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SPECIES COMPOSITION AND RELATIVE ABUNDANCE  
OF DEMERSAL MARINE LIFE IN WATERS OF  
SOUTHEASTERN ALASKA, 1969-81

by  
H. R. Carlson, R. E. Haight, and K. J. Krieger

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#### Figure

Figure 1.--Locations of demersal marine life sampling by bottom trawling in northern southeast Alaska from 1969 to 1981. Each number refers to a summary table for catches at a given site, marked with a small solid circle. -----



## ABSTRACT

Marine fishes and invertebrates were sampled by bottom trawl in coastal fiords of southeastern Alaska during all seasons, over a broad geographic expanse. Predominate groups in the catches were demersal fishes and invertebrates. This report summarizes our findings by geographic locale, month, year, relative abundance of major groups of organisms, and species composition within major groups. Locales which appeared distinctive, e.g. where certain life stages of commercially important groups or species were particularly abundant, are identified.



## INTRODUCTION

Marine life on and near bottom in coastal fiords of southeastern Alaska is varied and abundant. Scientific surveys to document the composition, abundance, and distribution of demersal organisms in this region have generally been of a one-time nature and, therefore, show little seasonal or year-to-year change.

In the course of studies to document the early life history of Pacific ocean perch, Sebastes alutus (Carlson and Haight 1976), and the seasonal movements and distribution of adult Pacific herring, Clupea harengus pallasii (Carlson 1980), in northern southeast Alaska, we sampled a wide variety of demersal marine life over much of this region (Figure 1), recorded the makeup of our catches, and estimated the abundance of major groups. We believe this information will be an aid in planning future research and in making management decisions concerning the fisheries in the many locales we sampled.

Our trawl surveys began in July 1969 and centered on western Chichagof Island; trawl sampling continued in this region until April 1972 when field operations in the first phase of our juvenile ocean perch studies terminated. In August 1970, we added surveys in the southern Baranof Island vicinity; trawl sampling continued there throughout the length of the perch study. In May 1971, we also conducted a trawl survey of western Baranof Island. In April of 1973, we began studies of the schooling ecology and distribution of Pacific herring, concentrating on the Stephens Passage-Lynn Canal area, where trawl surveys continued through June 1978. In July 1976, we also conducted a trawl survey of eastern Admiralty Island. Our findings cover these five general regions: Chichagof, Baranof, and Admiralty Islands, Cape Spencer, and Stephens Passage-Lynn Canal from 1969 to 1981.





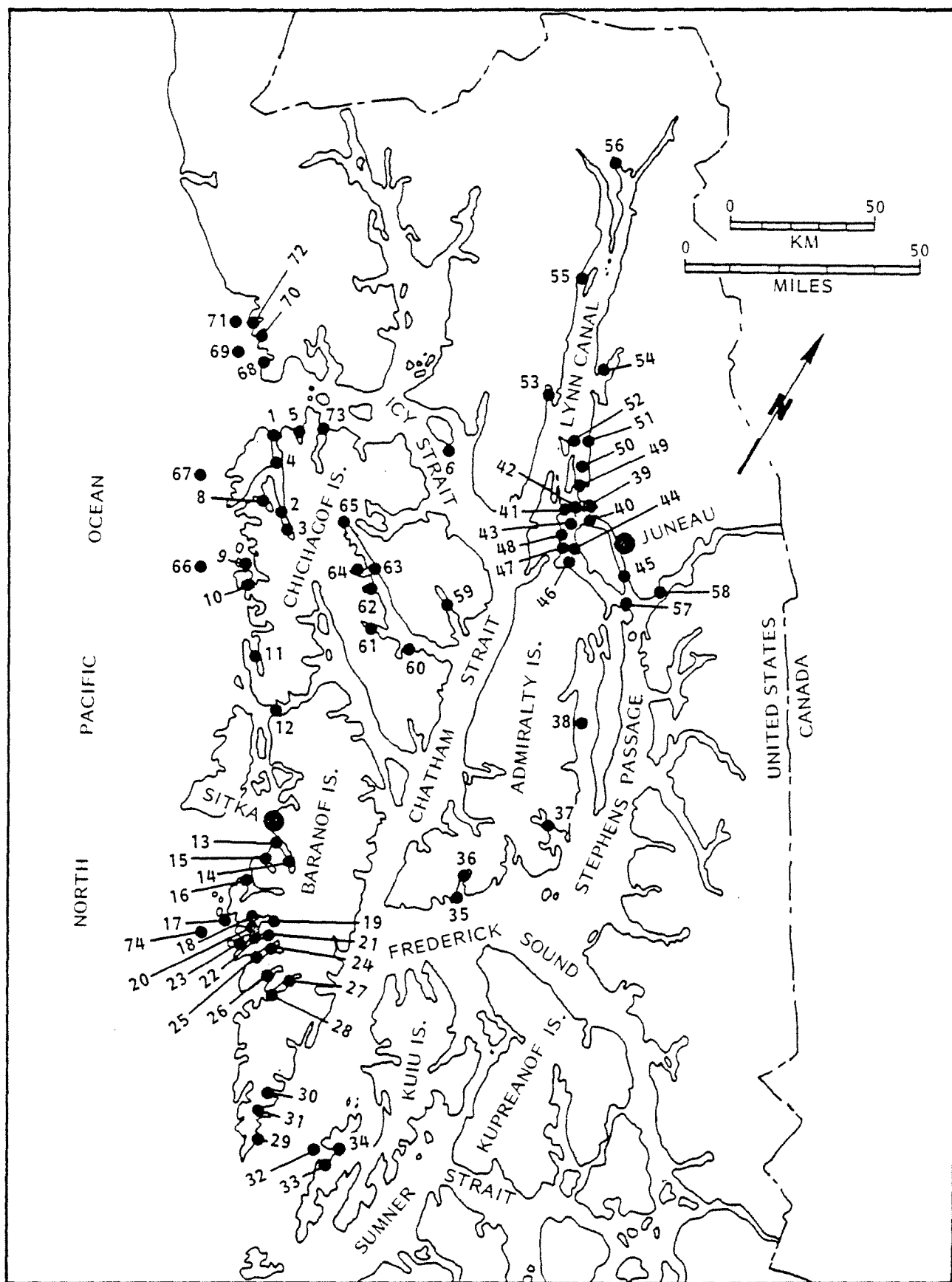


Figure 1.--Locations of demersal marine life sampling by bottom trawling in northern southeast Alaska from 1969 to 1981. Each number refers to a summary table for catches at a given site, marked with a small solid circle.

## MATERIALS AND METHODS

All of our work was done from the National Oceanic and Atmospheric Administration research vessel MURRE II, a power barge that is 25.9-m long. The sampling gear was a 12.2-m standard nylon flat shrimp trawl with 2.54-cm<sup>2</sup> mesh throughout and 1-m X 1.7-m weighted wooden doors. We trawled on bottom at speeds of 5 knots or less for 5-60 min; the length of time normally depended on roughness of the substrate and was usually 20-30 min. We were able to sample only inshore, protected waters over fairly unbroken substrate. At times, however, we trawled up the side of moderate-to-steep slopes.

After the catch was dumped on deck, we visually estimated the total weight and the proportion of major categories--flatfishes, pollock and cod, rockfishes or herring, "other" fishes, and invertebrates--to the nearest 5%. If a substantial part of the catch consisted of a single species from one of the major categories (e.g. Tanner crab or starry flounder), it was recorded as a separate major category.

The common and scientific names of fishes used concur with those found in Quast and Hall (1972).

References used to identify various fishes included Phillips (1957), Wilimovsky (1958), Hart (1973), Clemens and Wilby (1961), and Hitz (1962). For invertebrates, we used Clark (1911), Oldroyd (1927), D'yakanov (1954), Garth (1958), Light et al. (1961), Makarov (1962), Ricketts and Calvin (1962), Morris (1966), Kyte (1969), Barr (1970), McLaughlin (1974), and Gotshall and Laurent (1979).

Our findings are shown from two points of view: (1) by geographic locale, and (2) by species composition within major groups of demersal marine organisms. The geographic locales form five main regions of northern southeast Alaska: Chichagof, Baranof, and Admiralty Islands, Cape Spencer, and Stephens Passage-Lynn Canal. The tables show the species composition in each locale for five major groups of demersal sea life: flatfishes, gadids (pollock and cod), rockfishes or herring (depending on which of the two was the target fish), other fishes, and invertebrates. Estimates of relative abundance of groups by standardized 10-min haul are shown, and the total catch for a given locale and month is given in pounds and kilograms.

## PART I. GEOGRAPHIC LOCALES

### NORTHWESTERN CHICHAGOF ISLAND REGION

#### Northern Lisianski Inlet

A summary of our findings at northern Lisianski Inlet from July 1969, September 1969, April 1971, September 1971, April 1972, July 1977, May 1978, and October 1980 is shown in Table 1.

In July 1969, flatfishes made up the largest single part of two catches, with lesser amounts of invertebrates, rockfishes, gadids, and other fishes (Table 1). Of the flatfishes, arrowtooth flounder (Atheresthes stomias) and rex sole (Glyptocephalus zachirus) predominated by bulk. Also present were flathead sole (Hippoglossoides elassodon), small numbers of rock sole (Lepidopsetta bilineata), and Dover sole (Microstomous pacificus). Pacific cod (Gadus macrocephalus), walleye pollock (Theragra chalcogramma), and rockfishes of the family Scorpaenidae made up a small portion of the catch,

with juvenile Pacific ocean perch (Sebastes alutus) predominate. Also present were shortspine thornyhead or "idiotfish" (Sebastolobus alascanus) and small numbers of juvenile rockfishes including rougheye rockfish (Sebastes aleutianus), quillback rockfish (S. maliger), and greenstriped rockfish (S. elongatus). Other fishes taken at the North Lisianski locale in July 1969 included several species of sculpin (Ulca bolini), yellow Irish lord (Hemilepidotus jordani), ribbed sculpin (Triglops pingeli), spinyhead sculpin (Dasycottus setiger), and the sailfin sculpin (Nautichthys oculofasciatus). Also common were ratfish (Hydrolagus colliei), and present in small numbers and bulk were the longnose skate (Raja rhina), searcher (Bathymaster signatus), and kelp greenling (Hexagrammos decagrammus). Invertebrates made up a sizable part of the catch, with shrimp and starfish most common and nudibranchs, clams, crabs, and sponges present in small numbers and little bulk.

In September 1969, a small catch at northern Lisianski Inlet was about half flatfishes, mainly rex sole and English sole (Parophrys vetulus), and arrowtooth flounder were present as well (Table 1). No other fishes were taken. Invertebrates were mostly shrimp and clams, but brittle stars and skate egg cases were present also.

In April 1971, flatfish and rockfishes made up most of four catches in nearly equal amounts (Table 1). Predominate among the flatfishes were flathead sole; rex sole and arrowtooth flounder were also present. Of the rockfishes, juvenile Pacific ocean perch predominated in numbers and bulk, and small numbers of yellowtail rockfish (Sebastes flavidus), quillback rockfish, and redstripe rockfish (S. proriger) were present.

In September 1971, three catches at northern Lisianski Inlet (Table 1) were comprised mostly of invertebrates; large red sea urchins (Strongylocentrotus franciscanus) and large sea stars of the genera Pycnopodia and Solaster were the main bulk. Other invertebrates included hermit crab (Pagurus dalli), lyre crab (Hyas lyratus), stubby squid (Rossia pacifica), northern octopus (Octopus dofleini), chitons, brittle stars and four species of shrimp--pink (Pandalus borealis), sidestripe (Pandalopsis dispar), spot (Pandalus platyceros), and dock shrimp (Crangon sp.). Fish made up somewhat less than half of the bulk of the catches with rockfish, flatfish, and gadids present in small amounts. The rockfish were all juvenile Pacific ocean perch except for a single adult "idiotfish." Flatfishes were a few large arrowtooth flounder and some rex sole. A single adult walleye pollock accounted for the gadids. A variety of other fishes were taken in small numbers, mainly ratfish and sculpins, including the blackfin sculpin (Malacocottus kincaidii) and spinyhead sculpin. Single specimens of an adult searcher and kelp greenling were also taken.

In April 1972, four fair-sized catches (Table 1) consisted of about three-fourths invertebrates and the remainder a variety of fishes. Predominate by bulk were red sea urchins, brittle stars (mainly Ophiura sarsi), many-armed sun stars (Pycnopodia helianthoides), rose stars (Crossaster papposus), basket stars (Gorgonocephalus caryi), and white siliceous sponges. Present in smaller amounts were sea anemones; Hinds' scallops (Chlamys rubidas); stubby squid; three species of shrimp--pink, sidestripe, and dock shrimp; juvenile Tanner crab (Chionocetes bairdi); a single king crab (Paralithodes camtschatica); the hermit crabs Pagurus dalli, P. capillatus, and others; and lyre crab.

Of the fishes which made up the remainder of the catches, flatfishes and rockfishes predominated by bulk. A single Pacific halibut (Hippoglossus stenolepis) contributed as much bulk as the other flatfish species combined. Also present were flathead sole, rex sole, rock sole, arrowtooth flounder, Dover sole, and English sole. Of the rockfishes, juvenile Pacific ocean perch were most abundant; also present were quillback, redstripe, yellowtail, and dusky rockfish (Sebastes ciliatus). Other fishes included a variety of sculpins including the great sculpin (Myoxocephalus polyacanthocephalus), bigmouth sculpin, red Irish lord, ribbed sculpin, spinyhead sculpin, sailfin sculpin, and blackfin sculpin. A few juvenile walleye pollock were also taken as well as searchers, daubed shanny (Leptoclinus maculatus), kelp greenling, and a blackfin poacher (Bathyagonus nigripinnis).

We made a single trawl haul at northern Lisianski Inlet in July 1977 (Table 1) and had a fair catch of mostly flatfish and sea stars. Other fish and invertebrates did not amount to much. Adult flathead sole made up the bulk of the flatfish; also present were arrowtooth flounder, rock sole, rex sole, Dover sole, and English sole. The bulk of the sea stars was comprised of Pycnopodia helianthodes; also present were the stars Solaster stimpsoni, S. dawsoni, Orthasterias kohleri, Pteraster, Mediaster, and the brittle star Ophiura sarsi. Other fishes included juvenile walleye pollock and kelp greenling, the sculpin Triglops sp., searchers, sturgeon poachers, and spinycheek starsnouts. Other invertebrates included a few pink shrimp, the shrimp Crangon, lyre crabs, decorator crabs, hermit crabs, the stubby squid Rossia, the scallop Chlamys sp., and the hairy triton.

In May 1978, we made a single bottom trawl haul at northern Lisianski Inlet (Table 1) and came up with a small catch of mostly flatfish and a lesser amount of other fishes and invertebrates. A variety of flatfish were taken including flathead sole, Dover sole, rex sole, juvenile arrowtooth flounders, and a juvenile Pacific halibut. Other fishes included juvenile Pacific ocean perch, juvenile walleye pollock, a juvenile lingcod, spinyhead sculpins, yellow Irish lords, the sculpin Triglops sp., sturgeon poachers, searchers, and spinycheek starsnouts. Invertebrates were limited to a few pink shrimp, the shrimp Crangon, juveniles of the lithode crab Rhinolithodes, salps, and the sea stars Pycnopodia, Gephyriaster, and Crossaster.

We made four successful bottom trawl hauls near the entrance to northern Lisianski Inlet (Table 1) in October 1980 and came up with small-to-fair sized catches with a mixture of sea stars, flatfish, greenling, rockfish, bivalve shells, sponges, and other invertebrates and fishes. The sea stars were mostly basket stars and the sun stars Pycnopodia; also present were rose stars, purple urchins, and the sea cucumbers Cucumaria sp. The flatfish were varied and included flathead sole, rock sole, Dover sole, English sole, rex sole, and arrowtooth flounders. The greenling were mostly kelp greenling; two young lingcod were also taken. The rockfish were mostly juvenile Pacific ocean perch; also taken were juvenile yellowtail and greenstriped rockfish and adult dusky and black rockfish. Other fishes included juveniles of Pacific cod, walleye pollock, and Pacific tomcod, the bigmouth sculpin, Ulca bolini, yellow Irish lords, spinyhead sculpins, blackfin sculpins, the sculpins Gymnocanthus sp. and Triglops sp., searchers, blackfin poachers, sturgeon poachers, and spinycheek starsnouts. Other invertebrates included pink shrimp, sidestripe, spot, and brown shrimp, Tanner crabs, lyre crabs, the stubby squid Rossia, and scallop Chlamys sp.

### Southern Lisianski Inlet

A summary of our findings at southern Lisianski Inlet from July 1969, September 1969, May 1970, September 1971, April 1972, July 1977, and October 1980 is shown in Table 2.

In July 1969, in two trawl hauls, flatfish were the largest single group by bulk, but rockfishes and other fishes combined were roughly equal to the flatfishes, and invertebrates were almost as abundant. Gadids formed a minor part of the catches (Table 2).

Flathead sole were the most abundant of the flatfishes, but arrowtooth flounder and English sole also made up substantial amounts of the catches. Also present were rex sole, yellowfin sole, Pacific halibut, and Dover sole. Most of the rockfish were juvenile Pacific ocean perch, although quillback rockfish made up a fair portion of the catches; dusky rockfish and silvergray rockfish (Sebastes brevispinis) were taken also. Of the other fishes taken, sculpins formed the greatest bulk; they were great sculpins, bigmouth sculpins, and red Irish lords. Also contributing to the bulk of catches were ratfish and kelp greenling; also present were sablefish (Anoplopoma fimbria), searchers, ronquils (Ronquilus jordani), pricklebacks, and a few adult Pacific cod and walleye pollock.

Of the invertebrates, adult Tanner crab were singly most abundant. Sponges and sea stars also contributed to the bulk; and anemones, sea cucumbers (Parastichopus californicus), sea pens (Leioptilus gurneyi), and stubby squid were also taken.

In September 1969, only one haul was made in southern Lisianski Inlet, yielding the largest single catch taken at the southern Lisianski locale (Table 2). Slightly over half of the catch consisted of invertebrates; flatfishes made up most of the bulk of fishes. Of the invertebrates, sponges and anemones were most abundant, along with adult Tanner crab. Also present were Dungeness crab (Cancer magister), box crab (Lopholithodes foraminatus), sea cucumbers, sea whips (Stylatula elongata) and an octopus.

Among the flatfishes, flathead sole and arrowtooth flounder were most abundant; also taken were halibut, English sole, rock sole, rex sole, yellowfin sole, and Dover sole. Pacific cod and walleye pollock made up a fair portion of the catch. Other representative fishes were great sculpins and yellow Irish lords, kelp greenling, searchers, dusky and quillback rockfish, and poachers (Agonidae).

In May 1970, flatfishes predominated in seven catches at southern Lisianski Inlet, and their total bulk greatly exceeded all other fishes and invertebrates combined (Table 2). Rockfish were the only other group that contributed a substantial portion to the overall catch. Of the flatfishes, arrowtooth flounder and flathead sole were most common. Also present were English sole, starry flounder, and rock sole. Among the rockfishes, juvenile Pacific ocean perch and quillback rockfish contributed most of the bulk; also present were dusky rockfish, roughey rockfish, yellowtail rockfish, and black rockfish (Sebastes melanops). Invertebrates made up a fair portion of the catches and consisted of a wide variety of groups: northern octopus, stubby squid, Hinds' scallops, hairy tritons, nudibranchs, sponges, sea urchins, the sun stars Solaster sp., basket stars, sea cucumbers, sea whips, anemones, adult and juvenile Tanner crab, one Dungeness crab, lyre crab, the hermit crab Pagurus ochotensis, dock shrimp, and box crab.

Other fishes amounted to a relatively small portion of the catches. Pacific cod and walleye pollock roughly equaled the bulk of all other miscellaneous fishes, which included Pacific tomcod (Microgadus proximus), searchers, kelp greenling, Irish lords, sablefish, staghorn sculpins (Leptocottus armatus), eulachon (Thaleichthys pacificus), shortfin eelpout (Lycodes brevipes), and blackbelly eelpout (Lycodopsis pacifica), one proufish (Zaprora silenus), great sculpins, ribbed sculpins, spinyhead sculpins, blackfin sculpins, and poachers and pricklebacks.

In September 1971, six catches at southern Lisianski Inlet were nearly all flatfishes, as other fishes and invertebrates combined did not amount to one-third of their bulk (Table 2). Of the flatfishes, flathead sole and arrowtooth flounder were the most abundant. Also taken were relatively small amounts of Pacific halibut, rex sole, yellowfin sole, English sole, Dover sole, rock sole, and one slender sole (Lyopsetta exilis). Adult cod and pollock of roughly equal bulk were the next largest group in the catches. Rockfishes contributed a fair amount to catches and were comprised mostly of quillback rockfish by bulk, with juvenile Pacific ocean perch and roughey rockfish also present. Of the other fishes, only sablefish and a single large lingcod represented a significant part of the overall catches. Other species taken in small amounts were eulachon, ratfish, Irish lords, blackfin and spinyhead sculpins, and a single blackfin poacher. The invertebrates, which amounted to very little by bulk, were sponges; Tanner crab juveniles and adults; pink, spot, sidestripe, and dock shrimp; the hermit crab Pagurus aleuticus; one box crab; stubby squid; clams; mussels; hairy tritons; Hinds' scallops; basket stars; the sun stars Solaster sp. and Pycnopodia; sea whips; sea urchins; sea cucumbers; and sea anemones.

In April 1972, we made nine relatively small catches at the southern Lisianski Inlet study site (Table 2). Invertebrates made up roughly half of the bulk; rockfishes amounted to about one-fourth of the catches, and gadids, flatfishes, and other fishes constituted the remainder.

Of the invertebrates, sponges were most of the bulk; anemones constituted a substantial portion as well. Also present were many juvenile Tanner crab and pink, sidestripe, and dock shrimp, hermit crab, box crab, lyre crab, Hinds' scallops, stubby squid, clams, purple sea urchins (Strongylocentrotus purpuratus), brittle stars, many-armed sun stars, basket stars, sea pens, and sea cucumbers.

The rockfish were comprised of several species, with adult yellowtails and quillbacks contributing the most bulk. Also present were juvenile Pacific ocean perch and adult dusky rockfish, and juvenile and adult walleye pollock. Of the flatfishes, flathead sole were most abundant; also taken were rex sole, arrowtooth flounder, slender sole, and yellowfin sole. Other fishes were taken in very small amounts; they included kelp greenling, eulachon, searchers, spinyhead sculpins, a poacher, the spinycheek starsnout Asterotheca infraspinata, the daubed shanny, and longsnout prickleback (Lumpenella longirostris).

In July 1977, two bottom trawl hauls at southern Lisianski Inlet (Table 2) produced fair catches of mostly flatfish and rockfish with lesser amounts of assorted invertebrates and other fishes. Arrowtooth flounder and flathead sole made up the bulk of the flatfish; also abundant were yellowfin sole and rex sole; also present were English sole, slender sole, and Dover sole. The rockfish were mostly juvenile Pacific ocean perch and adult quillback rockfish;

also present were a few adult dusky rockfish. The invertebrates consisted of a few adult king crabs, several adult Tanner crabs, lyre crabs, decorator crabs, pink shrimp, the shrimp Crangon, basket stars, the blood star, rose star and sea star Pycnopodia, the anemone Metridium, sea whips, sponges, stubby squid, hairy tritons, the whelk Neptunea sp., scallop Chlamys sp., and the nudibranch Tochuina tetraquadra. Other fishes included adult and young walleye pollock, kelp greenling, one young Pacific herring, searchers, a ronquil, the sculpin Triglops sp., spinycheek starsnouts, and pricklebacks.

In May 1978, we made two bottom trawl hauls in southern Lisianski Inlet (Table 2) and came up with fairly small catches of flatfish and rockfish with few other fishes and invertebrates. The flatfish consisted of a variety of species, no single species clearly predominate; present were flathead sole, rex sole, slender sole, yellowfin sole, English sole, and a starry flounder. Rockfish included juvenile Pacific ocean perch and adult yellowtail rockfish, roughey rockfish and quillback rockfish. Other fishes included dogfish sharks, walleye pollock, sablefish, whitespotted greenling, shortfin eelpout, wattled eelpout, snake pricklebacks, searchers, and spinycheek starsnouts. The generally sparse invertebrates included pink shrimp, spot shrimp, adult and juvenile Tanner crabs, basket stars, a sea pen, stubby squid, the whelk Neptunea, and the snail Colus.

In October 1980, we made two bottom trawl hauls in southern Lisianski Inlet (Table 2) and came up with fair-sized catches of rockfish, flatfish, invertebrates, and other fishes. The rockfish were juvenile Pacific ocean perch and adult quillback rockfish. The flatfish were varied, with flathead sole most abundant. Also significant were arrowtooth flounder, rex sole, and rock sole; present were English sole, Dover sole, and yellowfin sole. Invertebrates consisted of a few adult king crab, female Tanner crabs, the sea stars Pycnopodia and Hippasterias, the scallop Chlamys sp., and the anemone Metridium senile. Other fishes taken were young walleye pollock, kelp greenling, young sablefish, searchers, and great sculpins.

#### Lisianski Inlet (head end)

In July 1969, we made a single bottom trawl haul at the head end of Lisianski Inlet and came up with a relatively large catch, half of which was flatfish; invertebrates made up most of the remaining bulk, with small amounts of rockfish, gadids, and other fishes also present (Table 3). Predominant among the flatfishes were English sole, flathead sole, and arrowtooth flounder; also taken were yellowfin sole, rex sole, one Pacific halibut, and a few starry flounder and Dover sole. The invertebrates were mostly siliceous sponges and a few adult female king crab. The only rockfish were a few adult quillback rockfish, and gadids were limited to a few juvenile walleye pollock. Other fishes included kelp greenling, poachers, eelpouts, and the daubed shanny.

We made a single trawl haul at the head end of Lisianski Inlet in September 1969 and came up with a relatively large catch of flatfishes and invertebrates, with small amounts of gadids, rockfish, and other fishes (Table 3). Of the flatfishes, flathead sole, arrowtooth flounder, and English sole made up most of the bulk; also taken were yellowfin sole, starry flounder, rex sole, and Dover sole. A variety of invertebrates was present, including adult king, Tanner, and Dungeness crabs; clams; sponges; and anemones. The gadids were all adult and young walleye pollock except for one adult Pacific hake; the only rockfish were a few adult quillbacks. Other fishes



included sablefish, kelp greenling, the eelpout Lycodes sp., and daubed shanny.

In May 1970, we made a single trawl haul at the head end of Lisianski Inlet, Chichagof Island, and came up with a catch of nearly all flatfishes and small amounts of gadids, other fishes, and invertebrates (Table 3). A variety of flatfishes were taken, including flathead sole, starry flounder, arrowtooth flounder, yellowfin sole, and one Pacific halibut. The gadids were mostly adult walleye pollock and one Pacific cod; other fishes were limited to a few poachers and eulachon; sea anemones were the only invertebrates.

#### Lisianski Inlet (Nose Head)

In July 1969, we made three bottom trawl hauls off Nose Head, near the center of Lisianski Inlet and came up with catches in which flatfish were the predominate single group; rockfishes, other fishes, and invertebrates were taken in lesser, roughly equal amounts, and only small amounts of gadids were present (Table 4). Among the flatfishes, arrowtooth flounder made up the main bulk; also taken were flathead sole, rex sole, and slender sole. The rockfishes were predominately adult shortspine thornyheads, or "idiotfish"; also taken were a few juvenile and adult Pacific ocean perch and roughey rockfish. Other fishes included a few adult sablefish, ratfish, longnose skates, a spiny dogfish shark (Squalus acanthias), eulachon, wattled eelpouts, blackfin poachers, and unidentified sculpins (Cottidae). Gadids consisted of a few adult walleye pollock and Pacific cod. The invertebrates included pink shrimp, juvenile Tanner crab, hermit crab, a large deepwater true coral, clams, and snails.

#### Port Althorp

A summary of our findings at Port Althorp is given in Table 5. We made trawl hauls there in July 1969, May 1970, September 1971, April 1972, May 1978, and November 1980.

In July 1969, two trawl hauls were comprised mainly of flatfishes, with lesser amounts of invertebrates and other fishes, and trace amount of rockfishes and pollock and cod (Table 5). Of the flatfishes, flathead sole and arrowtooth flounder made up most of the bulk. Also present were rex sole, Dover sole, and English sole. Invertebrates consisted mainly of pink shrimp; also present were Tanner crab, sea anemones, and many-armed sun stars. A variety of other fishes were taken, including giant wrymouth (Delolepis gigantea), longnose skates, Irish lords, spinyhead sculpins, blackfin poachers, eulachon, shortfin eelpout, young sablefish, juvenile roughey rockfish, cod, walleye pollock, and searchers.

In May 1970, a single trawl haul at Port Althorp contained a variety of fishes, flatfishes, and invertebrates, with small amounts of rockfishes and walleye pollock (Table 5). Longnose skates made up much of the bulk of fishes taken. Other fishes present were ratfish, eulachon, shortfin eelpouts, great sculpins, and young sablefish. The flatfish were mostly arrowtooth flounder by bulk; flathead sole and rex sole, a few walleye pollock, and juvenile roughey rockfish were also present. Invertebrates consisted mostly of pink and sidestripe shrimp, juvenile Tanner crab, the hermit crabs Labidochirus splendescens and Pagurus ochotensis, dock shrimp, sea stars, sea urchins, and octopus.

In September 1971, a single trawl haul was made up mostly of flatfishes, with invertebrates and rockfishes in lesser amounts, and other fishes present in trace amounts (Table 5). Most of the flatfish were flathead sole and arrowtooth flounder by bulk; English sole and rex sole were present also. The bulk of the invertebrates were shrimp, with pink shrimp most common. Also present were spot, sidestripe, and dock shrimp. Other invertebrates included sea urchins, many-armed sun stars, anemones, clams, hairy tritons, and the hermit crab Pagurus aleuticus. Rockfish were mostly juvenile roughey rockfish; also present were juvenile Pacific ocean perch, adult quillback rockfish, and harlequin rockfish (Sebastes variegatus). Other fishes included ratfish, blackfin poachers, blackfin sculpins, spinyhead sculpins, Pacific cod, and walleye pollock.

In April 1972, a single trawl haul at Port Althorp consisted of roughly half shrimp and other invertebrates and half fishes, with flatfish and walleye pollock present in equal amounts, a few rockfish, and only trace amount of other fishes (Table 5). The shrimp were mostly sidestripe and pink shrimp, but spot, coonstripe, and dock shrimp were also taken. Other invertebrates included juvenile Tanner crab, sea urchins, many-armed sun stars, and others, sea anemones, and the kelp Agarum. The flatfishes were comprised mainly of flathead sole and arrowtooth flounder, with lesser amounts of rex sole and a single Pacific halibut. The walleye pollock included large adults and few young; a single juvenile Pacific cod was present. Rockfishes were limited to a few juvenile roughey rockfish and Pacific ocean perch. Other fishes included eulachon, the longsnout prickleback, spinyhead sculpins, blackfin sculpins, and the blackfin poacher.

We made a single trawl haul at Port Althorp (Table 5) in May 1978 and came up with a good-sized catch of mostly shrimp, flatfish, and lesser amounts of other invertebrates and fishes. The shrimp were mostly pink and sidestripe shrimp; the shrimp Crangon and a juvenile spot shrimp were also taken. The flatfish were mostly flathead sole and arrowtooth flounder; also taken were Dover sole, English sole, and rex sole. Other fish included walleye pollock, juvenile sablefish, roughey rockfish, blackfin sculpin, spinyhead sculpin, the sculpin Triglops sp., and a few ratfish. Other invertebrates were limited to two juvenile Tanner crabs, salps, and an unidentified sea star.

We made one bottom trawl haul in Port Althorp (Table 5) in November 1980 and came up with a fair-to-large catch of mostly flatfish and walleye pollock, with lesser amounts of other fishes and invertebrates. Of the flatfish, arrowtooth flounder predominated by bulk; also present were flathead sole, rex sole, and a young Pacific halibut (82 cm in fork length). The walleye pollock were both juveniles and adults. Other fishes included Pacific ocean perch, roughey rockfish, juvenile sablefish, eulachon, longsnout pricklebacks, shortfin eelpouts, spinyhead sculpins, brown Irish lords, Hemilepidotus spinosus, a dogfish shark, sturgeon poachers, and blackfin poachers. The invertebrates were mostly pink shrimp; also present were juvenile spot shrimp, sidestripe shrimp, and brown shrimp, juvenile Tanner crabs, and the anemone Metridium senile.

## NORTHERN CHICHAGOF ISLAND REGION

## Icy Strait

We made a single trawl haul off the southeastern end of Pleasant Island in Icy Strait during September 1969, and the catch consisted of roughly equal amounts of flatfishes, other fishes, and invertebrates (Table 6). Of the flatfishes, flathead sole and arrowtooth flounder made up the bulk; rex sole were taken incidentally. A variety of other fishes were present, which included the longnose and starry skates (Raja rhina and Raja stellulata, respectively), spinyhead sculpins, Irish lords, young sablefish, juvenile dusky and rougheye rockfish, searchers, ronquils, snailfish (Liparidae), and eelpouts (Lycodes sp.). The invertebrates were mostly Tanner crab and whelks (Neptunea) with pink shrimp, clams, and the hermit crab Pagurus ochotensis also present.

## Idaho Inlet

We made two bottom trawl hauls in Idaho Inlet off Icy Strait, Chichagof Island (Table 73), in July 1977 and came up with fair catches of mainly flatfish, crabs, and shrimp with assorted other invertebrates and fishes as well. Flatfish were mostly young and adult flathead sole, adult rock sole, and yellowfin sole. Also present were rex sole, arrowtooth flounder, English sole, Dover sole, a starry flounder, and juvenile Pacific halibut. The crabs were mostly young Tanner crabs, and a few Dungeness and king crabs. The hermit crab Pagurus aleuticus also was present. Shrimp were mostly pink shrimp with a few coonstripe shrimp and the shrimp Crangon. Other fishes included fair numbers of young walleye pollock and Pacific herring, a few kelp greenling, sandlance, shortfin eelpouts, longsnout pricklybacks, a snake pricklyback, searchers, a young sablefish, a great sculpin, red Irish lords, spinyhead sculpins, the sculpin Triglops sp., sturgeon poachers, and spinycheek starsnouts. Other invertebrates included the anemone Metridium senile, the medusa Cyanea capillata, the sea whip Stylatula, the snail Colus halli, and scallop Chlamys sp., a green sea urchin, and a few basket stars.

## WESTERN CHICHAGOF ISLAND REGION

## Off Yakobi Rock

A summary of our findings from a single bottom trawl of short duration 0.5 mi off Yakobi Rock, near northwestern Chichagof Island in July 1969 is given in Table 7. In addition to a torn net and a few large boulders, this haul produced a large wolf-eel (Anarrichthys ocellatus) in excess of 2-m long that constituted over one-half the bulk of the catch, a large lingcod (Ophiodon elongatus), adult kelp greenling, arrowtooth flounder, Dover sole, adult quillback rockfish, and a few juvenile Pacific ocean perch, and ronquils. Invertebrates were a small part of the catch and included octopus, sea stars, and traces of coralline bryozoa and hippolytid shrimp.

## Stag Bay

We trawled in Stag Bay off Lisianski Strait on northwestern Chichagof Island in July and September 1969. The results are shown in Table 8.

In July 1969, a single trawl haul in Stag Bay contained mostly shrimp and lesser amounts of varied fishes. The shrimp were mostly pink and some spot shrimp. A few Tanner crab were the only other invertebrates. Flatfishes predominated by bulk among the fishes and consisted of flathead

sole and yellowfin sole. A few Pacific cod and juvenile walleye pollock were present as were great sculpins, spinyhead sculpins, juvenile Pacific ocean perch, and small amounts of blackfin poachers, capelin, longsnout pricklebacks, and the daubed shanny.

In September 1969, a single trawl haul in Stag Bay again consisted mostly of shrimp and other invertebrates, with flatfishes, walleye pollock, and other fishes in lesser amounts. Among the invertebrates, pink shrimp formed the bulk of the catch. Also present were spot shrimp, juvenile Tanner crab, and sea cucumbers. Flatfishes consisted of yellowfin sole, flathead sole, and rex sole; also present were walleye pollock, spinyhead sculpins, eulachon, and poachers.

#### Portlock Harbor

We trawled in Portlock Harbor, northwestern Chichagof Island, in September 1969 and July 1977. In September 1969, three trawl hauls produced generally sparse catches comprised of half invertebrates and half fishes, with the fishes split rather evenly between flatfishes and gadids and only trace amounts of others (Table 9). Among the invertebrates, bivalves and sea cucumbers predominated by bulk. Also present were brittle stars, sea stars, shrimp, and Tanner crab. Gadids were adult walleye pollock and Pacific cod; the flatfishes were mostly yellowfin sole, with flathead sole and rex sole also present. Other fishes were limited to adult yellowtail rockfish, juvenile rougheye rockfish, and a few daubed shanny.

In July 1977, we made a single bottom trawl haul in Portlock Harbor (Table 9) and came up with a fair catch of mostly flatfish, some gadids, and few other fishes or invertebrates. The bulk of the flatfish were flathead sole of a wide size range. Significant by bulk were adult yellowfin sole and starry flounder; also present were rex sole, arrowtooth flounder, and English sole. The gadids were adult walleye pollock and Pacific tomcod. Other fishes amounted to little bulk and included young rougheye rockfish, a few adult herring, shortfin eelpouts, a young sablefish, great sculpins, spinyhead sculpins, a red Irish lord, a searcher, and snake pricklebacks. Invertebrates were limited to mostly brittle stars; also present were pink and coonstripe shrimp, the shrimp Cragon, and a few stubby squid (Rossia).

#### Ogden Passage

In September 1969, we made a single bottom trawl haul in Ogden Passage on the western coast of Chichagof Island. The catch was about equally divided between invertebrates and flatfishes, with small amounts of gadids, rockfish, and other fishes (Table 10). The invertebrates consisted of Tanner crab, shrimp, octopus, bivalves, sea stars, sea cucumbers, and anemones. Of the flatfishes, yellowfin sole predominated by bulk; also present were large starry flounders and a halibut. Among the gadids, tomcod were most abundant; Pacific cod and walleye pollock were taken as well. The rockfishes amounted to only a few adult quillback and dusky rockfish and juvenile Pacific ocean perch. Other fishes included a giant wrymouth, kelp greenling, spinyhead sculpins, eelpouts (Lycodes sp.), and daubed shanny.

#### Khaz Bay

We trawled in Slocum Arm, Khaz Bay, on the southwestern coast of Chichagof Island in September 1969 and July 1977. A single trawl haul there

in September 1969 resulted in a relatively large catch comprised mostly of adult Tanner crab and a few other invertebrates, flatfishes, and other fishes (Table 11). Most of the Tanner crab were large males, which alone made up the greatest bulk of the catch. Other invertebrates taken were a few adult king crab, shrimp, Hinds' scallops, octopus, the hairy triton, and the anemone Metridium senile. The flatfishes were entirely yellowfin sole and arrowtooth flounder. Other fishes made up a small part of the catch and included juvenile Pacific ocean perch, adult quillback rockfish, Pacific cod, walleye pollock, juvenile sablefish, spinyhead sculpins, searchers, and sturgeon poachers.

We made three bottom trawl hauls in Slocum Arm, Khaz Bay, southwestern Chichagof Island in July 1977 (Table 11) and came up with good-sized catches of mostly flatfish and a variety of other fishes and invertebrates. Among the flatfish, adult and juvenile arrowtooth flounder and flathead sole and adult English sole made up the bulk. Significant also were rex sole, slender sole, Dover sole, and yellowfin sole; also present were rock sole. Of the other fishes, gadids and rockfish made up most of the bulk. Gadids were mostly young walleye pollock and a few individual adult Pacific cod, Pacific hake, and Pacific tomcod. Rockfish were mostly adult Pacific ocean perch, young rougheye rockfish, and a few adult quillback and single silvergray rockfish. Other fish present included a few young sablefish, eulachon, longsnout pricklybacks, poachers, spinycheek starsnouts, longnose skates, spinyhead sculpins, and a searcher. Invertebrates consisted mainly of shrimp, crabs, and anemones. Shrimp were mostly pink and sidestripe; also present were coonstripe shrimp and the shrimp Crangon. Crabs were mostly juvenile Tanner crabs and a few juvenile king and Dungeness crabs. Anemones were all Metridium senile. Also present were the snails Colus halli, Neptunea sp., and Buccinum sp., stubby squids, and the sea stars Orthasterias and Ctenodiscus.

#### NORTHWESTERN BARANOF ISLAND REGION

##### Fish Bay

We made two trawl hauls in Fish Bay on the northwestern end of Baranof Island in April 1971 and came up with relatively small catches, the bulk of which were flatfishes, with invertebrates and rockfish present in lesser amounts, and only a trace of other fishes (Table 12). Among the flatfishes, English sole and flathead sole made up the bulk of the catches; also taken were Dover sole, rex sole, rock sole, arrowtooth flounder, and yellowfin sole. A few adult quillback rockfish were present, and other fishes included juvenile Pacific cod, juvenile walleye pollock, and Irish lords. A variety of invertebrates were present including sea stars, sea urchins, anemones, salps, juvenile Tanner crab, pink shrimp, a box crab, stubby squid, and clams.

#### WESTERN BARANOF ISLAND REGION

We made a series of bottom trawls along the southwestern coast of Baranof Island in May 1971, covering nearly every bay between Silver Bay near Sitka and Whale Bay to the south and made one trawl haul off the entrance to Crawfish Inlet in July 1981.

### Silver Bay

We made a single trawl haul at the entrance to Silver Bay in May 1971 and came up with a catch that was comprised mostly of rockfishes with small amounts of flatfishes and invertebrates (Table 13). A very large individual yelloweye rockfish (Sebastes ruberrimus) accounted for much of the bulk of the catch; other rockfishes taken were juvenile Pacific ocean perch and adult yellowtail and quillback rockfish. A variety of flatfishes were present including English sole, Dover sole, flathead sole, rex sole, arrowtooth flounder, and rock sole. No other fishes were taken, and invertebrates were limited to small numbers of juvenile and adult Tanner crab, a single adult female king crab, and sea anemones.

We made two trawl hauls in the center of Silver Bay in May 1971 and came up with catches that were almost completely flatfishes with very small amounts of gadids, rockfishes, and invertebrates (Table 14). The flatfishes were English sole, flathead sole, arrowtooth flounder, rex sole, and rock sole. The rockfishes were mostly juvenile Pacific ocean perch; also present were juvenile rougheye rockfish and adult quillback rockfish. Other fish present in trace amounts were juvenile walleye pollock and eulachon. Invertebrates were limited to juvenile Tanner crab, pink and sidestripe shrimp, and clams.

### Deep Bay

We made a single trawl haul in Deep Bay, located south of Sitka on Baranof Island, in May 1971 which resulted in a relatively small catch of mostly flatfishes along with small amounts of other fishes and invertebrates (Table 15). Large starry flounders made up the bulk of the flatfish; also present were flathead sole and yellowfin sole. Single adult specimens of several rockfish species were taken--the rougheye rockfish, Pacific ocean perch, yellowtail rockfish, and quillback rockfish. Small amounts of juvenile Pacific cod and juvenile walleye pollock were the only other fishes present. The invertebrates were limited to juvenile Tanner crab and sea anemones.

### Redoubt Bay

We made a single trawl haul in Redoubt Bay, located south of Sitka on Baranof Island, in May 1971 and came up with a catch that was predominately juvenile gadids, clams, and flatfishes (Table 16). The gadids were juvenile Pacific cod and juvenile walleye pollock. Redoubt Bay appears to be a nursery area for both species. The only invertebrates taken were softshell clams (Mya arenaria). Flatfish consisted of two adult starry flounder and one English sole. The only other fish present were a few juvenile sablefish.

### Windy Passage

In a single trawl haul in the upper arm of Windy Passage, western Baranof Island, in May 1971, we came up with flatfishes and gadids in roughly equal amounts which made up over half the bulk of the catch. Rockfishes, other fishes, and invertebrates were taken in lesser amounts (Table 17). A variety of flatfishes were present including flathead sole, English sole, rex sole, arrowtooth flounder, yellowfin sole, and slender sole. The gadids were mostly juvenile Pacific cod and a fair number of walleye pollock. The rockfishes were juvenile Pacific ocean perch, juvenile rougheye rockfish, and adult quillback rockfish. Other fishes were limited to a few

adult ratfish. Invertebrates included juvenile Tanner crab, clams, and anemones.

#### West Crawfish Inlet

In a single trawl haul in the center of West Crawfish Inlet (above Cedar Pass) in May 1971, we came up with flatfishes, gadids, and invertebrates in near-equal amounts, lesser amounts of rockfishes, and only incidental other fishes (Table 18). Flatfishes were made up of English sole, flathead sole, arrowtooth flounder, rex sole, and slender sole. Gadids were all large adult walleye pollock, and invertebrates were almost entirely sea cucumbers and a few hermit crabs. Rockfish were mostly adult Pacific ocean perch with a few roughey rockfish. Other fishes in the haul included ratfish, blackfin and spinyhead sculpins, blackfin poachers, and shortfin eelpouts.

We made two trawl hauls in Shamrock Bay in West Crawfish Inlet, which lies just above (northwest of) Crawfish Inlet on Baranof Island, in May 1971. The hauls were made up mostly of flatfishes and lesser amounts of invertebrates with only trace amounts of other fishes (Table 19). Large adult English sole made up most of the bulk of the flatfish; also taken were flathead sole, rex sole, arrowtooth flounder, and one Dover sole. Other fishes were limited to incidental poachers (Agonidae), pricklybacks (Stichaeidae), one quillback rockfish, and one juvenile walleye pollock. The invertebrates included adult Dungeness crab, juvenile Tanner crab, sea stars, and anemones.

#### Crawfish Inlet

We made two trawl hauls in Cedar Cove, Crawfish Inlet, in May 1971 and came up with roughly equal amounts of flatfish, gadids, and other fishes and trace amounts of rockfish and invertebrates (Table 20). A wide variety of flatfishes were present including flathead sole, English sole, Dover sole, starry flounder, rex sole, arrowtooth flounder, yellowfin sole, and slender sole. Gadids were mostly walleye pollock and a few Pacific cod. Rockfish were mostly juvenile Pacific ocean perch and a few silvergray rockfish. Other fishes included a large giant wrymouth, Pacific herring (Clupea harengus pallasii), shortfin eelpouts, and the daubed shanny. Invertebrates included juvenile Tanner crab, dock shrimp, hermit crab, clams, stubby squid, sea cucumbers, salps, and nereid worms.

A single trawl haul at the head of Crawfish Inlet in May 1971 contained a large catch comprised mainly of flatfishes, with lesser amounts of gadids and only trace amounts of other fishes and invertebrates (Table 21). The bulk of the flatfish (and of the catch, actually) was large starry flounders close to the maximum recorded size for the species. Other flatfishes taken incidentally were flathead sole, yellowfin sole, and one English sole. The gadids included many juvenile walleye pollock and a substantial number of juvenile Pacific cod. Other fishes taken included juvenile sablefish, one juvenile Pacific ocean perch, a few staghorn sculpins, one adult Pacific herring, and one poacher (Agonidae). The invertebrates included juvenile Tanner crab, sidestripe shrimp, and brittle stars. This locale appears to be a nursery area for young walleye pollock and cod.

We made two trawl hauls in the central part of Crawfish Inlet in May 1971 and came up with substantial catches of flatfishes and gadids in near-equal amounts and small amounts of rockfish, other fishes, and invertebrates (Table 22). Among the flatfishes, flathead sole was the most

numerous single species, but several others were taken including English sole, arrowtooth flounder, yellowfin sole, rex sole, Dover sole, and slender sole. The gadids were made up of many juvenile walleye pollock and a fair number of juvenile Pacific cod. Rockfishes consisted of Pacific ocean perch, rougheye rockfish, one canary rockfish (Sebastes pinniger), and one greenstriped rockfish. Other fishes taken were adult Pacific herring, eulachon, spinyhead sculpins, one juvenile lingcod, shortfin eelpouts, wattled eelpouts, longsnout pricklebacks, and longnose skates. Invertebrates consisted of juvenile and adult Tanner crab; pink, sidestripe, and coonstripe shrimp; hermit crab; and sea cucumbers.

We made two trawl hauls inside the entrance to Crawfish Inlet in May 1971. Flatfishes made up the bulk of the catches with lesser amounts of rockfishes, gadids, other fishes, and invertebrates present (Table 23). Flathead sole made up nearly all of the bulk of the flatfish; rex sole were also present. The rockfishes included juvenile Pacific ocean perch and rougheye, yellowtail, and quillback rockfish. Walleye pollock were the only gadid, and other fishes included the eelpout Lycodes sp. and the daubed shanny. Invertebrates included sidestripe shrimp, one Tanner crab, sea cucumbers, and stubby squid.

#### Off Crawfish Inlet

We made one successful bottom trawl haul seaward of the entrance to Crawfish Inlet, western-central Baranof Island, in July 1981 (Table 74) and came up with a very small catch of anemones and sea cucumbers and little else. The anemones were all Metridium senile; the sea cucumbers were Parastichopus californicus. The remainder of the catch was a few small medusas and brittle stars.

#### Necker Bay

We made a single trawl haul at the head of Necker Bay, just north of Whale Bay, Baranof Island, in May 1971 and came up with roughly equal amounts of flatfishes, gadids, and rockfish, with a lesser amount of invertebrates, and only trace amounts of other fishes (Table 24). The flatfishes were comprised of flathead sole, English sole, rex sole, and slender sole; the rockfish were all adult Pacific ocean perch; and gadids were all walleye pollock. Other fish was merely a single shortfin eelpout. Invertebrates included pink shrimp, juvenile Tanner crab, sea stars, clams, stubby squid, and anemones.

We made a single trawl haul in the center of Necker Bay during May 1971 and came up with a sizable catch with roughly equal amounts of flatfish and gadids comprising most of the bulk, rockfish in lesser amounts, and small amounts of other fishes and invertebrates (Table 25). The flatfishes consisted of flathead sole, English sole, rex sole, arrowtooth flounder, and slender sole. Gadids were mostly walleye pollock but also included a few Pacific cod and a single adult hake (Merluccius productus). Rockfish were mostly rougheye rockfish with a few adult Pacific ocean perch and one yellowtail rockfish. Other fishes included one sablefish, blackfin poachers, longsnout pricklebacks, and the eelpout Lycodes sp. Invertebrates included pink and sidestripe shrimp, juvenile Tanner crab, hermit crab, sea cucumbers, sea stars, clams, and anemones.



## Whale Bay

In the Small Arm of Whale Bay, in May 1971, we made two trawl hauls and came up with relatively small catches of mostly flatfishes, some rockfish, and small amounts of other invertebrates and fishes (Table 26). Of the flatfishes, flathead sole were most abundant; also taken were English sole, rex sole, arrowtooth flounder, and Dover sole. The rockfish were all juvenile rougheye rockfish. Also taken were small amounts of walleye pollock, eulachon, the prickleback Lumpenella sp., blackfin eelpouts, poachers, and invertebrates, which were limited to Tanner crab, lyre crab, spot shrimp, and coonstripe shrimp.

We made two trawl hauls near the head of the Great Arm of Whale Bay in May 1971 that produced relatively small catches, in which gadids made up over half the bulk, flatfishes a substantial portion of the catch, and other fishes and invertebrates only incidental amounts (Table 27). The gadids were nearly all walleye pollock and a few Pacific cod. Flatfishes included flathead sole, English sole, rex sole, arrowtooth flounder, and yellowfin sole. The rockfish were all adult Pacific ocean perch and a few silvergrays. Other fishes included juvenile sablefish, Irish lords, staghorn sculpins, kelp greenling, searcher, the eelpout Lycodes sp., blackfin poachers, and other poachers (Agonidae). Invertebrates included pink, sidestripe, and spot shrimp; Tanner crab; sponges; stubby squid; sea cucumbers; sea stars; and sea urchins.

We made a single trawl haul in the center of the Great Arm of Whale Bay in May 1971 and came up with a small but varied catch in which rockfish were the largest single group, and present in slightly lesser amounts were invertebrates, flatfishes, gadids, and a small number of other fishes (Table 28). The rockfish were mostly adult Pacific ocean perch and rougheye rockfish with one adult quillback. Gadids were adult walleye pollock and one Pacific cod, and flatfishes present were flathead sole, English sole, rex sole, and arrowtooth flounder. Invertebrates consisted mostly of pink shrimp with small amounts of spot shrimp, juvenile Tanner crab, stubby squid, and anemones. Other fishes present were a few ratfish, eulachon, longnose skates, and blackfin poachers.

## SOUTHERN BARANOF ISLAND REGION

### Port Conclusion

A summary of our findings at Port Conclusion in August 1970, March and September 1971, April 1972, and October 1979 is shown in Table 29.

In August 1970, rockfishes, flatfishes, and invertebrates made up the bulk of two catches in roughly equal amounts, and a small amount of other fishes constituted the remainder (Table 29). Nearly all of the bulk of the rockfish was juvenile Pacific ocean perch; a few quillback rockfish and bocaccio (Sebastes paucispinis) were also taken. Of the flatfishes, adult arrowtooth flounder made up the bulk of any single species; also taken were flathead sole, rex sole, English sole, rock sole, Dover sole, and one juvenile halibut. Among the invertebrates were sponges, sea stars, whelks (Neptunea sp.), juvenile Tanner crab, shrimp, hermit crabs (Pagurus splendescens and P. hirsitiussculus), a few box crab, clams, and sea urchins. Other fishes were greenling, ribbed sculpins, staghorn sculpins, Irish lords, ratfish, searchers, the marbled snailfish (Liparis dennyi), and sturgeon poachers. A trace amount of juvenile walleye pollock was present.

In three hauls in Port Conclusion during March 1971, invertebrates were the most abundant single group, followed by sizable catches of rockfishes and other fishes, and small amounts of flatfishes and gadids (Table 29). Of the invertebrates, box crab and spot shrimp made up most of the bulk; also present were Tanner crab, golden king crab (Lithodes aequispina), hermit crab, stubby squid, sponges, sea stars, and sea urchins. The rockfishes were Pacific ocean perch and yellowtail rockfish, juveniles and adults; a juvenile redbanded rockfish (Sebastes babcocki); and adult quillback rockfish. Other fishes in the catches were great sculpins, ribbed sculpins, the sailfin sculpin, the sculpin Gymnocanthus sp., searchers, and the family Agonidae. Flatfishes, which did not amount to much of the catches, included flathead sole, arrowtooth flounder, rex sole, rock sole, halibut, and Dover sole. Cod and walleye pollock appeared in the catches in only trace amounts.

In September 1971, four relatively small catches at Port Conclusion were comprised mainly of rockfishes and invertebrates (Table 29). All other groups combined did not amount to much bulk. Of the rockfish, most were Pacific ocean perch; small amounts of adult quillbacks and silvergrays were taken along with one canary rockfish (Sebastes pinniger). The bulk of the invertebrates consisted of adult king crab, spot shrimp, and pink shrimp. Also taken were lyre crab, hermit crab (Elassochirus gilli), box crab, Hinds' scallops, mussels (Mytilus sp.), sponges, sea urchins, sea stars, brittle stars, snails, and limpets. Taken in small quantities were walleye pollock; a few flatfishes--flathead sole, arrowtooth flounder, and rock sole; searchers; and ribbed sculpins.

In April 1972, over half of three relatively small catches at Port Conclusion were invertebrates. Miscellaneous fishes, flatfishes, and rockfishes were taken in lesser quantities, and gadids were absent from the catches (Table 29). Of the invertebrates, adult king crab made up the greatest single portion of the catches. Also present were coonstripe shrimp, hermit crab (Pagurus dalli), lyre crab, sea cucumbers, sea stars, brittle stars, anemones, sponges, Hinds' scallops, brachiopods, and algae (Agarum sp. and Desmarestia sp.). Of the fishes, flatfishes and rockfishes together roughly equaled the bulk of other (miscellaneous) fishes. Among the flatfishes, adult arrowtooth flounder predominated; rock sole were also abundant. Also taken were flathead sole, rex sole, Dover sole, and English sole. Of the rockfishes, juvenile Pacific ocean perch predominated; also taken in small numbers were greenstriped, yellowtail, and silvergray rockfish. Other fishes were represented by great sculpins, staghorn sculpins, ribbed sculpins, spinyhead sculpins, armorhead sculpins, sturgeon poachers, searchers, and pricklebacks.

We made two bottom trawl hauls in Port Conclusion, north of Cape Ommaney, in October 1979 (Table 29) and came up with small-to-fair catches containing much kelp and lesser amounts of fishes and invertebrates. Among the fishes, juvenile Pacific ocean perch were most abundant; also present were an adult quillback rockfish, juvenile arrowtooth flounder, a rock sole, juvenile walleye pollock, searchers, great sculpins, a sturgeon poacher, and unidentified snailfish (Liparidae). The invertebrates included spot, pink, and brown shrimp, the hermit crab Pagurus tenuimanus, brittle stars, the sun star Pycnopodia, the medusa Cyanea, scallops Chlamys sp., and sponges Leuconia sp. The kelp was mostly brown macrophytes Cymothere, Alaria, and Laminaria sp.

## Big Port Walter

A summary of our findings at Big Port Walter from March and September 1971, April 1972, and October 1979 is shown in Table 30.

In March 1971, our initial trawl effort in Big Port Walter yielded two fair-size catches comprised mainly of invertebrates, with rockfishes barely one-third of the bulk and other fishes far less. Of the invertebrates, sponges, sea urchins, and sea stars predominated. Also taken were sea cucumbers, clams, lyre crab, hermit crab, and immature shrimp. The rockfish were nearly all juvenile Pacific ocean perch along with a few quillbacks. Gadids were represented by small amounts of walleye pollock. Flatfish were virtually absent from the catches; only a few Dover sole were taken. Other fishes included great sculpins, spinyhead sculpins, one grunt sculpin (Rhamphocottus richardsoni), searchers, and poachers.

In September 1971, two catches at Big Port Walter consisted mainly of flatfishes with rockfishes, invertebrates, and other fishes contributing roughly equal amounts to the remainder (Table 30). Of the flatfishes, adult arrowtooth flounder made up most of the bulk; also present were rex sole, flathead sole, English sole, and Dover sole. The rockfish were nearly all juvenile Pacific ocean perch along with a few adult quillbacks. Of the invertebrates, pink shrimp, sidestripe shrimp, coonstripe shrimp, and dock shrimp were present as well as hermit crab (Pagurus dalli), lyre crab, sponges, brittle stars, sea urchins, anemones, brachiopods, and kelp. Gadids were represented only by juvenile walleye pollock present in trace amounts. Other fishes taken were searchers, ribbed sculpins, and pricklebacks.

In April 1972, six generally small catches at Big Port Walter consisted mainly of rockfishes and miscellaneous fishes, with small amounts of gadids, and invertebrates, and trace amounts of flatfish (Table 30). Of the rockfishes, juvenile Pacific ocean perch predominated; adult quillback rockfish added a substantial amount to the bulk. Among the miscellaneous ("other") fishes, searchers and sculpins were most abundant and included great sculpins, ribbed sculpins, spinyhead sculpins, and bigmouth sculpins. Also taken were the longnose skate and northern ronquil. Gadids consisted mainly of juvenile walleye pollock and a few Pacific cod. Invertebrates were limited to hermit crab-- Pagurus dalli, Labidochirus splendescens, and Elassochirus tenuimanus; lyre crab; a few dock shrimp and spot shrimp; decorator crab (Oregonia gracilis); brittle stars; sea stars; sea urchins; hairy tritons; Hinds' scallops; stubby squid; brachiopods; sponges; anemones; and algae Laminaria, agarum, and Desmarestia. Flatfish were mainly arrowtooth flounder; also present were rock sole and Dover sole.

We made one successful bottom trawl in Big Port Walter, north of Cape Ommaney, in October 1979 (Table 30) and came up with a small catch of mostly juvenile Pacific ocean perch with few other fishes and invertebrates. Other fishes included juvenile walleye pollock and a juvenile Pacific cod, searchers, a flathead sole, and a rex sole. Invertebrates were limited to coonstripe and brown shrimp, the hermit crab Labidochirus splendescens, hairy tritons, and unidentified sponges.

## Port Lucy

We made two trawl hauls in Port Lucy, a fiord which lies just above Cape Ommaney, southern Baranof Island, off lower Chatham Strait, in March

1971 and caught mostly rockfishes with lesser amounts of other fishes and a few invertebrates (Table 31). Noteworthy is the complete absence of flatfish and gadids in these catches. The rockfish were all juvenile yellowtail rockfish except for a single juvenile silvergray rockfish. Other fishes taken were Irish lords, kelp greenling, and a searcher; invertebrates were limited to sea stars and clams. This catch of juvenile yellowtail rockfish apparently represents one of the very few instances of immature stages of this species being collected. None of the participants in the Second Annual Rockfish Survey planning meeting in Seattle on 15-16 February 1977 had any knowledge of the distribution of juvenile yellowtail rockfish, despite the fact that the species is the second most important commercial rockfish in the Pacific Northwest (S. J. Westrheim, Pacific Biological Station, Nanaimo, B.C., personal communication).

## KUIU ISLAND REGION

### Port Malmsbury

We made three trawl hauls in Port Malmsbury on lower Kuiu Island near the entrance to Chatham Strait in March 1971.

We made a single trawl haul at the entrance to Port Malmsbury in March 1971 which resulted in a catch of mostly flatfishes with lesser amounts of invertebrates and trace amounts of other fishes (Table 32). English sole was the most abundant flatfish; also taken were flathead sole, arrowtooth flounder, and rex sole. Other fishes were limited to juvenile walleye pollock, spinyhead sculpins, poachers, and eelpouts (*Lycodes* sp.). Invertebrates consisted of shrimp, family Hippolytidae, pink shrimp, one juvenile Tanner crab, octopus, sea urchins, sea stars, sea cucumbers, and anemones.

A single trawl haul near the head of the lower arm of Port Malmsbury in March 1971 produced a small catch, about evenly divided between rockfishes and flatfishes, and little else (Table 33). Among the rockfishes, adult yellowtail rockfish made up the greatest bulk; also present were adult canary, quillback, and silvergray rockfish. The flatfishes consisted of English sole, flathead sole, arrowtooth flounder, rex sole, yellowfin sole, and one starry flounder. Other fishes were limited to juvenile Pacific cod, a spinyhead sculpin, searchers, and a kelp greenling. Sea cucumbers and pink shrimp were the only invertebrates.

A trawl haul in the center of Port Malmsbury in March 1971 resulted in a small catch of nearly all flatfishes with trace amounts of other fishes, and few invertebrates (Table 34). Among the flatfishes, flathead sole and English sole predominated; also present were arrowtooth flounder, rex sole, and yellowfin sole. Other fishes were limited to a few walleye pollock and poachers. Invertebrates consisted of juvenile Tanner crab, hermit crab, sea stars, and anemones.

## SOUTHERN ADMIRALTY ISLAND REGION

### Eliza Harbor

We made a trawl haul near the entrance to Eliza Harbor, Admiralty Island, in July 1976 and came up with a large catch of gadids with flatfishes, other fishes, and invertebrates present in lesser amounts (Table 35). The

gadids were mainly adult and young walleye pollock and two large Pacific cod. Flatfishes included English sole, Dover sole, flathead sole, rock sole, and yellowfin sole. Other fishes present included the eelpout Lycodes sp., sturgeon poachers, and one juvenile rougheye rockfish. Invertebrates were mostly juvenile Tanner crab; one adult king crab; hermit crab; pink, coonstripe, and dock shrimp; clams; an octopus; and anemones.

We made a trawl haul at the head of Eliza Harbor on southern Admiralty Island in July 1976 and came up with roughly equal amounts of gadids and invertebrates, mostly Tanner crab, and lesser amounts of flatfishes and other fishes (Table 36) as well as a large quantity of soft mud. The gadids were all young and adult walleye pollock; besides the adult Tanner crab, other invertebrates taken were hermit crab and pink and dock shrimp. Flatfishes included flathead sole, arrowtooth flounder, rock sole, and yellowfin sole. Other fishes present included eelpouts (Lycodes), searchers, sturgeon poachers, spinycheek starsnouts, and a bigmouth sculpin.

#### Gambier Bay

We made a single trawl haul on the southwestern side of Gambier Bay on southern Admiralty Island in July 1976 and came up with mostly flatfishes with invertebrates, gadids, and other fishes in lesser amounts (Table 37). The flatfishes included large starry flounder, flathead sole, and yellowfin sole. Among the invertebrates were Tanner crab, lyre crab, pink and dock shrimp, hermit crab, the whelk Neptunea, Greenland cockles (Serripes groenlandicus), softshell clams (Mya arenaria), and jellyfish (Cyanea capillata). The gadids were all walleye pollock, and other fishes were limited to staghorn and great sculpins and pricklebacks.

### EASTERN ADMIRALTY ISLAND REGION

#### Seymour Canal

We made two bottom trawl hauls along the western side of Tiedeman Island in Seymour Canal, on the eastern side of Admiralty Island, in July 1976 and had large catches of invertebrates (mostly Tanner crab and shrimp) with gadids and other fishes present in lesser amounts and flatfishes present but sparse (Table 38). Most of the Tanner crab were adult females, and a number of large males were also present. Pink and coonstripe shrimp made up the bulk of the shrimp present. Other invertebrates included juvenile Tanner crab, several adult female king crab, hermit crab, lyre crab, dock shrimp, chitons, an octopus, a stubby squid, sea urchins, brittle stars, sun stars (Solaster dawsoni), sea cucumbers, sponges, and anemones. Gadids were comprised of adult Pacific cod and walleye pollock, and among the other fishes, longnose skates added much to the bulk. Also present were eelpouts; blackfin, spinyhead, and great sculpins; sturgeon poachers; spinycheek starsnouts, and rose snailfish. Flatfishes included one Pacific halibut, flathead sole, arrowtooth flounder, yellowfin sole, Dover sole, and rex sole.

### NORTHERN STEPHENS PASSAGE REGION

#### Auke Bay

A summary of our findings at Auke Bay is given in Table 39. We made trawl hauls in Auke Bay in April 1973; March and December 1974; January,

March, September, and November 1975; March and November 1976; March, April 1977; April, May, June, October, and December 1978; March, April, and October 1979; January, April, June, and September 1980; and January 1981.

In April 1973, a single trawl haul in Auke Bay was roughly half flatfishes with lesser amounts of walleye pollock and other fishes and invertebrates (Table 39). Flathead sole was the most abundant flatfish; other species taken in lesser amounts included starry flounder, rex sole, rock sole, yellowfin sole, and arrowtooth flounder. All of the walleye pollock were juveniles. Other fishes present included many shortfin eelpouts, eulachon, pricklebacks, spinyhead sculpins, and ribbed sculpins. Invertebrates consisted of pink shrimp, dock shrimp, coonstripe shrimp, Tanner crab, the hermit crabs Pagurus aleuticus and P. ochotensis, the whelk Neptunea, and sea star Hippasterias.

In March 1974, two trawl hauls in Auke Bay were composed almost entirely of flatfishes with small amounts of other fishes and invertebrates (Table 39). Yellowfin sole predominated among the flatfishes; also taken were flathead sole, rex sole, rock sole, and starry flounder. Other fishes included juvenile cod and walleye pollock, black and longnose skates, juvenile roughey rockfish, greenlings, sturgeon poachers, great sculpins, staghorn sculpins, spinyhead sculpins, and ribbed sculpins. Invertebrates included adult Tanner and king crabs, the hermit crabs Pagurus ochotensis and P. aleuticus, pink shrimp, and the whelk Neptunea.

In December 1974, two trawl hauls in Auke Bay were made up mostly of adult herring with lesser amounts of gadids, flatfishes, and trace amounts of other fishes and invertebrates (Table 39). Juvenile and adult walleye pollock were present as were flathead sole, rex sole, yellowfin sole, juvenile sablefish, eulachon, sturgeon poachers, pricklebacks, shortfin eelpouts, wattled eelpouts, staghorn sculpins, bigmouth sculpins, Tanner crab, the hermit crab Pagurus aleuticus, and the jellyfishes Aurelia and Cyanea.

In January 1975, two trawl hauls in Auke Bay were comprised of herring, flatfishes, and walleye pollock in near-equal amounts and few invertebrates and other fishes (Table 39). The herring were adults as were the walleye pollock and a single large cod. Flatfishes taken included flathead sole, yellowfin sole, starry flounder, and rock sole. Also present were eulachon, sturgeon poachers, staghorn sculpins, great sculpins, and pricklebacks. Invertebrates included king crab, Tanner crab, golden king crab, and hermit crab.

In March 1975, a single trawl haul in Auke Bay was comprised mostly of flatfishes and herring (Table 39). Yellowfin sole predominated among the flatfishes. Also present were flathead sole, rex sole, and starry flounder. Other fishes were limited to juvenile walleye pollock and spinycheek starsnouts, and invertebrates were limited to hermit crab and softshell clams.

In September 1975, two trawl hauls in Auke Bay produced mostly king crab with walleye pollock and flatfishes in smaller amounts and few other fishes or invertebrates (Table 39). All of the 41 king crab were gravid females. Flatfishes included flathead sole, yellowfin sole, and starry flounder. Other fishes included cod, longnose skates, spinyhead sculpins, and eelpouts. Invertebrates present were Tanner crab, hermit crab, lyre crab, dock and pink shrimp, and the whelk Neptunea.

In November 1975, two trawl hauls in Auke Bay produced a large catch of walleye pollock along with flatfishes and few other fishes and invertebrates (Table 39). Among the flatfishes were flathead sole, yellowfin sole, arrowtooth flounder, starry flounder, rex sole, and English sole. Other fishes included Pacific cod, herring, juvenile sablefish, eulachon, eelpouts, staghorn sculpins, great sculpins, and sturgeon poachers. Invertebrates included Tanner crab, king crab, pink shrimp, dock shrimp, the hermit crab Pagurus aleuticus, and the whelk Neptunea.

In March 1976, a very small catch in a single trawl haul in Auke Bay consisted mainly of flatfishes and few other fishes and invertebrates (Table 39). Flatfishes taken were flathead sole and yellowfin sole. Other fishes were limited to juvenile walleye pollock, and invertebrates were limited to pink shrimp, dock shrimp, the hermit crab Pagurus aleuticus, and the whelk Neptunea.

In November 1976, two trawl hauls in Auke Bay consisted mainly of flatfishes with some walleye pollock and few other fishes and invertebrates (Table 39). Flathead sole and yellowfin sole predominated among the flatfishes. Also taken were rex sole and starry flounder, adult and juvenile walleye pollock and herring, eelpouts, pricklebacks, whitespotted greenling (Hexagrammos stelleri), great sculpins, spinyhead sculpins, silverspotted sculpins, and sturgeon poachers and spinycheek starsnouts. Invertebrates included adult king and Tanner crabs, the hermit crab Pagurus aleuticus, pink shrimp, dock shrimp, Hinds' scallop, the whelk Neptunea, nudibranch Dendronotus sp., the rose sea star, and jellyfish Cyanea.

In March 1977, a single trawl haul in Auke Bay came up with a catch in which flatfishes and walleye pollock, in roughly equal amounts, made up the bulk; Tanner crab contributed a fair amount, and other fishes and invertebrates were sparse (Table 40). Yellowfin sole was the predominate flatfish; also present were starry flounder, flathead sole, arrowtooth flounder, and rock sole. The walleye pollock consisted of both juveniles and adults. The Tanner crab were all adults of both sexes. Other invertebrates included a single adult king crab, pink shrimp, brown shrimp, the hermit crab Pagurus aleuticus, and the whelk Neptunea. Other fishes included black and longnose skates, eulachon, staghorn sculpin, blackfin sculpin, the shortfin eelpout, and longsnout prickleback.

In April 1977, we made a bottom trawl haul in Auke Bay (Table 39) and came up with a good-sized catch of mostly flatfish and gadids. Large adult starry flounder made up the bulk of the catch; other flatfish present were yellowfin sole, flathead sole, English sole, rex sole, rock sole, and arrowtooth flounder. Gadids were nearly all walleye pollock, both juveniles and adults; one Pacific cod was also taken. Other fish present were eulachon, juvenile Pacific herring, shortfin eelpouts, spinyhead sculpins, longnose skates, and spinycheek starsnouts. Invertebrates present were pink shrimp, a few Tanner crabs, lyre crabs, the hermit crabs Pagurus aleuticus and P. capillatus, the whelks Neptunea lyrata and N. pribilofensis, and the snail Colus halli.

In April 1978, we made a single bottom trawl haul in Auke Bay (Table 39) and came up with a large catch of mostly flatfish with lesser amounts of invertebrates and other fishes. Large adult starry flounder and yellowfin sole made up the bulk of the flatfish; also present were flathead sole and rex sole. A few adult king crabs and Tanner crabs of both sexes made up the

bulk of the invertebrates. Other invertebrates included a male Dungeness crab, lyre crabs, pink shrimp, coonstripe shrimp, the anemone Metridium, and the snail Colus halli. Other fishes included adult and juvenile walleye pollock, juvenile sablefish, eulachon, juvenile and adult Pacific herring, a whitespotted greenling, a great sculpin, a snailfish, Liparis sp., sturgeon poachers, spinycheek starsnouts, black skates, and shortfin eelpouts.

We made a single bottom trawl haul in Auke Bay (Table 39) in May 1978 and came up with a large catch of mostly flatfish with lesser amounts of other fishes and invertebrates. Three species made up most of the bulk of the flatfish: flathead sole, yellowfin sole, and starry flounders; also taken were rex sole, English sole, and a juvenile Pacific halibut. Other fishes included juvenile and adult walleye pollock, shortfin eelpouts, juvenile sablefish, eulachon, spinyhead sculpins, staghorn sculpins, sturgeon poachers, and black skates. Invertebrates were limited to a few king crabs of both sexes, juvenile Tanner crabs, a male Dungeness crab, lyre crabs, the hermit crab Pagurus aleuticus, and pink and coonstripe shrimp.

We made two bottom trawl hauls in Auke Bay (Table 39) in June 1978 and came up with small-to-fair catches of mostly king crabs, flatfish, and walleye pollock with incidental amounts of other fish and invertebrates. The king crabs were all adult females carrying eggs. A variety of flatfish were taken, including flathead sole, yellowfin sole, rex sole, and starry flounder. Walleye pollock included both juveniles and adults. Other fish included a juvenile roughey rockfish, a few adult Pacific herring, black skates, spinyhead sculpins, and a few shortfin eelpouts and spinycheek starsnouts. Other invertebrates included pink shrimp, sidestripe shrimp, and brown shrimp (Crangon), a few Tanner crabs, the hermit crabs Pagurus aleuticus and Labidochirus splendescens, and the whelk Neptunea sp.

We made seven bottom trawl hauls in Auke Bay during October 1978 (Table 39) and had small-to-fairly-large catches of mostly flatfish with walleye pollock adding some bulk and other fishes and invertebrates in lesser amounts. Yellowfin sole predominated among the flatfish; flathead sole were abundant; also present were rex sole, starry flounder, rock sole, English sole, arrowtooth flounder, Alaska plaice, and a few small adult and juvenile Pacific halibut. Walleye pollock were mostly juveniles with a few adults. A large adult Pacific cod was also taken. Other fishes included eulachon, young sablefish, Pacific herring, a kelp greenling, shortfin eelpouts, wattled eelpouts, longsnout pricklybacks, snake pricklybacks, black skates, great sculpins, spinyhead sculpins, staghorn sculpins, the sculpin Triglops sp., sturgeon poachers, blackfin poachers, and spinycheek starsnouts. Other invertebrates included pink, coonstripe, brown, and hippolytid shrimp. Crabs included juvenile Tanner and king crabs, the lyre crab, and hermit crabs Pagurus aleuticus and P. hirsutiusculus; also present were green urchins, the sea star Pycnopodia, sea pens, the whelk Neptunea, and the nudibranch Dendronotus sp.

We made a single bottom trawl haul in Auke Bay (Table 39) in December 1978 and came up with a fairly small catch of mostly flatfish and assorted fishes and invertebrates. Flathead sole predominated among the flatfish; also present were yellowfin sole, rex sole, and starry flounder. Other fishes included juvenile walleye pollock (young-of-the-year fish), eulachon, great sculpins, staghorn sculpins, whitespotted greenling, and an unidentified snailfish. Invertebrates included Tanner crabs, coonstripe shrimp, the whelk Neptunea, and the medusa Aurelia.



We made one successful trawl haul in Auke Bay during March 1979 (Table 39) and came up with a fair catch of mostly flatfish and few other fishes and invertebrates. Yellowfin sole made up the bulk of the flatfish; also present were flathead sole and rex sole. Other fishes included kelp greenling, Pacific herring, staghorn sculpins, and young capelin. Invertebrates were limited to a few Tanner crabs.

We made two bottom trawl hauls in Auke Bay in April 1979 (Table 39) and had small-to-fair catches. Most of the bulk was flatfish with walleye pollock and other fishes and invertebrates present in lesser amounts. Among the flatfish, large adult starry flounder predominated. Also present were juvenile and adult flathead sole and yellowfin sole. Other fishes included Pacific herring, spinyhead and staghorn sculpins, a black skate, a sturgeon poacher, and shortfin and wattled eelpouts. Invertebrates were limited to a few adult female and juvenile king crabs and juvenile Tanner crabs.

We made one bottom trawl haul in Auke Bay in October 1979 (Table 39) and came up with a small catch of mostly flatfish with lesser amounts of walleye pollock, other fishes, and invertebrates. The flatfish were mostly flathead sole; also present were yellowfin sole, rex sole, and slender sole. The walleye pollock included both juveniles and adults. Other fish were limited to a black skate and spinyhead sculpins. The sparse invertebrates were limited to lyre crabs, the hermit crab Labidochirus splendescens, and the whelk Neptunea sp.

We made four bottom trawl hauls in Auke Bay in January 1980 (Table 39) and came up with small-to-large catches of mostly flatfish and walleye pollock, with lesser amounts of other fishes and invertebrates. The flatfish were mostly flathead sole, starry flounder, and yellowfin sole; also taken were rex sole, rock sole, arrowtooth flounder, and slender sole. The walleye pollock were all juveniles. Other fishes taken were a juvenile roughey rockfish, eulachon, juvenile Pacific herring, shortfin eelpouts, whitespotted greenling, longsnout pricklebacks, spinyhead sculpins, staghorn sculpins, a buffalo sculpin, black skates, marbled snailfish, sturgeon poachers, and spinycheek starsnouts. Invertebrates included adult female king crabs, adult and juvenile Tanner crabs, pink shrimp, the hermit crab Pagurus aleuticus, and the whelk Neptunea sp.

We made two bottom trawl hauls in Auke Bay in April 1980 (Table 39) and came up with small catches of mostly flatfish and walleye pollock with few other fishes and invertebrates. The flatfish were mostly flathead sole and starry flounder; yellowfin sole were also significant. Rock sole were also present. The walleye pollock were both adults and juveniles. Other fishes included eulachon, shortfin eelpouts, staghorn sculpins, the sculpin Triglops, and sturgeon poachers. The only invertebrates were clam shell remnants.

We made two bottom trawl hauls in Auke Bay in June 1980 (Table 39) and came up with fair-sized catches of mostly flatfish and walleye pollock with some crabs, other invertebrates, and other fishes. The flatfish were mostly flathead sole, with yellowfin sole significant and other species merely present; these included a 66-cm Pacific halibut, English sole, rex sole, rock sole, starry flounder, and arrowtooth flounder. The walleye pollock were both young and adults. The crabs were mostly adult female king crabs; a few adult Tanner crabs of both sexes were present; the hermit crab Pagurus aleuticus was also taken. Other invertebrates were limited to brown shrimp, the snail Colus halli, and the whelk Neptunea. Other fishes included eulachon, a few young Pacific herring, shortfin eelpouts, buffalo sculpin,

spinyhead sculpins, sturgeon poachers, spinycheek starsnouts, longsnout pricklebacks, and black skates.

In September 1980, we made three bottom trawl hauls in Auke Bay (Table 39) and came up with small-to-fair sized catches of mostly walleye pollock with lesser amounts of flatfish, other fishes, and invertebrates. The walleye pollock were both adults and young. Flathead sole was the predominate flatfish; also present were large adult English sole, yellowfin sole, and rock sole. Other fishes included Pacific herring, a roughey rockfish, capelin, eulachon, rose snailfish, longsnout pricklebacks, shortfin and wattled eelpouts, black skates, great sculpins, spinyhead sculpins, and spinycheek starsnouts. Invertebrates included a few adult king crabs, Tanner crabs, spot and coonstripe shrimp, the hermit crabs Pagurus aleuticus and P. capillatus, the whelk Neptunea sp., the scallop Chlamys rubida, hairy tritons, unidentified sea stars, sea cucumbers, and sponges.

We made one bottom trawl haul in Auke Bay in January 1981 (Table 39) and came up with a large catch of mostly flatfish with lesser amounts of other fishes and invertebrates. Flathead sole made up the bulk of the flatfish; also significant were yellowfin sole and arrowtooth flounder. Also present were starry flounder and a juvenile Pacific halibut. Other fishes included juvenile Pacific herring, walleye pollock, wattled eelpouts, whitespotted greenling, juvenile sablefish, a staghorn sculpin, great sculpins, and sturgeon poachers. The relatively sparse invertebrates included Tanner crabs and pink shrimp, three adult female king crabs, the hermit crabs Pagurus aleuticus and P. capillatus, and the whelks Neptunea lyrata and N. pribilofensis.

#### Fritz Cove

A summary of our findings in Fritz Cove is shown in Table 40 and includes the following sampling dates: February, March, and December 1974; January, March, April, and November 1975; March and October 1976; March and May 1977; April, June, October, and December 1978; March, April, May, and October 1979; January, April, May, June, September, October, and November 1980; and January, February, May, and June 1981.

In February 1974, a single trawl haul in Fritz Cove produced a catch of several hundred kilograms which was mostly starry flounder and lesser amounts of other fishes and invertebrates (Table 40). Large adult starry flounder predominated in numbers and bulk over all other species and groups combined. Also present were English sole, yellowfin sole, arrowtooth flounder, and rex sole. Adult walleye pollock and cod were present in lesser amounts as were herring, wattled and shortfin eelpouts, pricklebacks, staghorn, great and spinyhead sculpins, and sturgeon poachers. Invertebrates present were Tanner crab, Dungeness crab, sidestripe shrimp, and octopus.

In March 1974, a single trawl haul in Fritz Cove contained mostly flatfishes with lesser amounts of walleye pollock and herring and a few other fishes and invertebrates (Table 40). Among the flatfishes, large starry flounder predominated; yellowfin sole were also abundant, and rex sole were present as well. Other fishes taken included great sculpins, staghorn sculpins, and silverspotted sculpins (Blepsias cirrhosus), greenling, sturgeon poachers, and shortfin eelpouts. Invertebrates included adult Tanner and Dungeness crabs; hermit crab; and pink, sidestripe, and coonstripe shrimp.

In December 1974, a single trawl haul in Fritz Cove was made up almost entirely of flatfishes with other fishes and invertebrates only a small part of the catch (Table 40). Large adult starry flounder were the predominate flatfish, but also present were English sole, flathead sole, rex sole, rock sole, and yellowfin sole. Among the other fishes taken, walleye pollock were most numerous; also present were great sculpins, spinyhead sculpins, black and longnose skates, shortfin eelpouts, wattled eelpouts, blackfin poachers, and the rose snailfish (Careproctus rastrinus). Invertebrates included Tanner crab, lyre crab, the hermit crab Pagurus aleuticus, the jellyfishes Cyanea capillata and Aurelia aurita, the whelk Neptunea sp., and nudibranch Dendronotus sp.

In January 1975, catches from three trawl hauls in Fritz Cove were mostly flatfishes and gadids in roughly equal amounts, with other fishes and invertebrates only incidental (Table 40). Of the flatfishes, yellowfin sole and starry flounder made up most of the bulk. Also present were English sole, flathead sole, rex sole, rock sole, and arrowtooth flounder. Gadids were nearly all walleye pollock with only a few large cod. Other fishes included staghorn and spinyhead sculpins, great sculpins, sturgeon poachers, blackfin poachers, pricklebacks (Family stichaeidae), eelpouts (Family Zoarcidae), herring, eulachon, and rose snailfish. Invertebrates included pink shrimp, dock shrimp, adult king crab, Tanner crab, the hermit crabs Pagurus aleuticus and Labidochirus splendescens, the whelk Neptunea sp., nudibranch Dendronotus, one octopus, and the jellyfish Aurelia.

In March 1975, two catches in Fritz Cove were mostly flatfishes and gadids in roughly equal amounts with relatively small amounts of herring, other fishes, and invertebrates (Table 40). Flatfish were mostly starry flounder and yellowfin sole by bulk but also included flathead sole, rex sole, rock sole, English sole, arrowtooth flounder, and Alaska plaice (Pleuronectes quadrituberculatus). Gadids were almost entirely walleye pollock plus a few Pacific cod. Besides herring, other fishes included one yellowtail rockfish, great sculpins, bigmouth sculpins, staghorn and spinyhead sculpins, black and longnose skates, sturgeon poachers, spinycheek starsnouts, eelpouts, pricklebacks, and the rose snailfish. Invertebrates consisted of adult Tanner crab, the hermit crab Pagurus aleuticus, pink shrimp, and the nudibranch Dendronotus sp.

In April 1975, contents of a single trawl haul in Fritz Cove were fairly evenly divided among flatfishes, pollock, longnose skates, and miscellaneous invertebrates (Table 40). The flatfish were mainly starry flounder; also present were flathead sole, rex sole, yellowfin sole, and Alaska plaice. The walleye pollock and longnose skates were nearly all large adults. Other fishes included great sculpins, spinyhead sculpins, eulachon, shortfin eelpout, pricklebacks, and spinycheek starsnouts. The bulk of the invertebrates were adult Tanner crab; also present were hermit crab, pink and coonstripe shrimp, anemones, the whelk Neptunea sp., and nudibranch Dendronotus sp.

In November 1975, a single trawl haul in Fritz Cove resulted in a large catch made up almost entirely of one flatfish species--starry flounder. Other fishes and invertebrates were of minor significance in the catch. Other flatfishes present were flathead sole, English sole, Dover sole, rex sole, arrowtooth flounder, and yellowfin sole. Other fishes present included rougheye rockfish, walleye pollock, eulachon, black and longnose skates,

eelpouts, and pricklebacks. Invertebrates consisted of pink shrimp, dock shrimp, Tanner crab, and hermit crab.

In March 1976, a single trawl haul was made up mostly of flatfishes and pollock in near-equal amounts and little else (Table 40). Most of the flatfish were starry flounder, but also present were flathead sole, yellowfin sole, arrowtooth flounder, and rex sole. The small amounts of other fishes were comprised of eulachon, shortfin eelpouts, wattled eelpouts, longsnout pricklebacks, snake pricklebacks, and spinycheek starsnouts. Invertebrates included pink shrimp, adult Tanner crab, the hermit crabs Pagurus aleuticus and Labidochirus splendescens, and the ridged whelk Neptunea lyrata.

In October 1976, two trawl hauls in Fritz Cove were mainly flatfishes and gadids with small amounts of other fishes and invertebrates (Table 40). The flatfishes were mostly flathead sole and starry flounder with lesser amounts of rex sole, rock sole, yellowfin sole, arrowtooth flounder, and Alaska plaice. The gadids were mostly adult walleye pollock and a few large cod. Other fishes included eulachon, one ratfish (Hydrolagus colliei), shortfin eelpouts, sturgeon poachers, roughey rockfish, snailfish, and pricklebacks. Invertebrates included a pelagic squid (Berryteuthis magister), Tanner crab, pink shrimp, hermit crab, and an octopus.

In March 1977, a single trawl haul in Fritz Cove resulted in a fairly large catch of mostly flatfishes with lesser amounts of gadids, other fishes, and invertebrates (Table 40). The flatfish were mainly adult starry flounder; also present were arrowtooth flounder, flathead sole, English sole, and rex sole. The gadids were all walleye pollock, both juveniles and adults. Other fishes included black and longnose skates, shortfin eelpouts, longsnout pricklebacks, sturgeon poachers, and an unidentified sculpin. Invertebrates included adult pink shrimp, single adult king and Tanner crabs, the ridged whelk, the snail Colus halli, and the hermit crab Pagurus aleuticus.

We made two bottom trawl hauls in Fritz Cove (Table 40) in May 1977 and came up with a sizable catch overall of mostly shrimp, skates, pricklebacks, and flatfish. The shrimp were mostly pink shrimp; also present were a few sidestripe shrimp and the shrimp Crangon. The skates were mostly black skates; longnose skates were also present. Pricklebacks were all the longsnout prickleback. Among the flatfish, flathead sole predominated; also present were English sole, yellowfin sole, arrowtooth flounder, rex sole, and rock sole. Other fishes included walleye pollock, Pacific cod, eulachon, shortfin and wattled eelpouts, snailfish, and spinyhead sculpins. Other invertebrates included a few Tanner crabs, the hermit crab Pagurus aleuticus, the whelks Neptunea lyrata and N. pribilofensis, the snail Colus halli, and one Octopus sp.

We made a single bottom trawl haul in Fritz Cove during April 1978 (Table 40) and came up with a large catch of mostly flatfish and lesser amounts of invertebrates and other fish. The flatfish were mostly yellowfin sole, both adults and juveniles; starry flounder also amounted to substantial bulk. Also present were flathead sole, rex sole, rock sole, and two juvenile Pacific halibut 145-147 mm forklength. Invertebrates consisted of a few adult male king crabs and recently molted adult male Tanner crabs, pink and coonstripe shrimp, and the whelk Neptunea lyrata. Other fishes included adult and juvenile walleye pollock, adult Pacific herring, a juvenile sablefish, staghorn sculpins, great sculpins, spinyhead sculpins, the sculpin Triglops sp., snake pricklebacks, and sturgeon poachers.

In June 1978, we made four successful bottom trawl hauls in Fritz Cove (Table 40) and had catches that ranged from small to fairly large. Most of the bulk of the catches were shrimp; also present in lesser amounts were walleye pollock, flatfish, other fish, and incidental amounts of other invertebrates. The shrimp were nearly all pink shrimp; also present were coonstripe, sidestripe, and brown shrimp (Crangon). The walleye pollock were both adults and juveniles; a large adult Pacific cod was also taken. The assorted flatfish included flathead sole, yellowfin sole, rex sole, rock sole, English sole, and an Alaska plaice. Other fishes included a few rougheye rockfish, eulachon, Pacific herring, longnose and black skates, shortfin eelpouts, unidentified pricklebacks, daubed shanny, longsnout pricklebacks, spinyhead sculpins, the sculpin Triglops, sturgeon poachers, and Pacific spiny lumpsuckers. Other invertebrates included a few adult king crabs of both sexes, juvenile and adult Tanner crabs; the hermit crab Labidochirus splendescens; a few coonstripe, sidestripe, and spot shrimp; the shrimp Crangon; sea whips (Stylatula elongata); and the whelk Neptunea sp.

In October 1978, we made eight bottom trawl hauls in Fritz Cove (Table 40) and came up with generally fair-sized catches with a few large and small catches. Most of the bulk overall was flatfish and king crab; also contributing a substantial amount of bulk were walleye pollock; shrimp were significant; and of far lesser importance were other fishes and invertebrates. Of the flatfish, flathead sole and starry flounder predominated; also taken were yellowfin sole, rock sole, rex sole, arrowtooth flounder, and Alaska plaice. The king crabs were mostly adult females. Walleye pollock were both juveniles and adults. Shrimp consisted of mostly pink shrimp; also present were coonstripe, sidestripe, and anemone shrimp and the shrimp Eualus and Crangon. Other fishes included a few rougheye rockfish, eulachon, Pacific herring, shortfin and wattled eelpouts, snake and longsnout pricklebacks, spinyhead sculpins, great sculpins, staghorn sculpins, sturgeon poachers, spinycheek starsnouts, black skates, and longnose skates. Other invertebrates included juvenile Tanner crabs, an adult female Dungeness crab, the hermit crab Pagurus aleuticus, the medusa Aurelia, the anemone Tealia, a tiny Octopus sp., and the whelk Neptunea sp.

We made three bottom trawl hauls in Fritz Cove in December 1978 (Table 40) and came up with fair-to-large catches of mostly walleye pollock and flatfish with lesser amounts of other fishes and invertebrates. The walleye pollock were both juveniles and adults. Of the flatfish, flathead sole, yellowfin sole, and starry flounder made up the bulk; also present were rex sole and rock sole. Other fishes included adult herring and adult and young sablefish, eulachon, great sculpins, spinyhead sculpins, staghorn sculpins, shortfin eelpouts, a black skate, longsnout pricklebacks, sturgeon poachers, and spinycheek starsnouts. The invertebrates consisted of pink, coonstripe, and brown shrimp, juvenile and adult Tanner crabs, a few juvenile Dungeness crabs, the hermit crabs Pagurus aleuticus and P. capillatus, and the whelk Neptunea lyrata.

We made two bottom trawl hauls in Fritz Cove during March 1979 (Table 40) and came up with fair catches of walleye pollock, flatfish, herring, and assorted fishes and invertebrates. The walleye pollock were mostly juveniles with several adults mixed in. Yellowfin sole made up the bulk of the flatfish; also present were flathead sole, starry flounder, and rex sole. The herring were adults. Other fishes included great sculpins, spinyhead sculpins, staghorn sculpins, the sculpin Triglops, sturgeon poachers, spinycheek

starsnouts, shortfin and wattled eelpouts, and unidentified pricklebacks. Invertebrates included an adult female king crab, Tanner crabs, pink and sidestripe shrimp, and the whelk Neptunea sp.

We made two trawl hauls in Fritz Cove in April 1979 (Table 40) and had a small catch and a large catch. Most of the bulk of the catches were newly molted adult male Tanner crabs; of significance were flatfish but other fishes and invertebrates amounted to little. The only other crabs were an adult male king crab and a few juvenile Tanner crabs. The flatfish were varied with starry flounder and flathead sole abundant; also present were yellowfin sole, rex sole, and English sole. Other fish included walleye pollock, Pacific herring, black and longnose skates, spinyhead sculpins, a staghorn sculpin, longsnout pricklebacks, and shortfin and wattled eelpouts. Other invertebrates were limited to pink shrimp.

We made two bottom trawl hauls in Fritz Cove in May 1979 (Table 40) and came up with small catches of walleye pollock, Tanner crabs, and flatfish with lesser amounts of other fishes and invertebrates. The walleye pollock were both adults and juveniles; one Pacific cod was taken also. The Tanner crabs were all adult males. The flatfish were flathead sole and yellowfin sole. Other fishes included eulachon, spinyhead sculpins, black skates, longsnout pricklebacks, and shortfin and wattled eelpouts. Other invertebrates were limited to pink shrimp, the hermit crabs Pagurus aleuticus and Labidochirus splendescens, and the whelk Neptunea lyrata.

We made two bottom trawl hauls in Fritz Cove in October 1979 (Table 40) and came up with fair-to-large catches of mostly flatfish with lesser amounts of walleye pollock, skates, and other fishes and invertebrates. The flatfish were varied species that included flathead sole, rock sole, starry flounder, arrowtooth flounder, yellowfin sole, and one large Alaska plaice. The walleye pollock were all juveniles; skates were the black skate. Other fishes included eulachon, a juvenile herring, shortfin and wattled eelpouts, spinyhead and staghorn sculpins, longsnout and snake pricklebacks, sturgeon poachers, and spinycheek starsnouts. Invertebrates included adult female king crabs; juvenile Tanner crabs; pink, sidestripe, and coonstripe shrimp; stubby squid Rossia; the whelk Neptunea sp.; and the medusa Aurelia.

We made two bottom trawl hauls in Fritz Cove, northern Stephens Passage, in January 1980 (Table 40) and came up with fairly large catches of mostly flatfish with lesser amounts of walleye pollock and few other fishes and invertebrates. The flatfish were varied; predominate species were starry flounder, yellowfin sole, and flathead sole; also taken were arrowtooth flounder, rex sole, rock sole, and a juvenile halibut (366 mm long). The walleye pollock included both juveniles and adults. Other fishes included Pacific herring, eulachon, great sculpins, spinyhead sculpins, staghorn sculpins, the sculpin Triglops sp., shortfin eelpouts, sturgeon poachers, spinycheek starsnouts, unidentified pricklebacks, and black skates. The bulk of invertebrates was adult and juvenile Tanner crabs; also present were pink, sidestripe, and coonstripe shrimp, the hermit crab Pagurus aleuticus, and the whelk Neptunea sp.

We made two bottom trawl hauls in Fritz Cove in April 1980 (Table 40) and came up with fairly large catches of flatfish, crab, and pollock with few other fishes or invertebrates. Of the flatfish, starry flounder and yellowfin sole predominated by bulk; also abundant were flathead sole. Also present were rex sole and rock sole. The crabs were mostly adult king crabs; adult

Tanner crabs were abundant; and the hermit crab Pagurus aleuticus was also present. The walleye pollock were both juveniles and adults. Other fishes included kelp greenling, eulachon, shortfin eelpouts, staghorn sculpins, great sculpins, spinyhead sculpins, sturgeon poachers, longsnout pricklebacks, and black skates. Other invertebrates were limited to the whelk Neptunea sp.

We made two bottom trawl hauls in Fritz Cove, northern Stephens Passage, in May 1980 (Table 40) and came up with small-to-large catches of flatfish and walleye pollock, with lesser amounts of other fishes and invertebrates. Of the flatfish, flathead sole and starry flounder predominated; also present were yellowfin sole and Alaska plaice. The walleye pollock were both juveniles and adults. Other fishes included eulachon, shortfin and wattled eelpouts, longsnout pricklebacks, and sturgeon poachers. The few invertebrates were mostly Tanner crabs and king crabs by bulk; also present were the hermit crabs Pagurus aleuticus and Labidochirus splendescens, and the whelk Neptunea sp.

In June 1980, we made one bottom trawl haul in Fritz Cove (Table 40) and came up with a large catch of mostly flatfish and walleye pollock with some crab and shrimp and lesser amounts of other fishes and invertebrates. The flatfish were mostly flathead sole; also present were English sole, yellowfin sole, rex sole, and arrowtooth flounder. The walleye pollock were both juveniles and adults; one juvenile Pacific cod was also taken. Crabs included adult Tanner crabs of both sexes and one adult male king crab. Shrimp were pink and sidestripe shrimp. The only other invertebrates were whelks, Neptunea pribilofensis. Other fishes included shortfin and wattled eelpouts, the snailfish Careproctus rastrinus, the Alaska eelpout Bothrocara pusillum, longsnout pricklebacks, great sculpins, spinyhead sculpins, sturgeon poachers, spinycheek starsnouts, black skates, and an adult Pacific ocean perch, and a roughey rockfish.

We made one bottom trawl haul in Fritz Cove, Stephens Passage, in September 1980 (Table 40) and came up with a large catch of mostly walleye pollock with lesser amounts of flatfish and other fishes and invertebrates. The walleye pollock were both young and adults. Flathead sole predominated among the flatfish; also present were rex sole, rock sole, yellowfin sole, and arrowtooth flounder. Other fishes included eulachon, shortfin and wattled eelpouts, longsnout pricklebacks, a large longnose skate, one Pacific herring, spinyhead sculpins, an unidentified snailfish, and sturgeon poachers. The few invertebrates included pink and sidestripe shrimp, Tanner crabs, the hermit crab Pagurus aleuticus, and the whelks Neptunea lyrata, and N. pribilofensis.

In October 1980, we made one bottom trawl haul in Fritz Cove (Table 40) and came up with a large catch of mostly flatfish and few other fishes and invertebrates. Starry flounder made up the bulk of the flatfish; flathead sole were significant; also present were English sole, yellowfin sole, and arrowtooth flounders. Other fishes included walleye pollock, eulachon, shortfin eelpouts, longsnout pricklebacks, spinyhead sculpins, sturgeon poachers, and black skates. Invertebrates included king crabs, Tanner crabs, pink and sidestripe shrimp, the hermit crab Pagurus aleuticus, and the whelks Neptunea lyrata and N. pribilofensis.

In November 1980, we made one bottom trawl haul in Fritz Cove (Table 40) and came up with a large catch of mostly flatfish, with some walleye pollock, lesser amounts of other fishes, and few invertebrates. The bulk of

the flatfish were adult starry flounder; flathead sole and yellowfin sole were significant. Other flatfishes present were arrowtooth flounder, rock sole, rex sole, and English sole. Besides the walleye pollock, other fishes included Pacific herring, black skates, shortfin and wattled eelpouts, spinyhead sculpins, sturgeon poachers, spinycheek starsnouts, and longsnout pricklebacks. Sparse invertebrates were limited to pink and sidestripe shrimp, Tanner crabs, the hermit crab Pagurus aleuticus, and the whelk Neptunea pribilofensis.

We made two bottom trawl hauls in Fritz Cove in January 1981 (Table 40) and came up with very large catches of mostly flatfish with lesser amounts of walleye pollock, other fishes, and invertebrates. Flathead sole and starry flounder were the predominate flatfish; arrowtooth flounder and yellowfin sole also contributed substantial bulk. Also present were rex sole, three juvenile Pacific halibut, rock sole, and English sole. Walleye pollock were mostly adult fish; a Pacific cod was also taken. Other fishes included adult Pacific herring, Alaska eelpouts, shortfin and wattled eelpouts, rougheye rockfish, whitespotted greenling, juvenile sablefish, staghorn sculpins, great sculpins, sturgeon poachers, the gray starsnout Asterotheca alascana, and longsnout pricklebacks. Invertebrates were limited to pink shrimp, sidestripe shrimp, Tanner crabs, the hermit crab Pagurus aleuticus, the whelks Neptunea lyrata and N. pribilofensis, and the anemone Metridium senile.

We made three bottom trawl hauls in Fritz Cove in February 1981 (Table 40) and came up with very large catches of mostly flatfish with lesser amounts of walleye pollock, other fishes, and invertebrates. Most of the flatfish were starry flounder; also significant in bulk were arrowtooth flounder and yellowfin sole. Also present were flathead sole, rock sole, and a few young Pacific halibut. The walleye pollock were mostly juveniles. Other fishes included Pacific herring, eulachon, a Pacific cod, wattled eelpouts, juvenile sablefish, spinyhead sculpins, staghorn sculpins, the great sculpin, sturgeon poachers, and spinycheek starsnouts. Invertebrates included Tanner crabs, an adult male king crab, pink shrimp, and the hermit crab Pagurus aleuticus.

We made one bottom trawl haul in Fritz Cove in May 1981 (Table 40) and came up with a large catch of wood debris, walleye pollock, shrimp, and other fishes and invertebrates. The walleye pollock were mostly adults. The shrimp were mostly pink shrimp. Other fishes included arrowtooth flounder, flathead sole, Pacific halibut, rock sole, yellowfin sole, English sole, starry flounder, Alaska plaice, Pacific herring, capelin, Pacific cod, shortfin and wattled eelpouts, sablefish, spinyhead sculpins, the sculpin Myoxocephalus sp., sturgeon poachers, and snake pricklebacks. Other invertebrates included Tanner crabs and spot shrimp.

We made one bottom trawl haul in Fritz Cove in June 1981 (Table 40) and came up with a fair catch of walleye pollock, flatfish, and other fishes and invertebrates. The walleye pollock were mostly adults. Flathead sole was predominate among the flatfish; also taken were a juvenile Pacific halibut, rex sole, and arrowtooth flounder. Other fishes included black skates, eulachon, shortfin and wattled eelpouts, rougheye rockfish, rose snailfish, and longsnout pricklebacks. Invertebrates included pink shrimp, sidestripe shrimp, the whelks Neptunea lyrata and N. pribilofensis, unidentified tubeworms, and the hermit crab Pagurus aleuticus.



### West of Portland Island

A summary of our findings from bottom trawling off the western side of Portland Island is shown in Table 41. We trawled here in December 1974, October 1978, and May 1980.

We made three bottom trawl hauls off the western side of Portland Island, near the entrance to Auke Bay, in December 1974 which produced catches of gadids, other fishes, and invertebrates in roughly equal amounts and only trace amounts of flatfishes and rockfishes (Table 41). The gadids were all walleye pollock, both adults and young. Most of the bulk of the other fishes was black and longnose skates; other species present included eulachon, juvenile rougheye rockfish, Pacific ocean perch, blackfin sculpins, the sculpin Triglops sp., wattled eelpouts, the rose snailfish, and eelpout larvae. Invertebrates consisted predominately of sponges; also included were pink shrimp, dock shrimp, juvenile Tanner crab, the hermit crabs Pagurus aleuticus and Labidochirus splendescens, tiny golden king crab, giant barnacles (Balanus nubilis), an octopus, the whelk Neptunea sp., hairy tritons, brachiopods, sea whips, the jellyfish Aurelia aurita, brittle stars, sea stars including Mediaster aquealis and Pteraster tessellatus, sea cucumbers, and sea urchins including Strongylocentrotus pallidus.

We made one bottom trawl haul southwest of Portland Island, Stephens Passage, in October 1978 (Table 41) and came up with a small catch of assorted fishes, and a few shrimp and crabs. The fishes were mostly flatfish, a black skate, adult walleye pollock, rougheye rockfish, marbled snailfish, spinyhead sculpins, and shortfin eelpouts. Eulachon and unidentified pricklebacks were also present. The flatfish were mostly flathead sole and rex sole; a rock sole was also taken. The shrimp were pink shrimp and a few brown shrimp. The crabs were lyre crabs, small Tanner crabs and a few hermit crabs. A basket star and a green urchin were also taken.

We made two bottom trawl hauls west of Portland Island, Stephens Passage, in May 1980 (Table 41) and came up with small-to-large catches of mostly walleye pollock, flatfish, and sponges with few other fishes and invertebrates. The walleye pollock were both juveniles and adults with many ripe males with running milt. Among the flatfish, flathead sole predominated by bulk; also abundant were rex sole. Also present were rock sole, yellowfin sole, and arrowtooth flounders. The sponges were unidentified. Other fishes included rougheye rockfish, a juvenile Pacific cod, shortfin and wattled eelpouts, spinyhead sculpins, great sculpins, and the sculpin Triglops sp., searchers, black skates, the rose snailfish Careproctus rastrinus, spinycheek starsnouts, and a Pacific spiny lumpsucker, Eumicrotremis orbis. Invertebrates included pink, sidestripe, and brown shrimp, snow crabs, a king crab, the hermit crab Pagurus aleuticus, basket stars, green sea urchins, and the sea cucumber Cucumaria sp., stubby squids, the whelks Neptunea lyrata and N. pribilofensis, and unidentified sponges.

### Between Portland and Coghlan Islands

We made single trawl hauls between Portland Island and Coghlan Island, near the entrance to Auke Bay in upper Stephens Passage, in December 1974, March 1976, May 1977, October 1978, and January 1980.

In December 1974, the catch in a single trawl haul was relatively small and consisted mostly of gadids with lesser amounts of flatfishes, invertebrates, and other fishes (Table 42). The gadids were comprised of

adult and young walleye pollock; flatfish were nearly all flathead sole, a few rex sole and arrowtooth flounder. Other fishes included eulachon, eelpouts (Lycodes sp.), spinyhead sculpins, and one longnose skate. Invertebrates were mostly adult and juvenile Tanner crab, pink shrimp, the jellyfishes Aurelia and Cyanea, and one stubby squid.

In March 1976, the catch from a single trawl haul between Portland and Coghlan Islands, in Stephens Passage, was again small and consisted mostly of flatfishes and some gadids, with trace amounts of other fishes and invertebrates (Table 42). Nearly all of the flatfish were flathead sole; also present were rex sole, rock sole, yellowfin sole, and arrowtooth flounder. The gadids were all adult and young walleye pollock. Other fishes present included roughey rockfish, shortfin and wattled eelpouts, longsnout pricklebacks, spinyhead sculpins, roughspine sculpins (Triglops macellus), the daubed shanny, and spinycheek starsnouts. The sparse invertebrates consisted of pink shrimp, one juvenile Tanner crab, the hermit crab Pagurus aleuticus, and sea stars.

We made a single bottom trawl haul between Portland and Coghlan Islands (Table 42) in May 1977 and came up with a large catch of mostly adult walleye pollock and little else. Other fishes present included roughey rockfish, flathead sole, arrowtooth flounder, rex sole, eulachon, shortfin eelpouts, longsnout pricklebacks, black skates, and spinyhead sculpins. The few invertebrates were limited to pink shrimp, Tanner crabs, the hermit crab Pagurus aleuticus, the whelks Neptunea lyrata and N. pribilofensis, and the snail Fusitriton.

We made a single bottom trawl haul between Portland and Coghlan Islands near the entrance to Auke Bay in October 1978 (Table 42) and came up with a small catch of assorted fishes and invertebrates with roughly equal amounts of flatfish, skates, Tanner crabs, shrimp, and incidental amounts of other items. The flatfish included flathead sole, rex sole, and arrowtooth flounder; black skates were present. The few Tanner crabs were small adults; shrimp were nearly all pink shrimps. Other fishes included walleye pollock, eulachon, unidentified pricklebacks, and shortfin eelpouts. Other invertebrates included a few green urchins, the hermit crabs Pagurus aleuticus and P. hirsutiusculus, and brown shrimp (Crangon).

We made one bottom trawl haul between Portland and Coghlan Islands, northern Stephens Passage in January 1980 (Table 42) and came up with a small-to-fair catch of walleye pollock, flatfish, and skates with a few other fishes and invertebrates. The walleye pollock were both juveniles and adults; the flatfish were varied and included flathead sole, rex sole, rock sole, and arrowtooth flounder. Skates were both the longnose and black skates. Other fishes included eulachon, one Pacific herring, wattled eelpouts, unidentified pricklebacks, great sculpins, spinyhead sculpins, the sculpin Triglops sp., and spinycheek starsnouts. Invertebrates included pink, sidestripe, and coonstripe shrimp, Tanner crabs, the decorator crab Oregonia, hairy tritons, basket stars, sea whips (Stylatula), and the sponge Leuconia sp.

#### Portland Island to Spuhn Island

We made two trawl hauls between Portland Island and Spuhn Island - Georges Rock, near the entrance to Auke Bay in April 1973 which resulted in catches of flatfishes, miscellaneous other fishes (mainly sculpins), invertebrates (mainly Tanner crab) in roughly equal amounts, and gadids in

lesser amounts (Table 43). Flathead sole made up the bulk of the flatfish; also present were starry flounder, arrowtooth flounder, rex sole, rock sole, and yellowfin sole. The gadids were juvenile and adult walleye pollock, and other fishes were mostly sculpins including great, spinyhead, ribbed, and staghorn sculpins; other fishes included eelpouts (Lycodes sp.), pricklebacks, eulachon, and snailfish (Liparidae). Invertebrates were mostly adult Tanner crab; plus the hermit crabs Pagurus ochotensis and P. aleuticus; pink, coonstripe, and dock shrimp; the shrimps Nectocrangon sp. and Hipponotus sp.; the whelk Neptunea sp.; and sea star Hippasterias spinosa.

#### Western Douglas Island

We made bottom trawl hauls off western Douglas Island in upper Stephens Passage in December 1974, March and October 1976, May 1979, April, May, June, and November 1980, and January, February, May, and June 1981 (Table 44).

In December 1974, we made a single trawl haul abreast of Outer Point, Douglas Island, and came up with a relatively small catch of flatfishes and skates, with lesser amounts of invertebrates and few other fishes (Table 44). The flatfishes were arrowtooth flounder and flathead sole; the skates were both black and longnose skates. Other fishes were limited to a few young walleye pollock, wattled and shortfin eelpouts, and the sculpin Triglops sp. Invertebrates consisted of adult and juvenile Tanner crab, pink and sidestripe shrimp, the whelk Neptunea sp., the sun star Solaster stimpsoni, anemones, and sponges.

In March 1976, we made three trawl hauls off the western side of Douglas Island in upper Stephens Passage, between Middle Point and Inner Point and Inner Point and Point Hilda, and came up with relatively small catches, mostly of invertebrates, with lesser amounts of flatfishes, gadids, and other fishes (Table 44). Among the invertebrates, sea urchins and sponges made up most of the bulk; also taken were the hairy triton, pink and dock shrimp, the hermit crabs Pagurus cavimanus and Pagurus sp. The gadids were adult and juvenile walleye pollock; other fishes included the armorhead sculpin, spinyhead sculpins, the roughspine sculpin, and scissortail sculpin (Triglops forficata).

In October 1976, we made a single trawl haul on the western side of Douglas Island, between Inner Point and Middle Point, which resulted in a catch comprised of roughly equal amounts of flatfishes and sea urchins, and few other fishes or invertebrates (Table 44). The flatfishes included flathead sole, rock sole, arrowtooth flounder, and yellowfin sole. All of the sea urchins were Strongylocentrotus drobachiensis, the small green urchin. Other invertebrates included sea stars, pink and dock shrimp, and one stubby squid. Other fishes were limited to juvenile walleye pollock, the eelpout Lycodes sp., and sculpins Triglops sp. and Gymnocanthus sp.

We made three bottom trawl hauls between Outer Point and Middle Point, Douglas Island (Table 44), in May 1979 and came up with small-to-fair catches of walleye pollock and flatfish with few other fishes and invertebrates. The walleye pollock were mostly juveniles; Pacific cod were also taken. The flatfish were mostly flathead sole; also present were yellowfin sole and rex sole. Other fishes included a juvenile rougheye rockfish, great sculpins, spinyhead sculpins, longsnout pricklebacks, wattled and shortfin eelpouts, black skates, sturgeon poachers, and spinycheek starsnouts. Invertebrates

were limited to a few pink and sidestripe shrimp, the hermit crab Pagurus aleuticus, euphausiids, green urchins, basket stars, a stubby squid, the scallop Chlamys sp., the whelk Neptunea pribilofensis, and snail Natica sp.

We made one successful bottom trawl haul off Outer Point, northern Douglas Island, in April 1980 (Table 44) and came up with a large catch of mostly rockfish, gadids, and flatfish with lesser amounts of other fishes and invertebrates. The rockfish were all adult rougheye rockfish Sebastes aleutianus. The gadids were walleye pollock and Pacific cod, and flatfish were mostly flathead sole with arrowtooth flounder and rex sole also present. Other fishes included great sculpins and black skates. Invertebrates were limited to a small amount of pink and coonstripe shrimp and the hermit crab Pagurus aleuticus.

We made two bottom trawl hauls off Outer Point, northern Douglas Island, in May 1980 (Table 44) and came up with fair-to-large catches of mostly flatfish with lesser amounts of walleye pollock, other fishes, and invertebrates. Of the flatfish, adult and young flathead sole made up most of the bulk; yellowfin sole were abundant. Also present were arrowtooth flounder, rock sole, and rex sole. The walleye pollock were mostly adult males with running milt. Other fishes included a juvenile rougheye rockfish, eulachon, shortfin and wattled eelpouts, a large great sculpin, spinyhead sculpins, sturgeon poachers, a spinycheek starsnout, longsnout pricklebacks, black skates, and an unidentified lanternfish (Myctophidae). Invertebrates were limited to juvenile Tanner crabs, pink shrimp, the hermit crab Pagurus aleuticus, basket stars, sea pens, and the whelk Neptunea sp.

In June 1980, we made a single bottom trawl haul between Inner and Middle Points, western Douglas Island, (Table 44) and came up with a fair catch of mostly flatfish with lesser amounts of other fishes and invertebrates. The flatfish were mostly yellowfin sole, juveniles and adults. Also substantial in bulk were flathead sole; also present were rock sole, starry flounder, and arrowtooth flounder. The other fishes included walleye pollock, snake pricklebacks, great sculpins, spinyhead sculpins, and the sculpins Gymnocanthus sp. and Triglops sp., sturgeon poachers, and a searcher. The invertebrates included brown shrimp, juvenile king crabs, sea whips, basket stars, sea cucumbers, Cucumaria sp., green urchins, the sponge Leuconia sp., and the nudibranch Tritonia exulsans.

We made one bottom trawl haul off Outer Point, Douglas Island, in November 1980 (Table 44) and came up with a large catch of mostly flatfish with lesser amounts of other fishes and invertebrates. Predominate flatfishes were flathead sole and arrowtooth flounder; also present were rex sole and a starry flounder. Other fishes included walleye pollock, a Pacific cod, rougheye rockfish, eulachon, shortfin and wattled eelpouts, sablefish, a scissortail sculpin, and longsnout prickleback. Invertebrates included Tanner crabs, pink and sidestripe shrimp, the hermit crab Pagurus aleuticus, basket stars, and the whelks Neptunea lyrata and N. pribilofensis.

We made one bottom trawl haul off Outer Point, Douglas Island, in January 1981 (Table 44) and came up with a fair-sized catch of mostly flatfish and walleye pollock with lesser amounts of other fishes and few invertebrates. Flathead sole was the predominate flatfish; also present were arrowtooth flounder and rex sole. The walleye pollock were both young and adults. Other fishes included black skates, eulachon, wattled eelpouts, a rougheye rockfish, a staghorn sculpin, and spinycheek starsnouts. Invertebrates

included pink shrimp, sidestripe, coonstripe, and brown shrimp, Tanner crabs, and the hermit crab Pagurus aleuticus.

We made three bottom trawl hauls off Outer Point, Douglas Island, in February 1981 (Table 44) and came up with very large catches of walleye pollock and flatfish with lesser amounts of roughey rockfish, other fishes, and invertebrates. The walleye pollock were mostly juveniles with few adults. The flatfish were mostly yellowfin sole with flathead sole comprising substantial bulk; arrowtooth flounder were also significant. Also present were rock sole, rex sole, English sole, and starry flounder. The roughey rockfish were mostly adults. Other fishes taken included a black skate, eulachon, shortfin and wattled eelpouts, juvenile sablefish, a whitespotted greenling, spinyhead sculpins, staghorn sculpins, the sculpin Myoxocephalus stelleri, scissortail sculpins, and spinycheek starsnouts. Invertebrates included Tanner crabs, pink shrimp, sidestripe shrimp, the hermit crab Pagurus aleuticus, sea whips, and basket stars.

We made one bottom trawl haul off Outer Point, Douglas Island, in May 1981 (Table 44) and came up with a large catch of mostly walleye pollock, sponges, and lesser amounts of other fishes and invertebrates. The walleye pollock were adults. The sponges were unidentified. Other fishes included black skates, a Pacific herring, Pacific cod, shortfin eelpouts, roughey rockfish, an adult Pacific ocean perch, an adult redbanded (flag) rockfish, Sebastes babcocki, staghorn sculpins, the sculpin Myoxocephalus sp., arrowtooth flounder, flathead sole, a Pacific halibut, rock sole, yellowfin sole, and starry flounder. Other invertebrates included the whelk Neptunea lyrata, pink shrimp, spot shrimp, a Tanner crab, lyre crabs, hermit crabs, basket stars, and polychaetes.

We made three bottom trawl hauls off Outer Point, Douglas Island, in June 1981 (Table 44) and came up with fair-to-large catches of mostly walleye pollock and flatfish with lesser amounts of other fishes and invertebrates. The walleye pollock were mostly adults. Of the flatfish, flathead sole were most abundant, arrowtooth flounder were significant; also present were yellowfin sole, rex sole, and rock sole. Other fishes included Pacific cod, black skates, a Pacific herring, shortfin eelpouts, roughey rockfish, juvenile sablefish, spinyhead sculpins, great sculpins, roughspine sculpins, the sculpin Myoxocephalus stelleri, and spinycheek starsnouts. The invertebrates included basket stars, Tanner crabs, pink shrimp, sidestripe shrimp, lyre crabs, sea whips, unidentified anemones, the whelks Neptunea lyrata and N. pribilofensis, snails Buccinum plectrum and Colus halli, scallop Chlamys sp., brachiopod Laqueus vancouverensis, the hermit crab Pagurus aleuticus, the sea star Ctenodiscus crispatus, and sea cucumber Parastichopus californicus.

#### Gastineau Channel

We made a single trawl haul in Gastineau Channel off the town of Thane, near Juneau, in January 1977 and came up with a small catch of mostly flatfishes and juvenile walleye pollock in roughly equal amounts; also present were a few other fishes and invertebrates (Table 45). The flatfishes included flathead sole, yellowfin sole, and rock sole. Juvenile walleye pollock were the only gadids present. Other fishes included great, staghorn, and spinyhead sculpins; the sculpin Triglops sp.; eulachon larvae; sturgeon poachers; and spinycheek starsnouts. Invertebrates included adult Tanner crab, lyre crab, the hermit crab Pagurus aleuticus, pink shrimp, dock shrimp, and sea urchins.

## Young Bay - Scull Island

We trawled in the Young Bay - Scull Island area in October 1976, May 1977, May 1979, and June and October 1980 (Table 46).

We made a single trawl haul in Young Bay, off Admiralty Cove in upper Stephens Passage, in October 1976 and came up with a relatively small catch of flatfishes, somewhat lesser amounts of walleye pollock, and only trace amounts of other fishes and invertebrates (Table 46). The flatfishes were comprised almost entirely of flathead sole and arrowtooth flounder in near equal amounts; one rex sole was also present. The walleye pollock were comprised of both young and adults; other fishes taken included a few juvenile herring, eelpouts, eulachon, spinyhead sculpins, and spinycheek starsnouts. Invertebrates consisted of pink, sidestripe, and dock shrimp; juvenile Tanner crab; the hermit crab Pagurus aleuticus; and the nudibranch Dendronotus sp.

In May 1977, we made a bottom trawl haul between Scull Island and Inner Point, Douglas Island (Table 46), and came up with a large catch of mostly adult walleye pollock with lesser amounts of flatfish and few other fishes or invertebrates. Besides the walleye pollock, two Pacific cod were the only other gadids taken. Among the flatfish, flathead sole predominated; also common were yellowfin sole, arrowtooth flounder, and rock sole; rex sole were also present. Other fishes included a few roughey rockfish, eulachon, shortfin eelpouts, spinyhead sculpins, the sculpin Triglops sp., a longnose skate, and black skate. Other invertebrates included a few young Tanner crabs, the hermit crabs Pagurus aleuticus, P. capillatus, and Labidochirus splendescens, pink and coonstripe shrimp, the scallop Chlamys sp., whelks Neptunea pribilofensis, the snail Colus halli, sea cucumbers Parastichopus, and the sea stars Pycnopodia and Solaster dawsoni.

We made a single trawl haul off Scull Island in May 1979 (Table 46) and came up with a large catch of mostly walleye pollock with lesser amounts of flatfish and few other fishes or invertebrates. Besides the walleye pollock, a single large adult Pacific cod was taken. The flatfish were mostly flathead sole; also taken were yellowfin and rex sole. Other fish included Pacific herring, spinyhead sculpins, black skates, and shortfin eelpouts. Invertebrates were limited to the hermit crab Pagurus aleuticus.

We made a single bottom trawl haul in Young Bay in June 1980 (Table 46) and came up with a small catch of mostly flatfish, some walleye pollock, skates, and few other fishes and invertebrates. The flatfish were mostly flathead sole; yellowfin sole were also abundant. Also present were rex sole and rock sole. The walleye pollock were young and adults. The skates were black skates. Other fishes included an adult Pacific ocean perch, wattled and shortfin eelpouts, spinyhead sculpins, and spinycheek starsnouts. The generally sparse invertebrates included pink and brown shrimp, the hermit crabs Pagurus aleuticus and Labidochirus splendescens, basket stars, the sea cucumber Cucumaria sp., and sea stars Solaster dawsoni and Pycnopodia helianthoides.

We made one bottom trawl haul north of Scull Island, Stephens Passage, in October 1980 (Table 46) and came up with a fairly large catch of basket stars with lesser amounts of flatfish, other fishes, and other invertebrates. The basket stars (Gorgonocephalus) were unusually abundant here. Flatfish were mostly flathead sole; also present were rock sole, rex sole, yellowfin

sole, and arrowtooth flounders. Other fishes included juvenile walleye pollock, a large great sculpin, spinyhead sculpins, the sculpin Triglops sp., sturgeon poachers, and spinycheek starsnouts. Other invertebrates included pink, coonstripe, and brown shrimp; green urchins; the sun stars Pycnopodia helianthoides and Solaster sp.; sea cucumbers; the scallop Chlamys rubida; and hairy tritons.

#### Horse Shoal Vicinity

We trawled near Horse Shoal, upper Stephens Passage, in December 1974, September 1975, October 1976, September and November 1980, and January and February 1981 (Table 47).

In December 1974, we made two trawl hauls between Horse Shoal and Scull Island and came up with catches of mostly walleye pollock with flatfishes and invertebrates in lesser amounts and other fishes only in trace amounts (Table 47). The walleye pollock consisted of both adults and young fish; one adult Pacific cod was the only other gadid taken. Flatfish were nearly all flathead sole with a few rex sole and one arrowtooth flounder. Invertebrates included pink shrimp, dock shrimp, adult and juvenile Tanner crab, and the hermit crabs Pagurus aleuticus and Labidochirus splendescens. Basket stars made up a sizable part of the bulk of invertebrates; also present were sea urchins, sea stars, sea whips, sponges, and the whelk Neptunea sp.

In September 1975, we made three trawl hauls near Horse Shoal and came up with relatively large catches of mostly gadids with far smaller amounts of other fishes and few invertebrates (Table 47). The gadids were mostly adult walleye pollock, but adult Pacific cod also contributed a substantial amount to the bulk of the catch. The bulk of the flatfish was adult arrowtooth flounder; also present were flathead sole, rex sole, and rock sole. Other fishes present were adult Pacific herring, eulachon, spinyhead and bigmouth sculpins, gunnels (Pholidae), and eelpouts (Zoarcidae). Invertebrates were limited to sea whips, basket stars, sea stars, sea urchins, sea cucumbers, and one adult Tanner crab.

In October 1976, we made two trawl hauls just below Horse Shoal and came up with large catches that were mostly walleye pollock with lesser amounts of flatfishes, Pacific cod, herring, and other fishes and invertebrates (Table 47). The walleye pollock and cod were nearly all adults. Flatfishes consisted of arrowtooth flounder and flathead sole with rex sole and one Pacific halibut also present; the Pacific herring were all adults. Other fishes included one adult Pacific ocean perch, four rougheye rockfish, eelpouts, pricklebacks, black and longnose skates, one ratfish, spinyhead sculpins, and spinycheek starsnouts. Invertebrates were limited to pink shrimp, Tanner crab, the hermit crab Pagurus aleuticus, sea urchins, two octopuses, one of which was over 25 kg; and the whelks Neptunea sp. and Buccinum plectrum.

We made two bottom trawl hauls near Horse Shoal, Stephens Passage, in September 1980 (Table 47) and came up with fairly large catches of basket stars, flatfish and gadids, and lesser amounts of other fishes and invertebrates. The basket stars Gorgonocephalus were unusually abundant. Of the flatfish, flathead sole and arrowtooth flounder predominated; also present were a Pacific halibut, rex sole, rock sole, and yellowfin sole. Gadids consisted of walleye pollock and Pacific cod. Other fishes included great sculpins, spinyhead sculpins, eulachon, juvenile sablefish, shortfin and wattled eelpouts, black skates, longsnout pricklebacks, and spinycheek

starsnouts. Other invertebrates included pink, coonstripe, and brown shrimp; Tanner crabs; a king crab; the hermit crab Pagurus aleuticus; brittle stars; green urchins; brachiopods; sea whips; unidentified sponges; and the scallop Chlamys sp.

We made one bottom trawl haul off Horse Shoal in November 1980 (Table 47) and came up with a fair-sized catch of walleye pollock, sculpins, and flatfish, with lesser amounts of other fishes and invertebrates. The walleye pollock predominated by bulk. Flatfishes were mostly flathead sole by bulk; also present were arrowtooth flounder, rex sole, yellowfin sole, and a starry flounder. Sculpins were mostly the great sculpin, also present were spinyhead sculpins and roughspine and scissortail sculpins. Other fishes included a black skate, eulachon, wattled eelpouts, a roughey rockfish, young sablefish, and spinycheek starsnouts. Invertebrates included stubby squid Rossia, pink shrimp, brown shrimp, the hermit crab Pagurus aleuticus, basket stars, the sea urchin Strongylocentrotus echinoides, and the sea cucumber Parastichopus californicus.

We made two bottom trawl hauls off Horse Shoal in January 1981 (Table 47) and came up with fairly large catches of mostly flatfish, walleye pollock, and lesser amounts of other fishes and invertebrates. Flathead sole and arrowtooth flounder made up the bulk of the flatfish; also present were juvenile Pacific halibut, yellowfin sole, rex sole, rock sole, English sole, starry flounder, and the butter sole Isopsetta isolepis. The walleye pollock were mostly adults; two young Pacific cod were also taken. Other fishes included black skates, eulachon, shortfin and wattled eelpouts, roughey rockfish, an adult Pacific ocean perch, juvenile sablefish, spinyhead sculpins, great sculpins, roughspine and scissortail sculpins, sturgeon poachers, spinycheek starsnouts, rose snailfish, unidentified dark snailfish, and longsnout pricklebacks. The sparse invertebrates included the scallop Chlamys rubida, snail Buccinum plectrum, the whelk Neptunea pribilofensis, Tanner crabs, pink shrimp, coonstripe shrimp, the hermit crab Pagurus aleuticus, the rose star Crossaster, basket stars, brown sea urchins, and sea cucumbers Cucumaria sp.

We made one bottom trawl haul south of Horse Shoal in February 1981 (Table 47) and came up with a fair-sized catch of mostly flatfish with lesser amounts of other fishes and invertebrates. The flatfish were mostly flathead sole; also present were arrowtooth flounder, rex sole, rock sole, and yellowfin sole. Other fishes included walleye pollock, a black skate, eulachon, shortfin eelpout, roughey rockfish, juvenile sablefish, spinyhead sculpins, roughspine sculpins, scissortail sculpins, and spinycheek starsnouts. Invertebrates included Tanner crabs, pink shrimp, brown shrimp, and the hermit crab Pagurus aleuticus.

#### Saginaw Channel

In September 1975, we made a single bottom trawl haul in Saginaw Channel, south of Symonds Point on Admiralty Island, and came up with a catch that was nearly all Pacific cod, with small amounts of flatfish, other fishes, and invertebrates (Table 48). The Pacific cod were mostly juveniles with a few possibly small adults; flatfish were limited to rock sole, mostly juveniles; other fishes included bigmouth sculpins, a buffalo sculpin, the sculpin Triglops sp., and pricklebacks. Invertebrates were limited to sea urchins, sea stars, hermit crabs, and the Hinds' scallop.



#### Favorite Channel - southern Shelter Island

We trawled in Favorite Channel off southern Shelter Island in September 1975 and April 1977 (Table 49).

In September 1975, we made a single bottom trawl haul off the southeastern side of Shelter Island in Favorite Channel, northern Stephens Passage, and came up with a small catch of flatfishes, some gadids, and little else (Table 49). The flatfishes were varied and included juvenile arrowtooth flounder, rex sole, adult flathead sole, and rock sole. Gadids were mostly juvenile walleye pollock with one adult Pacific cod. No other fishes were taken. The trace amounts of invertebrates included brittle stars (Ophiura sp.), the whelk Neptunea sp., hermit crabs (Pagurus ochotensis and Pagurus sp.), and barnacles.

We made a single bottom trawl abreast Point Lena, near southeastern Shelter Island in Favorite Channel, during April 1977 (Table 49) and came up with a fair catch of mostly walleye pollock. The walleye pollock were both juveniles and adults over a wide size range. Other fish amounted to little bulk; they included flathead sole, arrowtooth flounder, rock sole, a rougheye rockfish, shortfin eelpouts, a blackfin poacher, pricklebacks, spinyhead sculpins, a black skate, the Pacific viperfish Chauliodus macouni, and northern lampfish, Stenobranchius leucopsarus. Invertebrates consisted of a few small Tanner crabs, the hermit crab Labidochirus splendescens, pink shrimp, the shrimp Crangon, basket stars, the sea cucumber Cucumaria miniata, sea whips Stylatula, the whelk Neptunea lyrata, and the snail Colus halli.

#### Favorite Channel - Cohen Island

We made bottom trawl hauls in Favorite Channel, upper Stephens Passage, near Cohen Island, south of Pearl Harbor, in March and April 1976 and March and April 1977 (Table 50).

In March 1976, we made a single trawl haul north of Cohen Island which resulted in a large catch that was nearly all adult herring; other fishes and invertebrates were incidental (Table 50). The adult herring were lying near bottom, off traditional spawning beaches. Other fishes taken incidentally included arrowtooth flounder, flathead and yellowfin sole, juvenile walleye pollock, eulachon, capelin, and armorhead sculpins; invertebrates included pink shrimp, dock shrimp, basket stars, sea stars, and sea cucumbers.

In April 1976, we made three trawl hauls off Cohen Island and came up with catches that were comprised of roughly equal amounts of gadids, herring, and flatfishes with somewhat lesser amounts of invertebrates and few other fishes (Table 50). The gadids were mostly adult and young walleye pollock but also included adult Pacific cod. The herring were all ripe adult fish about to spawn in a few weeks. Flatfish were mostly flathead sole along with yellowfin sole, arrowtooth flounder, rock sole, and starry flounder. Invertebrates consisted of pink shrimp, the hermit crabs Labidochirus splendescens and Pagurus aleuticus, octopus, sponges, sea pens (Ptilosarcus gurneyi), the whelk Neptunea sp., hairy tritons, and sea cucumbers. Other fishes included eulachon; armorhead, spinyhead, and great sculpins; shortfin and wattled eelpouts; rougheye rockfish; and one searcher.

In mid-March 1977, we made two bottom trawl hauls between Cohen Island and Point Terese, Favorite Channel, and came up with catches comprised largely of flatfishes, walleye pollock, and herring in roughly equal

amounts with small amounts of other fishes and invertebrates (Table 50). The flatfishes were adult flathead sole and arrowtooth flounder; walleye pollock were both juveniles and adults; and the herring were almost entirely juveniles. Other fishes included a large adult Pacific cod, eulachon, spinyhead sculpins, longnose skates, shortfin eelpouts, a juvenile rougheye rockfish, and a northern lampfish (Stenobranchius leucopsarus). Invertebrates included pink shrimp carrying eyed eggs, an adult king crab, the hermit crab Labidochirus splendescens, the ridged whelk, an octopus, a veiled chiton (Placiphorella velata), basket stars, sea urchins, sea cucumbers, and clams (Astarte sp.).

In April 1977, we made a single trawl haul in eastern Favorite Channel, south of Pearl Harbor (Table 50) and came up with a good-sized catch of mostly walleye pollock and sponges. The walleye pollock were mostly adults; sponges were siliceous types with the sponges Leuconia and Leucosolenia most abundant and Halichondria present. Other fishes included flathead sole, arrowtooth flounder, eulachon, shortfin eelpout, spinyhead sculpin, the sculpin Triglops sp., searchers, and spinycheek starsnouts. Other invertebrates included several basket stars, the brittle star Ophiopholis aculeata, green sea urchins, the sea cucumber Cucumaria miniata, and sea stars Pteraster and Pisaster brevispinis. Pink shrimp were numerous, and coonstripe shrimp and the shrimp Crangon were present. Other invertebrates present included a few young Tanner crabs, the decorator crab Oregonia, the hermit crab Pagurus aleuticus, sipunculoid worms, the mussel Modiolus, stubby squid, a small Octopus, the scallop Chlamys rubida, the snails Fusitriton and Colus, the brachiopod Laqueus, coralline bryozoa, and the tubeworm Sabella crassicornis.

#### Favorite Channel - Eagle River flats

We made bottom trawl hauls in Favorite Channel, upper Stephens Passage, between the Eagle River flats and Pearl Harbor in April 1975, March 1977, April 1978, and January 1980 (Table 51).

In April 1975, we made three trawl hauls below Eagle River flats and came up with catches that were mostly invertebrates (mainly sponges) with lesser amounts of flatfishes, gadids, and other fishes (Table 51). Besides sponges, the invertebrates included Tanner, hermit, and lyre crabs; pink, spot, coonstripe, and dock shrimp; stubby squid; octopus; Hinds' scallop; the whelk Neptunea sp., hairy tritons, brachiopods, coralline bryozoa, basket stars; brittle stars; and sea cucumbers. Of the flatfishes, yellowfin sole predominated; also taken were flathead sole, rex sole, and arrowtooth flounder. Gadids were juvenile and adult walleye pollock, and other fishes present were rougheye rockfish; great, spinyhead, and staghorn sculpins; the sculpin Triglops sp.; sturgeon poachers; spinycheek starsnouts; juvenile skates; eelpouts; pricklebacks; and one lanternfish (Myctophidae).

In late March 1977, we made two trawl hauls between the Eagle River flats and Pearl Harbor in Favorite Channel, Stephens Passage, and came up with catches of mostly flatfishes with lesser amounts of invertebrates and few other fishes (Table 51). The flatfishes included many juveniles as well as adults; yellowfin sole predominated. Also present were flathead sole, rex sole, starry flounder, rock sole, and four juvenile Pacific halibut that were 13-16 cm long. The bulk of the invertebrates were adult Tanner crab; also present were dock shrimp, lyre crab, one adult king crab, basket cockles (Clinocardium nuttali), weathervane scallops (Patinopecten caurinus), the

ridged and Pribilof whelks Neptunea lyrata and N. pribilofensis, and the hermit crabs Pagurus capillatus and P. aleuticus. Other fishes taken were spinyhead, great, and armorhead sculpins; sturgeon poachers; and a whitespotted greenling.

We made a single bottom trawl haul in northern Favorite Channel, south of Eagle River flats (Table 51), in April 1978 and came up with a fair-sized haul of mostly flatfish and few other fishes or invertebrates. Most of the flatfish were yellowfin sole and rock sole; also present were flathead sole, rex sole, and a starry flounder. Other fishes included juvenile walleye pollock, the daubed shanny, a great sculpin, spinyhead sculpins, staghorn sculpins, and sturgeon poachers. Invertebrates were mostly adult female Tanner crabs by bulk. Other invertebrates included an adult male king crab, the shrimp Crangon, two weathervane scallops, and the whelk Neptunea sp., and nudibranch Coryphella fusca.

We made two bottom trawl hauls east of Bird Island south of Eagle River Flats, in lower Lynn Canal, in January 1980 (Table 51) and came up with fair-to-large catches of sponges, sea stars, flatfish, walleye pollock, and lesser amounts of other invertebrates and fishes. The sponges were mostly Leuconia sp. and Leucosolenia sp.; the sea stars were mostly basket stars and brittle stars. The sea cucumber Cucumaria sp. was also taken. The flatfish were mostly flathead sole; also taken were rex sole, arrowtooth flounder, and a juvenile Pacific halibut (448 mm long). The walleye pollock were mostly young adults. Other fishes included juvenile sablefish, eulachon, an adult Pacific herring, shortfin eelpouts, spinyhead sculpins, juvenile rougheye rockfish, black skates, and spinycheek starsnouts. Other invertebrates included pink, coonstripe, and brown shrimp; adult king crabs of both sexes; Tanner crabs; a young Octopus dofleini; the scallop Chlamys rubida; the whelk Neptunea sp.; hairy tritons; and the snail Colus halli.

#### East of Lincoln Island

In September 1975, we made a single bottom trawl haul off the eastern side of Lincoln Island, near the juncture of Lynn Canal and Stephens Passage, and came up with a relatively large catch that was almost entirely invertebrates (mostly sponges) with incidental amounts of gadids and other fishes (Table 52). Besides the great abundance of silicious sponges in the catch, the giant barnacle (Balanus nubilis) and sea urchins contributed fair amounts to the bulk. Other invertebrates included pink shrimp, brittle stars, sea cucumbers, and anemones. Walleye pollock made up almost all of the bulk of the few fish present. Also present were a few rex sole and one rockfish (Sebastes sp.).

#### LYNN CANAL REGION

##### St. James Bay

We trawled in St. James Bay in March 1975 and October 1978 (Table 53).

We made a single trawl haul in St. James Bay, lower Lynn Canal, in March 1975 and came up with nearly all flatfishes with small amounts of gadids, other fishes, and invertebrates (Table 53). Adult starry flounder comprised the bulk of the flatfish; also taken were juvenile rock sole, adult yellowfin sole, flathead sole, arrowtooth flounder, and rex sole. Gadids were all juvenile walleye pollock, some very small; other fishes included eulachon,

eelpouts, great sculpins, staghorn sculpins, and sturgeon poachers. Invertebrates included adult and juvenile Tanner crab, pink and sidestripe shrimp, and the hermit crabs Labidochirus splendescens and Pagurus aleuticus.

We made two bottom trawl hauls in St. James Bay, Lynn Canal (Table 53), in October 1978 and came up with fair catches of mostly flatfish and walleye pollock with lesser amounts of other fishes and few invertebrates. The flatfish were assorted species including flathead, rex, rock, yellowfin, and slender sole; starry flounder; and arrowtooth flounder. The walleye pollock were all juveniles, including some young of the year. A few juvenile young-of-the-year Pacific cod were taken also. Other fishes included whitespotted greenling, sandfish (Trichodon trichodon), great sculpins, spinyhead sculpins, staghorn sculpins, the sculpin Triglops, and spinycheek starsnouts. Invertebrates included adult and young king crab, juvenile Tanner crabs, a lyre crab, the hermit crab Pagurus aleuticus, a few coonstripe and pink shrimp, hippolytid shrimp, the scallop Chlamys, the whelk Neptunea, the brachiopod Laqueus, and the medusa Aurelia.

#### Berners Bay

In March 1975, we made a single bottom trawl haul in Slate Creek Cove on the northwest side of Berners Bay, Lynn Canal, which resulted in a fairly large catch of flatfishes and gadids in roughly equal amounts, and small amounts of other fishes and invertebrates (Table 54). Among the flatfishes, starry flounder predominated and were mostly small adults. Other flatfishes present were flathead sole, yellowfin sole, arrowtooth flounder, rex sole, rock sole, and a Pacific halibut. The gadids were all walleye pollock, juveniles and adults; the few other fishes included eulachon, young sablefish, juvenile herring, longsnout pricklebacks, other pricklebacks, great sculpins, staghorn sculpins, spinyhead sculpins, and a sturgeon poacher. The invertebrates included adult Tanner crab, pink shrimp, the hermit crab Pagurus aleuticus, the ridged whelk, nudibranchs Dendronotus sp., and sea stars.

#### West of Sullivan Island

We made two bottom trawl hauls off the western side of Sullivan Island, in northern Lynn Canal, in November 1975 that resulted in catches of mostly gadids and small amounts of flatfishes, other fishes, and invertebrates (Table 55). The gadids were mostly adult walleye pollock; also taken were juvenile walleye pollock and adult Pacific cod. The flatfishes were flathead sole, arrowtooth flounder, and rex sole. Other fishes included eelpouts, pricklebacks, eulachon, blackfin and spinyhead sculpins, one rougheye rockfish, and a skate. The invertebrates included pink and spot shrimp, dock shrimp, Tanner crab, the hermit crab Labidochirus splendescens, sea urchins, and sponges.

#### Lutak Inlet

In November 1975, we made a single bottom trawl haul in Lutak Inlet, above the town of Haines in northern Lynn Canal, and came up with a catch of mostly gadids, somewhat lesser amounts of flatfishes, and little else (Table 56). The gadids were comprised mainly of young and adult walleye pollock and adult Pacific cod. Among the flatfishes, flathead sole predominated by bulk; also present were yellowfin sole, starry flounder, and rock sole. Other

fishes were limited to eulachon, eelpouts, and sturgeon poachers; invertebrates included pink shrimp, the hermit crab Pagurus aleuticus, and the whelk Neptunea lyrata.

## STEPHENS PASSAGE REGION

### Point Arden Vicinity

We trawled near Point Arden and False Point Arden in April 1979; April, September, October, and November 1980; and January, February, April, and May 1981 (Table 57).

We made three trawl hauls near Point Arden in northern Stephens Passage during April 1979 (Table 57) and came up with small-to-fair catches of mostly adult walleye pollock. Flatfish, other fishes, and invertebrates made up a small part of the bulk. The flatfish were mostly flathead sole; starry flounder and an arrowtooth flounder were also present. Other fish were limited to shortfin and wattled eelpouts, eulachon, the prickleback Lumpenella longirostris, spinyhead sculpins, a great sculpin, the sculpins Gymnocanthus sp. and Triglops sp., black skates, blackfin poachers, a spinycheek starsnout, and two unknown snailfish (Liparidae). The invertebrates included pink, sidestripe, and brown shrimp, adult female Tanner crabs, the hermit crabs Pagurus aleuticus, P. capillatus, Labidochirus splendescens, and Pagurus trigonochirus, the whelks Neptunea lyrata and N. pribilofensis, and snails Colus halli and Buccinum sp.

We made one bottom trawl haul off False Point Arden, Stephens Passage, in April 1980 (Table 57) and came up with a large catch of nearly all flatfish with other fishes and invertebrates accounting for little bulk. The flatfish were mostly flathead sole; also abundant were yellowfin sole. Also taken were arrowtooth flounder and rex sole. Other fishes included a few adult walleye pollock, shortfin and wattled eelpouts, spinyhead sculpins, the sculpin Triglops, sturgeon poachers, and young black skates. The invertebrates included pink shrimp, Tanner crabs, the whelk Neptunea pribilofensis, the snails Colus and Natica, green urchins, sea whips (Stylatula), the sun star Pycnopodia, and basket stars (Gorgonocephalus).

We made one bottom trawl haul off False Point Arden, Stephens Passage, in September 1980 (Table 57) and came up with a fair catch of mostly flatfish, crabs, shrimp, and other fishes and invertebrates. Arrowtooth flounder made up about half of the catch; flathead sole were also present. Crabs consisted of adult Tanner crabs and one adult king crab. Shrimp were pink and sidestripe shrimp. Other fishes included an adult Pacific hake, longsnout pricklebacks, shortfin eelpouts, eulachon, rose snailfish, spinyhead sculpins, spinycheek starsnouts, and black skates. Other invertebrates included the hermit crab Pagurus aleuticus, basket stars, and sea pens.

In October 1980, we made two bottom trawl hauls off False Point Arden (Table 57) and came up with fair-to-large catches of mostly walleye pollock with lesser amounts of flatfish and other fishes and invertebrates. The walleye pollock were both adults and young. The flatfish consisted of arrowtooth flounder and flathead sole. Other fishes included rougheye rockfish, eulachon, shortfin eelpouts, spinyhead sculpins, black skates, spinycheek starsnouts, and the prickly snailfish Paraliparis deani. Invertebrates included Tanner crabs, pink and sidestripe shrimp, the hermit crabs Pagurus aleuticus and Labidochirus splendescens, basket stars, and the whelk Neptunea pribilofensis.

We made two bottom trawl hauls off False Point Arden in November 1980 and came up with small-to-large catches (Table 57) of mostly walleye pollock with lesser amounts of other fishes and invertebrates. The walleye pollock were both young and adults. Other fishes included black skates, ratfish, arrowtooth flounder; flathead sole; roughey rockfish; eulachon, shortfin, black, and wattled eelpouts; sturgeon poachers; spinycheek starsnouts; a juvenile sablefish; spinyhead sculpins; the scissortail sculpin; and daubed shanny. Invertebrates included Tanner crabs, pink shrimp, sidestripe shrimp, brown shrimp, a lyre crab, the hermit crab Pagurus aleuticus, basket stars, the octopus Octopus leioderma, whelks Neptunea pribilofensis, and snails Colus halli, Buccinum plectrum, and Beringius kennicottii.

We made three bottom trawl hauls off False Point Arden in January 1981 (Table 57) and came up with fair-to-large catches of mostly walleye pollock with lesser amounts of basket stars, other fishes, and invertebrates. The walleye pollock were mostly adult fish. Basket stars predominated in one haul. Other fishes included flathead sole, arrowtooth flounder, rex sole, and two young Pacific halibut, black skates, eulachon, shortfin eelpouts, roughey rockfish, spinyhead sculpins, roughspine sculpins, scissortail sculpins, the thorny sculpin Icelinus borealis, spinycheek starsnouts, the northern spearnose poacher Agonopsis emmelane, rose snailfish, and an unidentified dark snailfish. Other invertebrates included Tanner crabs, pink shrimp, sidestripe shrimp, lyre crabs, the hermit crabs Pagurus aleuticus, P. capillatus, and Labidochirus splendescens, the whelks Neptunea lyrata and N. pribilofensis, the snails Colus halli, Thais lamellosa, and Buccinum plectrum, and sea whips.

We made five bottom trawl hauls off False Point Arden, Stephens Passage, in February 1981 (Table 57) and came up with fair-sized catches of mostly flatfish, with walleye pollock of considerable bulk, and lesser amounts of other fishes and invertebrates. The flatfish were mostly arrowtooth flounder and flathead sole; also present were rex sole, yellowfin sole, a juvenile Pacific halibut, rock sole, and starry flounder. Walleye pollock were both young and adults. Other fishes included black skates, roughey rockfish, sablefish, wattled eelpouts, whitespotted greenlings, spinyhead sculpins, a red Irish lord, thorny sculpins, roughspine sculpins, and ribbed sculpins, sturgeon poachers, spinycheek starsnouts, rose snailfish (Careproctus), and the snailfish Melanurus sp. Invertebrates included Tanner crabs; pink, coonstripe, sidestripe, and brown shrimp; the lyre crab; the whelks Neptunea lyrata and N. pribilofensis; the barnacle Balanus evermani; the snails Natica sp. and Colus halli; an Octopus dofleini; the hermit crabs Pagurus aleuticus and Labidochirus splendescens; sea whips; basket stars; the sea star Leptychaster anomalis; brittle stars Ophiopholis aculeata and Ophiura sp.; and the sea urchin Strongylocentrotus echinoides.

We made eight bottom trawl hauls near False Point Arden in April 1981 (Table 57) and came up with good-sized catches of mostly walleye pollock with relatively small amounts of flatfishes and other fishes and invertebrates. The walleye pollock were mostly adults. The flatfish were mostly flathead sole and arrowtooth flounder; also present were rock sole, butter sole, and starry flounder. Other fishes included the big skate Raja binoculata, black skates, longnose skates, eulachon, and hundreds of northern lampfish Stenobranchius leucopsarus (in stomachs of the walleye pollock); other fishes taken were a juvenile Pacific cod, shortfin and wattled eelpouts, a black eelpout Lycodes diapterus, roughey rockfish, spinyhead sculpins, the rose snailfish, the prickly snailfish Paraliparis deani, sturgeon poachers, spinycheek starsnouts,

unidentified poachers, and longsnout pricklebacks. The generally sparse invertebrates included Tanner crabs, pink shrimp, sidestripe shrimp, the hermit crabs Pagurus aleuticus and Labidochirus splendenscens, sea whips, the snails Colus sp. and Buccinum plectrum, the whelks Neptunea lyrata and N. pribilofensis, basket stars, the sea stars Ceramaster sp. and Leptasterias coei, and the sea urchin Strongylocentrotus echinoides.

We made seven bottom trawl hauls near False Point Arden in May 1981 (Table 57), covering an area from Green Cove to the west and Point Tantallon to the north, and came up with fair-to-large catches of mostly walleye pollock with relatively little else in the form of other fishes and invertebrates. Most of the walleye pollock were adult fish. Other fishes taken included flathead sole, arrowtooth flounder, a small Pacific halibut, the big skate, black skates, longnose skates, eulachon, a few young Pacific cod, shortfin eelpouts, black and wattled eelpouts, roughey rockfish, a Pacific ocean perch, spinyhead sculpins, a blackfin sculpin, the sculpin Myoxocephalus stelleri, spinycheek starsnouts, an unidentified poacher, prickly snailfish and longsnout prickleback. The invertebrates included Tanner crabs, pink shrimp, sidestripe shrimp, the shrimp Pandalus hypsinotus, the hermit crabs Pagurus aleuticus, P. ochotensis, and Labidochirus splendenscens, the snails Colus halli and Natica sp., the whelks Neptunea lyrata, N. pribilofensis, and N. smirnia, the scallop Chlamys rubida, shells of the bivalve Macoma, basket stars, unidentified brittle stars, the sea stars Pseudarchaster parellii, Ctenodiscus crispatus, and the sea urchin Strongylocentrotus echinoides.

#### Taku Inlet

We made one bottom trawl haul at the entrance to Taku Inlet in May 1981 (Table 58) and came up with a good-sized catch of sea stars, Tanner crabs, skates, walleye pollock, and other fishes and invertebrates. The sea star Ctenodiscus crispatus was more abundant than any other species or group; also abundant were black skates and Tanner crabs. Also significant were walleye pollock. Other fishes included eulachon, shortfin and wattled eelpouts, arrowtooth flounder, flathead sole, rex sole, blackfin poachers, rose snailfish, prickly snailfish, and longsnout pricklebacks. Other invertebrates included pink shrimp, brown shrimp, the hermit crab Pagurus aleuticus, the pelagic squid Berryteuthis magister, and the whelk Neptunea lyrata.

#### EASTERN CHICHAGOF ISLAND VICINITY

##### Freshwater Bay

We made a single bottom trawl haul at the head of Freshwater Bay, Chichagof Island (Table 59), in September 1977 and came up with a small catch of mostly flatfish and assorted fishes. Yellowfin sole and flathead sole made up the bulk of the flatfishes; also present were rex sole and a rock sole. Other fish included juvenile walleye pollock, an adult Pacific herring, a great sculpin, the sculpin Gilbertidia sigalutes, spinyhead sculpins, daubed shanny, sturgeon poachers, a large black skate, and a spinycheek starsnout. Invertebrates were limited to a few shrimp, mostly coonstripe shrimp, but also pink shrimp, spot shrimp, hypolytid shrimp, and Crangon sp.; also present were a few crabs, juvenile Tanner crabs, a lyre crab, decorator crab, the hermit crabs Pagurus aleuticus, and Labidochirus splendenscens; and a whelk, Neptunea pribilofensis.

#### Tenakee Inlet (off Kadishan Bay)

We made one successful bottom trawl haul off Kadishan Bay, Tenakee Inlet, in October 1978 (Table 60) and came up with a very small haul of mostly flatfish and little else over bottom where echosign was extremely sparse. The flatfish included flathead sole, rex sole, rock sole, and yellowfin sole. Other fishes included spinyhead sculpins, a tadpole sculpin (Psychrolutes paradoxus) and a fourhorned poacher (Hypsagonus quadricornis). Invertebrates were limited to pink, coonstripe, and brown shrimp; a few juvenile Tanner crabs; a lyre crab; the hermit crab Pagurus aleuticus; the sea star Henricia sp.; the scallop Chlamys sp.; brachiopods Laqueus sp.; and unidentified sponges.

#### Tenakee Inlet (Crab Bay)

We trawled in Crab Bay, Tenakee Inlet, in September 1977 and October 1978 (Table 61).

We made one bottom trawl haul in Crab Bay, Tenakee Inlet, in September 1977 (Table 61) and came up with a good-sized catch of mostly flatfish and gadids. Most of the flatfish were yellowfin sole; starry flounder were also significant. Also present were flathead sole and rock sole. Gadids were almost entirely juvenile walleye pollock and a juvenile Pacific cod. Other fish included a few young Pacific herring, great sculpins, staghorn sculpins, the sculpin Triglops sp., searchers, a sturgeon poacher, and a spinycheek starsnout. Invertebrates consisted primarily of pink shrimp and a single scallop, Chlamys sp., and anemone Metridium senile.

We made one bottom trawl haul in Crab Bay, Tenakee Inlet (Table 61), in October 1978 and came up with a fairly small catch of mostly flatfish with lesser amounts of walleye pollock, other fishes, and invertebrates. The flatfish included flathead sole, starry flounder, and yellowfin sole. The walleye pollock were mostly young-of-the-year juveniles. Other fishes included eulachon, juvenile Pacific herring, great sculpins, spinyhead sculpins, and staghorn sculpins, shortfin and wattled eelpouts, and spinycheek starsnouts. Invertebrates were limited to a few pink, coonstripe, and brown shrimp, the salp Salpa fusiformis, and the medusas Cyanea and Aurelia.

#### Tenakee Inlet (Seal Bay)

We trawled in Seal Bay, Tenakee Inlet, in September 1977 and October 1978 (Table 62).

We made a bottom trawl haul in Seal Bay, Tenakee Inlet (Table 62), in September 1977 and came up with a relatively small catch of mostly flatfish and lesser amounts of assorted other fishes. Adult yellowfin sole predominated among the flatfish. Also significant were flathead sole, and rex sole were also present. Juvenile walleye pollock were abundant but didn't amount to much bulk. Also present were spinyhead sculpins, a daubed shanny, and a sturgeon poacher. Other invertebrates included pink shrimp and the shrimp Pandalus hypsinotus, P. goniurus, and Crangon, a brittle star, lyre crab, and the clam Solemya.

We made one bottom trawl haul in Seal Bay, Tenakee Inlet (Table 62), in October 1978 and came up with a fair catch of mostly flatfish with lesser amounts of walleye pollock and other fishes and few invertebrates. Among the flatfish, yellowfin sole predominated; also substantial in bulk were starry



flounder; also present were flathead sole, rex sole, rock sole, and slender sole. The walleye pollock were both juveniles and adults. Other fishes included a juvenile Pacific cod, juvenile Pacific herring, great sculpins, spinyhead sculpins, staghorn sculpins, the sculpin Triglops, snake pricklebacks, shortfin eelpouts, sturgeon poachers, and a spinycheek starsnout. The only invertebrates were a few coonstripe shrimp.

#### Tenakee Inlet (between Seal Bay and Long Bay)

We made a single bottom trawl haul between Seal Bay and Long Bay, (Table 63) near the head of Tenakee Inlet, in October 1978 and came up with a fair catch of mostly walleye pollock and lesser amounts of varied fishes and invertebrates. The walleye pollock were all adults. Other fishes taken included eulachon, longsnout pricklebacks, shortfin and wattled eelpouts, spinyhead sculpins, the marbled snailfish, longnose skates, black skates, and spinycheek starsnouts. The invertebrates were mostly shrimp and crabs and included pink, coonstripe, and brown shrimp, adult and juvenile Tanner crabs; and the hermit crab Pagurus aleuticus. Other invertebrates included the bivalve Nuculana, the whelk Neptunea pribilofensis, the snail Colus halli, the cockle Clinocardium nuttali, the nudibranch Dendronotus sp., sea whips (Stylatula), brittle stars, and the sea star Ctenodiscus.

#### Tenakee Inlet (Long Bay)

We trawled in Long Bay, Tenakee Inlet, in September 1977 and October 1978 (Table 64).

We made a single bottom trawl haul in Long Bay, Tenakee Inlet (Table 64), in September 1977 and came up with a very small catch of mostly flatfish, shrimp, and assorted fishes. Flatfish consisted of a few adult rock sole and yellowfin sole; shrimp were mostly Pandalus hypsinotus and a few P. goniurus. Other fish included a few juvenile walleye pollock, a juvenile Pacific cod, a juvenile Pacific herring, a great sculpin, a staghorn sculpin, spinyhead sculpins, and the sculpin Triglops sp. Other invertebrates were limited to the hermit crab Pagurus aleuticus and the medusas Cyanea and Aurelia.

We made a single bottom trawl haul in Long Bay, Tenakee Inlet (Table 64), in October 1978 and came up with a small catch of Dungeness crabs and flatfish and very little else. The Dungeness crabs were all small adults. Flatfish included flathead sole, rock sole, yellowfin sole, and slender sole. Other fish included a few young-of-the-year walleye pollock and staghorn sculpins. Other invertebrates were limited to the medusa Cyanea capillata.

#### Tenakee Inlet (head end)

We trawled near the head end of Tenakee Inlet in September 1977 and October 1978 (Table 65).

We made two bottom trawl hauls at or near the head of Tenakee Inlet in September 1977 (Table 65) and came up with relatively small catches of mostly flatfish, shrimp, and walleye pollock. Large adult starry flounder comprised the bulk of the flatfish; also significant were yellowfin sole. English sole and flathead sole were also present. Pink shrimp comprised the bulk of the shrimp; also present were coonstripe and sidestripe shrimp and the shrimp Pandalus hypsinotus and Crangon. The walleye pollock were juveniles and young adults. Other fishes included eulachon, a few Pacific herring, shortfin

eelpouts, daubed shanny, spinyhead sculpins, sturgeon poachers, a spinycheek starsnout, and a searcher. Other invertebrates were limited to the medusa Cyanea capillata, a lyre crab, and a few unidentified clams.

We made a single bottom trawl haul at the head end of Tenakee Inlet (Table 65) in October 1978 and came up with a fairly large catch of flatfish, walleye pollock, Dungeness crabs, and lesser amounts of shrimp, sculpins, and few other invertebrates and fishes. The flatfish were varied and included starry flounder and flathead, English, rex, rock, yellowfin, and slender sole. The walleye pollock were all juveniles, including young of the year. A juvenile Pacific cod was also taken. The Dungeness crabs were all juveniles. A juvenile Tanner crab was also taken. The shrimp were mostly coonstripe shrimp and a few pink shrimp. The sculpins consisted of spinyhead and staghorn sculpins. Other fish were limited to juvenile Pacific herring. There were no other invertebrates.

#### WESTERN CHICHAGOF ISLAND VICINITY

##### Off Portlock Harbor

We made one successful bottom trawl haul seaward from the entrance to Portlock Harbor, western Chichagof Island, in July 1981 (Table 66) and came up with a very small catch of flatfish, rockfish, and a few invertebrates. The flatfish were adult rock sole and juvenile arrowtooth flounder. The only rockfish was a single adult quillback rockfish. Invertebrates were limited to a few scallops Chlamys sp., hermit crabs, the shrimp Pandalus montagui, sea cucumbers Parastichopus, and the brittle star Ophiura, and green sea urchins.

##### Off Cape Cross

We made two successful bottom trawl hauls seaward off Cape Cross, western Chichagof Island, in July 1981 (Table 67) and came up with very small catches of sea cucumbers and flatfish and few other fishes and invertebrates. The sea cucumbers were Parastichopus californicus; the flatfish were adult and young rock sole. Other fishes included a few young red rockfish, Sebastes sp., searchers, buffalo sculpins, and the sculpin Triglops sp. Other invertebrates included hippolytid shrimp, the lyre crab, hermit crabs Pagurus aleuticus and P. tenuimanus, the brachiopod Laqueus, green urchins, the brittle star Ophiura sarsii, the sea mouse Aphrodita, and polychaete Nereis sp., and a few bivalve shell remains.

#### CAPE SPENCER VICINITY

##### Graves Harbor

We made a single bottom trawl haul in Graves Harbor, north of Cape Spencer, in July 1977 and came up with a small catch of mostly flatfish (Table 68) with a few invertebrates. Large adult Dover sole made up the bulk of the flatfish; rex sole were also present. The only other fish were a few spinyhead sculpins. Invertebrates included many tiny juvenile Tanner crabs; the hermit crabs Pagurus aleuticus and Labidochirus splendescens, a few

spot, pink, and sidestripe shrimp; the shrimp Crangon; sea star Ctenodiscus; green urchins; and the medusa Aurelia.

#### Off Torch Bay

We made two trawl hauls off the entrance to Torch Bay, north of Cape Spencer, in July 1977 (Table 69) and came up with sparse catches of a few fishes, sea stars, and little else. The fishes consisted of a yellow Irish lord, a few juvenile Pacific ocean perch, and juvenile arrowtooth flounder. The sea stars included the blood star Henricia leviscula, a sun star Solaster dawsoni, and the brittle star Ophiura sarsi. Also present were green urchins, the brachiopod Laqueus sp., the decorator crab Oregonia gracilis, a coonstripe shrimp, the hermit crab Elassochirus sp., the scallop Chlamys sp., and hairy tritons.

#### Torch Bay

In two trawl hauls in Torch Bay (Table 70), north of Cape Spencer, July 1977, we had fair catches of shrimp, flatfish, and gadids with lesser amounts of other fishes and invertebrates. Most of the shrimp were pink shrimp. A few spot and coonstripe shrimp, and the shrimp Crangon and Eualus were also present. Flatfish were mostly arrowtooth flounder and flathead sole by bulk; also present were rex sole, Dover sole, yellowfin sole, and English sole. Gadids were mostly adult Pacific cod and walleye pollock and a few Pacific tomcod. Other fishes included large longnose skates, juvenile Pacific Ocean perch and roughey rockfish, eulachon, wattled and shortfin eelpouts, the snake and daubed shanny, and spinyhead sculpins. Other invertebrates included an adult king crab, several (mostly juvenile) Tanner crabs, a few Dungeness crabs, a lyre crab, the hermit crabs Pagurus aleuticus and Labidochirus splendescens, and the sea star Mediaster.

#### Off Dixon Harbor

During July 1977, we made a single trawl haul off the entrance to Dixon Harbor, north of Cape Spencer, and had a fair catch of flatfish, and brittle stars and an assortment of fishes and few other invertebrates (Table 71). The flatfish were mostly Dover sole and arrowtooth flounder by bulk; also present were flathead sole and rex sole. The brittle stars were all Ophiura sarsi. Other fishes included an adult sablefish and quillback rockfish, eulachon, wattled eelpouts, shortfin eelpouts, a dogfish shark, ratfish, black skate, and a staghorn sculpin. Other invertebrates were limited to the sea stars Crossaster papposus and Pycnopodia helianthodes, and pink and sidestripe shrimp.

#### Dixon Harbor

We made two successful trawl hauls in Dixon Harbor in July 1977 (Table 72) and came up with small catches of assorted fishes and invertebrates without clearly predominate groups. Dover sole, rex sole, and walleye pollock accounted for the bulk of the fishes; shortfin and wattled eelpouts and eulachon were taken also. Invertebrates consisted of juvenile Tanner crabs; the small crab Pugettia sp.; the hermit crabs Pagurus aleuticus and Labidochirus splendescens; pink, sidestripe, and coonstripe shrimp; the anemone shrimp Eualus sp. and Lebbeus grandimanus; brittle stars; and the sea stars Pycnopodia and Mediaster.

## PART II. SPECIES-ORIENTED FINDINGS

In Part I, we described our findings in terms of what marine life was found in the geographic location covered by bottom trawl surveys. In this part, we describe how certain species of real or potential commercial value are distributed in both adult and juvenile stages.

Our coverage will take up the following groups of marine life: flatfishes, gadids, rockfishes, other commercial fishes, and commercial invertebrates insofar as we can contribute information on the distribution and relative abundance of a given species at one or more of its life stages.

## FLATFISHES

English sole (Parophrys vetulus)

We found large adult English sole in concentrations at the heads of bays along the southwestern coast of Baranof Island in May 1971--Necker Bay and Shamrock Bay in West Crawfish Inlet (Tables 19, 24). Adults were taken in numbers in most of the bays along the western coast of Baranof Island and at the head end of Lisianski Inlet on Chichagof Island; although we took English sole in many other locations during our sampling, they were more infrequent, scattered, and smaller in average size. We found few juveniles.

Starry flounder (Platichthys stellatus)

We found concentrations of very large starry flounders at the head of Crawfish Inlet and in the center of Deep Inlet, Baranof Island (Tables 21 and 15), in May 1971 and in Fritz Cove, northern Stephens Passage, from November to March 1974 to 1980 (Table 40). During the winter months we sampled, Fritz Cove contained an abundance of younger starry flounders as well as the large adults, indicating that this location may be particularly well suited to the species at more than one life stage. We found fair numbers of large starry flounders in Gambier Bay (Table 37), St. James Bay (Table 53), and Ogden Passage (Table 10). Starry flounder was the only flatfish species that was rarely found in incidental numbers; with few exceptions, they either formed a substantial portion of the catch or were entirely absent from it.

Flathead sole (Hippoglossoides elassodon)

In nearly every bottom trawl haul that we took flatfish of any kind, we took flathead sole in quantities ranging from predominant to incidental. We encountered the greatest abundance of flathead sole in Lisianski Inlet, particularly southern Lisianski Inlet (Table 2), the head of the inlet (Table 3), and nearby at Port Althorp (Table 5). Flathead sole were fairly abundant at times in Auke Bay (Table 39), Fritz Cove (Table 40), Whale Bay on Baranof Island (Tables 26-28), Crawfish Inlet (Tables 20, 22, 23), Fish Bay on Baranof Island (Table 12), Port Malmsbury (Table 32), Gambier Bay on Admiralty Island (Table 36), and the Auke Bay entrance vicinity (Table 43). All life stages of flathead sole, from tiny young fish to large adults, were normally found in the same haul; few, if any, catches contained only large or small fish.

### Arrowtooth flounder (Atheresthes stomias)

We took arrowtooth flounder in the majority of bottom trawl hauls throughout northern southeast Alaska and found concentrations of large adults in several locales: southern Lisianski Inlet (Table 2), Port Althorp (Table 5), Port Conclusion (Table 29), Big Port Walter (Table 30), off Pleasant Island in Icy Strait (Table 6), and off False Point Arden (Table 57). Juvenile arrowtooth flounder were frequently taken in the same hauls as large adults, and we commonly took incidental amounts of this species over a wide size range.

### Yellowfin sole (Limanda aspera)

We found yellowfin sole were fairly localized in northern southeast Alaska. In only a few locations did they make up the bulk of the flatfish taken, and they did not commonly occur in incidental amounts in the catches. We found concentrations of yellowfin sole in Khaz Bay (Table 11) and in Auke Bay (Table 39), where they frequently made up the bulk of the flatfish. We took few young or small yellowfin sole in our catches; most were adult fish over a relatively narrow size range. One exception was a catch of mostly juvenile yellowfins taken off Middle Point, Douglas Island (Table 44), in June 1980.

### Rex sole (Glyptocephalus zachirus)

Rex sole were taken in the majority of bottom trawl hauls we made throughout northern southeast Alaska, but they rarely amounted to more than a small part of the flatfish; in few instances were many large adults taken. Most of the catches of rex sole were a mixture of age groups from tiny juvenile fish to large juveniles or small adults. In northern and southern Lisianski Inlet (Tables 1, 2) and at the head of Lisianski Inlet (Table 3), we occasionally took fair numbers of large adult rex sole and almost always had a wide size range of this species in our catches at these locations.

Several species of flatfish that are common in southeastern Alaska were not frequently found in our catches. In most cases, this can be attributed to depth distribution of the species--either shallower or deeper than the range of depths we trawled.

### Pacific halibut (Hippoglossus stenolepis)

We took halibut occasionally that ranged from small, young fish to adult fish of commercial size, but most were relatively small. The northern and southern Lisianski Inlet trawl sites (Tables 1, 2), Auke Bay, and Fritz Cove (Tables 39, 40) are probably the only locations where halibut appeared in our catches more than once. It seems likely that halibut of all sizes are more adept at avoiding a trawl than the other species of flatfish which are generally smaller, slower, and appear to take up a less alert posture on the bottom.

### Dover sole (Microstomus pacificus)

We took Dover sole quite regularly in our catches but rarely in any numbers or bulk, merely a few individuals that turned up over the course of several trawl hauls. Nearly all of the Dover sole we took incidentally were

adults; few young were taken. Dover sole were taken consistently only at Big Port Walter and Port Conclusion on southern Baranof Island (Tables 30, 29) and at southern Lisianski Inlet and the head of Lisianski Inlet (Tables 2, 3). Large adult Dover sole made up the bulk of a catch in Graves Harbor near Cape Spencer (Table 68) in July 1977.

#### Rock sole (Lepidopsetta bilineata)

Rock sole were taken regularly in our catches but never in any abundance. Often we found an occasional individual or a few adult rock sole in one trawl haul out of several made in a given area. We took rock sole fairly often in bottom trawls in Fritz Cove, Auke Bay, and the entrance to Auke Bay (Tables 40, 39, 42). Adult rock sole made up much of a catch in Idaho Inlet (Table 73) in July 1977. We rarely took young rock sole; most of those we took were large adults. This species may be more solitary in habit and may prefer more broken, untrawlable substrate than other flatfishes.

#### Slender sole (Lyopsetta exilis)

Slender sole were uncommon in our trawl catches. We took incidental numbers, nearly all adults, from time to time without any consistency, even in locations that were sampled regularly over a number of years. Slender sole occasionally turned up in our catches at southern Lisianski Inlet (Table 2), Auke Bay (Table 39), and in a number of isolated instances elsewhere.

#### Alaska Plaice (Pleuronectes quadrituberculatus)

Alaska plaice were rare in our trawl catches. We took only two dozen or so large adults in the total of our efforts. At least eight hauls in Fritz Cove (Table 40) contained Alaska plaice; we also took a few individuals in Auke Bay (Table 39) and in bays along western Chichagof Island.

### GADIDS

#### Walleye Pollock (Theragra chalcogramma)

Almost every series of bottom trawl hauls that we made in northern southeast Alaska contained walleye pollock at some level of abundance, ranging from incidental to nearly pure catches, and sizes ranging from tiny juveniles to large adult fish. Most often a mixture of juvenile and adult walleye pollock was taken, but frequently walleye pollock in the catches consisted entirely of adults or juveniles in narrow-to-broad size ranges.

The greatest concentrations of large adult walleye pollock were found in the region of northern Stephens Passage, specifically near Point Arden (Table 57), Horse Shoal, in Fritz Cove (Tables 47, 40), Auke Bay, and the entrance to Auke Bay (Tables 39, 41), Favorite Channel and Berners Bay (Tables 51, 54), and off Sullivan Island in Lynn Canal (Table 55).

Concentrations of adult walleye pollock were also found along western Baranof Island in Necker Bay (Tables 24, 25), Crawfish Inlet (Table 20), West Crawfish Inlet (Table 18), and False Point Arden (Table 57), Stephens Passage.

We found concentrations of juvenile walleye pollock in Fritz Cove, Auke Bay, and the entrance to Auke Bay (Tables 39-42) in northern Stephens Passage, and in Crawfish Inlet (Tables 21, 22) and Redoubt Bay (Table 16) on western Baranof Island, and small adults and juveniles off Middle Point, Douglas Island (Table 44).

With the possible exception of western Chichagof Island, walleye pollock were abundant or at least present in substantial numbers nearly everywhere we trawled in northern southeast Alaska. Walleye pollock probably have the largest biomass of any single species of fish in all the areas we sampled.

#### Pacific cod (Gadus macrocephalus)

We frequently took Pacific cod in our bottom trawl hauls throughout northern southeast Alaska. Most often we took large adults, rarely more than a few in one haul, but these few often contributed a substantial part of the bulk of a catch. We found concentrations of juveniles separate from the adults and rarely took both in the same haul.

Large adult Pacific cod were taken frequently in our trawl hauls in Fritz Cove, off Horse Shoal, and Favorite Channel (Tables 40, 47, 50), in northern Stephens Passage, and at southern Lisianski Inlet (Table 2), Chichagof Island. Large adult cod also contributed substantially to catches in Seymour Canal (Table 38) and Eliza Harbor (Tables 35, 36), Admiralty Island, and along southwestern Baranof Island in Whale Bay (Table 27), Necker Bay (Table 25), and Crawfish Inlet (Table 20).

We found concentrations of juvenile Pacific cod in bays along the southwestern coast of Baranof Island, namely Redoubt Bay (Table 16), Windy Passage (Table 17), and at the head of Crawfish Inlet (Table 21). These locales are probably cod nursery grounds.

#### Pacific tomcod (Microgadus proximus)

Pacific tomcod were rare in our trawl catches; only a few times were tomcod taken--in Ogden Passage, western Chichagof Island (Table 11) in September 1969, at southern Lisianski Inlet in May 1970 (Table 2), in Torch Bay near Cape Spencer (Table 70) and Portlock Harbor (Table 9) and Khaz Bay (Table 11) in July 1977.

#### Pacific hake (Merluccius productus)

Pacific hake were very rare in our catches; we took only three individuals, all large adults--one at the head of Lisianski Inlet (Table 3), Chichagof Island, another in the center of Necker Bay (Table 25), Baranof Island, and another off False Point Arden (Table 57), Stephens Passage.

### ROCKFISHES

#### Pacific ocean perch (Sebastes alutus)

Pacific ocean perch were a target species during a study of their early life history (Carlson and Haight 1976); we took juvenile Pacific ocean perch routinely in four locations that we subsequently designated as study sites because they were Pacific ocean perch nursery areas. The sites were at northern and southern Lisianski Inlet (Tables 1, 2), on Chichagof Island, and

Port Conclusion and Big Port Walter, on Baranof Island (Tables 29, 30). We took juvenile Pacific ocean perch in a number of other locations but, with the exception of Silver Bay (Table 14) on Baranof Island, only in incidental numbers. We collected young-of-the-year Pacific ocean perch at Port Conclusion and Big Port Walter in October 1979 and northern Lisianski Inlet in October 1980.

We rarely took large adult Pacific ocean perch during the trawl sampling, primarily because our effort was concentrated at shallower depths than the adult Pacific ocean perch normally inhabit. In one trawl haul in the center of the Great Arm, Whale Bay, on Baranof Island (Table 28), large adult Pacific ocean perch made up a substantial part of the catch.

#### Rougheye rockfish (Sebastes aleutianus)

While focusing our sampling efforts on collecting juvenile Pacific ocean perch, we often collected juvenile rougheye rockfish instead--mainly when the trawl went over muddy or soft substrate that the young S. aleutianus seem to prefer to the firm, hard substrate that juvenile S. alutus are found over. At Port Althorp (Table 5) on Chichagof Island, for instance, we repeatedly took juvenile rougheye rockfish over the soft substrate found there. We consistently took adult and young rougheye rockfish in trawls off Outer Point (Table 44), Douglas Island.

Adult rougheye rockfish were infrequent in our trawl catches probably because, like adult Pacific ocean perch, they normally inhabit deeper waters than we sampled. We took some adult S. aleutianus in trawl hauls in the center of the Great Arm, Whale Bay (Table 28), and in the center of Necker Bay (Table 25) on Baranof Island.

#### Quillback rockfish (Sebastes maliger)

Adult quillback rockfish regularly appeared in our catches at the juvenile Pacific ocean perch study sites at northern and southern Lisianski Inlet on Chichagof Island (Tables 1, 2) and Port Conclusion and Big Port Walter on Baranof Island (Tables 29, 30) and often contributed as much bulk to the catches as did the target species. Large adult quillback rockfish were also taken at the head of Lisianski Inlet (Table 3) and Khaz Bay (Table 11) on Chichagof Island. Adult quillback rockfish appear to be distributed as nonschooling individuals scattered over a broad geographic range since they occur frequently in our catches but rarely in any numbers. We took few juvenile S. maliger in the trawl catches; their normal distribution may be shallower than the depths we trawled.

#### Yellowtail rockfish (Sebastes flavidus)

Adult yellowtail rockfish were uncommon in our trawl catches; on one occasion, in April 1972, they contributed a substantial amount to catches at southern Lisianski Inlet (Table 2).

Juvenile S. flavidus were similarly uncommon in our catches, but in one location, at Port Lucy on lower Baranof Island, in March 1971 (Table 31) they were not merely abundant but made up the bulk of our catches. Several juveniles were also taken in March 1971 at Port Conclusion (Table 29) and at Northern Lisianski Inlet (Table 1) in October 1980.



Other species of rockfish that were taken incidentally, in small numbers, on few occasions during our trawl sampling include:

Shortspine thornyhead "idiotfish" (Sebastolobus alascanus)

In July 1969, we took several adult "idiotfish" at northern Lisianski Inlet (Table 1) and off Nose Head, Lisianski Inlet (Table 4).

Silvergray rockfish (Sebastes brevispinis)

We routinely took adult silvergray rockfish in Port Conclusion (Table 29) in March and September 1971 and April 1972, and on occasion in Port Malmsbury in March 1971 (Table 33), and the Great Arm of Whale Bay and Crawfish Inlet in May 1971 (Tables 27, 20).

Yelloweye rockfish (Sebastes ruberrimus)

We took a single large adult yelloweye rockfish at the entrance to Silver Bay in May 1971 (Table 13). It constituted the bulk of the catch.

Greenstriped rockfish (Sebastes elongatus)

A few juvenile greenstriped rockfish were among our catches in Port Conclusion in March 1971 and April 1972 (Table 29), northern Lisianski Inlet in July 1969 and October 1980 (Table 1), and Crawfish Inlet (Table 22) in May 1971.

Redstripe rockfish (Sebastes proriger)

We took a few juvenile redstripe rockfish at northern Lisianski Inlet in April 1971 and April 1972 (Table 1).

Canary rockfish (Sebastes pinniger)

We took a few individual adult canary rockfish in catches in Port Conclusion (Table 29) in September 1971; Crawfish Inlet (Table 22), Baranof Island, in May 1971; and Port Malmsbury, Kuiu Island, in March 1971 (Table 33).

Bocaccio (Sebastes paucispinis)

On one occasion we took a few adult bocaccio in Port Conclusion (Table 29) in August 1970.

Redbanded rockfish (Sebastes babcocki)

We took a single juvenile redbanded "flag" rockfish in Port Conclusion (Table 29) in August 1970 and an adult off Outer Point, Douglas Island (Table 44), in May 1981.

Harlequin rockfish (Sebastes variegatus)

A few juvenile harlequin rockfish were in our trawl hauls at Port Althorp (Table 5) in September 1971.

### Dusky rockfish (Sebastes ciliatus)

Dusky rockfish are common and abundant in southeastern Alaska but were uncommon in our catches, probably because they normally inhabit shallower depths than we trawled and are usually over rough substrate that can not be trawled. We took a few adult dusky rockfish in southern Lisianski Inlet in April 1972, May 1970, and July and September 1969 (Table 2), in Ogden Passage in September 1969 (Table 10), and northern Lisianski Inlet in October 1980.

### OTHER FISHES

#### Sablefish (Anoplopoma fimbria)

Adult sablefish were uncommon in our catches and juveniles were not taken consistently. We took a few adult sablefish off Nose Head in Lisianski Inlet (Table 4) in July 1969 and a single adult in the center of Necker Bay (Table 25), Baranof Island, in May 1971.

We took small numbers of juvenile sablefish in several locations during our trawl sampling. Juvenile sablefish were taken in Port Althorp in July 1969 and May 1970 (Table 5); in Khaz Bay, Chichagof Island, in September 1969 (Table 11); off Pleasant Island, Icy Strait, in September 1969 (Table 6); in Great Arm, Whale Bay, Baranof Island in May 1971 (Table 27); at the head of Crawford Inlet in May 1971 (Table 21); southern Lisianski Inlet in September 1971 (Table 2); in Auke Bay in December 1974 and November 1975 (Table 39); Berners Bay, Lynn Canal, in March 1975 (Table 54); and routinely in Fritz Cove (Table 40) during the winter months. Juvenile sablefish were unusually abundant over much of northern Stephens Passage in our trawls during the fall of 1980.

#### Eulachon (Thaleichthys pacificus)

Adult eulachon frequently appeared in our trawl catches throughout northern southeast Alaska but were rarely taken in more than incidental amounts. We took eulachon in nearly every series of trawl hauls from October to April in Fritz Cove and Auke Bay (Tables 39, 40) and at almost every other location in the Stephens Passage-Lynn Canal vicinity during those months (Tables 39-56). We also took small numbers of eulachon in southern Lisianski Inlet in May 1971 and April 1972 (Table 2); the head of Lisianski Inlet in May 1970 (Table 3); Stag Bay, Chichagof Island, in September 1969 (Table 8), and most of the bays along the southwestern coast of Baranof Island from Whale Bay to Silver Bay (Tables 13-28) in May 1971.

#### Pacific herring (Clupea harengus pallasii)

Adult Pacific herring were a primary target species for our trawling in Fritz Cove and Auke Bay during the winter months when the schools remained on or near bottom, and trawling was an effective means of sampling them. Seasonal distribution of Lynn Canal-Auke Bay herring is described by Carlson (1980). We took sizable catches of adult herring in Fritz Cove in February and March 1974 and March 1975 (Table 40) and in Auke Bay during December 1974 and January and March 1975 (Table 39). We made a large catch of almost entirely adult herring in Favorite Channel, Stephens Passage, in March

1976 (Table 50) and again took fair numbers of herring there the following month. Although we captured herring in trawls in other locations and times, in particular during winter months in Lynn Canal and Stephens Passage, they were for the most part incidental in the catches, as were a few herring taken in trawl hauls in Whale Bay, Baranof Island in May 1971.

Unlike most of the demersal fishes we trawled, the numbers of herring in our trawl hauls do not reflect their relative abundance but only their availability to the gear used.

#### Lingcod (Ophiodon elongatus)

We took very few lingcod in our trawl hauls. In July 1969 we took a large adult lingcod in a trawl off Yakobi Rock, northwestern Chichagof Island (Table 7). In September 1971 we took a large adult lingcod at southern Lisianski Inlet on Chichagof Island (Table 2). In May 1971 we took a juvenile lingcod in the center of Crawfish Inlet on southwestern Baranof Island (Table 22). In May 1978, we took a juvenile lingcod at northern Lisianski Inlet (Table 1).

### COMMERCIAL INVERTEBRATES

Of the commercially valuable invertebrates, we often took shrimp and Tanner and king crabs but few others with any regularity or in substantial amounts.

#### Tanner (snow) crab (Chionocetes bairdi)

We found a concentration of large adult male Tanner crab in Slocum Arm of Khaz Bay on southwestern Chichagof Island, in September 1969 (Table 11) and took substantial numbers of adults of both sexes in trawl hauls along the western side of Tiedeman Island, Seymour Canal, Admiralty Island, in July 1976 (Table 38). We routinely took adult Tanner crab in Fritz Cove and Auke Bay (Tables 40, 39) during the winter months, and regularly took small numbers of adults throughout the Stephens Passage area (Tables 39-47), and St. James Bay (Table 53) and Berners Bay (Table 54).

Juvenile Tanner crab were taken in most of our trawl hauls in Fritz Cove and Auke Bay (Tables 40, 39) during winter months and in bays along the southwestern coast of Baranof Island (Tables 13-28) in May 1971.

#### Dungeness crab (Cancer magister)

We took several juvenile Dungeness crabs in a trawl at the head end of Tenakee Inlet (Table 65) and a few small adults in Long Bay, Tenakee Inlet (Table 64), in October 1978. Adult Dungeness crabs were occasionally taken in Fritz Cove (Table 40).

#### Red King crab (Paralithodes camtschatica)

We regularly took small numbers of adult king crab during late winter months (February-March) in Fritz Cove (Table 40). Adult king crab were rare in our catches at other locations and times.

Juvenile king crab were infrequent in our trawl hauls; small numbers were taken in the Auke Bay vicinity during winter months (Table 39).

#### Pink shrimp (Pandalus borealis)

Pink shrimp were frequently taken in our trawls throughout northern southeast Alaska during all seasons but usually in incidental amounts; they rarely made up a substantial portion of the catch. Two exceptions were Port Althorp on Chichagof Island (Table 5), where adult pink shrimp made up a good portion of the catches, and the western side of Sullivan Island in Lynn Canal (Table 55) and Fritz Cove (Table 40), where they also appeared fairly abundant.

#### Miscellaneous Commercial Invertebrates

Other commercially valuable invertebrates that we trawled up infrequently include weathervane scallops, Patinopecten caurinus, which were very rare; sidestripe shrimp, Pandalopsis dispar, which were taken in small amounts at Port Althorp (Table 5); spot shrimp, Pandalus platyceros, which were never taken in substantial amounts; clams of several species, all rarely taken; and giant Pacific octopus, Octopus dofleini, which were taken occasionally, sometimes constituting a fair portion of the catch, but not amounting to much overall in any particular location in which we trawled. The whelks Neptunea lyrata and N. pribilofensis, harvested commercially by the Japanese in the North Pacific, were taken fairly frequently in the Fritz Cove-Auke Bay vicinity (Tables 40, 39) but in incidental numbers.

#### MISCELLANEOUS FISHES (NONCOMMERCIAL)

We took quite a variety of fishes of little or no commercial value in our trawl hauls; in all but a few instances, they were an incidental part of the catches in any given locale.

#### Skates (Rajidae)

The longnose skate, Raja rhina, appeared fairly frequently in our catches, particularly in near-coastal waters of Chichagof and Baranof Islands and in Fritz Cove (Table 40), and occasionally made up a fair portion of a catch. The black skate, Raja kincaidii, was much more common in waters of northern Stephens Passage, including Auke Bay and Fritz Cove (Tables 39, 40) and False Point Arden (Table 57) but rarely amounted to much in terms of bulk. Big skates, Raja binoculata, were taken less often and almost invariably in incidental amounts.

#### Ratfish or Chimaeras (Chimaeridae)

We took the ratfish, Hydrolagus collei, in fair numbers only at northern Lisianski Inlet (Table 1) where, in July 1969, it amounted to a fair portion of the catch. Ratfish were infrequent to rare and taken only incidentally in our other catches.

### Sculpins (Cottidae)

It was a rare haul that came up without at least a few sculpins in all of the trawls we made throughout southeastern Alaska, and occasionally they made up a substantial part of a haul; but overall the sculpins were a minor part of our catches. Several species were taken; most important in terms of bulk was the great sculpin, Myoxocephalus polyacanthocephalus. Also taken were the sculpin Myoxocephalus sp.; the buffalo sculpin, Enophrys bison; spinyhead sculpin, Dasycottus setiger; blackfin sculpin, Malacocottus kincaidii; ribbed sculpin, Triglops pengeli; the sculpin Triglops sp.; the armorhead sculpin, Gymnocanthus galeatus; the red Irish lord, Hemilepidotus hemilepidotus; and yellow Irish lord, H. jordani; the Pacific staghorn sculpin, Leptocottus armatus; sailfin sculpin, Nautichthys oculofasciatus; silverspotted sculpin, Blepsias cirrhosus; crested sculpin, B. bilobus; grunt sculpin, Rhamphocottus richardsoni; bigmouth sculpin, Ulca (Hemitripterus) bolini; and soft sculpin, Gilbertidia sigalutes.

### Greenlings (Hexagrammidae)

Greenlings were not uncommon in our catches throughout southeastern Alaska but were almost invariably taken in very small numbers and in incidental amounts overall. Most frequently taken were adult kelp greenling, Hexagrammos decagrammus, of both sexes; we occasionally took adult and young whitespotted greenling, H. stelleri.

### Eelpouts (Zoarcidae)

Eelpouts were common in our catches in Fritz Cove and Auke Bay (Tables 40, 39) and were fairly frequent in trawl hauls throughout southeastern Alaska, almost invariably in incidental amounts. Most often taken were shortfin eelpouts, Lycodes brevipes; also common were wattled eelpouts, L. palearis. We occasionally took the Alaska eelpout, Bothracara pusillum, in northern Stephens Passage, and once took the blackbelly eelpout, Lycodopsis pacifica, in southern Lisianski Inlet in May 1970.

### Pricklebacks (Stichaeidae)

Pricklebacks were routinely present in small numbers and incidental amounts in our catches throughout southeastern Alaska. Taken most often were the longsnout prickleback, Lumpenella longirostris, and daubed shanny, Leptoclinus (Lumpenus) maculatus; also taken were snake pricklebacks, Lumpenus sagitta. The giant wrymouth, Delolepis gigantea, was rarely taken, but a few very large individuals were found in trawl hauls in Cedar Cove, Crawfish Inlet on Baranof Island, in May 1971 (Table 20); Port Althorp in July 1969 (Table 5); and Ogden Passage, Chichagof Island, in September 1969 (Table 10). In each case the individual giant wrymouths contributed a substantial portion of the catch.

### Poachers (Agonidae)

Poachers were common in our catches throughout southeastern Alaska, almost invariably occurring in incidental amounts. A poacher we believe to be the spinycheek starsnout, Asterotheca (Bathyagonus) infraspinata, was often taken; sturgeon poachers, Podothecus (Agonus) acipenserinus, were common;

and we occasionally took the blackfin poacher, Bathyagonus nigripinnis, and the fourhorn poacher, Hypsagonus quadricornis.

#### Ronquils (Bathymasteridae)

We frequently took searchers, Bathymaster signatus, in our trawls throughout southeastern Alaska, always in incidental numbers and amounts. Also occasionally taken were northern ronquils, Ronquilus jordani, in very small numbers and amounts.

#### Snailfish (Liparidae)

Snailfish were uncommon in our catches, but occasionally we took a few individuals, most often in Auke Bay (Table 30). The rose snailfish Careproctus rastrinus was taken most often; we also took the marbled snailfish Liparis dennyi.

#### Lumpsuckers (Cyclopteridae)

We occasionally took the small Pacific spiny lumpsucker, Eumicrotremus orbis, in our trawl catches; nowhere was it common.

#### Wolffishes (Anarrhichadidae)

The wolf-eel, Anarrhichthys ocellatus, was very rare in our catches, but one very large individual made up the bulk of a catch off Yakobi Rock, northwestern Chichagof Island in July 1969 (Table 7).

#### Dogfish sharks (Squalidae)

We collected adult spiny dogfish sharks, Squalus acanthias, in a trawl haul off Nose Head, Lisianski Inlet, Chichagof Island, in July 1969 (Table 4) and off the entrance to Dixon Harbor (Table 71), near Cape Spencer, in July 1977, and at southern Lisianski Inlet (Table 2) in May 1978.

#### Prowfishes (Zaproridae)

We collected an adult prowfish, Zaprora silenus, in one trawl haul in southern Lisianski Inlet in May 1970 (Table 2).

### MISCELLANEOUS INVERTEBRATES (NONCOMMERCIAL)

In our bottom trawl hauls through southeastern Alaska, we collected a number of invertebrates of no commercial value which were merely present in varying, usually small, numbers and amounts incidental to the remainder of the catches.

#### Crustaceans

Hermit crabs were frequently taken. The most common species was Pagurus aleuticus; we also took Pagurus (Elassochirus) tenuimanus, P. gilli, P. cavimanus, P. hirsutiusculus, P. capillatus, and Labidochirus splendescens.

The lyre crab, Hyas lyratus, and decorator crab, Oregonia gracilis, were commonly taken, as were dock (brown) shrimp, Crangon sp. Occasionally we took the small lithode crab Rhinolithodes sp. and the anemone shrimp Lebbeus grandimanus.

#### Sponges (Porifera)

Siliceous sponges were frequent in our catches and sometimes amounted to substantial bulk, particularly off Lincoln Island (Table 52), Lynn Canal, in September 1975.

#### Echinoderms

We commonly took brittle stars (Ophiuroidea); basket stars, Gorgonocephalus caryi; the sun stars (Pycnopodia helianthoides, Solaster stimpsoni, and S. dawsoni; the rose star, Crossaster papposus; sea cucumbers, Parastichopus californicus; red, purple, and green sea urchins, Strongylocentrotus franciscanus, S. purpuratus, S. drobachiensis; and the urchin S. pallidus.

#### Coelenterates

We commonly took sea anemones, Metridium senile, attached to rocks, and the scyphozoans Aurelia aurita and Cyanea capillata; occasionally we took sea whips, Stylatula elongata, and sea pens, Ptilosarcus (Leioptilus) gurneyi.

#### Molluscs

We occasionally took small nudibranchs of the genus Dendronotus in our trawls in and near Auke Bay, Stephens Passage, and the large sea lemon nudibranch Tochuina tetraquadra in southern Lisianski Inlet (Table 2).

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Appendix Table A.--List of common and scientific names of fishes referred to in the text.

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Sharks (Squalidae)	
Spiny dogfish shark	<u>Squalus acanthias</u>
Skates (Rajidae)	
Big skate	<u>Raja binoculata</u>
Black skate	<u>Raja kincaidi</u>
Longnose skate	<u>Raja rhina</u>
Starry skate	<u>Raja stellulata</u>
Chimaeras (Chimaeridae)	
Ratfish	<u>Hydrolagus coliei</u>
Herrings (Clupidae)	
Pacific herring	<u>Clupea harengus pallasii</u>
Smelts (Osmeridae)	
Eulachon	<u>Thaleichthys pacificus</u>
Capelin	<u>Mallotus villosus</u>
Lanternfishes (Myctophidae)	
Northern lampfish	<u>Stenobrachius leucopsarus</u>
Viperfishes (Chauliodontidae)	
Viperfish	<u>Chauliodus macouni</u>
Codfishes (Gadidae)	
Pacific cod	<u>Gadus macrocephalus</u>
Pacific hake	<u>Merluccius productus</u>
Pacific tomcod	<u>Microgadus proximus</u>
Walleye pollock	<u>Theragra chalcogramma</u>
Sandfish (Trichodontidae)	
Pacific sandfish	<u>Trichodon trichodon</u>
Eelpouts (Zoarcidae)	
Alaska eelpout	<u>Bothrocara pusillum</u>
Black eelpout	<u>Lycodes diapterus</u>
Shortfin eelpout	<u>Lycodes brevipes</u>
Wattled eelpout	<u>Lycodes palearis</u>
Blackbelly eelpout	<u>Lycodopsis pacifica</u>

Appendix Table A.--Continued.

## Rockfishes (Scorpaenidae)

Rougheye rockfish	<u>Sebastes aleutianus</u>
Pacific ocean perch	<u>Sebastes alutus</u>
Redbanded rockfish	<u>Sebastes babcocki</u>
Silvergray rockfish	<u>Sebastes brevispinis</u>
Dusky rockfish	<u>Sebastes ciliatus</u>
Greenstriped rockfish	<u>Sebastes elongatus</u>
Widow rockfish	<u>Sebastes entomelas</u>
Yellowtail rockfish	<u>Sebastes flavidus</u>
Quillback rockfish	<u>Sebastes maliger</u>
Black rockfish	<u>Sebastes melanops</u>
Bocaccio	<u>Sebastes paucispinis</u>
Canary rockfish	<u>Sebastes pinniger</u>
Redstripe rockfish	<u>Sebastes proriger</u>
Yelloweye rockfish	<u>Sebastes ruberrimus</u>
Harlequin rockfish	<u>Sebastes variegatus</u>
Shortspine thornyhead "idiotfish"	<u>Sebastolobus alascanus</u>

## Greenlings (Hexagrammidae)

Kelp greenling	<u>Hexagrammos decagrammus</u>
Whitespotted greenling	<u>Hexagrammos stelleri</u>
Lingcod	<u>Ophiodon elongatus</u>

## Sablefishes (Anoplopomatidae)

Sablefish	<u>Anoplopoma fimbria</u>
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## Sculpins (Cottidae)

Crested sculpin	<u>Blepsias bilobus</u>
Silverspotted sculpin	<u>Blepsias cirrhosus</u>
Spinyhead sculpin	<u>Dasycottus setiger</u>
Buffalo sculpin	<u>Enophrys bison</u>
Soft sculpin	<u>Gilbertidia sigalutes</u>
Armorhead sculpin	<u>Gymnocanthus galeatus</u>
Red Irish lord	<u>Hemilepidotus hemilepidotus</u>
Brown Irish lord	<u>Hemilepidotus spinosus</u>
Yellow Irish lord	<u>Hemilepidotus jordani</u>
Thorny sculpin	<u>Icelinus borealis</u>
Pacific staghorn sculpin	<u>Leptocottus armatus</u>
Blackfin sculpin	<u>Malacocottus kincaidi</u>
Great sculpin	<u>Myoxocephalus polyacanthocephalus</u>
Sculpin	<u>Myoxocephalus stelleri</u>
Sailfin sculpin	<u>Nautichthys oculofasciatus</u>
Tadpole sculpin	<u>Psychrolutes paradoxus</u>
Grunt sculpin	<u>Rhamphocottus richardsoni</u>
Scissortail sculpin	<u>Triglops forficata</u>
Roughspine sculpin	<u>Triglops macellus</u>
Ribbed sculpin	<u>Triglops pingeli</u>
Bigmouth sculpin	<u>Ulca (Hemitripterus) bolini</u>

Appendix Table A.--Continued.

## Poachers (Agonidae)

Spearnose poacher	<u>Agonopsis emmelane</u> ( <u>vulsa</u> )
Gray starsnout	<u>Asterotheca alascana</u>
Spinycheek starsnout	<u>Asterotheca</u> ( <u>Bathyagonus</u> ) <u>infraspinata</u>
Blackfin poacher	<u>Bathyagonus nigripinnis</u>
Fourhorned poacher	<u>Hypsagonus quadricornis</u>
Sturgeon poacher	<u>Podothecus</u> ( <u>Agonus</u> ) <u>acipenserinus</u>

## Snailfishes (Liparidae)

Blacktail snailfish	<u>Careproctus melanurus</u>
Rose snailfish	<u>Careproctus rastrinus</u>
Marbled snailfish	<u>Liparis dennyi</u>
Prickly snailfish	<u>Paraliparis deani</u>

## Lumpsuckers (Cyclopteridae)

Pacific spiny lumpsucker	<u>Eumicrotremus orbis</u>
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## Ronquils (Bathymasteridae)

Searcher	<u>Bathymaster signatus</u>
Northern ronquil	<u>Ronquilus jordani</u>

## Wolffishes (Anarrhichadidae)

Wolf-eel	<u>Anarrhichthys ocellatus</u>
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## Pricklebacks (Stichaeidae)

Giant wrymouth	<u>Delolepis gigantea</u>
Langbarn prickleback	<u>Leptoclinus</u> ( <u>Lumpenus</u> ) <u>maculatus</u>
Longsnout prickleback	<u>Lumpenella longirostris</u>
Snake prickleback	<u>Lumpenus sagitta</u>

## Gunnels (Pholidae)

Crescent gunnel	<u>Pholis laeta</u>
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## Prowfishes (Zaproridae)

Prowfish	<u>Zaprora silenus</u>
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## Righteyed flounders (Pleuronectidae)

Arrowtooth flounder	<u>Atheresthes stomias</u>
Rex sole	<u>Glyptocephalus zachirus</u>
Flathead sole	<u>Hippoglossoides elassodon</u>
Pacific halibut	<u>Hippoglossus stenolepis</u>
Butter sole	<u>Isopsetta isolepis</u>
Rock sole	<u>Lepidopsetta bilineata</u>
Yellowfin sole	<u>Limanda aspera</u>
Slender sole	<u>Lyopsetta exilis</u>
Dover sole	<u>Microstomus pacificus</u>
English sole	<u>Parophrys vetulus</u>
Starry flounder	<u>Platichthys stellatus</u>
Alaska plaice	<u>Pleuronectes quadrituberculatus</u>

Appendix Table B.--List of common and scientific names of invertebrates referred to in the text.

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Sponges (Porifera)

sponge	<u>Halichondria</u> sp.
sponge	<u>Leuconia</u> sp.
sponge	<u>Leucosolenia</u> sp.

Jellyfishes anemones, and sea pens (Coelenterata)

Jellyfish	<u>Aurelia</u> <u>aurita</u>
Jellyfish	<u>Cyanea</u> <u>capillata</u>
Sea anemone	<u>Metridium</u> <u>senile</u>
Sea pen	<u>Ptilosarcus</u> ( <u>Leioptilus</u> ) <u>gurneyi</u>
Sea whip	<u>Stylatula</u> <u>elongata</u>

Marine worms (Annelida)

Sea mouse	<u>Aphrodita</u> sp.
Polychaete	<u>Nereis</u> sp.
Tubeworm	<u>Sabella</u> <u>crassicornis</u>

Crabs and shrimps (Crustacea)

Crabs:

Dungeness crab	<u>Cancer</u> <u>magister</u>
Tanner (snow) crab	<u>Chionocetes</u> <u>bairdi</u>
Lyre crab	<u>Hyas</u> <u>lyratus</u>
Golden king crab	<u>Lithodes</u> <u>aequispina</u>
Box crab	<u>Lopholithodes</u> <u>foraminatus</u>
Box crab	<u>Lopholithodes</u> <u>mandtii</u>
Decorator crab	<u>Oregonia</u> <u>gracilis</u>
Hermit crab	<u>Pagurus</u> <u>aleuticus</u>
Hermit crab	<u>Pagurus</u> <u>capillatus</u>
Hermit crab	<u>Pagurus</u> ( <u>Elassochirus</u> ) <u>cavimanus</u>
Hermit crab	<u>Pagurus</u> <u>dalli</u>
Hermit crab	<u>Pagurus</u> ( <u>Elassochirus</u> ) <u>gilli</u>
Hermit crab	<u>Pagurus</u> <u>hirsutiusculus</u>
Hermit crab	<u>Pagurus</u> <u>ochotensis</u>
Hermit crab	<u>Pagurus</u> ( <u>Labidochirus</u> ) <u>splendescens</u>
Hermit crab	<u>Pagurus</u> ( <u>Elassochirus</u> ) <u>tenuimanus</u>
Hermit crab	<u>Pagurus</u> <u>trigonocheirus</u>
Red king crab	<u>Paralithodes</u> <u>camtschatica</u>
Lithode crab	<u>Rhinolithodes</u> sp.

Shrimp:

Dock (brown) shrimp	<u>Crangon</u> sp.
Anemone shrimp	<u>Eualus</u> sp.
Hippolytid shrimp	<u>Hipponotus</u> sp.
Anemone shrimp	<u>Lebbeus</u> <u>grandimanus</u>
Crangonid shrimp	<u>Nectocrangon</u> sp.
Sidestripe shrimp	<u>Pandalopsis</u> <u>dispar</u>
Pink shrimp	<u>Pandalus</u> <u>borealis</u>
Coonstripe shrimp	<u>Pandalus</u> <u>danae</u>
Shrimp	<u>Pandalus</u> <u>montagui</u>
Spot shrimp	<u>Pandalus</u> <u>platyceros</u>

Appendix Table B.--Continued.

## Barnacles:

Barnacle	<u>Balanus evermani</u>
Giant barnacle	<u>Balanus nubilis</u>

## Gastropods, bivalves, cephalopods, and nudibranchs (Mollusca)

## Gastropods:

Snail	<u>Beringius kennicotti</u>
Lyre whelk	<u>Buccinum plectrum</u>
Snail	<u>Colus halli</u>
Hairy triton	<u>Fusitriton oregonensis</u>
Moon snail	<u>Natica</u> sp.
Ridged whelk	<u>Neptunea lyrata</u>
Pribilof whelk	<u>Neptunea pribilofensis</u>
Whelk	<u>Neptunea smirnia</u>
Veiled chiton	<u>Placiphorella velata</u>
Snail	<u>Thais lamellosa</u>

## Bivalves:

Clam	<u>Astarte</u> sp.
Hinds' scallop	<u>Chlamys rubida</u>
Basket cockle	<u>Clinocardium nuttali</u>
Softshell clam	<u>Mya arenaria</u>
Blue mussel	<u>Mytilus edulis</u>
Weathervane scallop	<u>Patinopecten caurinus</u>
Greenland cockle	<u>Serripes groenlandicus</u>
Clam	<u>Solemya</u> sp.

## Cephalopods:

Pelagic squid	<u>Berryteuthis magister</u>
Giant Pacific octopus	<u>Octopus dofleini</u>
Octopus	<u>Octopus leioderma</u>
Stubby squid	<u>Rossia pacifica</u>

## Nudibranchs:

Nudibranch	<u>Coryphella fusca</u>
Nudibranch	<u>Dendronotus</u> sp.
Nudibranch (Sea Lemon)	<u>Tochuina tetraquadra</u>
Nudibranch	<u>Tritonia exulsans</u>

## Lamp shells (Brachiopoda)

Brachiopod	<u>Laqueus vancouverensis</u>
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## Appendix Table B.--Continued.

## Sea stars, sea cucumbers, and sea urchins (Echinodermata)

Sea star	<u>Ceramaster</u> sp.
Rose star	<u>Crossaster</u> <u>papposus</u>
Sea star	<u>Ctenodiscus</u> <u>crispatus</u>
Sea star	<u>Gepheriaster</u> sp.
Basket star	<u>Gorgonocephalus</u> <u>caryi</u>
Sea star	<u>Hippasterias</u> <u>spinosa</u>
Sea star	<u>Leptasterias</u> <u>coei</u>
Sea star	<u>Leptychaster</u> <u>anomalis</u>
Vermillion star	<u>Mediaster</u> <u>aquealis</u>
Brittle stars	<u>Ophiuroidea</u>
Brittle star	<u>Ophiura</u> <u>sarsi</u>
Sea star	<u>Orthasterias</u> <u>kohleri</u>
Sea cucumber	<u>Parastichopus</u> <u>californicus</u>
Sea star	<u>Pseudarchaster</u> <u>parellii</u>
Cushion star	<u>Pteraster</u> <u>tesselatus</u>
Many-armed sun star	<u>Pycnopodia</u> <u>helianthoides</u>
Sun star	<u>Solaster</u> <u>dawsoni</u>
Sun star	<u>Solaster</u> <u>stimpsoni</u>
Green sea urchin	<u>Strongylocentrotus</u> <u>drobachiensis</u>
Sea urchin	<u>Strongylocentrotus</u> <u>echinoides</u>
Red sea urchin	<u>Strongylocentrotus</u> <u>franciscanus</u>
Sea urchin	<u>Strongylocentrotus</u> <u>pallidus</u>
Purple sea urchin	<u>Strongylocentrotus</u> <u>purpuratus</u>

## Salps (Tunicata)

Salp	<u>Salpa</u> <u>fusiformis</u>
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## Brown algae (Phaeophyta)

Brown algae	<u>Agarum</u> sp.
Brown algae	<u>Alaria</u> sp.
Brown algae	<u>Cymothere</u> sp.
Brown algae	<u>Desmarestia</u> sp.
Brown algae	<u>Laminaria</u> sp.
Sea cucumber	<u>Parastichopus</u> <u>californicus</u>

Table 1.--Northern Lisianski Inlet, Chichagof Island. Composition of marine life taken by bottom trawl in 1969-72, 1977-78, and 1980. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1969	73-128	2	22	94.5	42.9	31.5	14.3	4.7	2.1	7.9	3.6	27.7	12.6	22.7	10.3
Sept 1969	123	1	5	40.0	18.1	20.0	9.1	--	--	T	T	--	--	20.0	9.1
Apr 1971	73-128	4	47	10.6	4.8	4.9	2.1	0.3	0.1	3.8	1.7	0.6	0.3	1.3	0.6
Sept 1971	55-113	3	26	23.0	10.4	1.9	0.9	1.2	0.5	3.1	1.4	4.2	1.9	12.7	5.8
Apr 1972	46-128	4	40	72.8	33.0	12.5	5.7	T	T	9.0	4.1	3.0	1.4	48.0	21.8
July 1977	55-128	1	10	52.0	23.6	26.0	11.8	0.5	0.2	T	T	7.3	3.3	18.2	8.3
May 1978	55-128	1	10	30.0	13.6	15.0	6.8	--	--	3.0	1.4	9.0	4.1	3.0	1.4
Oct 1980	55-128	4	85	21.1	9.6	3.5	1.6	0.7	0.3	1.9	0.9	1.4	0.6	13.6	6.2



Table 2.--Southern Lisianski Inlet, Chichagof Island. Composition of marine life taken by bottom trawl in 1969-72, 1977-78, and 1980.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1969	55- 64	2	80	137.5	62.4	50.6	23.0	1.9	0.9	23.1	10.5	28.1	12.8	35.0	15.9
Sept 1969	64	1	25	160.0	72.6	56.0	25.4	9.6	4.4	1.6	0.7	4.8	2.2	88.0	39.9
May 1970	55-110	7	235	47.6	21.5	27.8	12.6	1.2	0.5	12.0	5.4	1.4	0.6	5.2	2.4
Sept 1971	55-113	6	119	55.0	25.0	41.1	18.6	6.9	3.1	4.0	1.8	2.6	1.2	0.4	0.2
Apr 1972	36-115	9	132	35.1	15.9	3.8	1.7	5.0	2.3	8.8	4.0	0.3	0.1	17.2	7.8
July 1977	62- 73	2	35	65.5	30.0	30.7	13.9	1.5	0.7	15.0	6.8	2.5	1.1	15.7	7.1
May 1978	55-110	2	30	20.0	9.1	10.0	4.5	1.0	0.5	5.0	2.3	2.0	0.9	2.0	0.9
Oct 1980	55-128	2	50	34.0	15.4	10.2	4.6	--	--	10.2	4.6	3.4	1.5	10.2	4.6

Table 3.--Lisianski Inlet (head end), Chichagof Island. Composition of marine life taken by bottom trawl in 1969-70.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1969	37	1	30	100.0	45.4	50.0	22.7	T	T	5.0	2.3	1.0	0.5	44.0	20.0
Sept 1969	55	1	29	170.0	77.1	68.0	30.8	11.9	5.4	1.7	0.8	3.4	1.5	85.0	38.6
May 1970	10-18	1	10	60.0	27.2	54.0	24.5	3.0	1.4	--	--	T	T	3.0	1.4

Table 4.--Lisianski Inlet (center, off Nose Head), Chichagof Island. Composition of marine life taken by bottom trawl in July 1969.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1969	37-165	3	81	60.4	27.4	24.3	11.0	0.7	0.3	12.1	5.5	10.9	4.9	12.4	5.6

Table 5.--Port Althorp, western Chichagof Island. Composition of marine life taken by bottom trawl in 1969-72, 1978, and 1980.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1969	36-128	2	60	72.6	33.0	39.9	18.1	0.7	0.3	0.7	0.3	8.6	3.9	22.8	10.3
May 1970	128	1	30	99.0	44.9	24.8	11.3	2.0	0.9	1.0	0.5	61.4	27.9	9.9	4.5
Sept 1971	110-155	1	30	33.0	15.0	23.1	10.5	T	T	3.3	1.5	T	T	6.6	3.0
Apr 1972	90-146	1	40	62.5	28.4	12.5	5.7	12.5	5.7	3.1	1.4	T	T	34.3	15.6
May 1978	146	1	60	25.0	11.3	7.5	3.4	2.5	1.1	T	T	1.3	0.6	13.8	6.3
Nov 1980	128-146	1	60	20.0	9.1	8.0	3.6	8.0	3.6	2.0	0.9	T	T	2.0	0.9

Table 6.--Icy Strait, off southeastern Pleasant Island. Composition of marine life taken by bottom trawl in September 1969.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1969	90	1	45	44.0	20.0	15.4	7.0	--	--	T	T	15.4	7.0	13.2	6.0

Table 7.--Off Yakobi Rock, western Chichagof Island. Composition of marine life taken by bottom trawl in July 1969.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1969	128	1	6	250.5	113.5	17.5	7.9	--	--	5.0	2.3	177.9	80.7	50.0	22.7

Table 8.--Lisianski Strait (Stag Bay), western Chichagof Island. Composition of marine life taken by bottom trawl in 1969.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1969	110	1	18	84.0	38.1	16.8	7.6	5.0	2.3	0.8	0.4	2.5	1.1	58.8	26.7
Sept 1969	92-117	1	30	16.5	7.5	3.3	1.5	0.8	0.4	--	--	0.8	0.4	11.6	5.3

Table 9.--Portlock Harbor, northwestern Chichagof Island. Composition of marine life taken by bottom trawl in 1969 and 1977.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1969	55-70	3	65	15.5	7.0	3.2	1.5	3.7	1.7	0.1	0.1	T	T	8.6	3.9
July 1977	62-73	1	20	50.0	22.7	21.5	9.8	18.5	8.4	T	T	2.5	1.1	7.5	3.4

Table 10.--Ogden Passage, western Chichagof Island. Composition of marine life taken by bottom trawl in September 1969.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1969	55-73	1	15	67.0	30.4	28.7	13.0	2.7	1.7	1.3	0.6	4.0	1.8	30.0	13.6

Table 11.--Khaz Bay (Slocum Arm), southwestern Chichagof Island. Composition of marine life taken by bottom trawl in 1969 and 1977.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1969	73- 77	1	34	87.0	39.5	8.7	4.0	1.7	0.8	1.7	0.8	0.9	0.4	74.0	33.6
July 1977	73-214	3	60	70.3	31.9	39.3	17.8	7.8	3.5	3.1	1.4	3.0	1.4	17.1	7.8

Table 12.--Fish Bay, Baranof Island. Composition of marine life taken by bottom trawl in April 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Apr 1971	55-81	2	90	9.9	4.5	5.5	2.5	T	T	1.3	0.6	0.1	0.1	3.0	1.4

Table 13.--Silver Bay (entrance), Baranof Island. Composition of marine life taken by bottom trawl in May 1971.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	55-110	1	10	80.0	36.3	8.0	3.6	--	--	64.0	29.0	--	--	8.0	3.6

Table 14.--Silver Bay (center), Baranof Island. Composition of marine life taken by bottom trawl in May 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	64-91	2	47	21.5	9.8	19.4	8.8	0.7	0.3	0.7	0.3	T	T	0.7	0.3

Table 15.--Deep Inlet, Baranof Island. Composition of marine life taken by bottom trawl in May 1971.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	82-91	1	31	9.6	4.4	6.7	3.0	T	T	1.0	0.5	--	--	1.9	0.9

Table 16.--Redoubt Bay, Baranof Island. Composition of marine life taken by bottom trawl in May 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	48-70	1	35	17.4	7.9	1.7	0.8	12.2	5.5	--	--	T	T	3.5	1.6

Table 17.--Windy Passage (upper arm), Baranof Island. Composition of marine life taken by bottom trawl in May 1971.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	59-66	1	15	33.5	15.2	10.1	4.6	10.1	4.6	3.5	1.6	6.7	3.0	3.5	1.6



Table 18.--West Crawfish Inlet (center, above Cedar Pass), Baranof Island. Composition of marine life taken by bottom trawl in May 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	146-197	1	37	40.5	18.4	12.2	5.5	12.2	5.5	4.1	1.9	T	T	12.2	5.5

Table 19.--West Crawfish Inlet (Shamrock Bay), Baranof Island. Composition of marine life taken by bottom trawl in May 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	64-73	2	15	43.2	19.6	33.6	15.2	T	T	T	T	T	T	9.6	4.4

Table 20.--Crawfish Inlet (Cedar Cove), Baranof Island. Composition of marine life taken by bottom trawl in May 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	55-110	2	36	28.0	12.7	9.5	4.3	8.4	3.8	T	T	10.1	4.6	T	T

Table 21.--Crawfish Inlet (head), Baranof Island. Composition of marine life taken by bottom trawl in May 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	55-59	1	29	136.0	61.7	108.8	49.4	27.2	12.3	T	T	T	T	T	T

Table 22.--Central Crawfish Inlet, Baranof Island. Composition of marine life taken by bottom trawl in May 1971.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	64-128	2	66	75.0	34.0	37.5	17.0	30.0	13.6	2.6	1.2	2.4	1.1	2.6	1.2

Table 23.--Crawfish Inlet (entrance), Baranof Island. Composition of marine life taken by bottom trawl in May 1971.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	64-110	2	16	41.3	18.7	22.5	10.2	3.8	1.7	7.5	3.4	3.8	1.7	3.8	1.7

Table 24.--Necker Bay (head), Baranof Island. Composition of marine life taken by bottom trawl in May 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	73-146	1	17	23.6	10.7	7.1	3.2	7.1	3.2	7.1	3.2	T	T	2.4	1.1

Table 25.--Necker Bay (center), Baranof Island. Composition of marine life taken by bottom trawl in May 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	165-201	1	33	90.0	40.8	36.0	16.3	36.0	16.3	9.0	4.1	4.5	2.0	4.5	2.0

Table 26.--Whale Bay (Small Arm), Baranof Island. Composition of marine life taken by bottom trawl in May 1971.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	79-192	2	15	20.0	9.1	13.2	6.0	0.4	0.2	3.2	1.4	1.6	0.7	1.6	0.7

Table 27.--Whale Bay (head of Great Arm), Baranof Island. Composition of marine life taken by bottom trawl in May 1971.

P = present.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	77-132	2	67	21.0	9.5	6.0	2.7	12.9	5.9	0.8	0.4	1.4	0.6	P	P

Table 28.--Whale Bay (center of Great Arm), Baranof Island. Composition of marine life taken by bottom trawl in May 1971.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1971	101-216	1	55	16.2	7.4	3.2	1.5	3.2	1.5	4.9	2.2	1.6	0.7	3.2	1.5

Table 29.--Port Conclusion, southern Baranof Island. Composition of marine life taken by bottom trawl in 1970-72 and 1979.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Aug 1970	70-97	2	25	88.0	39.9	26.4	12.0	T	T	28.0	12.7	9.6	4.4	24.0	10.9
Mar 1971	46-77	3	25	64.0	29.0	4.0	1.8	T	T	18.0	8.2	15.2	6.9	26.8	12.2
Sept 1971	64-88	4	63	7.4	3.4	0.5	0.2	0.8	0.4	3.6	1.6	0.2	0.1	2.4	1.1
Apr 1972	64-91	3	50	14.0	6.4	1.9	0.9	--	--	1.4	0.6	3.3	1.5	7.4	3.4
Oct 1979	55-88	2	30	36.6	16.6	T	T	T	T	2.0	0.9	0.3	0.1	34.3	15.5

Table 30.--Big Port Walter, southern Baranof Island. Composition of marine life taken by bottom trawl in 1971-72 and 1979.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Mar 1971	73-101	2	25	42.0	19.1	T	T	1.0	0.5	9.0	4.1	4.0	1.8	28.0	12.7
Sept 1971	64- 73	2	17	23.5	10.7	11.8	5.4	T	T	4.7	2.1	3.5	1.6	3.5	1.6
Apr 1972	73- 91	6	115	11.7	5.3	T	T	1.5	0.7	5.4	2.5	4.2	1.9	0.7	0.3
Oct 1979	64- 91	1	10	15.0	6.8	1.5	0.7	T	T	9.0	4.1	3.0	1.4	1.5	0.7

Table 31.--Port Lucy, southern Baranof Island. Composition of marine life taken by bottom trawl in March 1971.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Mar 1971	37-55	2	10	22.0	10.0	--	--	--	--	16.0	7.3	5.0	2.3	1.0	0.5

Table 32.--Port Malmsbury (entrance), Kuiu Island. Composition of marine life taken by bottom trawl in March 1971.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Mar 1971	73-81	1	28	36.0	16.3	28.8	13.1	T	T	--	--	T	T	7.2	3.3

Table 33.--Port Malmsbury (lower arm), Kuiu Island. Composition of marine life taken by bottom trawl in March 1971.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Mar 1971	46-55	1	10	15.0	6.8	7.5	3.4	T	T	7.5	3.4	T	T	T	T

Table 34.--Port Malmsbury (center), Kuiu Island. Composition of marine life taken by bottom trawl in March 1971. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Mar 1971	59-73	1	24	12.5	5.7	12.0	5.4	T	T	--	--	T	T	0.6	0.3

Table 35.--Eliza Harbor (near entrance), southern Admiralty Island. Composition of marine life taken by bottom trawl in July 1976.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1976	101-146	1	20	125.0	56.7	37.5	17.0	62.5	28.4	--	--	12.5	5.7	12.5	5.7

Table 36.--Eliza Harbor (head), southern Admiralty Island. Composition of marine life taken by bottom trawl in July 1976.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1976	73-95	1	15	40.2	18.2	4.0	1.8	16.1	7.3	--	--	4.0	1.8	16.1	7.3

Table 37.--Gambier Bay (southwestern end), Admiralty Island. Composition of marine life taken by bottom trawl in July 1976.

T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1976	51-79	1	20	25.0	11.3	15.0	6.8	2.5	1.1	--	--	T	T	7.5	3.4

Table 38.--Western side of Tiedeman Island in Seymour Canal, Admiralty Island. Composition of marine life taken by bottom trawl in July 1976.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1976	64-92	2	45	107.8	48.9	2.5	1.1	21.6	9.8	--	--	34.7	15.7	49.1	22.3



Table 39.--Auke Bay, upper Stephens Passage. Composition of marine life taken by bottom trawl in 1973-81. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Apr 1973	73- 91	1	10	50.0	22.7	25.0	11.3	15.0	6.8	T	T	2.5	1.1	7.5	3.4
Mar 1974	42- 91	2	65	89.9	40.8	73.2	33.2	3.9	1.8	T	T	4.5	2.0	8.4	3.8
Dec 1974	42- 99	2	34	46.6	21.1	4.7	2.1	6.3	2.9	35.4	16.1	T	T	T	T
Jan 1975	46- 73	2	35	62.7	28.4	22.2	10.1	20.5	9.3	18.8	8.5	0.6	0.3	0.6	0.3
Mar 1975	40- 55	1	20	15.0	6.8	9.0	4.1	T	T	6.0	2.7	T	T	T	T
Sept 1975	20- 33	2	12	175.4	79.6	22.5	10.2	10.0	4.5	--	--	3.3	1.5	139.5	63.3
Nov 1975	36- 73	2	44	129.4	58.7	32.6	14.8	69.2	31.4	T	T	20.3	9.2	7.3	3.3
Mar 1976	40- 59	1	30	0.7	0.3	0.5	0.2	T	T	--	--	--	--	0.1	0.1
Nov 1976	50- 55	2	35	39.9	18.1	29.6	13.5	6.3	2.9	0.7	0.3	1.4	0.6	1.9	0.9
Mar 1977	36- 64	1	25	32.0	14.5	9.6	4.4	9.6	4.4	--	--	3.2	1.4	9.6	4.4
Apr 1977	55- 64	1	40	50.0	22.7	30.0	13.6	10.0	4.5	T	T	5.0	2.3	5.0	2.3
Apr 1978	37- 55	1	20	150.0	68.0	105.0	47.6	7.5	3.4	--	--	7.5	3.4	30.0	13.6
May 1978	37- 64	1	30	133.0	60.5	106.4	48.3	13.3	6.0	--	--	T	T	13.3	6.0
June 1978	37- 62	2	55	18.2	8.2	2.9	1.3	3.6	1.7	T	T	2.5	1.2	9.1	4.1
Oct 1978	9-101	7	100	49.3	22.4	34.6	16.7	4.1	1.9	T	T	7.7	3.5	2.9	1.3
Dec 1978	37- 55	1	20	20.0	9.1	10.0	4.5	2.0	0.9	--	--	2.0	0.9	6.0	2.7
Mar 1979	37-51	1	15	46.7	21.2	32.7	14.8	--	--	T	T	9.3	4.2	4.7	2.1
Apr 1979	33-59	2	31	38.7	17.6	27.7	12.6	6.5	2.9	T	T	16.1	7.3	T	T
Oct 1979	37- 64	1	30	20.0	9.1	12.0	5.4	4.0	1.8	--	--	T	T	4.0	1.8
Jan 1980	37- 91	4	90	34.4	15.6	16.2	7.3	13.3	6.0	--	--	1.9	0.9	2.9	1.4
Apr 1980	37- 55	2	29	20.7	9.4	11.0	5.0	5.5	2.5	--	--	2.1	0.9	2.1	0.9
June 1980	37- 64	2	80	25.0	11.3	11.3	5.1	7.5	3.4	--	--	2.5	1.1	3.8	1.7
Sept 1980	46- 95	3	93	22.6	10.3	3.4	1.5	14.5	6.6	--	--	2.9	1.3	2.0	0.9
Jan 1981	44- 66	1	25	100.0	45.4	90.0	40.8	T	T	T	T	10.0	4.5	T	T

Table 40.--Fritz Cove, Stephens Passage. Composition of marine life taken by bottom trawl in 1974-81. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Feb 1974	55-110	1	25	1,600.0	725.8	1,440.0	653.2	80.0	36.3	40.0	18.1	20.0	9.1	20.0	9.1
Mar 1974	73-110	1	25	140.0	63.5	98.0	44.5	28.0	12.7	14.0	6.4	T	T	T	T
Dec 1974	73-106	1	14	319.5	144.9	287.6	130.5	T	T	--	--	32.0	14.5	T	T
Jan 1975	55-110	3	55	165.0	74.8	78.8	35.7	67.8	30.8	T	T	11.0	5.0	7.3	3.3
Mar 1975	46- 99	2	50	290.0	131.5	123.2	55.9	116.0	52.6	14.5	6.6	18.0	8.2	18.3	8.3
Apr 1975	55-110	1	30	49.5	22.5	12.4	5.6	12.4	5.6	--	--	12.4	5.6	12.4	5.6
Nov 1975	73-110	1	25	880.0	399.2	836.0	379.2	6.0	2.7	--	--	32.0	14.5	6.0	2.7
Mar 1976	59-108	1	30	30.0	15.0	18.2	8.3	14.9	6.8	--	--	T	T	T	T
Oct 1976	66-119	2	55	61.2	27.8	31.3	14.2	23.8	10.8	--	--	3.1	1.4	3.1	1.4
Mar 1977	73-110	1	25	120.0	54.4	72.0	32.7	24.0	10.9	--	--	12.0	5.4	12.0	5.4
May 1977	73-101	2	50	76.0	34.5	12.3	5.6	4.7	2.1	--	--	31.0	14.1	28.0	12.7
Apr 1978	18-106	1	40	100.0	45.4	75.0	34.1	T	T	1.0	0.5	9.0	4.0	15.0	6.8
June 1978	18-102	4	70	83.0	8.7	19.2	8.7	17.2	7.8	T	T	11.1	5.0	35.5	16.1
Oct 1978	6-112	8	111	65.8	29.8	24.2	11.0	10.0	4.5	T	T	5.0	2.3	26.5	12.0
Dec 1978	37-113	3	46	115.2	52.3	34.6	15.7	37.1	16.9	10.2	4.6	11.5	5.2	21.7	9.9
Mar 1979	55-110	2	20	175.0	79.4	36.6	16.6	89.1	40.4	12.7	5.8	18.3	8.3	18.3	8.3
Apr 1979	73-156	2	35	140.0	63.5	8.4	3.8	2.3	1.0	T	T	6.6	3.0	122.8	55.7
May 1979	40-110	2	46	9.6	4.4	1.0	0.5	3.5	1.6	--	--	0.7	0.3	4.4	2.0
Oct 1979	18-101	2	40	52.5	23.8	35.0	15.9	7.0	3.2	--	--	T	T	10.5	4.8
Jan 1980	73-110	2	50	60.0	27.2	43.8	19.9	12.9	5.8	T	T	T	T	3.3	1.5
Apr 1980	18-119	2	42	71.4	32.4	28.6	13.0	8.9	4.0	--	--	7.1	3.2	26.8	12.2
May 1980	20-106	2	66	50.0	22.7	30.9	14.0	13.9	6.3	--	--	2.5	1.1	2.7	1.2
June 1980	18-102	1	35	114.3	51.8	51.4	23.3	40.0	18.1	--	--	5.7	2.6	17.1	7.8
Sept 1980	48- 97	1	26	115.4	52.3	23.1	10.5	80.8	36.6	T	T	8.1	3.7	3.5	1.6
Oct 1980	55-106	1	22	272.7	123.7	245.4	111.3	T	T	--	--	27.3	12.4	T	T
Nov 1980	55-101	1	20	300.0	136.1	219.0	99.3	54.0	24.5	--	--	27.0	12.2	T	T
Jan 1981	51-108	2	37	486.5	220.7	317.8	144.1	103.8	47.1	T	T	40.5	18.4	24.3	11.0
Feb 1981	51-102	3	40	875.0	396.9	695.0	315.3	110.3	50.3	T	T	49.1	22.3	20.6	9.3
May 1981	73-101	1	20	150.0	68.0	15.0	6.8	97.5	44.2	T	T	7.5	3.4	30.0	13.6
June 1981	68-102	1	13	76.9	34.9	26.9	12.2	19.2	8.7	--	--	27.7	8.1	13.1	5.9

Table 41.--Near the entrance to Auke Bay (western side of Portland Island). Composition of marine life taken by bottom trawl in 1974, 1978, and 1980. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Dec 1974	101-128	3	57	26.5	12.0	T	T	9.5	4.3	--	--	8.5	3.9	8.5	3.9
Oct 1978	91-110	1	14	42.9	19.4	17.1	7.7	17.1	7.7	--	--	4.3	1.9	4.3	1.9
May 1980	40- 91	2	63	44.4	20.1	13.8	6.3	13.3	6.1	--	--	4.3	2.0	12.9	5.8

Table 42.--Near the entrance to Auke Bay (Coghlan Island-Portland Island). Composition of marine life taken by bottom trawl in 1974, 1976-78, and 1980. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Dec 1974	79-104	1	20	15.0	6.8	3.0	1.4	7.5	3.4	--	--	1.5	0.7	3.0	1.4
Mar 1976	73- 95	1	60	17.0	7.7	11.9	5.4	5.1	2.3	T	T	T	T	T	T
May 1977	82- 99	1	27	185.2	84.0	9.3	4.2	167.0	76.0	--	--	3.7	1.6	5.6	2.5
Oct 1978	82- 93	1	16	16.0	7.3	3.2	1.5	1.6	0.7	T	T	4.8	2.2	6.4	2.9
Jan 1980	82-110	1	30	16.7	7.6	5.8	2.6	5.8	2.5	T	T	4.1	1.9	0.8	0.4

Table 43.--Near the entrance to Auke Bay, (Portland Island-Spuhn Island). Composition of marine life taken by bottom trawl in April 1973.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Apr 1973	73-82	2	30	30.2	13.7	5.9	2.7	5.9	2.7	--	--	11.4	5.2	7.0	3.2

Table 44.--Western Douglas Island (Inner Point to Outer Point), Stephens Passage. Composition of marine life taken by bottom trawl in 1974, 1976, and 1979-81. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Dec 1974	101-128	1	18	11.2	5.1	4.5	2.0	T	T	--	--	4.5	2.0	2.2	1.0
Mar 1976	42- 64	3	84	11.4	5.2	3.3	1.5	1.1	0.5	--	--	1.3	0.6	5.8	2.6
Oct 1976	51- 64	1	20	20.0	9.1	10.0	4.5	T	T	--	--	T	T	10.0	4.5
May 1979	60- 86	3	82	11.7	5.3	3.7	1.7	6.7	3.0	--	--	1.4	0.6	T	T
Apr 1980	73-129	1	49	40.8	18.5	8.2	3.7	16.3	7.4	--	--	14.0	6.4	2.0	0.9
May 1980	46-124	2	71	28.2	12.8	24.0	10.9	2.5	1.2	--	--	1.4	0.6	0.4	0.2
June 1980	35- 44	1	30	33.0	15.0	26.6	12.1	3.3	1.5	--	--	0.6	0.3	0.6	0.3
Nov 1980	48- 82	1	20	100.0	45.4	86.0	39.0	5.0	2.3	--	--	4.0	1.8	5.0	2.3
Jan 1981	64-119	1	18	44.4	20.1	20.0	9.1	20.0	9.1	--	--	4.4	2.0	T	T
Feb 1981	49-123	3	92	434.8	197.2	154.1	69.9	221.2	100.3	--	--	52.8	24.0	7.1	3.2
May 1981	73-101	1	20	100.0	45.4	5.0	2.3	60.0	27.2	--	--	10.0	4.6	25.0	11.3
June 1981	55-119	3	103	71.0	32.2	22.9	10.3	28.9	13.1	T	T	8.8	4.0	10.8	4.9

Table 45.--Gastineau Channel (off Thane Light). Composition of marine life taken by bottom trawl in January 1977.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Jan 1977	36-44	1	20	7.5	3.4	3.0	1.4	3.0	1.4	--	--	0.8	0.4	0.8	0.4

Table 46.--Young Bay (Scull Island) upper Stephens Passage. Composition of marine life taken by bottom trawl in 1976-77 and 1979-80. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Oct 1976	64-71	1	20	20.0	9.1	12.0	5.4	8.0	3.6	T	T	T	T	T	T
May 1977	55	1	20	300.0	136.1	97.5	44.2	180.0	81.6	--	--	T	T	22.5	10.2
May 1979	73-82	1	65	46.2	21.0	6.9	3.1	37.0	16.8	T	T	2.3	1.0	T	T
June 1980	60	1	30	10.0	4.5	6.5	3.0	2.3	1.0	--	--	0.6	0.3	0.6	0.3
Oct 1980	52-68	1	22	68.2	31.0	13.6	6.2	--	--	--	--	20.5	9.3	34.1	15.5

Table 47.--Near Horse Shoal, upper Stephens Passage. Composition of marine life taken by bottom trawl in 1974-76 and 1980-81. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Dec 1974	60-88	2	48	31.5	14.3	4.6	2.1	19.1	8.7	--	--	T	T	7.8	3.5
Sept 1975	59-82	3	90	106.2	48.6	9.5	4.3	92.3	41.9	1.2	0.5	3.1	1.4	T	T
Oct 1976	73-82	2	65	131.8	59.8	35.7	16.2	82.9	37.6	4.7	2.1	3.9	1.8	4.7	2.1
Sept 1980	57-86	2	48	145.8	66.2	47.5	21.5	25.0	11.3	--	--	18.0	8.1	55.4	25.1
Nov 1980	59-81	1	30	40.0	18.1	9.6	4.4	14.0	6.4	--	--	13.6	6.2	2.8	1.3
Jan 1981	57-88	2	63	71.4	32.4	51.4	23.3	13.6	6.2	--	--	6.4	3.0	T	T
Feb 1981	62-86	1	30	33.3	15.1	29.3	13.3	1.7	0.8	--	--	2.0	0.9	0.3	0.1

Table 48.--Saginaw Channel (1 mi south of Symonds Point), Stephens Passage. Composition of marine life taken by bottom trawl in September 1975.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1975	26-68	1	18	28.0	12.7	2.8	1.3	22.4	10.2	--	--	1.4	0.6	1.4	0.6

Table 49.--Favorite Channel (off southeastern Shelter Island), Stephens Passage. Composition of marine life taken by bottom trawl in 1975 and 1977. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1975	36- 60	1	13	7.7	3.5	5.8	2.6	1.9	0.9	--	--	--	--	T	T
Apr 1977	100-119	1	30	40.0	18.1	4.0	1.8	28.0	12.7	--	--	8.0	3.6	T	T

Table 50.--Favorite Channel (near Cohen Island), Stephens Passage. Composition of marine life taken by bottom trawl in 1976-77. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Mar 1976	110	1	18	168.0	76.2	1.7	0.8	0.8	0.4	164.6	74.7	0.8	0.4	0.8	0.4
Apr 1976	91-119	3	44	81.6	37.0	18.2	8.3	23.5	10.7	20.9	9.5	3.6	1.6	15.4	7.0
Mar 1977	73-119	2	45	35.2	16.0	10.6	4.8	12.8	5.8	7.0	3.2	1.3	0.6	3.5	1.6
Apr 1977	73-119	1	30	100.0	45.4	T	T	30.0	13.6	--	--	20.0	9.1	50.0	22.7



Table 51.--Favorite Channel (Eagle River flat to Pearl Harbor), Stephens Passage. Composition of marine life taken by bottom trawl in 1975, 1977-78, and 1980. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Apr 1975	36-128	3	37	24.3	11.0	3.4	1.5	2.0	0.9	--	--	2.0	0.9	16.9	7.7
Mar 1977	18- 55	2	30	23.5	10.7	16.4	7.4	--	--	--	--	2.4	1.1	4.7	2.1
Apr 1978	18- 60	1	10	60.0	27.2	48.0	21.8	T	T	--	--	T	T	12.0	5.4
Jan 1980	110-137	2	50	40.0	18.1	4.6	2.1	4.6	2.1	T	T	1.1	5.0	29.7	13.3

Table 52.--Eastern Lincoln Island, upper Stephens Passage. Composition of marine life taken by bottom trawl in September 1975. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1975	133	1	6	125.3	56.8	T	T	6.3	2.9	--	--	2.5	1.1	116.5	52.8

Table 53.--St. James Bay, Lynn Canal. Composition of marine life taken by bottom trawl in 1975 and 1978.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Mar 1975	82-110	1	20	25.0	11.3	22.3	10.1	1.0	0.5	--	--	0.8	0.4	1.0	0.5
Oct 1978	13- 85	2	42	23.8	10.8	8.3	3.8	7.1	3.2	--	--	5.9	2.7	2.4	1.1

Table 54.--Berners Bay, Lynn Canal. Composition of marine life taken by bottom trawl in March 1975.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Mar 1975	73-91	1	17	147.5	66.9	75.2	34.1	66.4	30.1	--	--	3.0	1.4	3.0	1.4

Table 55.--Off western Sullivan Island, upper Lynn Canal. Composition of marine life taken by bottom trawl in November 1975.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Nov 1975	101-119	2	60	83.5	37.9	4.1	1.9	74.3	33.7	--	--	1.3	0.6	2.8	1.3

Table 56.--Lutak Inlet, upper Lynn Canal. Composition of marine life taken by bottom trawl in November 1975. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Nov 1975	73- 77	1	30	66.0	29.9	27.1	12.3	38.3	17.4	--	--	0.7	0.3	T	T

Table 57.--Off False Point Arden, Stephens Passage. Composition of marine life taken by bottom trawl in 1979-81. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Apr 1979	73-155	3	75	24.0	10.9	2.4	1.1	18.4	8.4	--	--	0.1	T	3.1	1.4
Apr 1980	64-119	1	31	56.6	25.6	50.8	23.0	T	T	--	--	2.8	1.3	2.8	1.3
Sept 1980	73-104	1	20	50.0	22.7	28.5	13.0	T	T	--	--	9.0	4.1	12.5	5.7
Oct 1980	71-126	2	48	43.8	19.9	6.3	2.8	32.0	14.5	T	T	2.2	1.0	3.4	1.6
Nov 1980	73-117	2	45	106.7	48.4	7.8	3.5	68.6	31.1	T	T	9.0	4.1	21.7	9.8
Jan 1981	68-123	3	83	76.2	34.6	2.0	0.9	63.2	28.7	0.3	0.2	2.1	0.9	8.6	3.9
Feb 1981	73-136	5	125	32.8	14.9	20.5	9.3	7.8	3.5	T	T	5.4	2.4	0.9	0.4
Apr 1981	70-165	8	177	107.3	48.7	18.9	8.6	85.6	38.8	4.5	2.1	3.5	1.6	3.0	1.4
May 1981	64-145	7	170	62.9	28.5	5.9	2.7	52.0	23.6	0.1	T	2.5	1.1	2.3	1.0

Table 58.--Entrance to Taku Inlet, Stephens Passage. Composition of marine life taken by bottom trawl in May 1981.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
May 1981	104-140	1	29	44.8	20.3	1.8	0.8	4.0	1.8	--	--	14.3	6.5	24.6	11.2

Table 59.--Freshwater Bay, eastern Chichagof Island. Composition of marine life taken by bottom trawl in September 1977.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1977	55-101	1	20	9.5	4.3	4.6	2.1	0.3	0.1	--	--	2.9	1.3	1.6	0.7

Table 60.--Off Kadishan Bay, Tenakee Inlet. Composition of marine life taken by bottom trawl in October 1978. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Oct 1978	37-75	1	30	2.0	0.9	1.7	0.8	--	--	--	--	0.1	T	0.2	0.1

Table 61.--Crab Bay, Tenakee Inlet. Composition of marine life taken by bottom trawl in 1977-78.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1977	33-62	1	55	24.4	11.1	16.8	7.6	3.9	1.8	--	--	2.2	1.0	0.9	0.4
Oct 1978	33-55	1	28	14.3	6.5	10.0	4.5	1.4	0.7	--	--	1.4	0.6	1.4	0.6

Table 62.--Seal Bay, Tenakee Inlet. Composition of marine life taken by bottom trawl in 1977-78.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1977	44-104	1	35	10.8	4.9	7.0	3.2	0.5	0.2	--	--	2.2	1.0	1.1	0.5
Oct 1978	29-57	1	22	36.4	16.5	25.5	11.6	7.3	3.3	--	--	3.6	1.7	--	--

Table 63.--Tenakee Inlet between entrances to Long Bay and Seal Bay. Composition of marine life taken by bottom trawl in October 1978.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Oct 1978	105-134	1	25	24.0	10.9	2.4	1.1	15.6	7.1	--	--	3.6	1.6	3.6	1.6

Table 64.--Long Bay, Tenakee Inlet. Composition of marine life taken by bottom trawl in 1977-78. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1977	22-37	1	5	1.7	0.8	1.0	0.5	T	T	--	--	0.3	0.2	0.3	0.2
Oct 1978	37-53	1	30	6.7	3.0	2.7	1.2	0.3	0.2	--	--	0.3	0.2	0.3	0.2

Table 65.--Tenakee Inlet (head end). Composition of marine life taken by bottom trawl in 1977-78.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sept 1977	55-101	2	35	28.6	13.0	9.1	4.1	6.0	2.7	--	--	3.3	1.5	10.2	4.6
Oct 1978	51- 70	1	24	83.3	37.8	25.0	11.3	25.0	11.3	--	--	8.3	3.8	25.0	11.3

Table 66.--Seaward from Portlock Harbor entrance, western Chichagof Island. Composition of marine life taken by bottom trawl in July 1981.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1981	70-101	1	18	4.4	2.0	2.7	1.3	--	--	1.3	0.6	--	--	0.4	0.2

Table 67.--Seaward from Cape Cross, Yakobi Island. Composition of marine life taken by bottom trawl in July 1981.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1981	70-91	2	30	5.3	2.4	2.7	0.8	--	--	0.2	0.1	0.2	0.1	3.2	1.5

Table 68.--Graves Harbor, north of Cape Spencer. Composition of marine life taken by bottom trawl in July 1977. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1977	91-137	1	20	15.0	6.8	13.5	6.1	--	--	--	--	--	--	1.5	0.7

Table 69.--Seaward from Torch Bay entrance, north of Cape Spencer. Composition of marine life taken by bottom trawl in July 1977. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
				lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1977	117-166	2	18	3.9	1.8	T	T	--	--	T	T	2.7	1.3	1.2	0.5

Table 70.--Torch Bay, north of Cape Spencer. Composition of marine life taken by bottom trawl in July 1977.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1977	46-84	2	30	66.6	30.2	16.1	7.3	9.5	4.3	1.6	0.7	13.1	5.9	26.1	11.8

Table 71.--Seaward from Dixon Harbor entrance, north of Cape Spencer. Composition of marine life taken by bottom trawl in July 1977. T = trace.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1977	194-207	1	20	68.5	31.1	30.1	13.7	--	--	T	T	13.7	6.2	24.6	11.2

Table 72.--Dixon Harbor, north of Cape Spencer. Composition of marine life taken by bottom trawl in July 1977.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Rockfish		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1977	46-106	2	25	8.8	4.0	3.0	1.4	1.6	0.7	--	--	1.3	0.6	2.9	1.3



Table 73.--Idaho Inlet, Icy Strait. Composition of marine life taken by bottom trawl in July 1977.

Date	Depth range (m)	Total hauls	Total bottom (min)	Mean catch in 10 min		Mean weight of organisms in 10-minute drag (lb/kg)									
						Flatfish		Gadids		Herring		Other Fish		Invertebrates	
						lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
July 1977	31-60	2	35	45.8	20.8	16.3	7.4	4.6	2.1	0.4	0.2	5.2	2.4	19.9	9.0

Table 74.--Seaward from Crawfish Inlet entrance, western Baranof Island. Composition of marine life taken by bottom trawl in July 1981.

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