island (67)	STFL	not fished		0.46	0.49	0.50		0.48		0.80
	ARFL			0.46				0.96		
	PCHR		0.48	0.46	0.98				0.46	0.80
	RNSM		2.40	0.46	0.49					
	ARCD									
	SFCD				0.49					
	FHSC		0.48	0.46		1.00				0.40
	ARCS		4.33	4.15	0.49		0.50	0.96	1.38	2.00
	LSCS		2.88	4.15	2.44	0.50	1.00	0.48	6.45	2.00
	INCO		0.48			1.00	1.50			
	LKWT					1.00	1.00	0.48		2.00
	BDWT				0.98	1.00			0.46	1.60
	ELPT									
	SLEP									
	BLPB									
	TOTAL		11.06	10.60	6.34	5.00	4.00	3.36	8.75	9.60

Table 19. Seasonal surface otter trawl CPUE for each species in the south (Station 52) and north (Station 53) harbour areas.

Harbour Area	Species	Date: July 1	July 8	July 10, 11	July 19	July 26	Aug. 9	Aug. 14	Aug. 21	Aug. 28
South (Station 52)	STFL	not								
	ARFL	fished			1.00					
	PCHR		1.11							
	RNSM		3.33	0.40						
	ARCD									
	SFCD									
	FHSC									
	ARCS		1.11	2.00	5.00					
	LSCS		5.56	8.00			1.00	1.00	2.00	1.50
	INCO									
	LKWT				2.00					
	BDWT									
	ELPT									
	SLEB									
	BLPB									
	BRBT									
	Total		11.11	10.40	8.00	0.00	1.00	1.00	2.00	1.50
North (Station 53)	STFL		not	0.83						
	ARFL		fished							
	PCHR									
	RNSM			45.00	6.00		1.00			
	ARCD									
	SFCD									
	FHSC									
	ARCS									
	LSCS	1.11		0.83						
	INCO									
	LKWT									
	BDWT									
	ELPT									
	SLEB									
	BLPB									
	BRBT									
	Total	1.11		46.67	6.00	0.00	1.00	0.00	0.00	0.00

Table 20. Seasonal bottom otter trawl CPUE for each species in the south (Station 52) and north (Station 53) harbour areas.

Harbour Area	Species	Date								
		July 1	July 10 11	July 19	July 26	Aug. 9	Aug. 14	Aug. 21	Aug. 28	Sept. 3
South (Station 52)	STFL	3.00	6.11	1.50	2.00				0.50	0.50
	ARFL			1.00	0.50	1.00	0.36	0.67	3.00	5.50
	PCHR							0.33		
	RNSM		1.67	0.50	0.50	2.33	1.07	2.33	7.50	2.50
	ARCD						1.07			
	SFCD		1.11	1.00				0.67		1.00
	FHSC	6.00	4.44	4.00	0.50	1.67	1.07	2.00	3.50	
	ARCS	1.00	5.00	3.00		2.33	2.14	6.33	28.00	24.00
	LSCS		1.67			0.33	3.93	3.00	44.00	19.50
	INCO								1.00	0.50
	LKWT	1.00				0.67	0.36		9.50	1.50
	BDWT									
	ELPT	2.00	10.56	8.00	1.00	0.67	1.43	0.33	0.50	4.00
	SLEB		1.67	5.50	4.50	0.33	0.71	3.00	2.50	2.50
	BLPB	2.00	16.11	13.00	12.00	3.67	1.79	9.00	9.00	7.00
	BRBT									
	Total	15.00	48.33	37.50	25.50	13.00	13.93	27.99	109.00	68.50
North (Station 53)	STFL	2.78	12.00	2.00		not fished		2.50	1.50	13.50
	ARFL		2.00	2.00			0.50	2.50	5.00	10.50
	PCHR							0.50		
	RNSM		1.33	3.00	0.50		2.50	30.00	11.50	3.50
	ARCD		0.67	1.00	1.50		0.50	1.00	0.50	
	SFCD			1.50				1.50	2.00	1.00
	FHSC	2.78	6.67	8.50	3.00		6.00	5.00	8.50	14.00
	ARCS				0.50		3.00	5.00	9.50	
	LSCS				3.00			4.50		0.50
	INCO									
	LKWT						0.50	1.50	1.00	
	BDWT									
	ELPT	1.67	25.33	10.50	2.50		1.00	2.00	5.50	24.50
	SLEB		0.67	1.50	4.00		1.00	1.50	2.00	1.00
	BLPB		0.67	0.50			2.00	2.00	2.00	3.50
	BRBT									
	Total	7.22	49.33	30.50	15.00		16.50	59.50	49.00	72.00

Table 21. Length distributions, by sex, of various age-groups of rainbow smelt subsampled from 1981 Tuktoyaktuk Harbour catches.

Length (mm)	Age (years)																		
	1	2	4	5			6			7		8			9		10	12	13
	U	U	U	U	M	F	U	M	F	M	F	U	M	F	M	F	M	F	U
0 - 25																			
26 - 50																			
51 - 75	1	5																	
76 - 100		3																	
101 - 125																			
126 - 150			2																
151 - 175			1			1													
176 - 200				2	1		3	1	1	2	1		1						
201 - 225								1	2	2			2						
226 - 250								3	2		1		3	1		1			
251 - 275										2	1	1	4	4					
276 - 300															2	1			
302 - 325																	1	1	
326 - 350																			1
Total (n = 61)	1	8	3	2	1	1	3	5	5	6	3	1	10	5	2	2	1	1	1

Table 22. Length distributions, by sex, of various age-groups of Pacific herring subsampled from 1981 Tuktoyaktuk Harbour catches.

Length (mm)	Age (years) 2	4			5	7	9	10		11		12	13
	U	U	M	F	U	F	F	M	F	M	F	F	F
0 - 25													
26 - 50													
51 - 75													
76 - 100													
101 - 125	1												
126 - 150	1												
151 - 175	2	3											
176 - 200		8	2	7	1								
201 - 225		3	3	8									
226 - 250			1			1	1					1	
251 - 275													
276 - 300								1	1	4	2	1	1
301 - 325								1		8	5	1	
326 - 350											1	1	1
Total (n = 71)	4	14	6	15	1	1	1	2	1	12	8	4	2

Table 23. Length distribtuions, by sex, of various age-groups of Arctic cisco subsampled from 1981 Tuktoyaktuk Harbour catches.

Length (mm)	Age (years) 0	1	2	3		4		5			6			7		8		9		10		11		12	13
	U	U	U	U	F	U	F	U	M	F	U	M	F	U	M	M	F	M	F	M	F	M	F	F	M
0 - 25																									
26 - 50																									
51 - 75	1	2																							
76 - 100		11																							
101 - 125		3	3																						
126 - 150			2	5																					
151 - 175			5	3																					
176 - 200				5			2			1															
201 - 225				2		2																			
226 - 250					2	4	2	3					1												
251 - 275				1						2	1	1													
276 - 300									2	2			1	2	2						1				
301 - 325													2	2	2										
326 - 350												1		2			5	2							
351 - 375																1	2	3	1	1			1		
376 - 400																1			2		1	1	1		1
401 - 425																					1		2	1	
Total (n=110)	1	16	10	16	2	6	4	3	2	5	1	2	4	6	4	2	7	5	3	1	3	1	4	1	1

Table 24. Length distributions, by sex, of various age-groups of least cisco subsampled from 1981 Tuktoyaktuk Harbour catches.

Length (mm)	Age (years) 0	1	2	3		4			5			6			7			8		9		10
	U	U	U	U	M	U	M	F	U	M	F	U	M	F	U	M	F	M	F	M	F	F
0 - 25																						
26 - 50																						
51 - 75	3																					
76 - 100	2	7																				
101 - 125		5	1																			
126 - 150		1	6	2																		
151 - 175				2			1															
176 - 200				2	1	2	4	2	1													
201 - 225						1	1	1		3	1		2									
226 - 250						1					2	1	1	2		1						
251 - 275													2		1	2	1		1			
276 - 300																	2	1	1	2	2	
301 - 325																			1		3	3
Total (n = 81)	5	13	7	6	1	4	6	3	1	3	3	1	5	2	1	3	3	1	3	2	5	3

Table 25. Length distributions, by sex, of various age groups of lake whitefish sampled from 1981 Tuktoyaktuk Harbour catches.

Length (mm)	Age (years) 0	1	2	3	4		5		6			7		8			9			10	11		12	16
	U	U	U	U	U	F	U	F	U	M	F	M	F	U	M	F	U	M	F	F	U	F	F	F
0 - 25																								
26 - 50	1																							
51 - 75	4																							
76 - 100	1	2																						
101 - 125	1	4	2	1																				
126 - 150				4	2																			
151 - 175				3	4	1																		
176 - 200				2	2	1		1																
201 - 225							1	1	1	1														
226 - 250									1	1	3	1	3			2								
251 - 275									1					2			1							
276 - 300														1		1	1							
301 - 325															3	1		1				1		
326 - 350														1					1	1				
351 - 375																								
376 - 400																					1			1
401 - 425																								1
426 - 450																							1	
Total (n = 71)	7	6	2	10	8	2	1	2	3	2	3	1	3	4	3	4	2	1	1	1	1	1	1	2

Table 26. Length distributions, by sex, of various age-groups of inconnu subsampled from 1981 Tuktoyaktuk Harbour catches.

Length (mm)	Age (years) 1	2	3		4		5			6			7			8			9		10	11	
	U	U	U	M	U	F	U	M	F	U	M	F	U	M	F	U	M	F	U	F	F	M	F
0 - 50																							
51 - 100	2																						
101 - 150	4																						
151 - 200																							
201 - 250		2																					
251 - 300		1																					
301 - 350			3	1	1																		
351 - 400			1		1		1		1			1											
401 - 450						1	3	1	1	1	1	3	1	1	1								
451 - 500								1			1		1		1				1				
501 - 550															1	1	2	1		1	1		
551 - 600																		1					
601 - 650																						1	
651 - 700																							1
Total (n = 48)	6	3	4	1	2	1	4	2	2	1	2	4	2	1	3	1	2	2	1	1	1	1	1

Table 27. Length distributions, by sex, of various age-groups of broad whitefish subsampled from 1981 Tuktoyaktuk Harbour catches.

Length (mm)	Age (years)																				
	0	1	2		3		5	6			7		8		9		10		11	12	14
	U	U	U	F	U	F	F	U	M	F	M	F	U	M	M	F	M	F	F	F	F
0 - 25																					
26 - 50																					
51 - 75	8																				
76 - 100	8																				
101 - 125	2	4																			
126 - 150		3																			
151 - 175		4																			
176 - 200			2		2																
201 - 225				1	3																
226 - 250			2		1																
251 - 275																					
276 - 300						1															
301 - 325																					
326 - 350										1											
351 - 375								1	1	1		2									
376 - 400							1	1	1	1									1		
401 - 425													1		1	2		1			
426 - 450											1		1	1	2	2	2	1		1	
451 - 475													1		2		1	1	2	1	
476 - 500																					
501 - 525																					
526 - 550																					
551 - 575																					
576 - 600																					1
Total (n = 77)	18	11	4	1	6	1	1	2	2	3	1	2	3	1	5	4	3	3	3	2	1

Table 28. Length distributions, by sex, of various age-groups of slender eelblenny subsampled from 1981 Tuktoyaktuk Harbour catches.

Length (mm)	Age (years)																							
	3	4		5		6		7	8			11	12		13			14			15		16	17
	U	U	F	U	F	U	F	U	U	M	F	U	U	F	U	M	F	U	M	F	M	F	M	M
0 - 25																								
26 - 50																								
51 - 75																								
76 - 100																								
101 - 125	1	1																						
126 - 150																								
151 - 175																								
176 - 200			2	2	1		1																	
201 - 220					2																			
226 - 250				1		1	1														1			
251 - 275							2	1		1	2									2				
276 - 300										1				1			1			1		1		
301 - 325									1						1		1	1		1				
326 - 350												1				1			2		2			
351 - 375													1					1			1		1	1
Total (n = 43)	1	1	2	3	3	1	4	1	1	2	2	1	1	1	1	1	2	2	2	4	4	1	1	1

Table 29. Length distributions, by sex, of various age-groups of blackline prickleback subsampled from 1981 Tuktoyaktuk Harbour catches.

	Age (years)																		
	2	3	4			6		7	9	10		11	12	13		14		15	16
Length (mm)	U	U	U	M	F	M	F	M	F	M	F	F	M	M	F	M	F	M	M
0 - 25																			
26 - 50																			
51 - 75																			
76 - 100	2																		
101 - 125	1	3																	
126 - 150		7																	
151 - 175		4																	
176 - 200		2	1																
201 - 225			1																
226 - 250			1		1		2												
251 - 275				1		1	4								1				
276 - 300							9												
301 - 325						4	2		1										
326 - 350						5		1			1				2				
351 - 375						3									1		3		
376 - 400						1		1		1				1	4		1		
401 - 425												2			1				
426 - 450										2				2	1	1			
451 - 475													1	6	1	1		1	
476 - 500													1	2		1			1
Total (n = 97)	3	16	3	1	1	14	17	2	1	3	1	2	2	11	11	3	4	1	1

Table 30. Weight-length relationships for various fish species captured in Tuktoyaktuk Harbour, 1981.

Species	Sample Type	Sample Size	Intercept (log a)	Slope (b)	Standard Error of b	r-Square
LSCS	Total	780	-5.609	3.227	0.014	0.986
	Male	81	-6.006	3.399	0.076	0.962
	Female	89	-5.961	3.380	0.051	0.981
ARCS	Total	526	-5.981	3.414	0.015	0.990
	Male	53	-6.048	3.441	0.092	0.965
	Female	95	-5.755	3.325	0.035	0.990
LKWT	Total	390	-5.648	3.311	0.018	0.989
	Male	9	-5.339	3.317	0.095	0.994
	Female	36	-5.632	3.303	0.071	0.985
BDWT	Total	199	-5.566	3.278	0.012	0.997
	Male	20	-5.636	3.307	0.057	0.995
	Female	30	-5.534	3.269	0.052	0.993
INCO	Total	56	-5.455	3.152	0.025	0.997
	Male	9	-5.431	3.147	0.165	0.981
	Female	17	-5.047	2.998	0.105	0.982
PCHR	Total	300	-5.876	3.375	0.024	0.985
	Male	102	-5.811	3.355	0.074	0.953
	Female	136	-5.905	3.384	0.032	0.988
RNSM	Total	498	-5.849	3.293	0.019	0.985
	Male	112	-5.369	3.094	0.070	0.946
	Female	108	-5.110	2.979	0.065	0.952
BLPB	Total	178	-5.636	2.993	0.034	0.978
	Male	43	-4.271	2.440	0.078	0.960
	Female	77	-5.098	2.803	0.090	0.928
SLEB	Total	68	-4.601	2.543	0.070	0.953
	Male	10	-4.020	2.278	0.279	0.893
	Female	27	-4.364	2.476	0.106	0.956
BRBT	Total	57	-4.782	2.828	0.049	0.984
	Male	9	-5.189	2.967	0.496	0.836
	Female	7	-4.468	2.717	0.200	0.974
SFCD	Total	80	-5.596	3.208	0.023	0.996
	Male	19	-5.505	3.175	0.070	0.992
	Female	19	-5.397	3.128	0.119	0.976
ARCD	Total	12	-5.178	3.006	0.192	0.961
	Male	-	-	-	-	-
	Female	-	-	-	-	-
ELPT	Total	183	-5.958	3.274	0.020	0.993
	Male	50	-5.704	3.170	0.038	0.993
	Female	47	-5.937	3.268	0.060	0.985
STFL	Total	135	-5.706	3.325	0.090	0.911
	Male	67	-4.795	2.943	0.209	0.752
	Female	49	-6.326	3.576	0.179	0.895
ARFL	Total	127	-4.970	3.054	0.027	0.990
	Male	23	-4.308	2.773	0.068	0.987
	Female	42	-5.037	3.081	0.074	0.978
FHSC	Total	205	-5.719	3.257	0.032	0.981
	Male	-	-	-	-	-
	Female	-	-	-	-	-
NRPK	Total	2	-4.757	2.820	-	1.000
	Male					
	Female					
LNSK	Total	1	-	-	-	-
	Male					
	Female					
PDSM	Total	1	-	-	-	
	Male					
	Female					

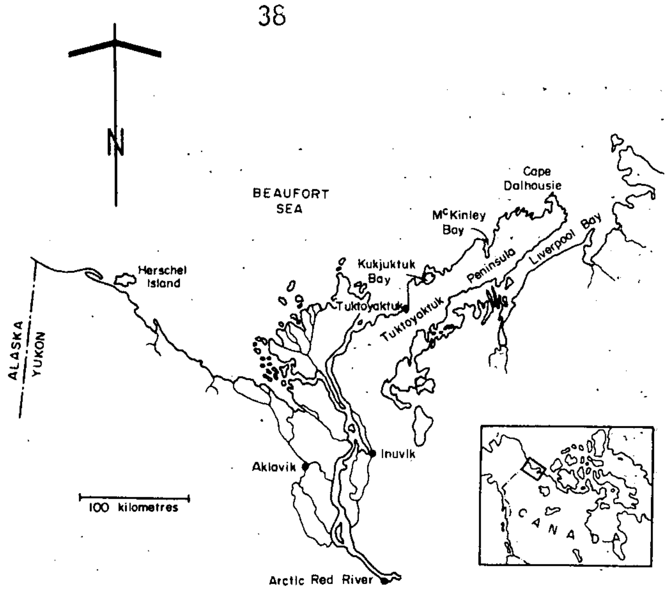

Fig. 1. Location of Tuktoyaktuk and the Mackenzie Delta-Beaufort Sea region.

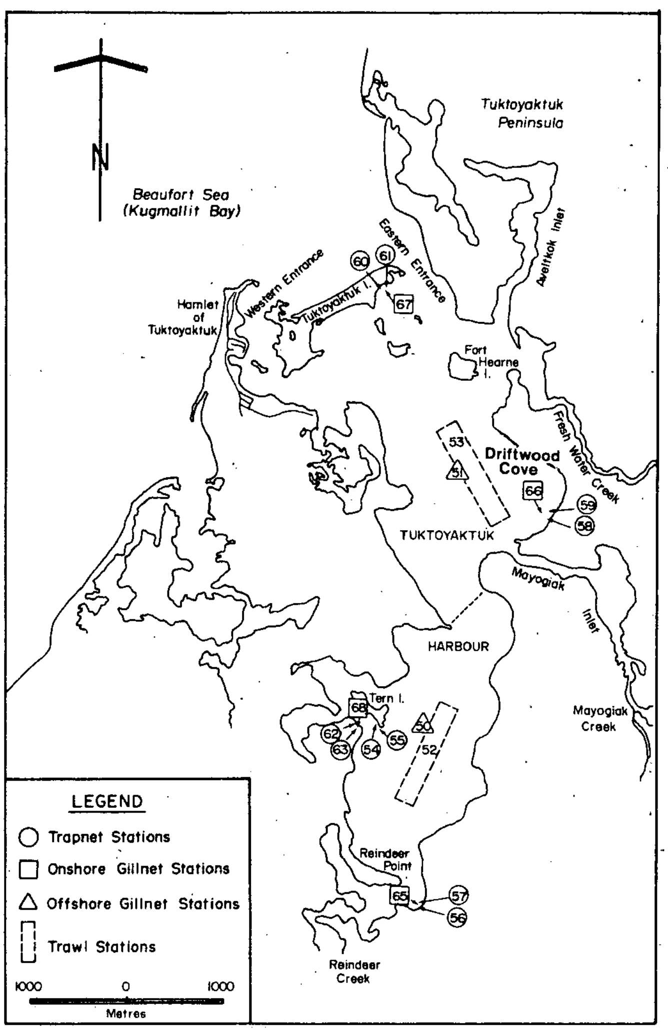

Fig. 2. Tuktoyaktuk Harbour indicating location of fish sampling sites. The hatched line transecting the harbour delineates the north and south areas referred to in the text.

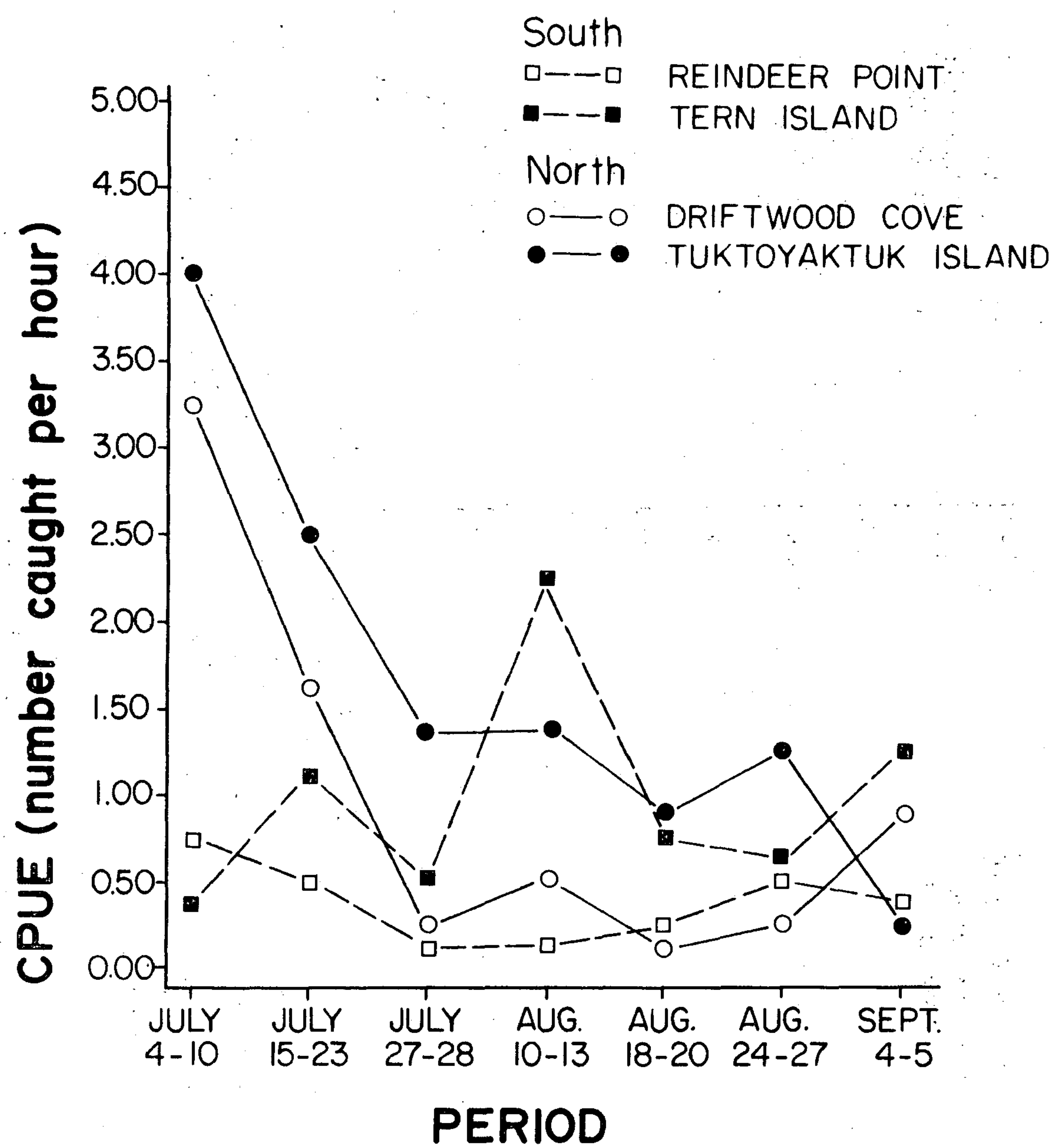

Fig. 3. Seasonal changes in total trapnet CPUE by location.

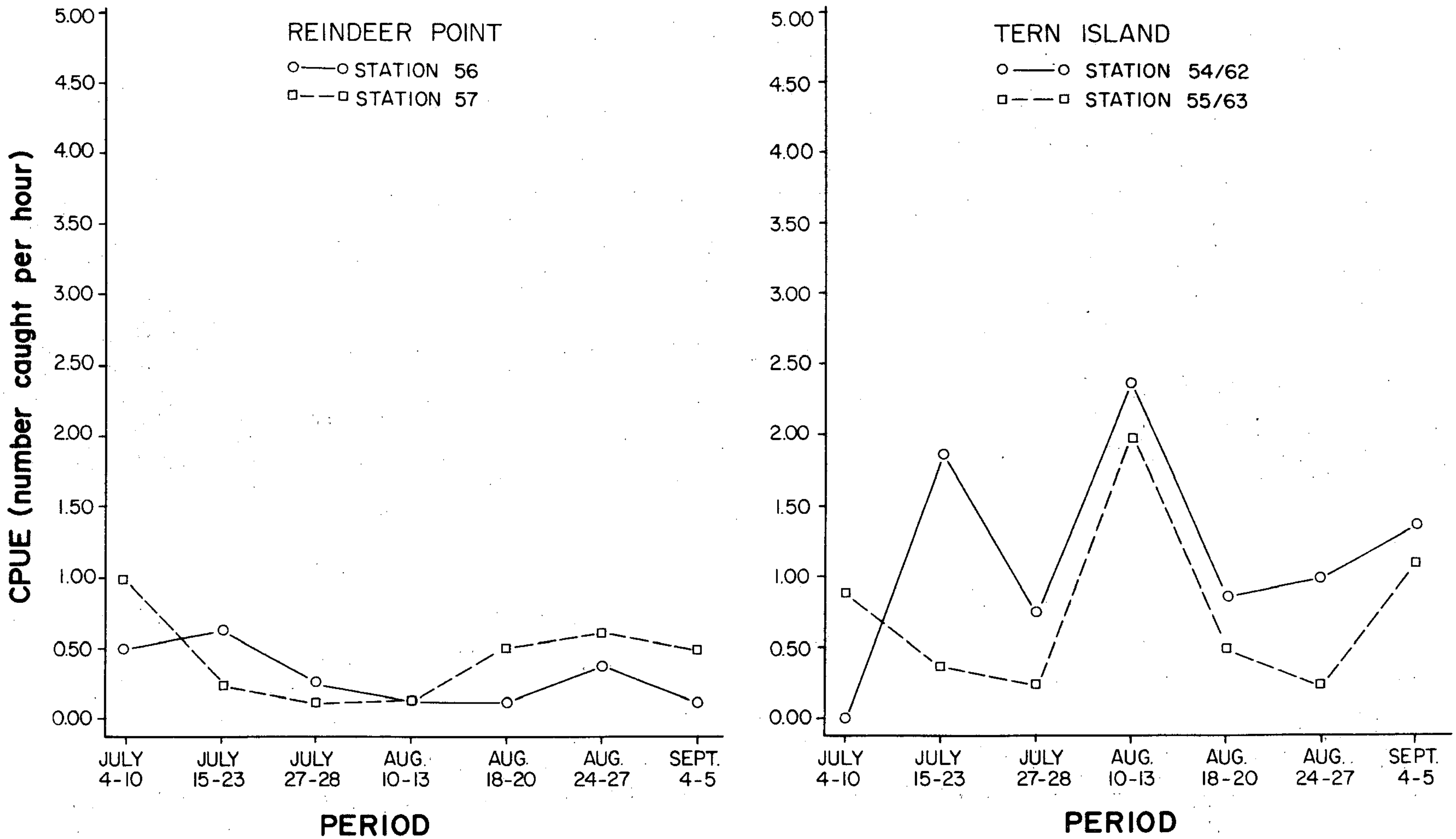

Fig. 4. Seasonal changes in total trapnet CPUE by station at Reindeer Point and Tern Island.

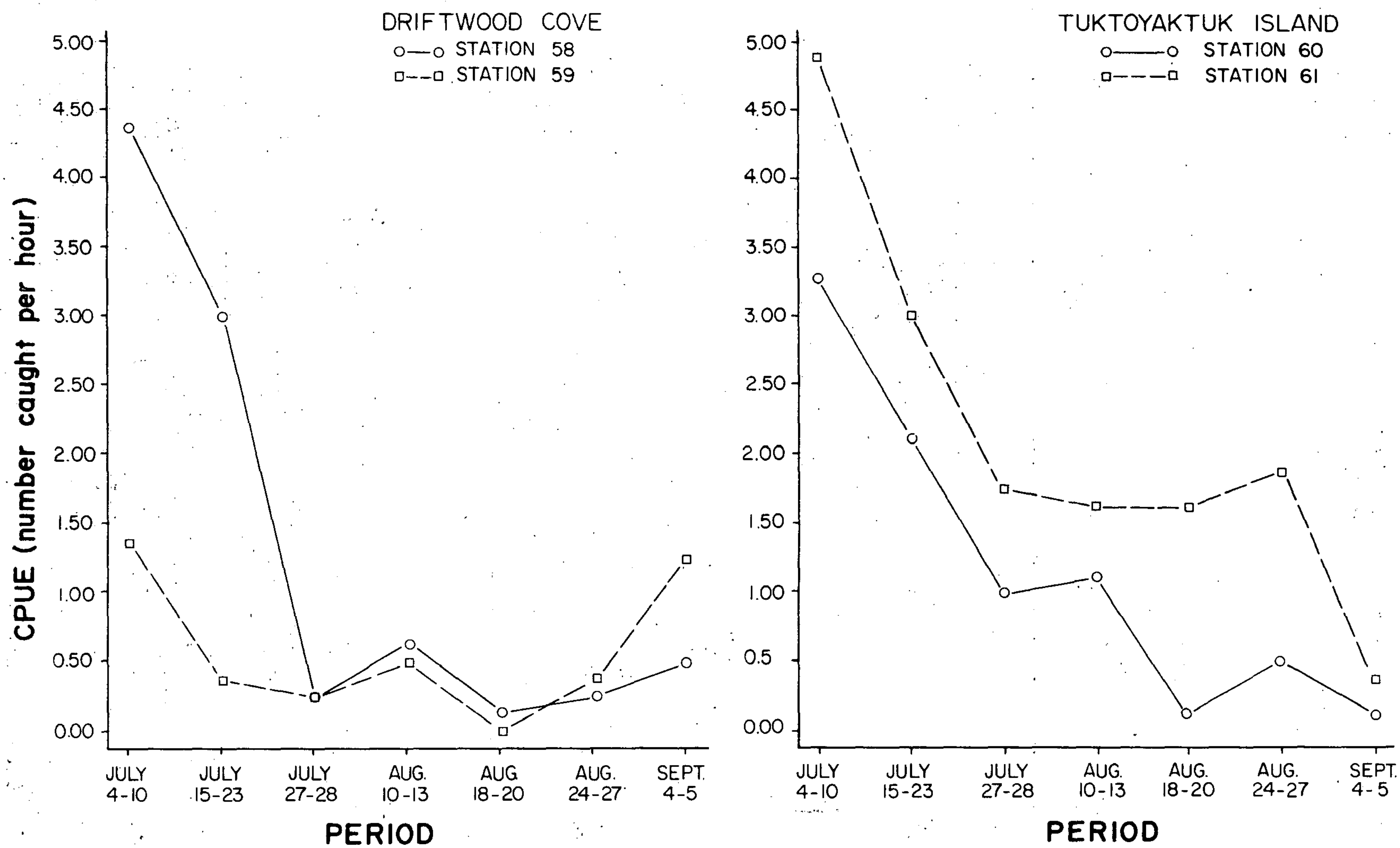

Fig. 5. Seasonal changes in total trapnet CPUE by station at Driftwood Cove and Tuktoyaktuk Island.

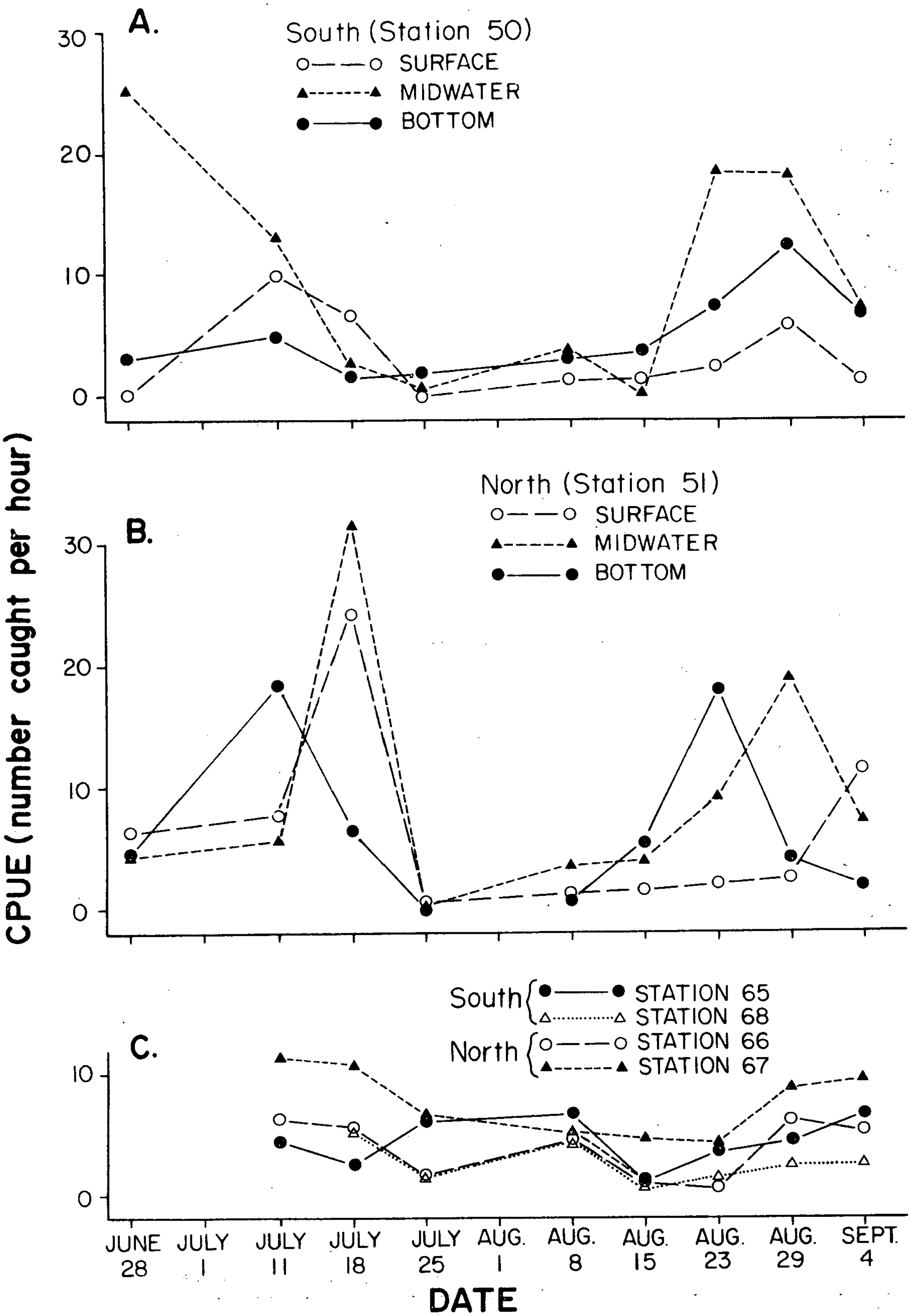

Fig. 6. Seasonal changes in total gillnet CPUE in offshore (A and B) and inshore (C) gillnets by station and depth.

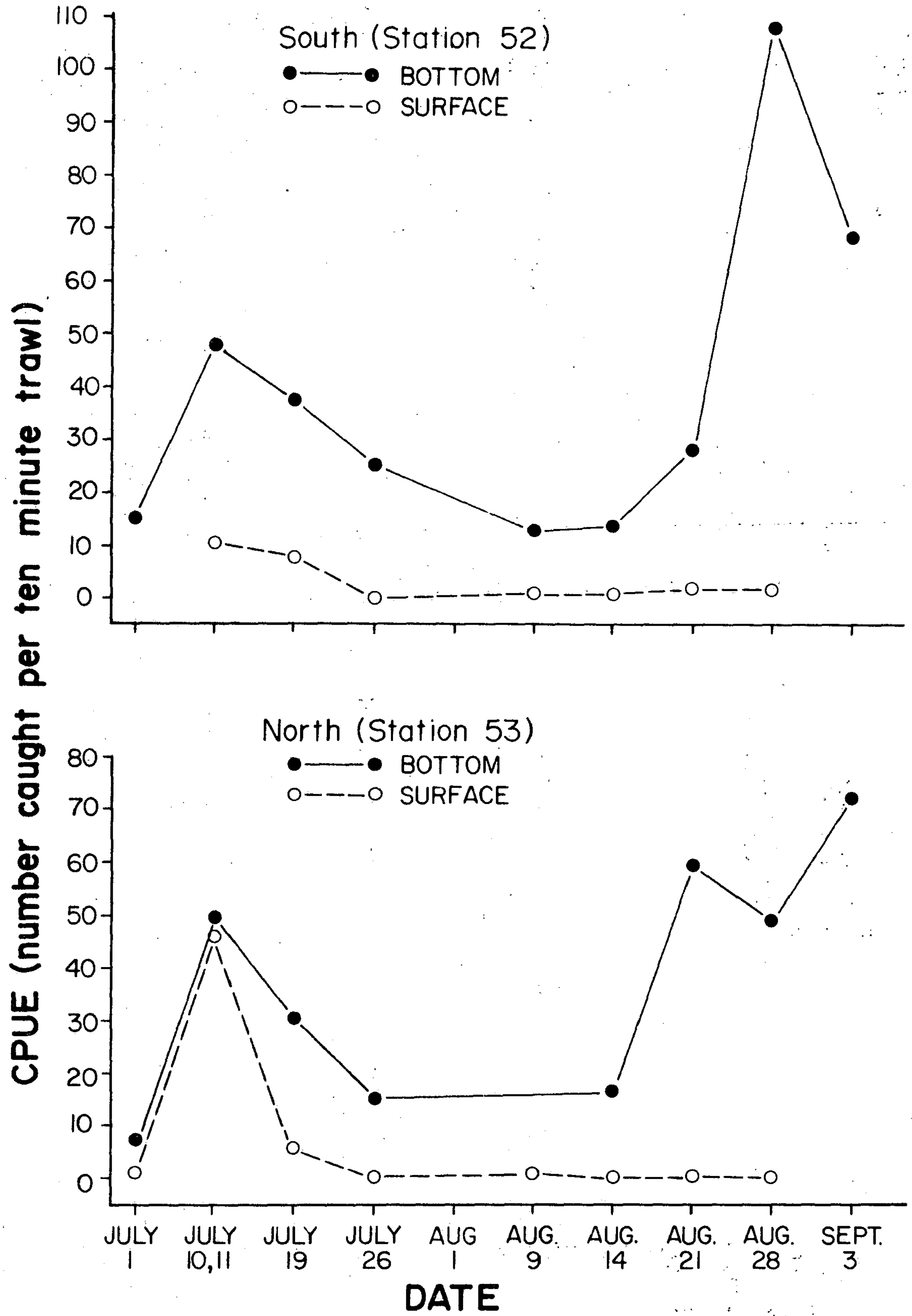

Fig. 7. Seasonal changes in total trawl net CPUE by station and depth.

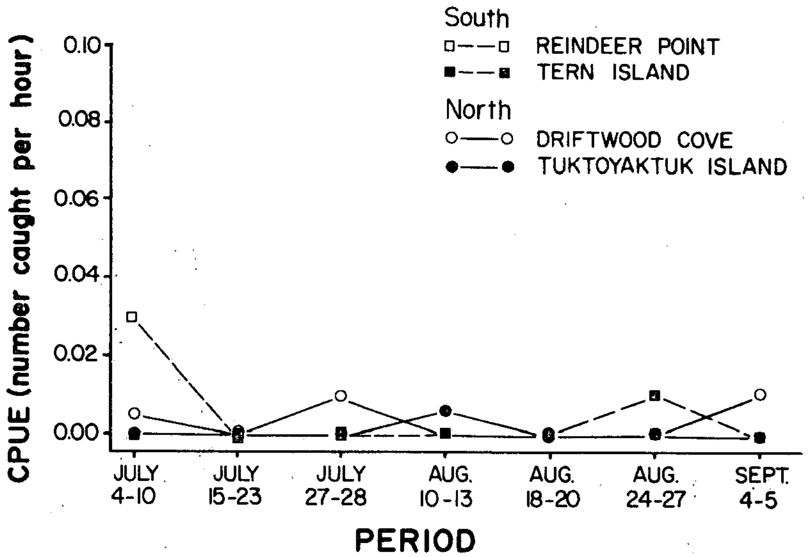

Fig. 8. Seasonal changes in Pacific herring trapnet CPUE by location.

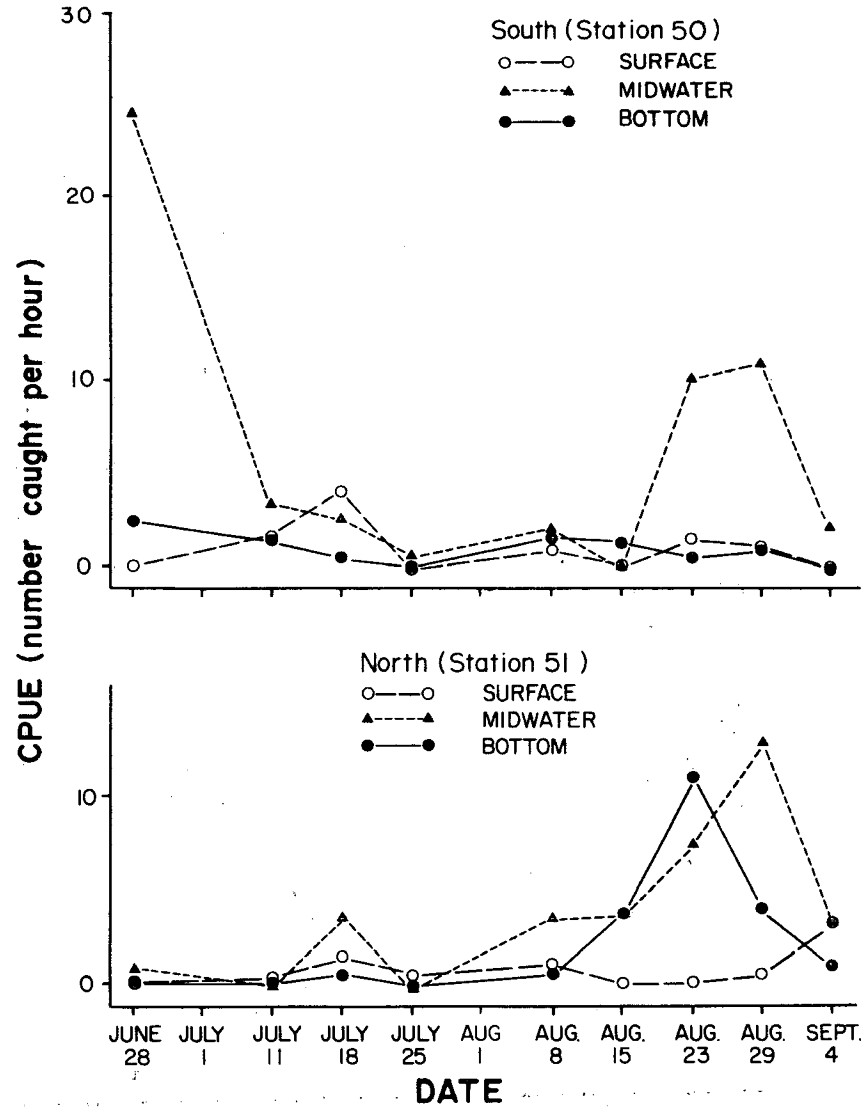

Fig. 9. Seasonal changes in Pacific herring offshore gillnet CPUE by station and depth.

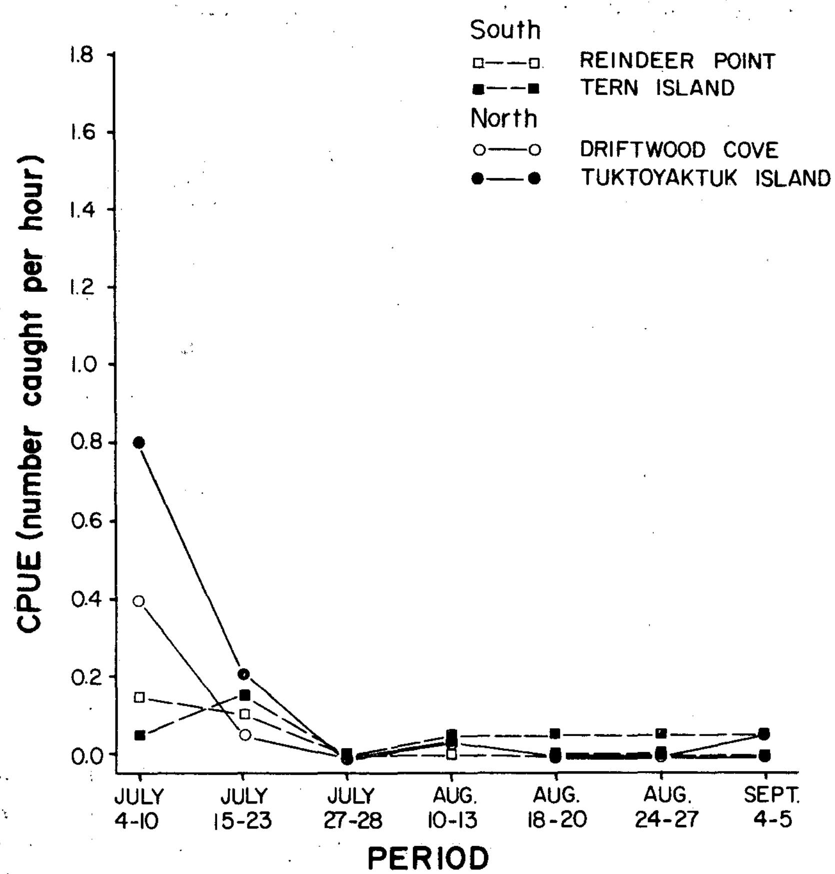

Fig. 10. Seasonal changes in Arctic cisco trapnet CPUE by location.

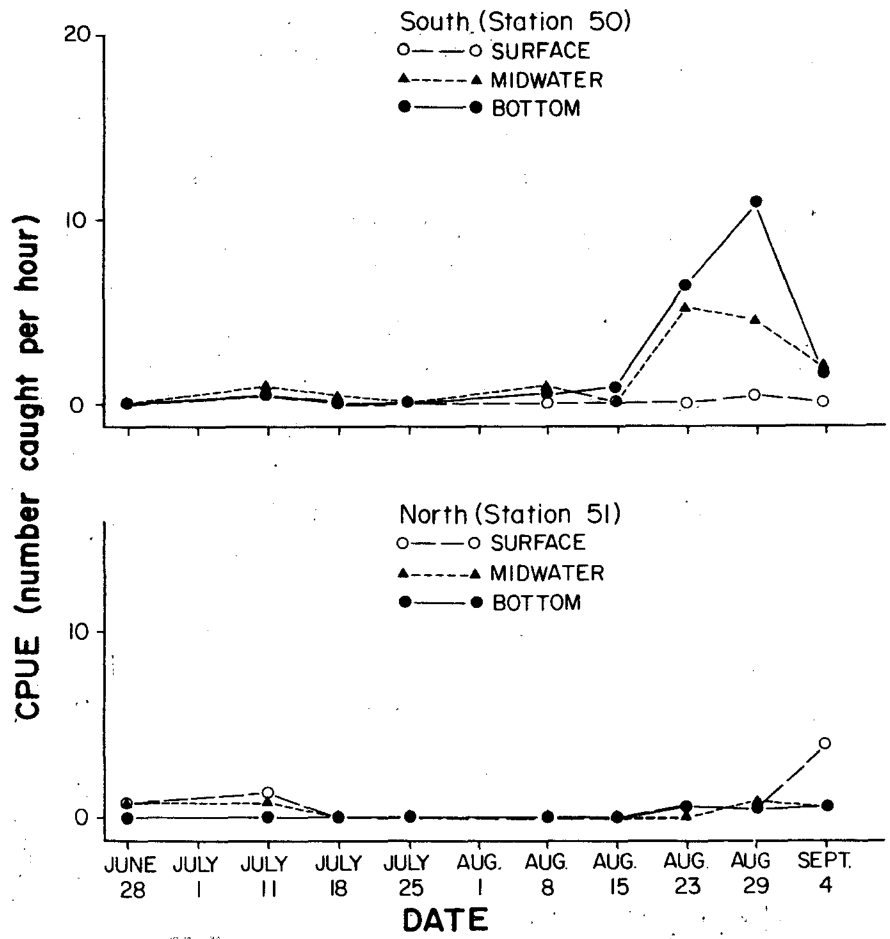

Fig. 11. Seasonal changes in Arctic cisco offshore gillnet CPUE by station and depth.

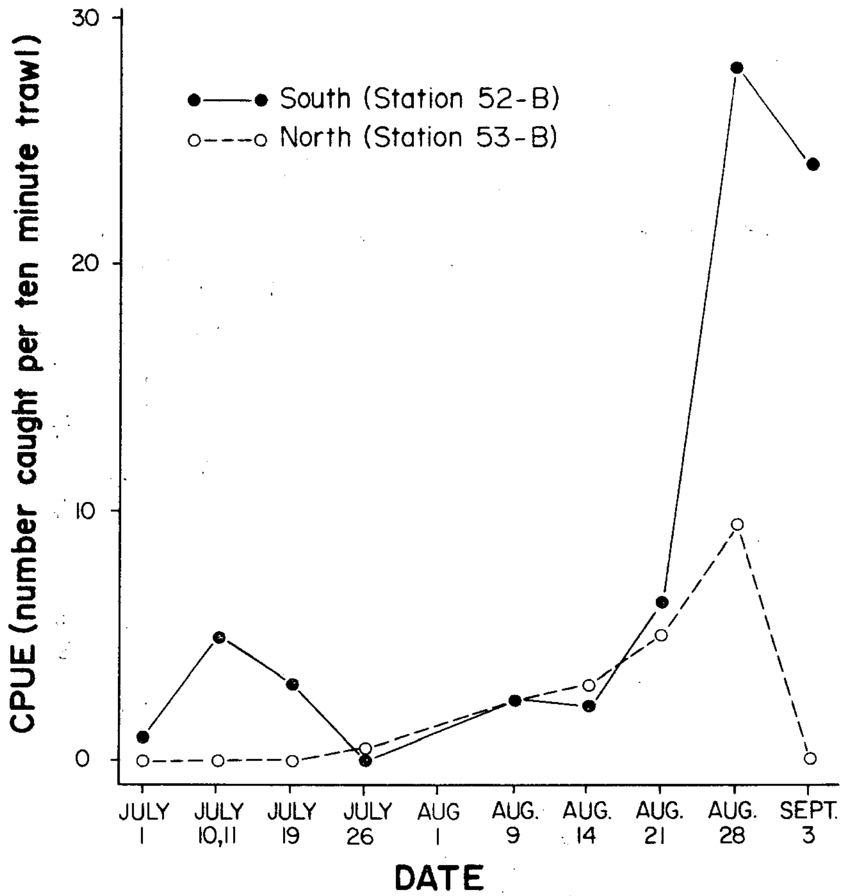

Fig. 12. Seasonal changes in Arctic cisco bottom trawl net CPUE by station.

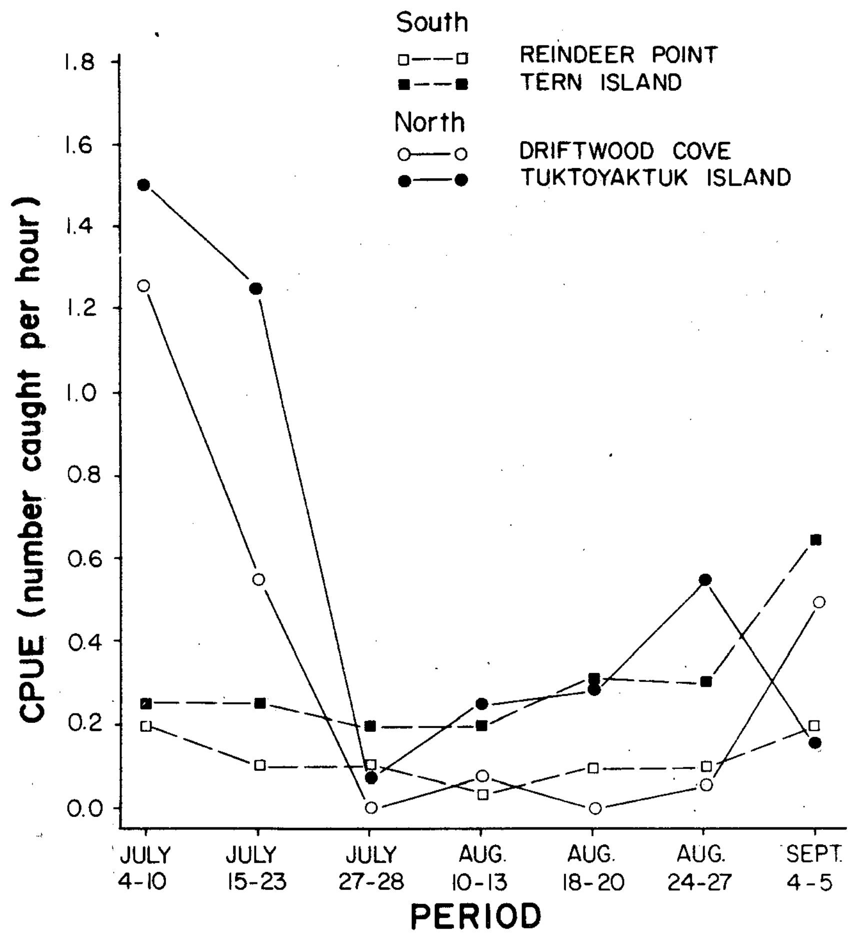

Fig. 13. Seasonal changes in least cisco trapnet CPUE by location.

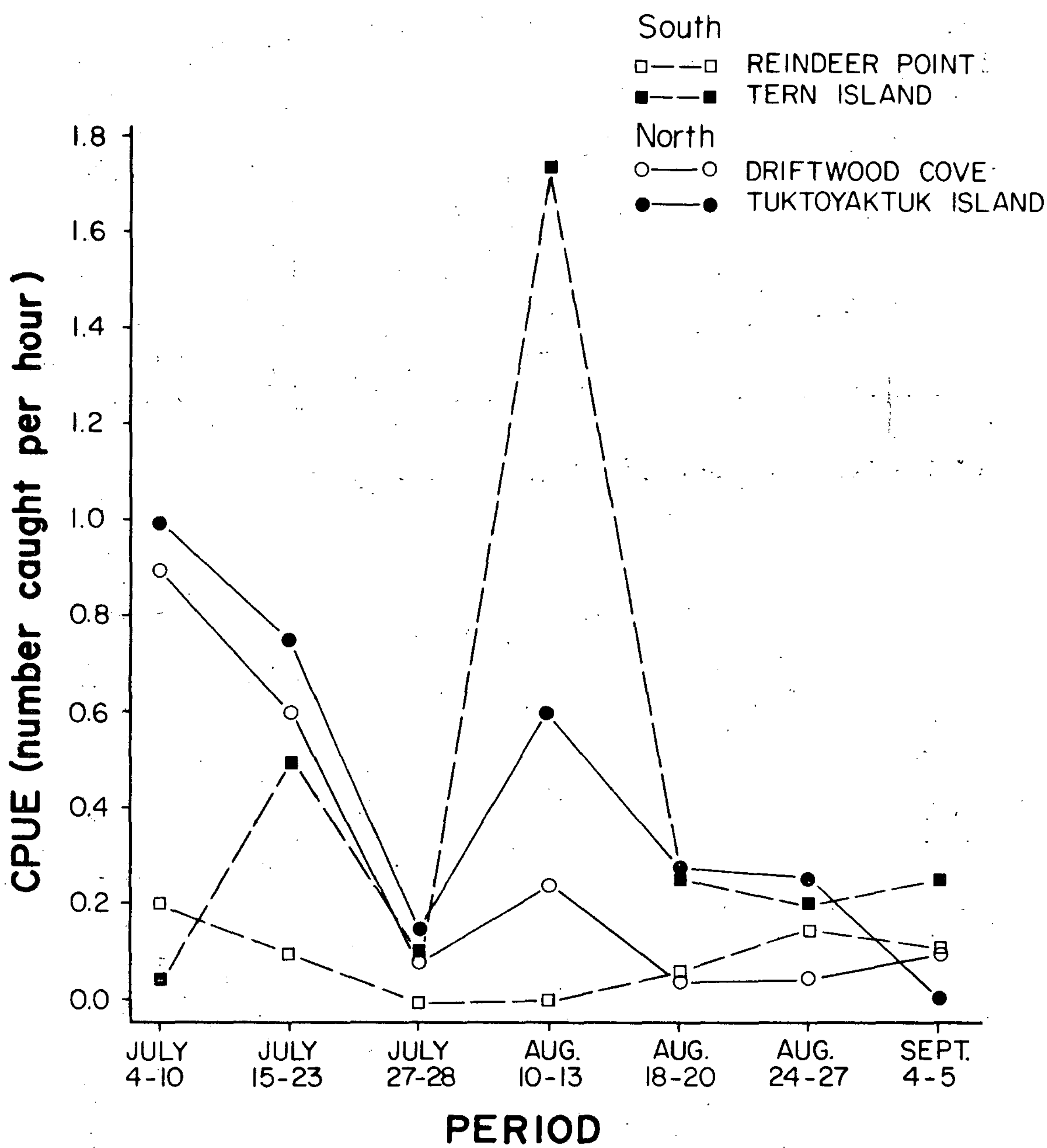

Fig. 14. Seasonal changes in lake whitefish trapnet CPUE by location.

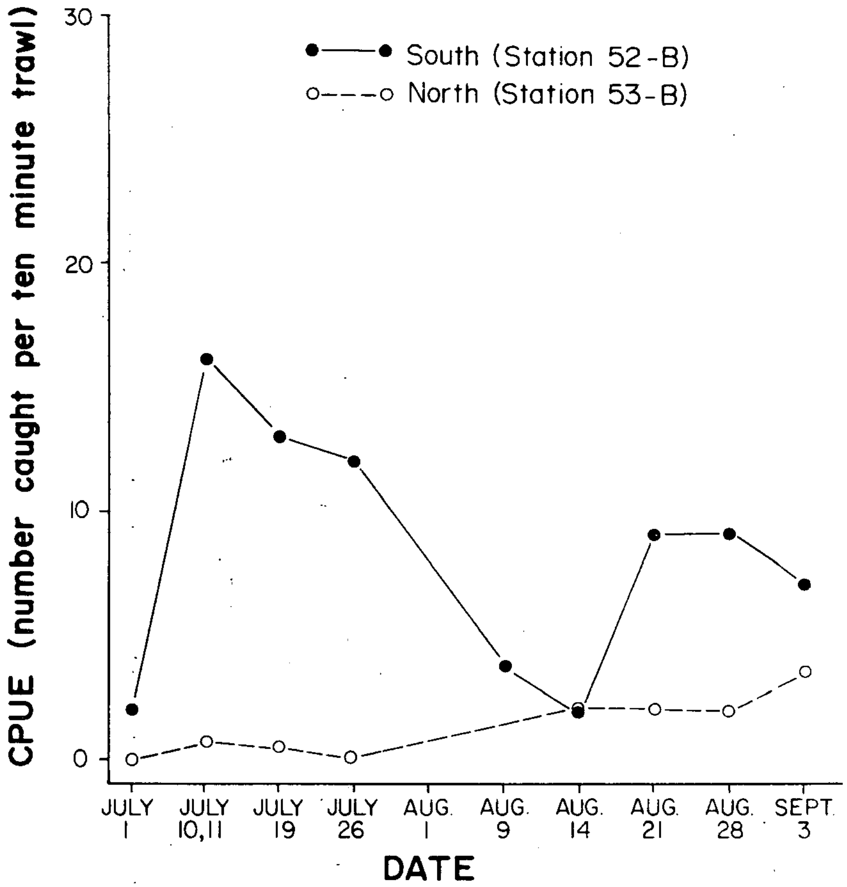

Fig. 15. Seasonal changes in blackline prickleback bottom otter trawl CPUE by station.

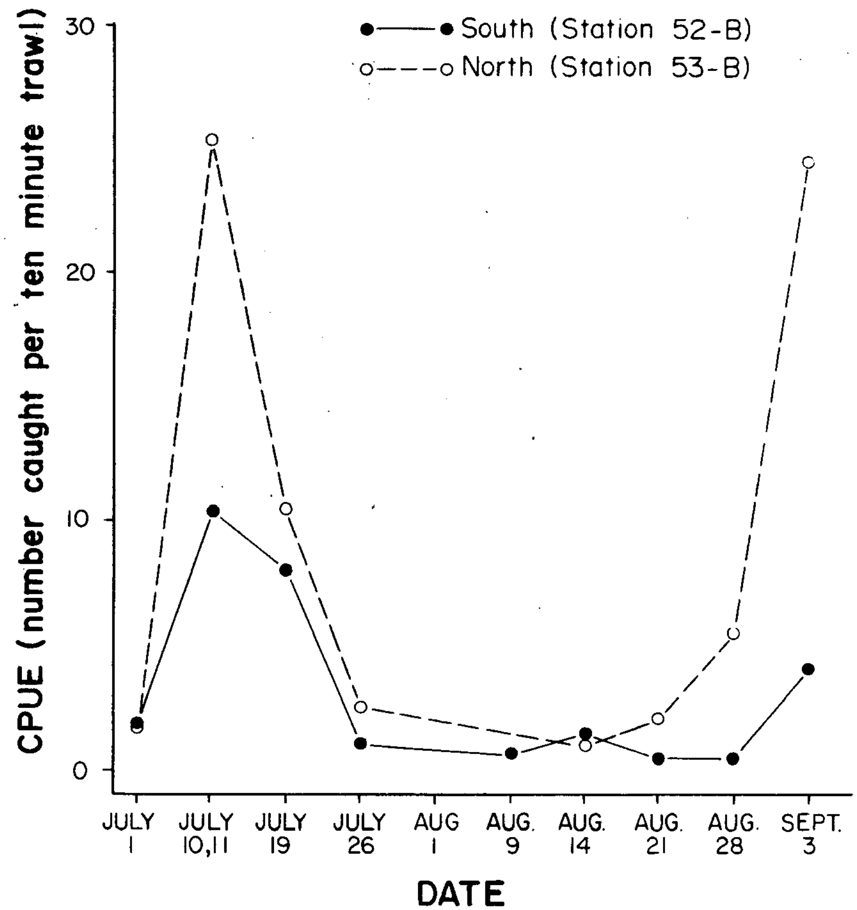

Fig. 16. Seasonal changes in eelpout bottom otter trawl CPUE by station.

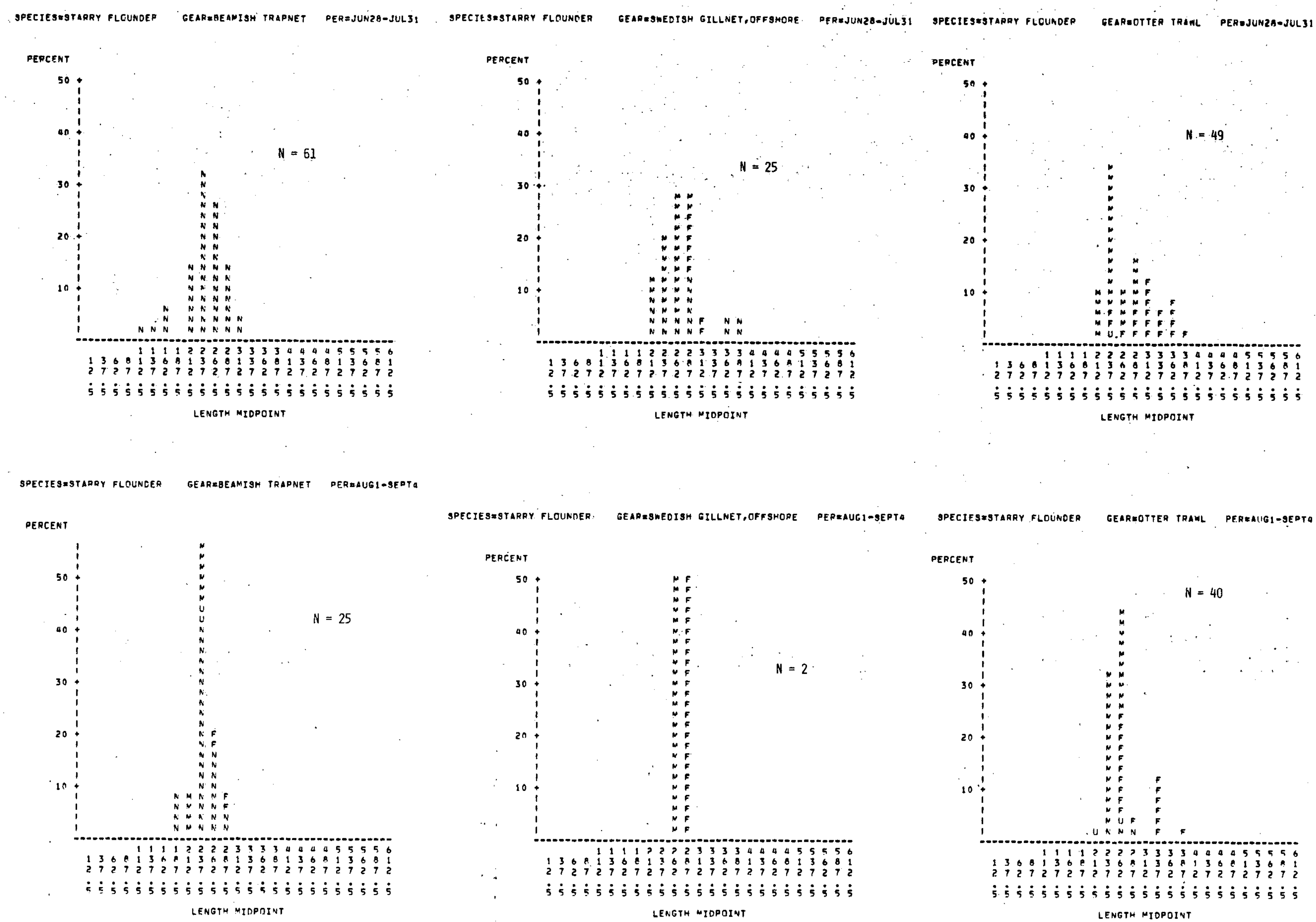

Fig. 17. Percent length-frequency distributions for starry flounder by gear and period.

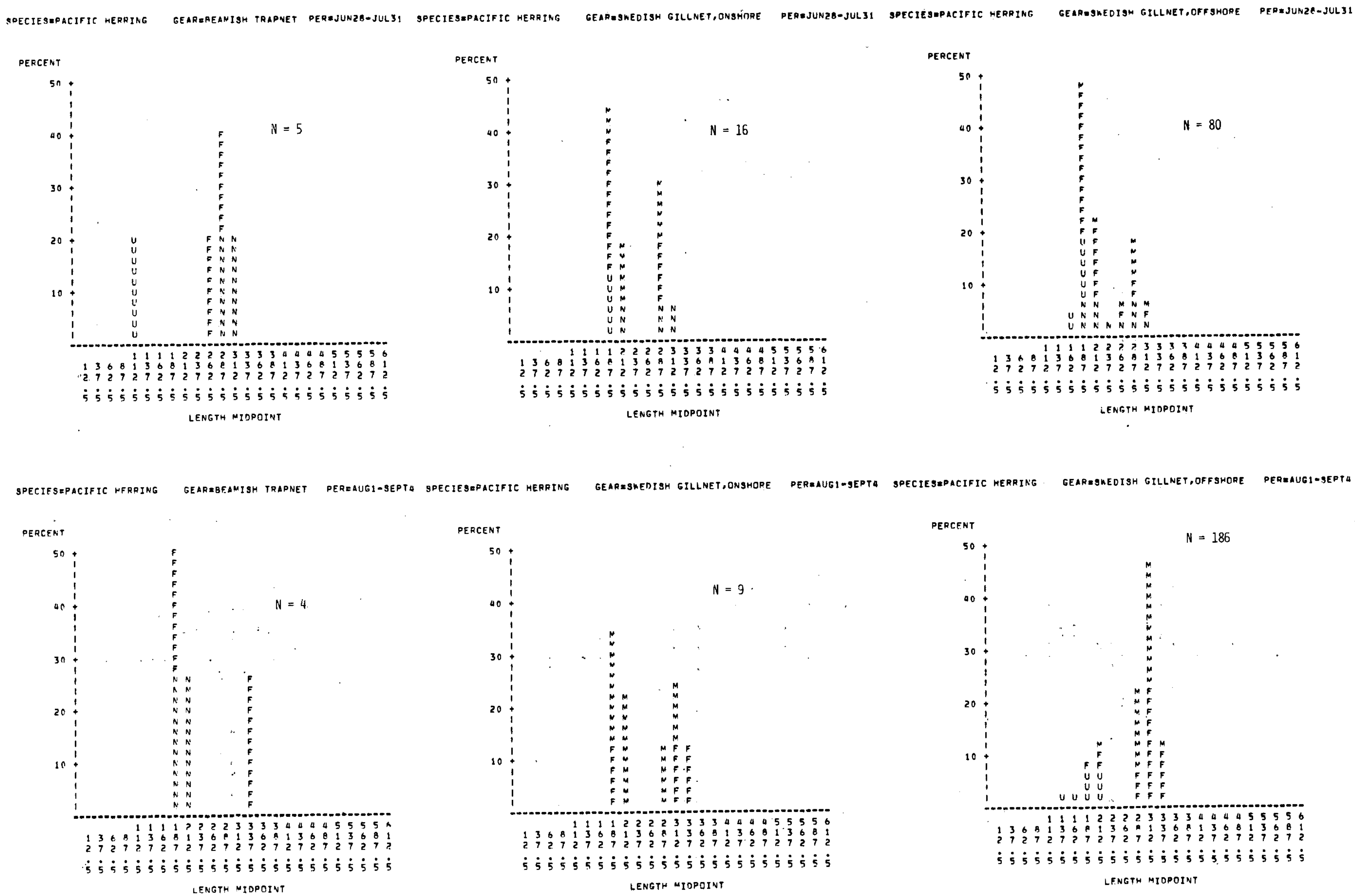

Fig. 18. Percent length-frequency distributions for Pacific herring by gear and period.

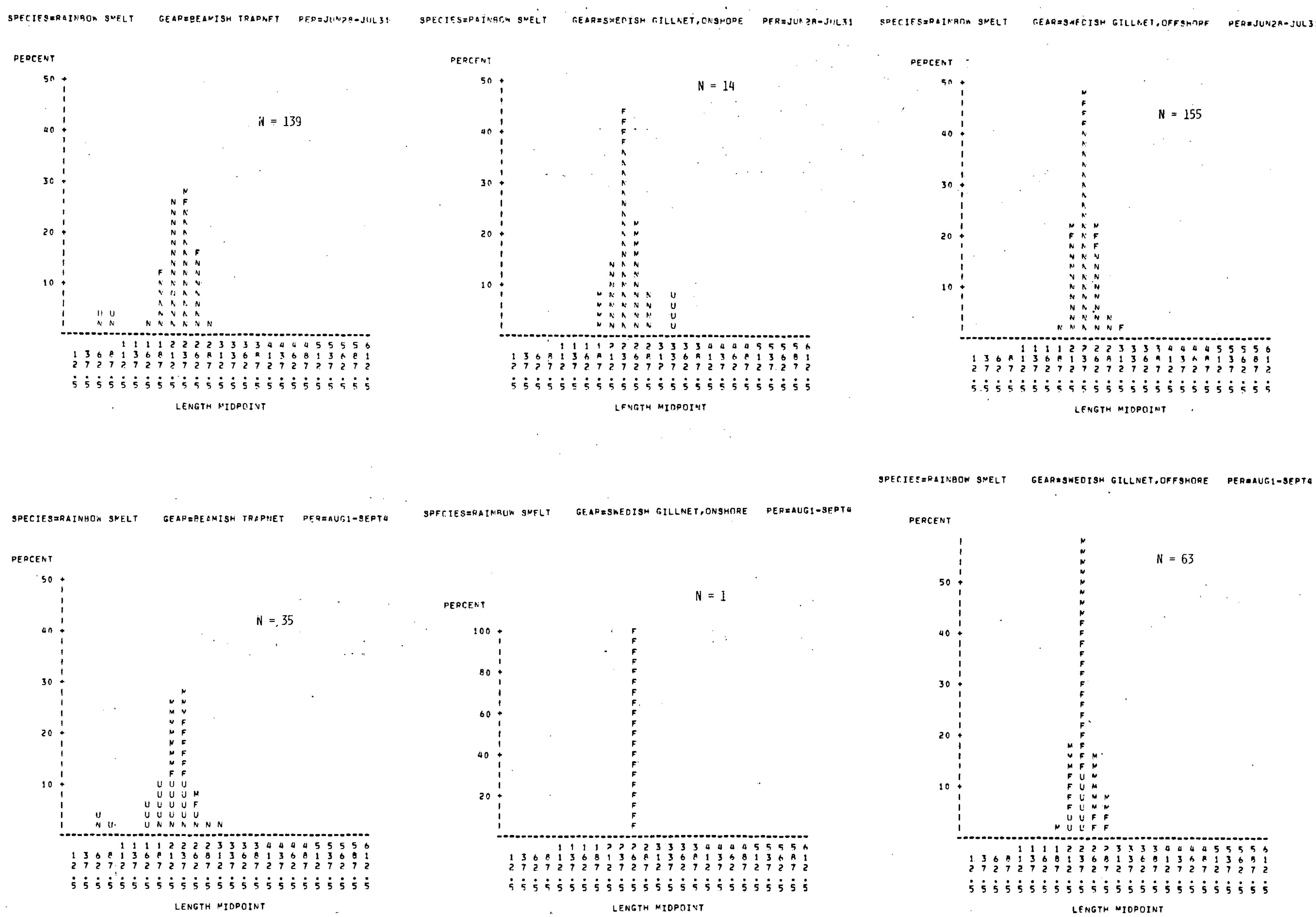

Fig. 19. Percent length-frequency distributions for rainbow smelt by gear and period.

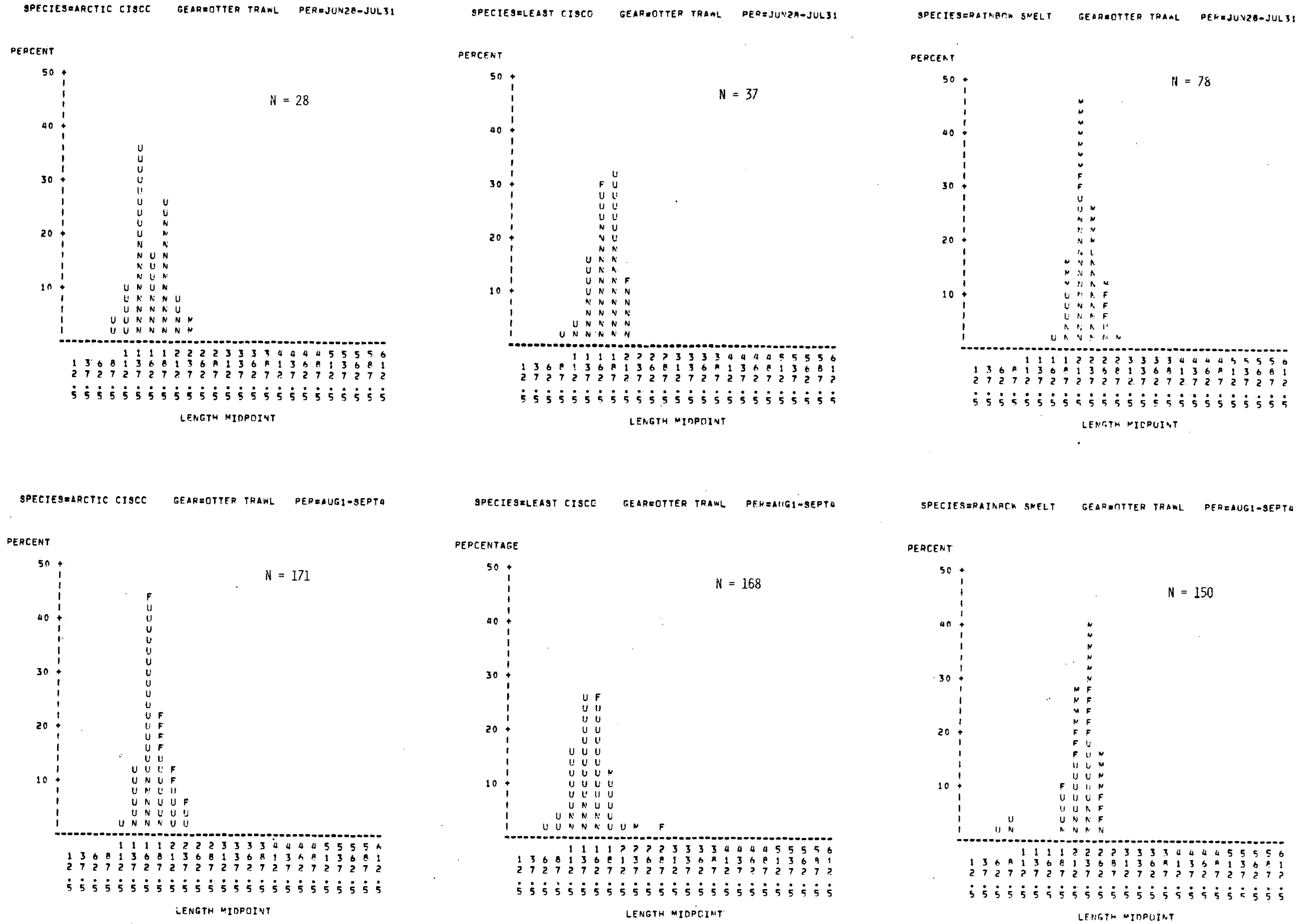

Fig. 20. Percent length-frequency distributions for Arctic cisco, least cisco and rainbow smelt by otter trawl and period.

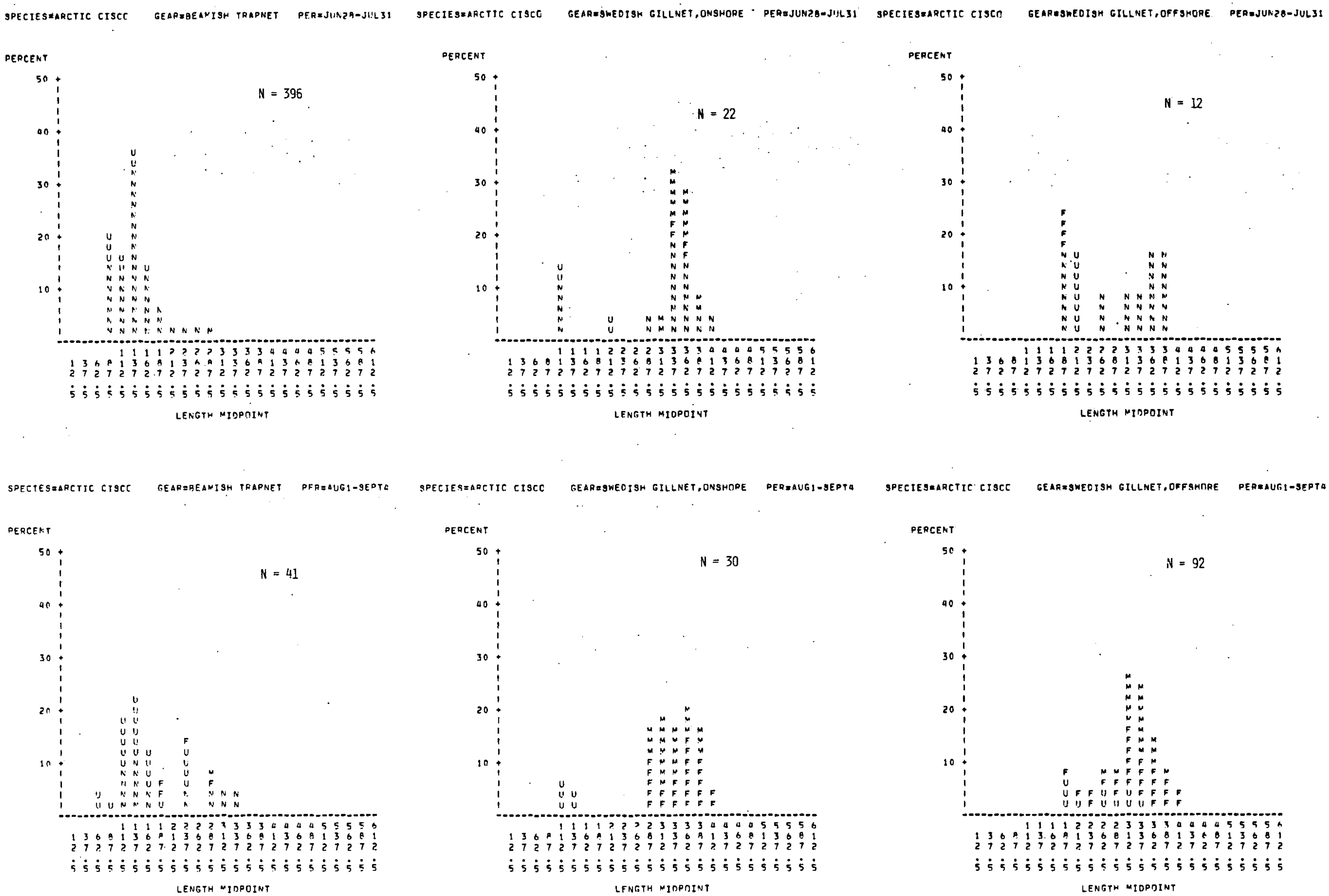

Fig. 21. Percent length-frequency distributions for Arctic cisco by gear and period.

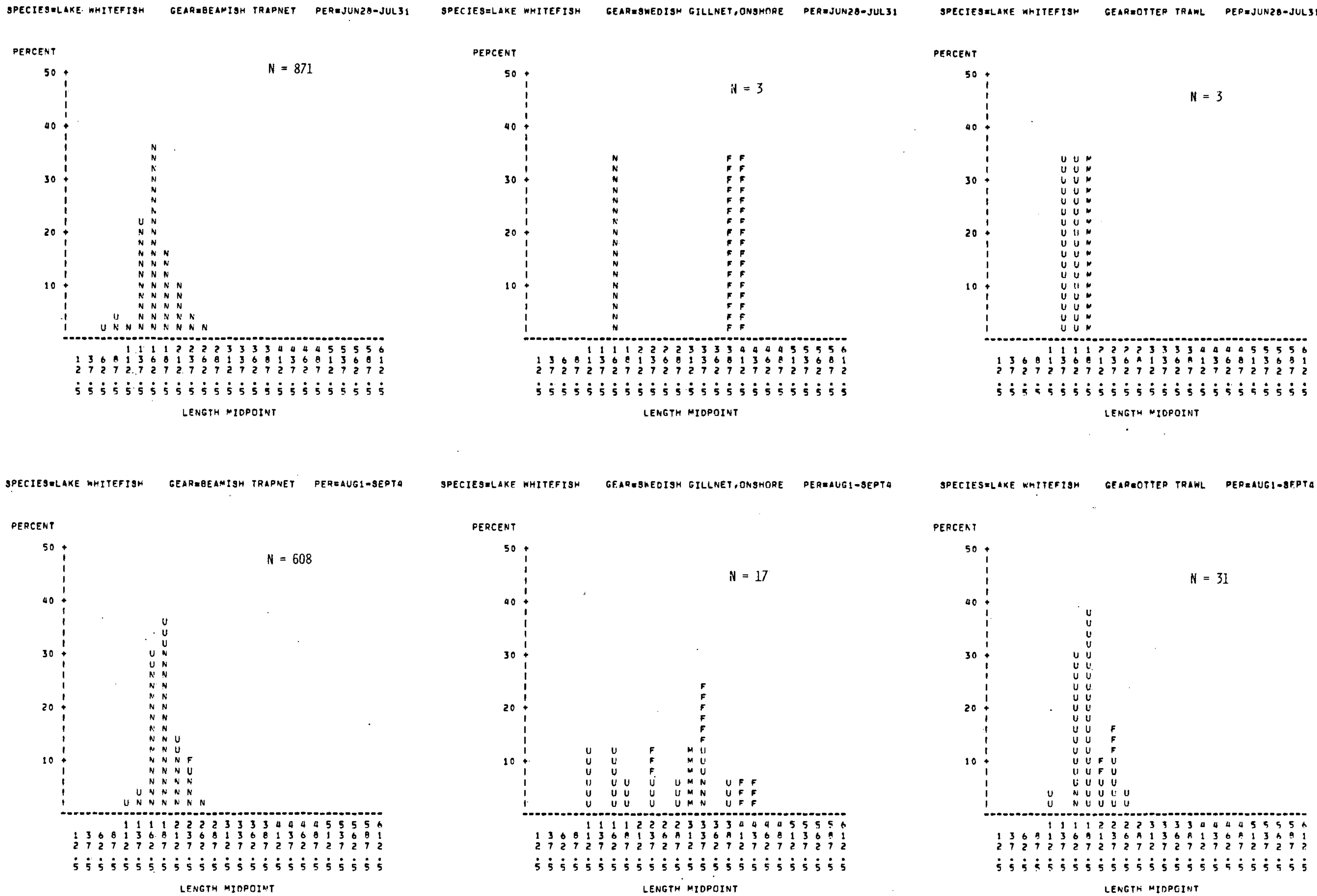

Fig. 22. Percent length-frequency distributions for lake whitefish by gear and period.

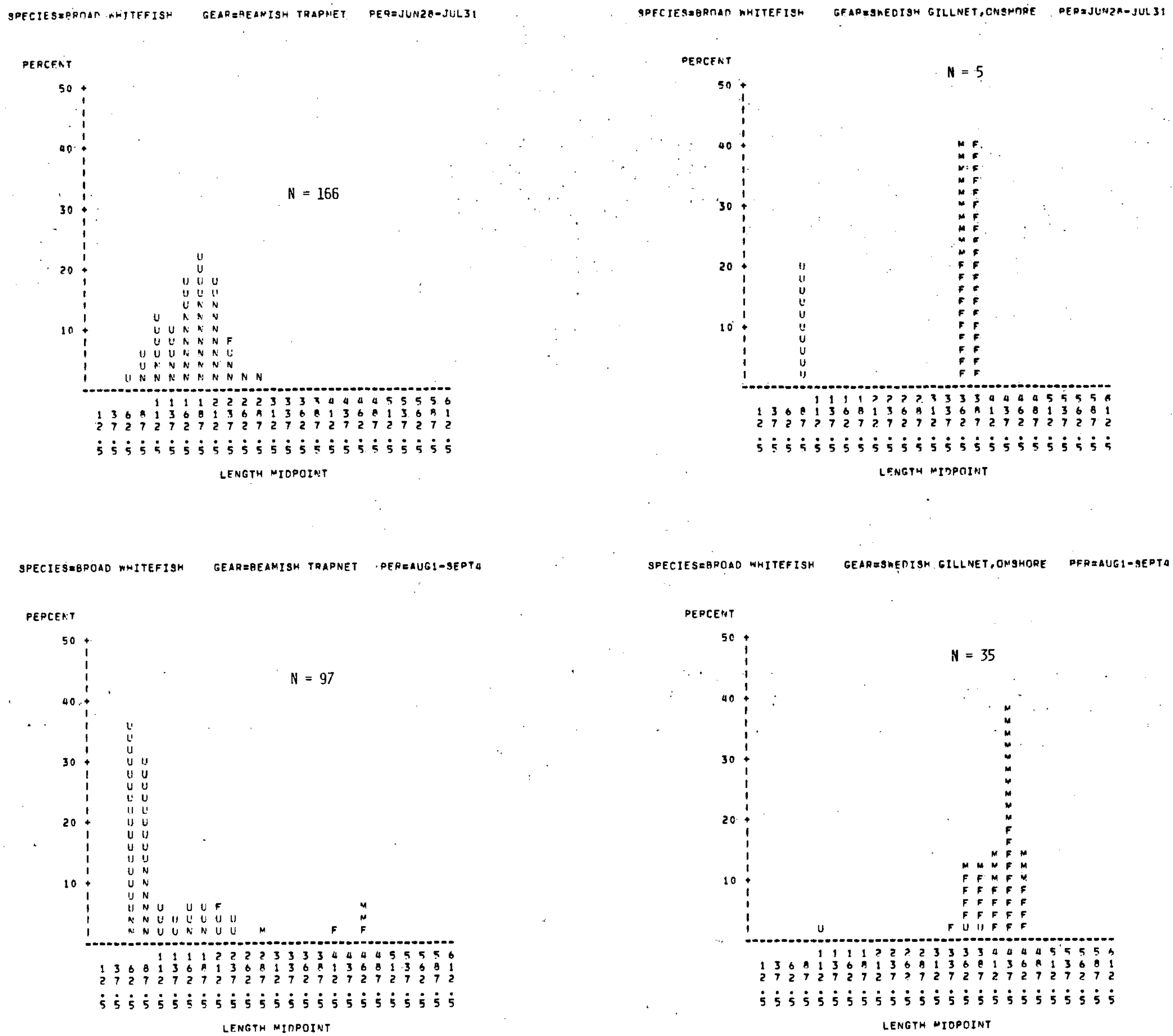

Fig. 23. Percent length-frequency distributions for broad whitefish by gear and period.

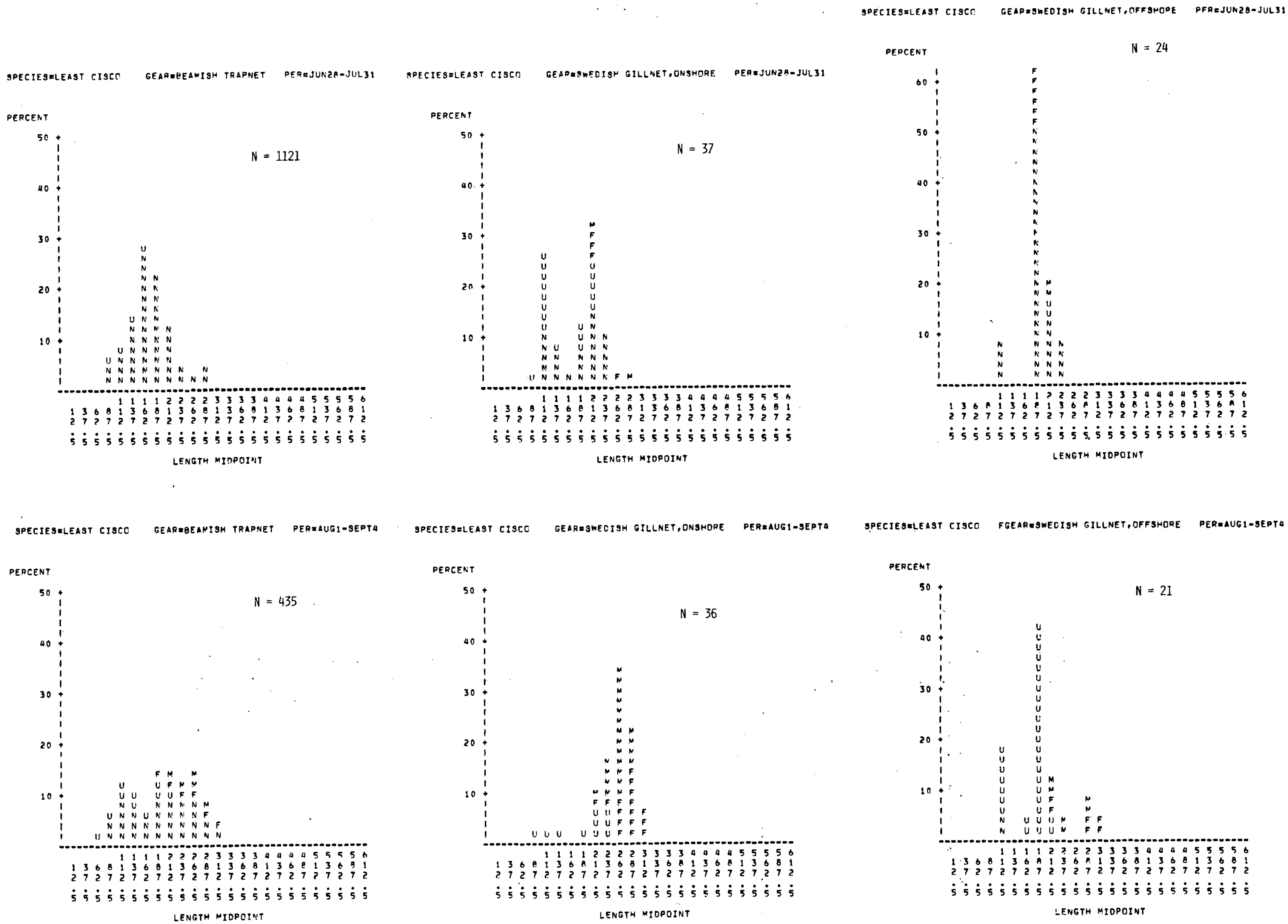

Fig. 24. Percent length-frequency distributions for least cisco by gear and period.

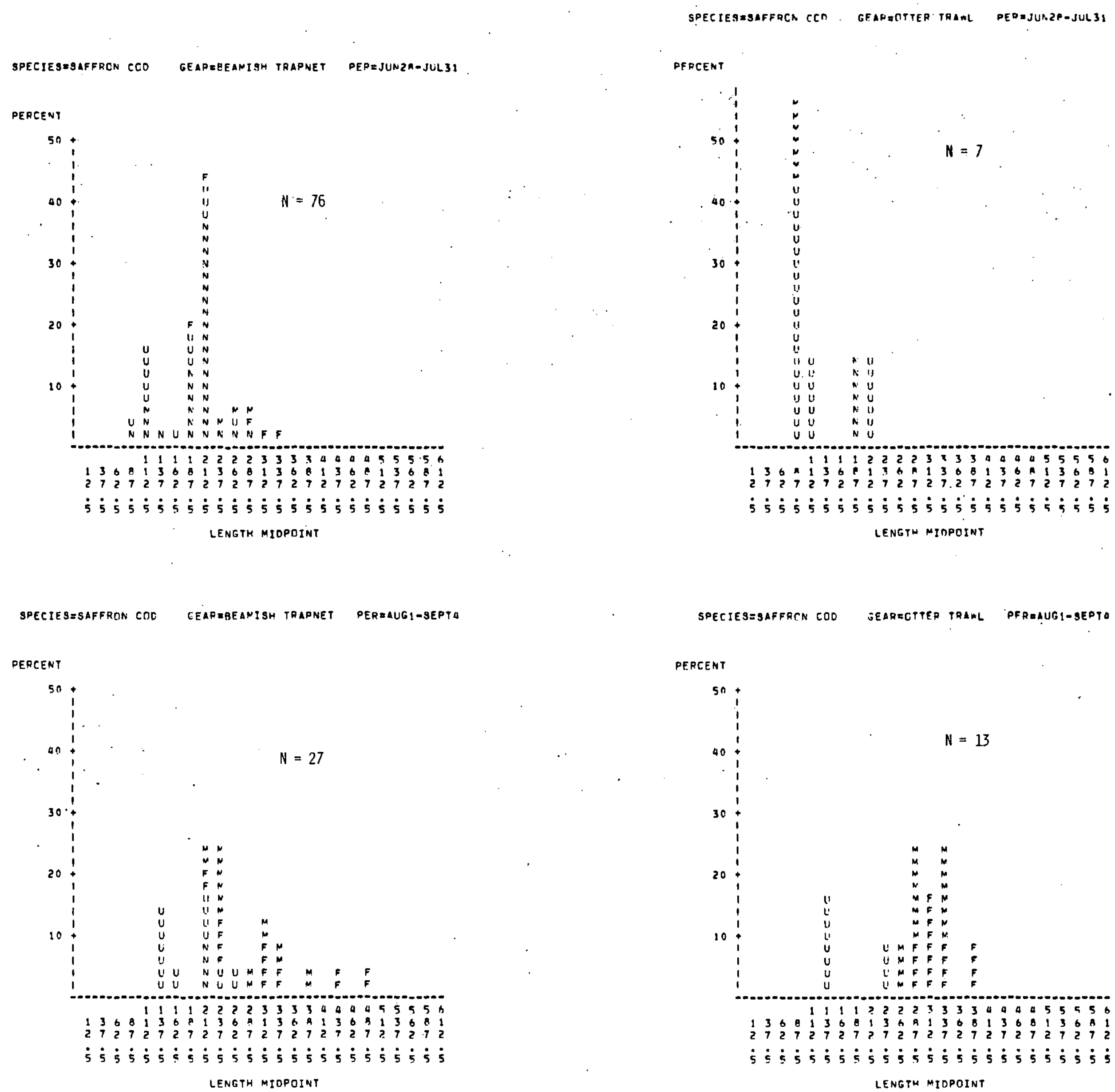

Fig. 25. Percent length-frequency distributions for saffron cod by gear and period.

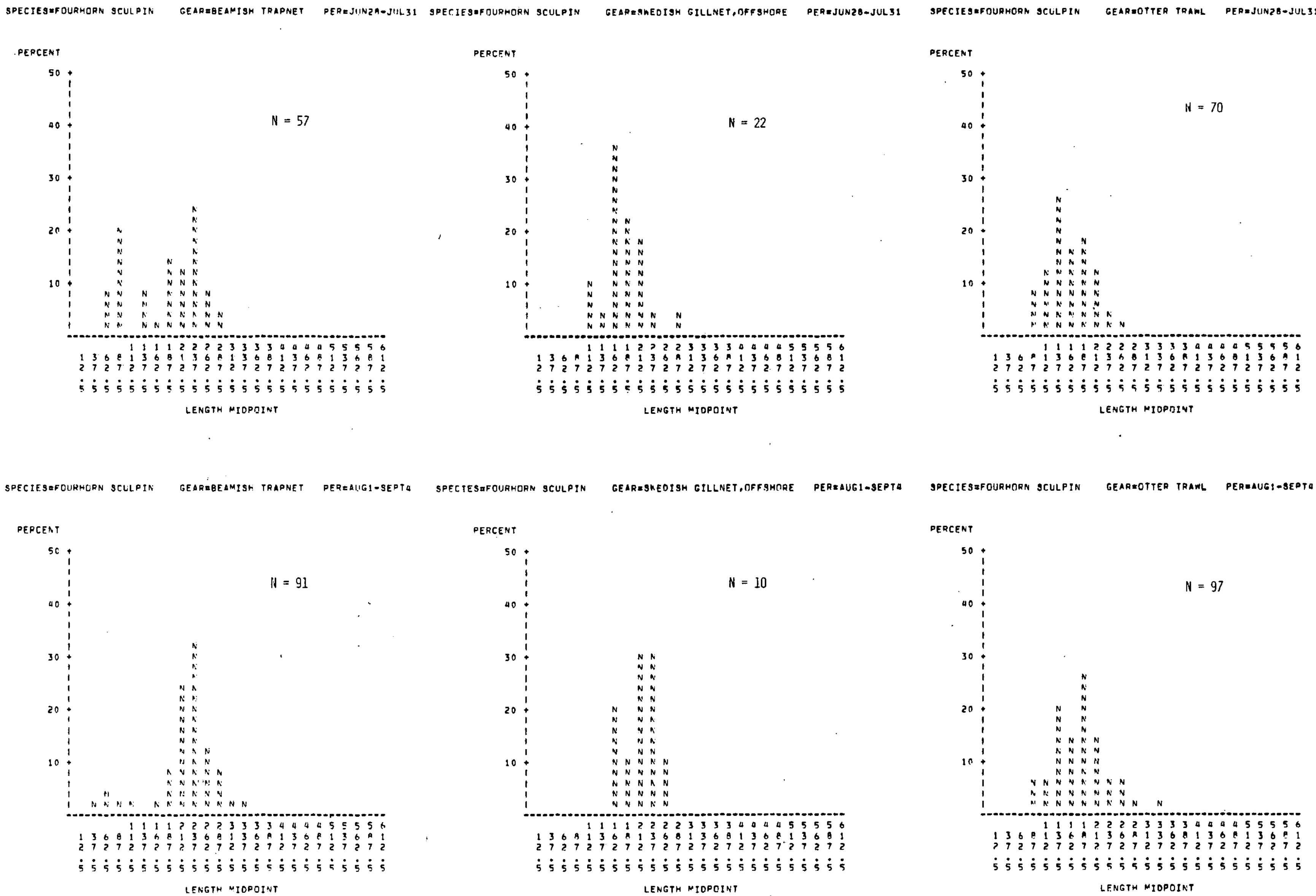

Fig. 26. Percent length-frequency distributions for fourhorn sculpin by gear and period.

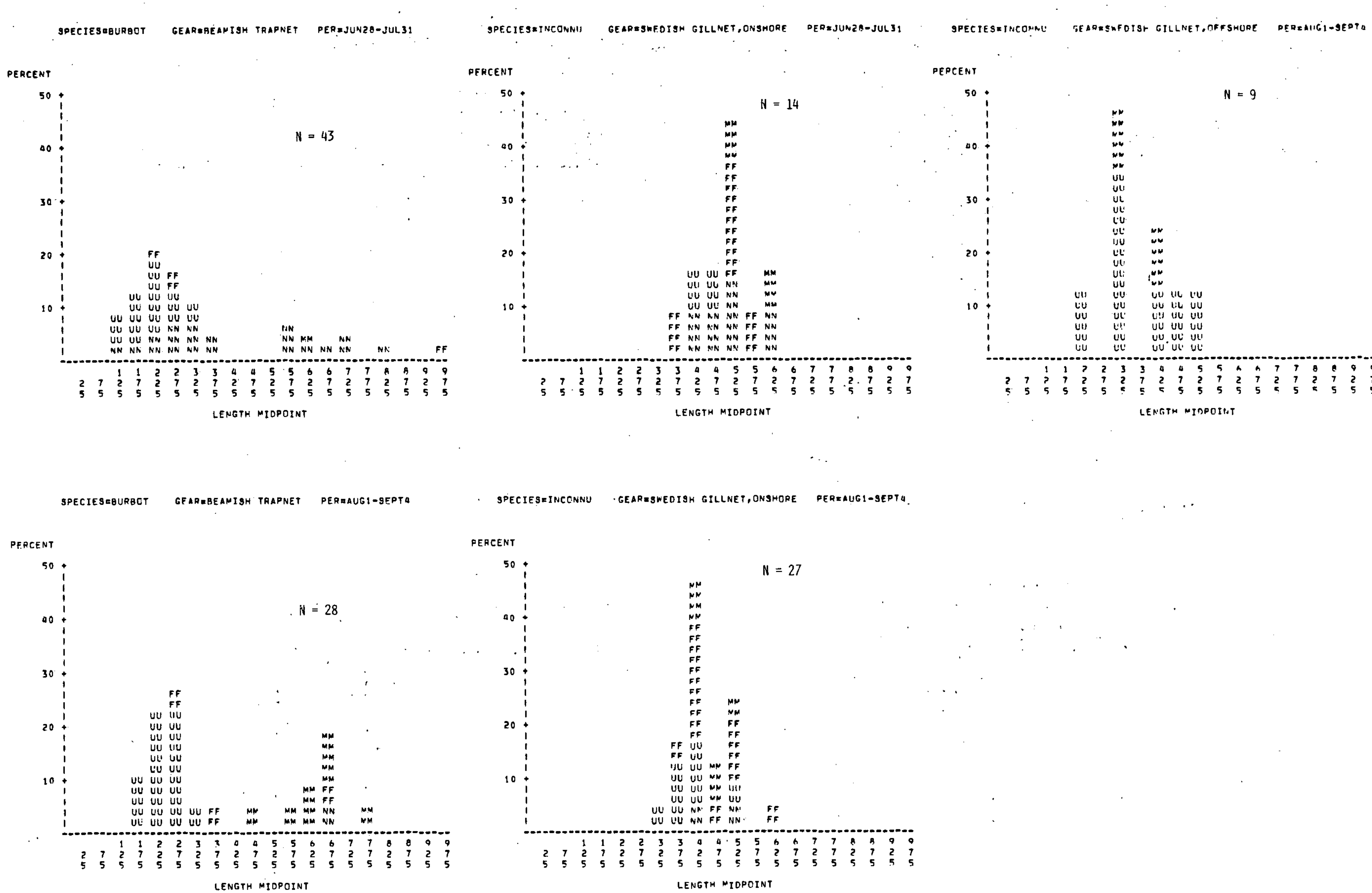

Fig. 27. Percent length-frequency distributions for burbot and inconnu by trapnet and gillnet respectively, and period.

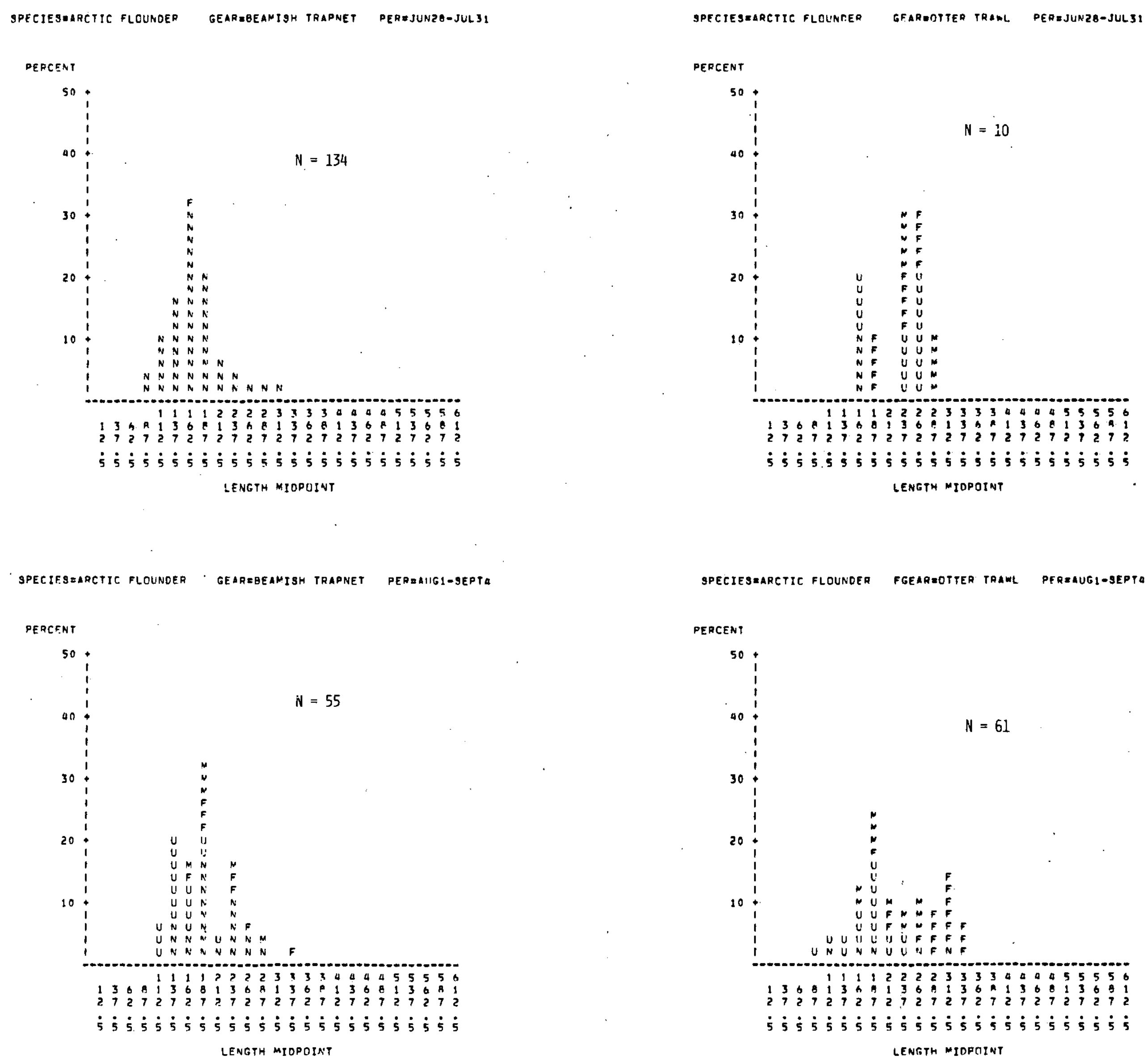

Fig. 28. Percent length-frequency distributions for Arctic flounder by gear and period.

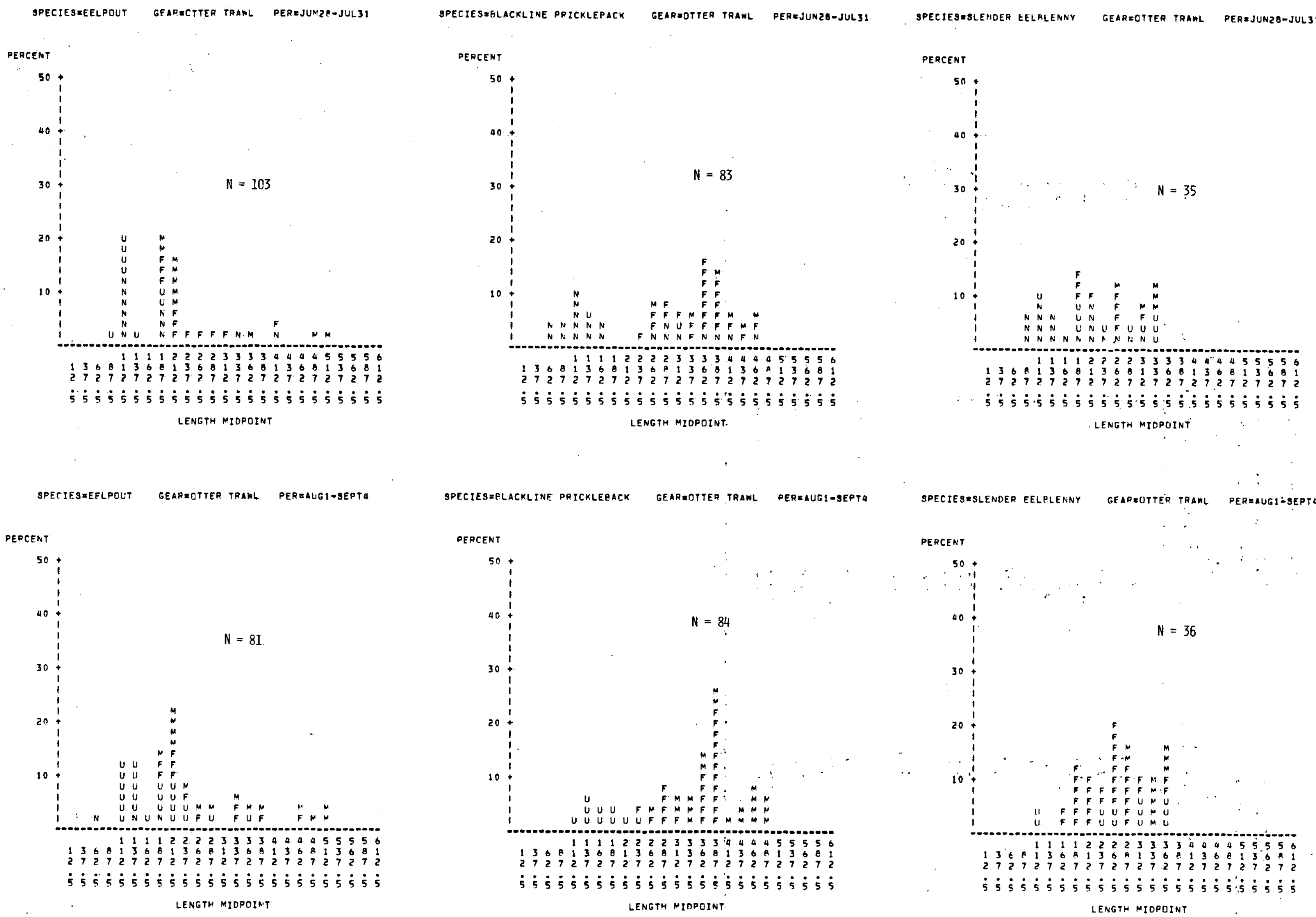

Fig. 29. Percent length-frequency distributions for eelpout, blackline prickleback and slender eelblenny by otter trawl and period.

Appendix 1. Number of fish, by species, for which hard parts were collected and aged from Tuktoyaktuk Harbour, 28 June - 5 September, 1981.

Species	July Sample Size	August Sample Size	September Sample Size	Total	
				Collected	Aged
BDWT	73	77	27	177	77
LKWT	45	183	7	235	71
ARCS	85	232	8	325	110
LSCS	110	331	1	442	81
INCO	11	34	9	54	48
STFL	60	23	5	88	
ARFL	18	62	17	97	
BRBT	24	25	4	53	
RNSM	76	158	4	238	61
SFCD	38	32	6	76	76
PCHR	83	144	2	229	71
SLEB	19	29	6	54	43
BLPB	50	77	12	139	97
ELPT	51	23	51	125	
Totals	737	1429	159	2325	

Appendix 2. Number of fish stomachs collected and preserved from catches in Tuktoyaktuk Harbour 1981 by period.

Species	June				July				August				September				Total			
	Gill-Net	Otter Trawl	Trap-Net	Total	Gill-Net	Otter Trawl	Trap-Net	Total	Gill-Net	Otter Trawl	Trap-Net	Total	Gill-Net	Otter Trawl	Trap-Net	Total	Gill-Net	Otter Trawl	Trap-Net	Total
BDWT					2		11	13	2		13	15					4		24	28
LKWT						3	11	14	7	18	50	75	1			1	8	21	61	90
ARCS					1	7	15	23	55	56	4	115					56	63	19	138
LSCS					3	6	15	24	16	50	62	128					19	56	77	152
STFL					1	5		6	2	10	3	15					3	15	3	21
ARFL					1	3	2	6	2	18	2	22		3		3	3	24	4	31
BRBT							14	14		5	20	25						5	34	39
RNSM	4			4			1	1	11	40	8	59					15	40	9	64
SFCD					1	4	20	25		9	20	29		3	1	4	1	16	41	58
PCHR					4			4	89	1	1	91					93	1	1	95
INCO					1			1	12	2	1	15					13	2	1	16
SLEB						12		12		22		22						34		34
BLPB						35		35		58		58		2		2		95		95
ELPT						15		15		3		3		26		26		44		44
ARCD						3		3		7		7						10		10
Total	4			4	14	93	89	196	196	299	184	679	1	34	1	36	215	426	274	915

Appendix 3. Length statistics for each species captured in Tuktoyaktuk Harbour during 1981 by gear type and period.

ARCTIC FLOUNDER

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	4	4
MEAN LENGTH(MM)	250.3	266.3
STANDARD DEVIATION	37.5	15.7
MAXIMUM LENGTH(MM)	286	280
MINIMUM LENGTH(MM)	202	247
BEAMISH TRAPNETS		
N	134	55
MEAN LENGTH(MM)	174.3	189.3
STANDARD DEVIATION	48.6	48.9
MAXIMUM LENGTH(MM)	335	335
MINIMUM LENGTH(MM)	90	114
OTTER TRAWLS		
N	10	61
MEAN LENGTH(MM)	234.3	226.5
STANDARD DEVIATION	44.9	64.0
MAXIMUM LENGTH(MM)	291	333
MINIMUM LENGTH(MM)	165	97

STARRY FLOUNDER

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	6	7
MEAN LENGTH(MM)	259.2	262.6
STANDARD DEVIATION	16.9	26.1
MAXIMUM LENGTH(MM)	288	301
MINIMUM LENGTH(MM)	240	223
OFFSHORE GILLNETS		
N	25	2
MEAN LENGTH(MM)	269.0	268.5
STANDARD DEVIATION	40.6	17.7
MAXIMUM LENGTH(MM)	380	281
MINIMUM LENGTH(MM)	214	256
BEAMISH TRAPNETS		
N	61	25
MEAN LENGTH(MM)	241.4	242.5
STANDARD DEVIATION	39.7	24.6
MAXIMUM LENGTH(MM)	320	286
MINIMUM LENGTH(MM)	101	179
OTTER TRAWLS		
N	49	40
MEAN LENGTH(MM)	275.0	267.7
STANDARD DEVIATION	46.5	38.5
MAXIMUM LENGTH(MM)	380	388
MINIMUM LENGTH(MM)	211	206

Appendix 3. cont'd

PACIFIC HERRING

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	16	9
MEAN LENGTH(MM)	231.8	251.3
STANDARD DEVIATION	51.5	64.2
MAXIMUM LENGTH(MM)	310	332
MINIMUM LENGTH(MM)	180	182
OFFSHORE GILLNETS		
N	80	186
MEAN LENGTH(MM)	220.1	285.3
STANDARD DEVIATION	44.5	49.3
MAXIMUM LENGTH(MM)	323	336
MINIMUM LENGTH(MM)	174	141
BEAMISH TRAPNETS		
N	5	4
MEAN LENGTH(MM)	252.0	231.3
STANDARD DEVIATION	72.8	68.0
MAXIMUM LENGTH(MM)	303	333
MINIMUM LENGTH(MM)	124	194
OTTER TRAWLS		
N	1	2
MEAN LENGTH(MM)	185.0	324.5
STANDARD DEVIATION		2.1
MAXIMUM LENGTH(MM)	185	326
MINIMUM LENGTH(MM)	185	323

RAINBOW SMELT

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	14	1
MEAN LENGTH(MM)	249.3	273.0
STANDARD DEVIATION	35.4	
MAXIMUM LENGTH(MM)	341	273
MINIMUM LENGTH(MM)	193	273
OFFSHORE GILLNETS		
N	155	63
MEAN LENGTH(MM)	236.7	238.7
STANDARD DEVIATION	24.6	18.1
MAXIMUM LENGTH(MM)	315	286
MINIMUM LENGTH(MM)	153	180
BEAMISH TRAPNETS		
N	140	35
MEAN LENGTH(MM)	211.7	214.9
STANDARD DEVIATION	53.2	54.9
MAXIMUM LENGTH(MM)	289	314
MINIMUM LENGTH(MM)	63	52
OTTER TRAWLS		
N	79	150
MEAN LENGTH(MM)	222.4	225.3
STANDARD DEVIATION	22.5	37.7
MAXIMUM LENGTH(MM)	284	301
MINIMUM LENGTH(MM)	172	63

Appendix 3. cont'd

SAFFRON COD

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	1	
MEAN LENGTH(MM)	101.0	
STANDARD DEVIATION		
MAXIMUM LENGTH(MM)	101	
MINIMUM LENGTH(MM)	101	
OFFSHORE GILLNETS		
N	1	
MEAN LENGTH(MM)	430.0	
STANDARD DEVIATION		
MAXIMUM LENGTH(MM)	430	
MINIMUM LENGTH(MM)	430	
BEAMISH TRAPNETS		
N	76	27
MEAN LENGTH(MM)	195.4	254.2
STANDARD DEVIATION	53.7	87.6
MAXIMUM LENGTH(MM)	327	477
MINIMUM LENGTH(MM)	85	126
OTTER TRAWLS		
N	7	13
MEAN LENGTH(MM)	128.4	279.5
STANDARD DEVIATION	52.6	71.2
MAXIMUM LENGTH(MM)	210	376
MINIMUM LENGTH(MM)	90	137

BURBOT

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
BEAMISH TRAPNETS		
N	43	28
MEAN LENGTH(MM)	347.3	392.5
STANDARD DEVIATION	211.1	203.4
MAXIMUM LENGTH(MM)	995	765
MINIMUM LENGTH(MM)	126	154
OTTER TRAWLS		
N		5
MEAN LENGTH(MM)		198.2
STANDARD DEVIATION		52.8
MAXIMUM LENGTH(MM)		263
MINIMUM LENGTH(MM)		135

ARCTIC COD

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
OTTER TRAWLS		
N	5	7
MEAN LENGTH(MM)	97.0	81.6
STANDARD DEVIATION	21.0	6.4
MAXIMUM LENGTH(MM)	122	95
MINIMUM LENGTH(MM)	69	74

Appendix 3. cont'd

INCONNU

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	14	27
MEAN LENGTH(MM)	506.0	451.8
STANDARD DEVIATION	70.5	61.9
MAXIMUM LENGTH(MM)	637	610
MINIMUM LENGTH(MM)	398	335
OFFSHORE GILLNETS		
N		9
MEAN LENGTH(MM)		382.0
STANDARD DEVIATION		96.1
MAXIMUM LENGTH(MM)		510
MINIMUM LENGTH(MM)		233
BEAMISH TRAPNETS		
N	3	2
MEAN LENGTH(MM)	162.7	207.5
STANDARD DEVIATION	61.8	70.0
MAXIMUM LENGTH(MM)	234	257
MINIMUM LENGTH(MM)	124	158
OTTER TRAWLS		
N		3
MEAN LENGTH(MM)		174.0
STANDARD DEVIATION		3.5
MAXIMUM LENGTH(MM)		178
MINIMUM LENGTH(MM)		172

FOURHORN SCULPIN

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	3	6
MEAN LENGTH(MM)	251.3	235.0
STANDARD DEVIATION	39.5	75.0
MAXIMUM LENGTH(MM)	291	306
MINIMUM LENGTH(MM)	212	89
OFFSHORE GILLNETS		
N	22	10
MEAN LENGTH(MM)	181.2	212.3
STANDARD DEVIATION	39.3	32.6
MAXIMUM LENGTH(MM)	293	266
MINIMUM LENGTH(MM)	118	160
BEAMISH TRAPNETS		
N	57	91
MEAN LENGTH(MM)	180.5	218.9
STANDARD DEVIATION	69.6	60.2
MAXIMUM LENGTH(MM)	298	345
MINIMUM LENGTH(MM)	66	42
OTTER TRAWLS		
N	70	97
MEAN LENGTH(MM)	161.0	176.4
STANDARD DEVIATION	43.1	46.8
MAXIMUM LENGTH(MM)	260	331
MINIMUM LENGTH(MM)	83	86

Appendix 3. cont'd

LEAST CISCO

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	37	36
MEAN LENGTH(MM)	177.6	248.1
STANDARD DEVIATION	55.4	48.8
MAXIMUM LENGTH(MM)	290	307
MINIMUM LENGTH(MM)	98	98
OFFSHORE GILLNETS		
N	24	21
MEAN LENGTH(MM)	191.4	194.4
STANDARD DEVIATION	30.1	54.0
MAXIMUM LENGTH(MM)	236	301
MINIMUM LENGTH(MM)	103	108
BEAMISH TRAPNETS		
N	1121	435
MEAN LENGTH(MM)	174.8	194.8
STANDARD DEVIATION	47.1	65.0
MAXIMUM LENGTH(MM)	338	325
MINIMUM LENGTH(MM)	35	59
OTTER TRAWLS		
N	37	168
MEAN LENGTH(MM)	168.4	153.4
STANDARD DEVIATION	29.4	38.3
MAXIMUM LENGTH(MM)	219	290
MINIMUM LENGTH(MM)	87	73

ARCTIC CISCO

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	22	30
MEAN LENGTH(MM)	313.5	316.9
STANDARD DEVIATION	90.5	75.6
MAXIMUM LENGTH(MM)	405	405
MINIMUM LENGTH(MM)	108	113
OFFSHORE GILLNETS		
N	12	92
MEAN LENGTH(MM)	285.6	316.1
STANDARD DEVIATION	85.0	57.6
MAXIMUM LENGTH(MM)	395	421
MINIMUM LENGTH(MM)	181	180
BEAMISH TRAPNETS		
N	396	41
MEAN LENGTH(MM)	141.4	185.0
STANDARD DEVIATION	49.9	76.2
MAXIMUM LENGTH(MM)	405	335
MINIMUM LENGTH(MM)	62	69
OTTER TRAWLS		
N	28	171
MEAN LENGTH(MM)	157.4	176.7
STANDARD DEVIATION	35.0	32.9
MAXIMUM LENGTH(MM)	226	354
MINIMUM LENGTH(MM)	88	66

Appendix 3. cont'd

LAKE WHITEFISH

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	3	17
MEAN LENGTH(MM)	318.7	277.8
STANDARD DEVIATION	137.4	100.4
MAXIMUM LENGTH(MM)	401	428
MINIMUM LENGTH(MM)	160	105
OFFSHORE GILLNETS		
N		1
MEAN LENGTH(MM)		197.0
STANDARD DEVIATION		
MAXIMUM LENGTH(MM)		197
MINIMUM LENGTH(MM)		197
BEAMISH TRAPNETS		
N	891	588
MEAN LENGTH(MM)	165.7	189.1
STANDARD DEVIATION	37.4	35.1
MAXIMUM LENGTH(MM)	302	325
MINIMUM LENGTH(MM)	45	50
OTTER TRAWLS		
N	3	31
MEAN LENGTH(MM)	164.7	191.1
STANDARD DEVIATION	16.0	30.1
MAXIMUM LENGTH(MM)	180	267
MINIMUM LENGTH(MM)	148	125

BROAD WHITEFISH

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
ONSHORE GILLNETS		
N	5	35
MEAN LENGTH(MM)	318.0	408.8
STANDARD DEVIATION	132.6	62.8
MAXIMUM LENGTH(MM)	398	473
MINIMUM LENGTH(MM)	82	112
OFFSHORE GILLNETS		
N		2
MEAN LENGTH(MM)		422.0
STANDARD DEVIATION		2.8
MAXIMUM LENGTH(MM)		424
MINIMUM LENGTH(MM)		420
BEAMISH TRAPNETS		
N	166	97
MEAN LENGTH(MM)	175.1	121.1
STANDARD DEVIATION	57.7	92.2
MAXIMUM LENGTH(MM)	597	467
MINIMUM LENGTH(MM)	51	52

Appendix 3. cont'd

SLENDER EELBLENNY

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
OTTER TRAWLS		
N	35	33
MEAN LENGTH(MM)	222.6	271.8
STANDARD DEVIATION	80.7	66.4
MAXIMUM LENGTH(MM)	346	363
MINIMUM LENGTH(MM)	82	113

BLACK-LINED PRICKLEBACK

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
OFFSHORE GILLNETS		
N		2
MEAN LENGTH(MM)		383.5
STANDARD DEVIATION		23.3
MAXIMUM LENGTH(MM)		400
MINIMUM LENGTH(MM)		367
BEAMISH TRAPNETS		
N		2
MEAN LENGTH(MM)		194.5
STANDARD DEVIATION		47.4
MAXIMUM LENGTH(MM)		228
MINIMUM LENGTH(MM)		161
OTTER TRAWLS		
N	83	92
MEAN LENGTH(MM)	287.9	336.9
STANDARD DEVIATION	122.4	99.3
MAXIMUM LENGTH(MM)	475	500
MINIMUM LENGTH(MM)	68	125

EELPOUT

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
OTTER TRAWLS		
N	103	81
MEAN LENGTH(MM)	223.0	228.5
STANDARD DEVIATION	106.4	106.5
MAXIMUM LENGTH(MM)	521	522
MINIMUM LENGTH(MM)	91	60

Appendix 3. cont'd

NORTHERN PIKE

BEAMISH TRAPNETS

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
N	1	1
MEAN LENGTH(MM)	150.0	464.0
STANDARD DEVIATION		
MAXIMUM LENGTH(MM)	150	464
MINIMUM LENGTH(MM)	150	464

POND SMELT

BEAMISH TRAPNETS

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
N		1
MEAN LENGTH(MM)		72.0
STANDARD DEVIATION		
MAXIMUM LENGTH(MM)		72
MINIMUM LENGTH(MM)		72

LONGNOSE SUCKER

BEAMISH TRAPNETS

	JUN 28 TO JULY 31	AUG 1 TO SEPT 5
N	1	
MEAN LENGTH(MM)	109.0	
STANDARD DEVIATION		
MAXIMUM LENGTH(MM)	109	
MINIMUM LENGTH(MM)	109	