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## NOAA Technical Memorandum NMFS F/NWC-54

### Food Habits Literature of North Pacific Marine Fishes: A Review and Selected Bibliography

by  
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and  
Bernard J. Goiney, Jr.

December 1983

**U.S. DEPARTMENT OF COMMERCE**  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service

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*7/2001*

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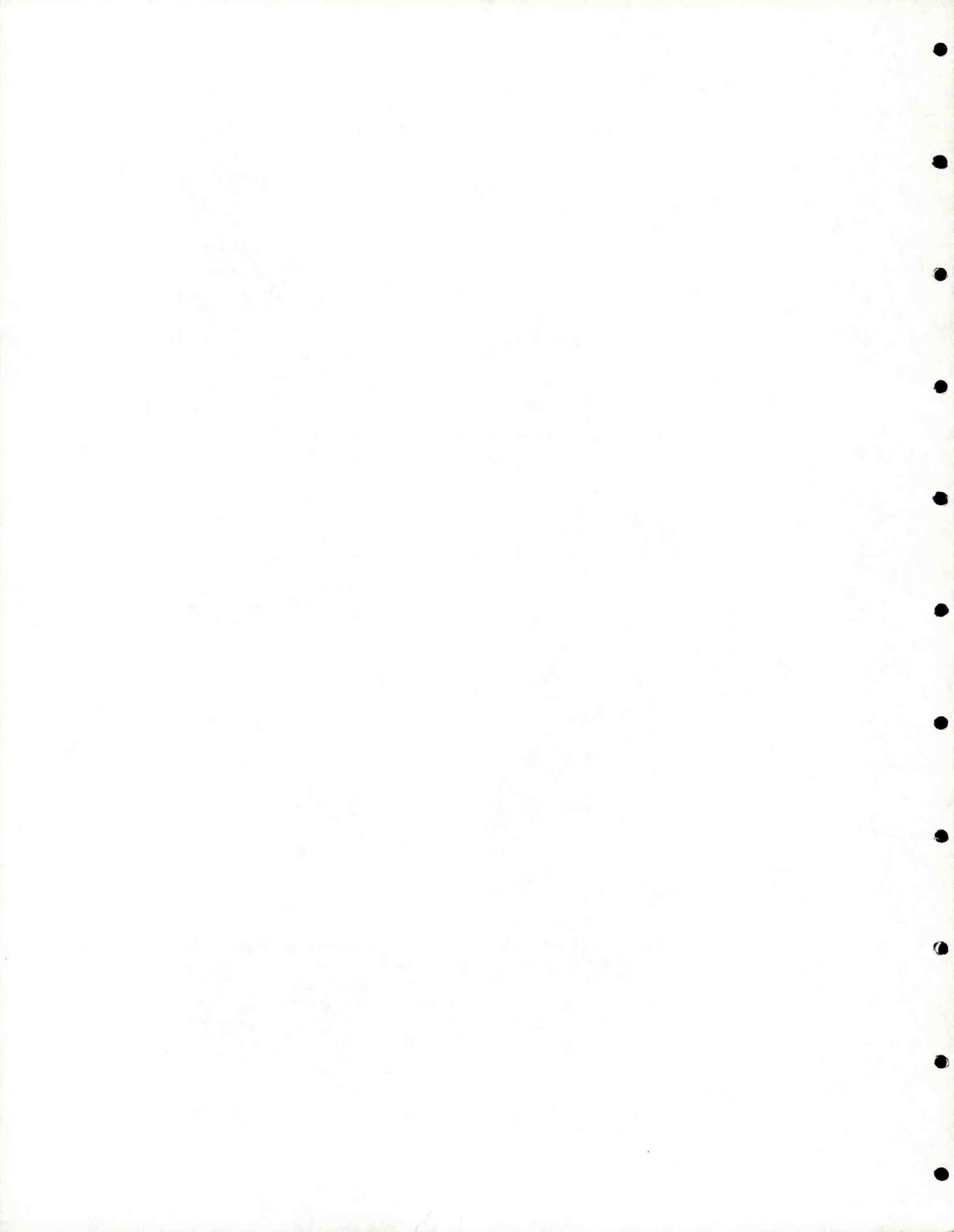
FOOD HABITS LITERATURE  
" OF  
NORTH PACIFIC MARINE FISHES:  
A REVIEW AND SELECTED BIBLIOGRAPHY  
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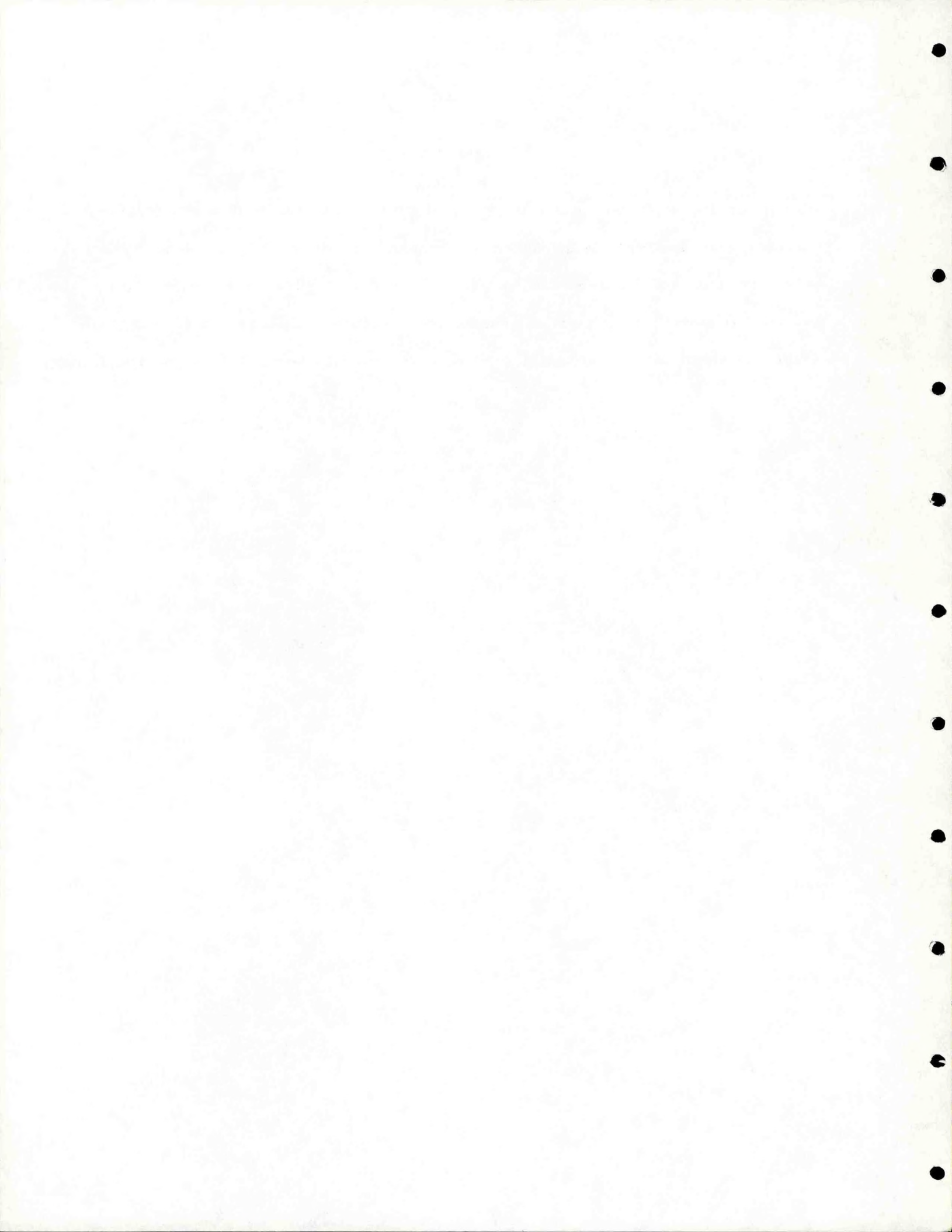
December 1983

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ABSTRACT

A bibliography and review on the food habits literature of North Pacific marine fishes was performed. The bibliography will serve as a baseline for detailing gaps and requirements in food habits data needed in ecosystem models and in formulating responses to management questions. This report also contains a summary table of the diets and feeding modes of many North Pacific marine fishes.



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## INTRODUCTION

Trophodynamic models of marine systems require data concerning the food habits of the model's predators. Since the collection and analysis of food habits data can be time-consuming and expensive, it would be most efficient for the modeller to use existing food habits literature to parameterize models. The exact type and amount of data required for a model, however, will vary with the model's scope and structure. Unfortunately, most fish food habits studies are neither designed nor conducted with the objective of providing parameters for a specific model. Therefore, these data are often of limited use to the modeler.

Stomach sampling programs should be developed to produce a specific end product other than just the creation of data. For example, an end product might be estimates of annual predation mortality that could be used directly by management, or estimates of size-specific vulnerability to predation, and even provide general life history information on a little-studied species. Although a particular sampling program may be able to produce several types of information, the desired outputs should be identified before the program is initiated as the quality and type of the outputs may depend on specific sampling requirements or the level of data analysis.

This literature review of North Pacific fish food habits has several purposes. The first purpose is to summarize the literature on food habits and use the information to provide the ecosystem models of the Northwest and Alaska Fisheries Center (NAFAC) with the best available data on trophic interactions. The review will also serve as a baseline for identifying data gaps in food habits information so that the stomach sampling program of the NAFAC can not only fill in data gaps but also be designed to provide the type of data



appropriate for responding to management questions. Finally, this report can provide information to others interested in the food habits literature of North Pacific fishes.

Any marine fish or large invertebrate species in the North Pacific which has been studied for food habits was eligible for inclusion in this bibliography if references were available. Salmon are included in the bibliography, but the selection of references is admittedly a subset of the large amount of available references for this group. Unpublished references are included because they may be the only available source of information on the food habits of some species. Major groundfish species and commercially important species were of greatest interest in this endeavor, but surprisingly few references were available for many of these fishes.

The species index to the references is arranged alphabetically by family. Species are also arranged alphabetically within families by scientific name. The common name follows the scientific name in parentheses. Although the number of references for some species may look formidable, it should be kept in mind that many references may contain only a listing of food items or may have analyzed a very small number of stomachs.

Following the species index is a summary table (Table 1) of the food habits of selected North Pacific marine fishes. If a species is included in the table, it will have a number in parentheses after its name in the species index to references. The number indicates the row in Table 1 where that species is located. For some fish only a subset of references were used in the table if there were many available references and only a few contained much quantitative information. In some cases, we converted the original data in an article to correspond to the percentage measurements of diet parameters used in the table. Some mistakes may have been made in these conversions and the data contained

in the table should be used only for general information purposes. Anyone desiring to use the data for other than general information should consult the original article.

Although we have attempted to gather every available reference, many valuable references may have been overlooked, particularly in the literature of other countries. This bibliography will be updated when new or overlooked references are brought to our attention. We would appreciate hearing of any references not contained in this bibliography and, if possible, receiving a copy of the article.

## ACKNOWLEDGMENTS

The authors wish to express their sincere appreciation to those who so diligently typed the very time consuming bibliography and lengthy table in this report and who assisted in editing and printing the final version. We would also like to thank those people of the Resource Ecology and Fisheries Management Division and of the Office of the Center Director who looked into the future and realized the need for the development of food habit studies which address management questions. Mostly, we would like to thank Dr. Taivo Laevastu, who kept reminding us of the value of this report and who supported us through all the stages of its development. It was his encouragement that brought this project to completion.

## GENERAL REFERENCES

- California fishes  
 Allen 1982  
 Johnston 1954  
 Canadian Pacific fishes  
 Hart 1973  
 Sharks and rays  
 Roedel and Ripley 1950  
 USSR fishes  
 Andriyashev 1937, 1954

## AGONIDAE

- Agonopsis emmelane (northern spearnose poacher) [33]  
 Barraclough 1967c  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
 Robinson 1969  
Agonus acipenserinus (sturgeon poacher)  
 Blackburn et al. 1981  
Anoplagonis inermis (smooth alligatorfish)  
 Feder and Jewett 1978  
Odontopyxis trispinosa (pygmy poacher)  
 Barraclough and Fulton 1968  
 Robinson et al. 1968  
Pallasina barbata (tubenose poacher)  
 Blackburn et al. 1981  
Sarritor frenatus (sawback poacher) [32]  
 Mito 1974  
Xeneretmus triacanthus (bluespotted poacher)  
 Barraclough and Fulton 1967

## ALEPISAUURIDAE

- Alepisaurus ferox (longnose lancetfish)  
 Fitch 1951

## AMMODYTIDAE

- Ammodytes hexapterus (Pacific sand lance) [9]  
 Barraclough 1967a-c  
 Barraclough and Fulton 1967, 1968  
 Barraclough et al. 1968  
 Blackburn et al. 1981  
 Robinson 1969  
 Robinson et al. 1968a,b  
 Rogers et al. 1979

## ANARRHICHADIDAE

- Anarrhichthys ocellatus (wolf-eel)  
 Barraclough 1967b  
 Rosenthal 1980

## ANOPLOMATIDAE

- Anoplopoma fimbria (sablefish) [6]  
 Conway 1967  
 Feder 1979b, 1980, 1981  
 Grinols and Gill 1968

Kulikov 1965  
 Mito 1974  
 Rogers et al. 1979  
 Shubnikov 1963  
 Thompson 1981

## ANOPTERIDAE

Anotopterus pharao (daggertooth)  
 Taylor 1959

## BATHYLAGIDAE

Leuroglossus schmidti (smoothtongue)  
 Barraclough 1967b,c  
 Barraclough and Fulton 1967  
 Cailliet 1972  
 Robinson et al. 1968b

## BATHYMASTERIDAE

Bathymaster caeruleofasciatus (Alaskan ronquill)  
 Blackburn et al. 1981  
 Rosenthal 1979, 1980  
Bathymaster signatus (searcher) [30]  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
 Feder 1978a  
Ronquillus jordani (Northern ronquill)  
 Barraclough 1967c  
 Barraclough and Fulton 1968  
 Robinson 1969  
 Robinson et al. 1968b

## BOTHIDAE

Citharichthys sordidus (Pacific sanddab)  
 Hulberg and Oliver 1979  
 Kravitz et al. 1976  
 Percy and Hancock 1978  
Citharichthys stigmaeus (speckled sanddab)  
 Hogue and Carey 1982

## BRAMIDAE

Brama japonica (pomfret)  
 Pinckard 1957

## BYTHITIDAE

Brosmophycis marginata (red brotula)  
 Barraclough and Fulton 1967

## CARANGIDAE

Trachurus symmetricus (jack mackerel)  
 Arthur 1976  
 Fitch 1951  
 Grinols and Gill 1968

## CARCHARHINIDAE

Prionace glauca (blue shark)  
 LeBrasseur 1964

## CHIMAERIDAE

Hydrolagus colliei (spotted ratfish)

Quinn et al. 1980

Sathyanesan 1966

## CLINIDAE

Gibbonsia sp. (kelpfish)

Robinson et al. 1968a

## CLUPEIDAE

Clupea harengus pallasii (Pacific herring) [7]

Barracough 1967a-c

Barracough and Fulton 1967

Barracough et al. 1968

Barton 1979

Blackburn et al. 1981

Carlson 1980

Dudnik and Usol'tsev 1964

Parker 1971

Percy 1975

Robinson 1969

Robinson et al. 1968a

Rumyantsev and Darda 1970

Tester 1935

Thompson 1981

Wailles 1936

Sardinops sagax (Pacific sardine)

Arthur 1976

Hand and Berner 1959

Radovich 1952

## COTTIDAE

Artedius lateralis (smoothhead sculpin)

Yoshiyama 1980

Clinocottus analis (wooly sculpin)

Mollick 1970

Yoshiyama 1980

Dasycottus setiger (spinyhead sculpin)

Feder 1979b

Mito 1974

Enophrys bison (buffalo sculpin) [12]

Johnson 1968

Robinson et al. 1968b

Enophrys diceraus (antlered sculpin)

Blackburn et al. 1981

Rosenthal 1979, 1980

Gilbertidia sigalutes (soft sculpin) [11]

Barracough 1967a-c

Barracough and Fulton 1968

Barracough et al. 1968

Robinson et al. 1968a

Gymnocanthus sp.

Simenstad 1979

Hemilepidotus hemilepidotus (red Irish lord)

Barracough 1967a,b

- Blackburn et al. 1981  
 Demartini and Patten 1979  
 Robinson 1969  
 Rogers et al. 1979  
 Rosenthal 1980
- Hemilepidotus jordani (yellow Irish lord) [40]  
 Feder 1979b, 1981  
 Hunter 1979  
 Jewett and Powell 1979  
 Mito 1974  
 Rogers et al. 1979  
 Simenstad 1979
- Hemilepidotus papilio (butterfly sculpin)  
 Feder 1977a, 1978b
- Hemilepidotus spinosus (brown Irish lord)  
 Barraclough 1967a
- Hemitripterus bolini (bigmouth sculpin)  
 Mito 1974
- Icelinus quadriseriatus (yellowchin sculpin)  
 Moore and Mearns 1980
- Icelus spiniger (thorny sculpin)  
 Mito 1974
- Leptocottus armatus (Pacific staghorn sculpin)  
 Blackburn et al. 1981  
 Robinson 1969  
 Tasto 1975
- Malacocottus zonurus  
 Mito 1974
- Myoxocephalus sp.  
 Feder 1977a, 1978b, 1979b, 1981  
 Jewett and Powell 1979  
 Rogers et al. 1979  
 Simenstad 1979
- Myoxocephalus jaok (plain sculpin)  
 Hunter 1979
- Myoxocephalus polyacanthocephalus (great sculpin)  
 Blackburn et al. 1981  
 Feder 1978a  
 Hunter 1979  
 Mito 1974  
 Rosenthal 1979, 1980  
 Simenstad 1979
- Myoxocephalus quadricornis (fourhorn sculpin)  
 Bendock 1977  
 Craig and Haldorson 1981
- Nautichthys oculofasciatus (sailfin sculpin)  
 Barraclough et al. 1968  
 Robinson et al. 1968a
- Oligocottus maculosus (tidepool sculpin) [13]  
 Nakamura 1971
- Oligocottus snyderi (fluffy sculpin) [14]  
 Nakamura 1971  
 Yoshiyama 1980
- Psychrolutes paradoxus (tadpole sculpin)

- Barraclough 1967a,b  
 Barraclough et al. 1968  
 Robinson et al. 1968a  
Rhamphocottus richardsoni (grunt sculpin)  
 Barraclough 1967a-c  
 Barraclough et al. 1968  
 Hobson and Chess 1976  
 Robinson et al. 1968a  
Scorpaenichthys marmoratus (cabezon)  
 Barraclough 1967b  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
 Robinson 1969  
 Robinson et al. 1968b

## CRYPTACANTHODIDAE

- Lyconectes aleutensis (dwarf wrymouth)  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
 Robinson et al. 1968a

## CYCLOPTERIDAE [31]

- Careproctus sp.  
 Feder 1978b  
Careproctus phasma  
 Mito 1974  
Liparis cyclostigma  
 Mito 1974  
Liparis pulchellus (showy snailfish)  
 Johnson 1969  
 Robinson et al. 1968a  
Liparis rutteri (ringtail snailfish)  
 Barraclough et al. 1968  
Nectoliparis pelagicus (tadpole snailfish)  
 Barraclough et al. 1968

## EMBIOTOCIDAE

- Brachyistius frenatus (kelp perch)  
 Hobson and Chess 1976  
Cymatogaster aggregata (shiner perch)  
 Barraclough and Fulton 1968  
Hyperprosopon argenteum (walleye surfperch)  
 Hobson and Chess 1976

## ENGRAULIDAE

- Engraulis mordax (northern anchovy)  
 Arthur 1976  
 Barraclough et al. 1968  
 Robinson 1969

## GADIDAE

- Boreogadus saida (Arctic cod) [1]  
 Bendock 1977  
 Craig and Haldorson 1981



- Craig et al. 1982  
 Frost and Lowry 1981  
 Lowry and Frost 1981  
Eleginus gracilis (saffron cod) [36]  
 Blackburn et al. 1981  
 Craig and Haldorson 1981  
 Frost and Lowry 1981  
 Percy 1975  
Gadus macrocephalus (Pacific cod) [4]  
 Barraclough et al. 1968  
 Clausen 1980  
 Feder 1977a, 1978a-b, 1979b, 1980, 1981  
 Forrester 1969  
 Hart 1949  
 Hunter 1979  
 Jewett 1978  
 Krivobok and Tarkovskaya 1964  
 Mito 1974  
 Rogers et al. 1979  
 Simenstad 1979  
 Suyehiro 1942  
 Westrheim 1977  
Lota lota leptura (burbot)  
 Percy 1975  
Merluccius productus (Pacific whiting)  
 Alton and Nelson 1970  
 Bailey and Francis 1981  
 Barraclough 1967a,c  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
 Best 1962  
 Cass et al. 1980  
 Cutshall et al. 1977,1978  
 Fiscus 1979  
 Gotshall 1969  
 Livingston 1983  
 Livingston and Alton 1982  
 Outram and Haegele 1972  
 Robinson 1969  
 Robinson et al. 1968a,b  
 Sumida and Moser 1980  
 Thompson 1981  
Microgadus proximus (Pacific tomcod) [2]  
 Feder 1977a, 1978a  
 Hart 1949  
 Rosenthal 1979, 1980  
Theragra chalcogramma (walleye pollock) [3]  
 Armstrong and Winslow 1968  
 Bailey and Dunn 1979  
 Barraclough 1967 a,b  
 Blackburn et al. 1981  
 Cass et al. 1980  
 Feder 1977a, 1978a, 1979b, 1980, 1981  
 Frost and Lowry 1981

Hart 1949  
 Iizuka et al. 1954  
 Krivobok and Tarkovskaya 1964  
 Maeda et al. 1980  
 Mito 1974  
 Rogers et al. 1979  
 Simenstad 1979  
 Smith et al. 1978  
 Somerton et al. 1978  
 Suyehiro 1942  
 Takahashi and Yamaguchi 1972  
 Taylor and Kieser 1980  
 Thompson 1981  
 Wespestad 1978

## GASTEROSTEIDAE

Gasterosteus aculeatus (threespine stickleback)

Barraclough 1967a-c  
 Barraclough and Fulton 1967  
 Barraclough et al. 1968  
 Blackburn et al. 1981  
 Robinson 1969  
 Robinson et al. 1968 a, b

## GOBIIDAE

Clevelandia ios (arrow goby)

Barraclough and Fulton 1967, 1968  
 Robinson, et al. 1968b

Coryphopterus nicholsi (blackeye goby)

Barraclough 1967c  
 Barraclough and Fulton 1967, 1968  
 Robinson 1969  
 Robinson et al. 1968b

## GONOSTOMATIDAE

Cyclothone sp. (bristlemouth)

Gorelova 1980

## HAEMULIDAE

Xenistius californiensis (salema)

Hobson and Chess 1976

## HEXAGRAMMIDAE

Hexagrammos decagrammus (kelp greenling) [41]

Barraclough 1967a-c  
 Blackburn et al. 1981  
 Howard 1983  
 Robinson et al. 1968 a,b  
 Rogers et al. 1979  
 Rosenthal 1979, 1980

Hexagrammos lagocephalus (rock greenling) [42]

Barraclough et al. 1968  
 Blackburn et al. 1981  
 Rogers et al. 1979  
 Rosenthal 1979, 1980

- Simenstad 1971  
Hexagrammos octogrammus (masked greenling) [44]  
 Blackburn et al. 1981  
 Rogers et al. 1979  
 Rosenthal 1980  
Hexagrammos stelleri (whitespotted greenling) [43]  
 Barraclough et al. 1968  
 Blackburn et al. 1981  
 Robinson et al. 1968a  
 Rogers et al. 1979  
 Rosenthal 1979, 1980  
Ophiodon elongatus (lingcod) [5]  
 Barraclough 1967a-c  
 Barraclough et al. 1968  
 Forrester 1969  
 Phillips and Barraclough 1977  
 Robinson et al. 1968a,b  
 Rosenthal 1980  
Oxylebius pictus (painted greenling)  
 Barraclough et al. 1968  
 Robinson 1969  
Pleurogrammus monoptyerygius (Atka mackerel) [45]  
 Feder 1979b, 1981  
 Mito 1974  
 Zolotov and Medveditsyna 1978

#### LABRIDAE

- Oxyjulis californica (senorita)  
 Hobson and Chess 1976

#### LAMNIDAE

- Lamna nasus (porbeagle)  
 Bright 1960

#### LAMPRIDAE

- Lampris guttatus (opah)  
 Fitch 1951

#### MACROURIDAE

- Ambler 1974  
 Geistdoerfer 1978  
 McLellan 1977  
Coryphaenoides pectoralis (giant grenadier)  
 Novikov 1970

#### MELAMPHAIDAE

- Melamphaes lugubris (highsnout bigscale)  
 Collard 1970

#### MOLIDAE

- Mola mola (ocean sunfish)  
 Fraser 1951

#### MYCTOPHIDAE

- Frost and McCrone 1979  
 Gorelova 1975, 1978  
 Paxton 1967  
Diaphus theta (California headlightfish)  
 Collard 1970  
 Tyler and Percy 1975  
Lampanyctus regalis (pinpoint lampfish)  
 Collard 1970  
Lampanyctus ritteri (broadfin lampfish)  
 Collard 1970  
Stenobranchius leucopsarus (northern lampfish)  
 Barraclough 1967a  
 Cailliet 1972  
 Collard 1970  
 Percy et al. 1979  
 Tyler and Percy 1975  
Symbolophorus californiensis (California lanternfish)  
 Collard 1970  
Tarletonbeania crenularis (blue lanternfish)  
 Collard 1970  
 Robinson et al. 1968a  
 Tyler and Percy 1975  
Triphoturus mexicanus (Mexican lampfish)  
 Holton 1969  
 Imsand 1981

## OSMERIDAE

- Hypomesus pretiosus (surf smelt) [34]  
 Barraclough 1967a,c  
 Barraclough and Fulton 1967  
 Barraclough et al. 1968  
 Blackburn et al. 1981  
 Robinson 1969  
 Robinson et al. 1968a,b  
Mallotus villosus (capelin) [10]  
 Blackburn et al. 1981  
 Robinson et al. 1968a  
 Rogers et al. 1979  
 Smith et al. 1978  
Osmerus esperlanus (boreal smelt)  
 Craig and Haldorson 1981  
 Percy 1975  
Spirinchus thaleichthys (longfin smelt) [35]  
 Barraclough 1967b  
 Blackburn et al. 1981  
 Hart and McHugh 1944  
Thaleichthys pacificus (eulachon) [29]  
 Barraclough 1964, 1967a-c  
 Barraclough and Fulton 1967, 1968  
 Barraclough et al. 1968  
 Hart and McHugh 1944  
 Robinson 1969  
 Robinson et al. 1968a,b

## PERCICHTHYIDAE

Roccus saxatilis (striped bass)

Johnson and Calhoun 1952

Shapovalov 1936

## PETROMYZONTIDAE

Lampetra ayresi (river lamprey)

Barracough 1967a,b

Barracough and Fulton 1967

Barracough et al. 1968

Beamish and Scarsbrook 1979

Robinson 1969

Robinson et al. 1968a,b

Thompson 1981

Lampetra tridentata (Pacific lamprey)

Barracough 1967a-c

Barracough et al. 1968

Robinson et al. 1968a,b

## PHOLIDIDAE

Pholis laeta (crescent gunnel) [25]

Rogers et al. 1979

Pholis ornata (saddleback gunnel)

Robinson et al. 1968b

Xererpes fucorum (rockweed gunnel)

Barton 1982

Robinson et al. 1968a

## PLEURONECTIDAE

Atheresthes stomias (arrowtooth flounder) [52]

Barracough and Fulton 1968

Barracough et al. 1968

Feder 1977a, 1979b, 1980, 1981

Gotshall 1969

Hunter 1979

Kabata and Forrester 1974

Mito 1974

Robinson 1969

Shuntov 1970

Simenstad 1979

Smith et al. 1978

Thompson 1981

Eopsetta jordani (petrale sole)

Forrester 1969

Kravitz et al. 1976

Glyptocephalus zachirus (rex sole) [56]

Feder 1977a, 1978b, 1980

Kravitz et al. 1976

Mineva 1964

Mito 1974

Percy and Hancock 1978

Smith et al. 1978

Hippoglossoides elassodon (flathead sole) [57]

Feder 1977b, 1978a, 1979a-b, 1980, 1981

- Hunter 1979  
 Klimova and Ivankova 1978  
 Miller 1970  
 Mineva 1964  
 Mito 1974  
 Rogers et al. 1979  
 Simenstad 1979  
 Skalkin 1963  
 Smith 1936  
 Smith et al. 1978  
 Suyehiro 1934
- Hippoglossus stenolepis (Pacific halibut) [55]  
 Feder 1977a, 1978a-b, 1980  
 Gray 1964  
 Hunter 1979  
 Mito 1974  
 Novikov 1964  
 Rogers et al. 1979  
 Rosenthal 1979, 1980  
 Smith et al. 1978
- Hypsopsetta guttulata (diamond turbot)  
 Lane et al. 1979
- Isopsetta isolepis (butter sole) [64]  
 Blackburn et al. 1981  
 Feder 1980, 1981  
 Forrester 1969  
 Gadowski 1983  
 Hogue and Carey 1982  
 Hunter 1979  
 Robinson 1969  
 Simenstad 1979
- Lepidopsetta bilineata (rock sole) [58]  
 Blackburn et al. 1981  
 Feder 1977a-b, 1978a, 1979b, 1980, 1981  
 Forrester 1969  
 Forrester and Thompson 1969  
 Hunter 1979  
 Kravitz et al. 1976  
 Mineva 1964  
 Mito 1974  
 Rogers et al. 1979  
 Rosenthal 1979, 1980  
 Shubnikov and Lisovenko 1964  
 Simenstad 1979  
 Skalkin 1963  
 Smith et al. 1978
- Limanda aspera (yellowfin sole) [59]  
 Blackburn et al. 1981  
 Fadeev 1970  
 Feder 1977b, 1981  
 Klimova and Ivankova 1978  
 Krivobok and Tarkovskaya 1964  
 Rogers et al. 1979  
 Simenstad 1979

- Skalkin 1963
- Liopsetta glacialis (Arctic flounder) [53]  
 Bendock 1977  
 Craig and Haldorson 1981  
 Percy 1975
- Lyopsetta exilis (slender sole)  
 Barraclough 1967c  
 Pearcy and Hancock 1978  
 Vanderploeg 1979
- Microstomus pacificus (Dover sole) [60]  
 Barraclough and Fulton 1968  
 Feder 1980  
 Hagerman 1952  
 Moore and Mearns 1980  
 Pearcy and Hancock 1978  
 Simenstad 1979  
 Smith et al. 1978  
 Vanderploeg 1979
- Parophrys vetulus (English sole) [61]  
 Blackburn et al. 1981  
 Feder 1980  
 Forrester 1969  
 Gadomski 1983  
 Hogue and Carey 1982  
 Hulberg and Oliver 1979  
 Kravitz et al. 1976  
 Toole 1981
- Platichthys stellatus (starry flounder) [63]  
 Barraclough 1967c  
 Blackburn et al. 1981  
 Feder 1977a-b, 1978a, 1979a, 1980  
 Hunter 1979  
 Jewett and Feder 1980  
 Miller 1967  
 Robinson 1969  
 Robinson et al. 1968a,b  
 Rosenthal 1979, 1980
- Pleuronectes quadrituberculatus (Alaska plaice) [51]  
 Feder 1977a, 1978b  
 Hunter 1979  
 Mineva 1964  
 Skalkin 1963
- Psettichthys melanostictus (sand sole) [62]  
 Blackburn et al. 1981  
 Feder 1980  
 Hogue and Carey 1982  
 Hunter 1979  
 Miller 1967
- Reinhardtius hippoglossoides (Greenland halibut) [54]  
 Feder 1978b  
 Mito 1974  
 Shuntov 1970  
 Smith et al. 1978

## POMACENTRIDAE

Chromis punctipinnis (blacksmith)  
Hobson and Chess 1976

## RAJIDAE

Raja interrupta (Bering skate)  
Mito 1974  
Raja parmifera (Alaska skate)  
Mito 1974  
Raja stellulata (starry skate)  
Feder 1977a, 1978b

## SALMONIDAE

Coregonus autumnalis (Arctic cisco)  
Bendock 1977  
Craig and Haldorson 1981  
Percy 1975

Coregonus laurettae (Bering cisco)  
Blackburn et al. 1981

Coregonus nasus (broad whitefish)  
Bendock 1977

Coregonus sardinella (least cisco)  
Bendock 1977

Craig and Haldorson 1981  
Oncorhynchus gorbuscha (pink salmon) [48]

Barraclough 1967a-c  
Barraclough and Fulton 1967, 1968  
Barraclough et al. 1968  
Blackburn 1979  
Blackburn et al. 1981  
Foskett 1951  
Healey 1978  
Kanno and Hamai 1971  
Karpenko 1979  
LeBrasseur 1965, 1966  
Manzer 1968, 1969  
Robinson 1969  
Robinson et al. 1968a,b  
Rogers et al. 1979  
Rosenthal 1979

Oncorhynchus keta (chum salmon) [46]

Allen 1956  
Allen and Aron 1958  
Barraclough 1967a-c  
Barraclough and Fulton 1967, 1968  
Barraclough et al. 1968  
Blackburn et al. 1981  
Foskett 1951  
Healey 1978  
Kanno and Hamai 1971  
Karpenko 1979  
LeBrasseur 1965, 1966  
Manzer 1969  
Robinson 1969



- Robinson et al. 1968a,b  
 Rogers et al. 1979  
Oncorhynchus kisutch (coho salmon) [47]  
 Barraclough 1967c  
 Barraclough and Fulton 1967, 1968  
 Barraclough et al. 1968  
 Blackburn et al. 1981  
 Foskett 1951  
 Grinols and Gill 1968  
 Healey 1978  
 Karpenko 1979  
 LeBrasseur 1965, 1966  
 Manzer 1968, 1969  
 Prakash and Milne 1958  
 Pritchard and Tester 1944  
 Robinson 1969  
 Robinson et al. 1968a,b  
 Rogers et al. 1979  
Oncorhynchus nerka (sockeye salmon) [49]  
 Allen 1956  
 Allen and Aron 1958  
 Barraclough 1967a-c  
 Barraclough and Fulton 1967, 1968  
 Barraclough et al. 1968  
 Blackburn et al. 1981  
 Healey 1978  
 Kanno and Hamai 1971  
 Karpenko 1979  
 LeBrasseur 1965, 1966  
 Manzer 1968, 1969  
 Robinson 1969  
 Robinson et al. 1968a,b  
Oncorhynchus tshawytscha (chinook salmon)  
 Barraclough 1967a-c  
 Barraclough and Fulton 1967, 1968  
 Barraclough et al. 1968  
 Blackburn et al. 1981  
 Foskett 1951  
 Healey 1978  
 Karpenko 1979  
 Merkel 1957  
 Robinson 1969  
 Robinson et al. 1968a,b  
Salmo gairdneri (steelhead) [50]  
 Barraclough 1967c  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
 Healey 1978  
 LeBrasseur 1965, 1966  
 Manzer 1968  
 Robinson et al. 1968b  
 Taylor and LeBrasseur 1957  
Salvelinus alpinus (Arctic char)  
 Bendock 1977

Craig and Haldorson 1981  
Salvelinus malma (dolly varden)  
 Blackburn et al. 1981

## SCIAENIDAE

Seriphus politus (queenfish)  
 Hobson and Chess 1976

## SCOMBERESOCIDAE

Cololabis saira (Pacific saury)  
 Fukushima 1976  
 Odate 1977

## SCOMBRIDAE

Euthynnus pelamis (skipjack tuna)  
 Nakamura 1965

Sarda chiliensis (Pacific bonito)  
 Pinkas et al. 1971

Thunnus alalunga (albacore)  
 Hart and Barraclough 1948

Iverson 1962

McHugh 1952

Pinkas et al. 1971

Scagel 1949

Thunnus thynnus (bluefin tuna)  
 Pinkas et al. 1971

## SCORPAENIDAE

Kohler 1966

Phillips 1964

Richards et al. 1980

Sebastes aleutianus (rougheye rockfish) [15]  
 Feder 1980

Sebastes alutus (Pacific ocean perch) [8]  
 Carlson and Haight 1976

Lyubimova 1963

Mito 1974

Paraketsov 1963

Skalkin 1964

Smith et al. 1978

Somerton et al. 1978

Sebastes atrovirens (kelp rockfish)  
 Hobson and Chess 1976

Sebastes auriculatus (brown rockfish)  
 Ryan 1983

Sebastes carnatus (gopher rockfish)  
 Larson 1980

Sebastes caurinus (copper rockfish)  
 Prince 1975

Prince and Gotshall 1976

Sebastes chrysomelas (black-and-yellow rockfish)  
 Hunt 1980

Larson 1980

Sebastes ciliatus (dusky rockfish) [19]

- Blackburn et al. 1981  
 Carlson and Barr 1977  
 Rosenthal 1980  
Sebastes entomelas (widow rockfish) [24]  
 Pereyra et al. 1969  
Sebastes flavidus (yellowtail rockfish) [23]  
 Carlson and Barr 1977  
 Pereyra et al. 1969  
Sebastes goodei (chilipepper)  
 Fitch 1951  
Sebastes jordani (shortbelly rockfish)  
 Chess and Smith 1983  
Sebastes maliger (quillback rockfish) [18]  
 Rosenthal 1980  
Sebastes melanops (black rockfish) [20]  
 Blackburn et al. 1981  
 Rosenthal 1979, 1980  
Sebastes mystinus (blue rockfish)  
 Gotshall et al. 1965  
 Love and Ebeling 1978  
 Whales 1952  
Sebastes nebulosus (China rockfish) [16]  
 Rosenthal 1979, 1980  
Sebastes nigrocinctus (tiger rockfish)  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
Sebastes polyspinis (northern rockfish) [22]  
 Mito 1974  
 Skalkin 1964  
Sebastes ruberrimus (yelloweye rockfish) [17]  
 Rosenthal 1980  
Sebastes serranoides (olive rockfish)  
 Hobson and Chess 1976  
 Love and Ebeling 1978  
Sebastolobus alascanus (shortspine thornyhead) [21]  
 Feder 1980  
 Mito 1974

## SCYLIORHINIDAE

- Apristurus brunneus (brown cat shark)  
 Thompson 1981

## SERRANIDAE

- Paralabrax clathratus (kelp bass)  
 Love and Ebeling 1978

## SQUALIDAE

- Somniosus pacificus (Pacific sleeper shark)  
 Bright 1959  
Squalus acanthias (spiny dogfish) [39]  
 Alton 1967  
 Barraclough 1967c  
 Barraclough and Fulton 1967, 1968  
 Barraclough et al. 1968

Feder 1978a, 1980  
 Jensen 1966  
 Jones and Geen 1977  
 Shippen and Alton 1967  
 Thompson 1981

## STERNOPTYCHIDAE

Argyropelecus lychnus (tropical hatchetfish)  
 Collard 1970

## STICHAEIDAE

Allolumpenus hypochromus (y-prickleback)  
 Barraclough and Fulton 1968  
Anoplarchus purpureus (high cockscomb) [38]  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
 Barton 1982  
 Robinson et al. 1968a  
Cebidichthys violaceus (monkeyface prickleback)  
 Barton 1982  
 Montgomery 1977  
Lumpenella longirostris (longsnout prickleback)  
 Barraclough 1967a  
Lumpenus sagitta (snake prickleback) [37]  
 Barraclough 1967a  
 Barraclough and Fulton 1968  
 Barraclough et al. 1968  
 Blackburn et al. 1981  
 Robinson et al. 1968a  
 Rogers et al. 1979  
Phytichthys chirus (ribbon prickleback)  
 Robinson et al. 1968a  
Xiphister atropurpureus (black prickleback)  
 Barraclough et al. 1968  
 Barton 1982  
 Robinson et al. 1968a,b  
Xiphister mucosus (rock prickleback)  
 Barton 1982

## SYNGNATHIDAE

Syngnathus leptorhynchus (bay pipefish)  
 Barraclough 1967b  
 Barraclough and Fulton 1967  
 Barraclough et al. 1968  
 Robinson 1969

## TRACHIPTERIDAE

Fitch 1964  
Trachipterus altivelis (king-of-the-salmon)  
 Fitch 1951  
 Roedel 1938

## TRICHIURIDAE

Trichiurus nitens (Pacific cutlassfish)

Fitch 1951

TRICHODONTIDAE

Trichodon trichodon (Pacific sandfish)

Feder 1978a

Rogers et al. 1979

ZOARCIDAE

Lycodapus mandibularis (pallid eelpout)

Anderson 1980

Lycodes brevipes (shortfin eelpout) [26]

Smith et al. 1978

Lycodes palearis (wattled eelpout)

Feder 1977a, 1978a

Mito 1974

Slipp and Delacy 1952

Lycodes sagittarius (archer eelpout)

McAllister 1975

Lycodopsis pacifica (blackbelly eelpout) [28]

Levings 1969

Maynea californica (persimmon eelpout)

Cailliet and Lea 1977

Melanostigma pammelas (midwater eelpout) [27]

Belman and Anderson 1979

## INVERTEBRATES

## ASTEROIDEA (starfishes)

Asterias amurensis

Feder 1977a, 1978b

Evasterias sp.

Feder 1978b

Leptasterias ascervata

Feder 1977a

Pycnopodia helianthoides (sunflower sea star)

Feder 1979b

## CEPHALOPODA (squids and octopuses)

Todarodes pacificus [70]

Lipinski 1973

## DECAPODA (shrimps and crabs)

Cancer magister (Dungeness crab) [68]

Feder 1979a, 1980

Chionoecetes bairdi (Tanner (snow) crab) [66]

Feder 1977b, 1978a, 1979a-b, 1981

Chionoecetes opilio (Tanner (snow) crab) [67]

Feder 1977a, 1978b

Pandalus borealis (pink shrimp) [69]

Feder 1981

Paralithodes camtschatica (king crab) [65]

Feder 1977a-b, 1978a-b, 1979a-b, 1981

McLaughlin and Hebard 1961

Table 1.---Information on the food habits of some North Pacific fish extracted from selected literature sources. Amounts of prey consumed by predators are expressed either in terms of percent by weight or volume (%W or %V), percent frequency of occurrence (%FO), or percent by number (%N).

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
1. Arctic cod <u>Boreogadus</u> <u>saida</u>	Craig and Haidorson 1981	Feeds on mobile epibenthos	Beaufort Sea Simpson Lagoon	Summer	Mysids Amphipods	59.4 39.2			45-257 mm 92 mm Ave.	47-stomachs examined
				Winter	Mysids Amphipods Fish	93.2 3.0 1.5			125 mm Ave.	84-stomachs examined
	Lowry and Frost 1981		Beaufort Lagoon	Nov.	Copepods Gammarid Amphipods Euphausiids Mysids Larval Fish Polychaetes	56.0 20.0 8.0 6.0 5.0 4.0	84.0			86-stomachs with food 5-empty
					Gammarid Amphipod Isopods Pteropods Mussel Gastropods Caridean Shrimp Rock sole Sandlance Unident. Fish Brachy. Crabs	12.0 10.0 2.0 3.0 5.0 6.0 2.0 2.0 2.0 3.0 3.0	40.9 11.7 13.9 17.8 7.4 2.3 2.3 <1.0 <1.0 2.5		90-290 mm	35-stomachs
2. Pacific tomcod <u>Micro-</u> <u>gadus</u> <u>proximus</u>	Rosenthal 1980	Adults are bottom feeders, juveniles feed in the water column in groups	N.E. Gulf of Alaska		Pandalus b. Cragon dalli Pagurus o. Euphausiids Shrimp Crabs Isopods Unident. Fish	75.0 16.7 8.3 100. 21.0 5.5 5.5				11-stomachs with food 1-empty 19-stomachs with food 3-empty
				Feder 1978a	Cook Inlet Kodiak Is.	Oct.				
	Hart 1949		British Columbia (Coast)	Winter						

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
3. Walleye Pollock <u>Theragra</u> <u>chalco-</u> <u>gramma</u>	Wespestad 1978		Eastern Bering Sea	Winter	Euphausiids Unident. fish Pollock Digested mat. Zooplankton	5.4 28.1 51.4 5.6 0.6	26.0 24.0 17.0 17.0 7.0		25-70 cm	496- stomachs with food
	Feder 1977a	Pelagic feeding, Benthic prey, Predator	Cook Inlet	Oct.	Crangonidae <u>Pandalus</u> <u>borealis</u> Unident. Crustacea		5.9 23.5 23.5	11.1 44.4 44.4	10.1-5.6 cm	8-stomachs with food 9-empty & not used
	Smith et al. 1978		S.E. Bering Sea	Aug.- Oct.	Crustacea Euphausiids Unid. Crustacea Amphipods Fish	30.0 10.0 0.4 0.7 70.0	87.0 60.0 21.0 15.0 12.0	95.0 77.0 3.0 7.0 2.0	85-526 mm	163- stomachs with food
4. Pacific cod <u>Gadus</u> <u>macro-</u> <u>cephalus</u>	Clausen 1980	Cod >60 cm ate mainly fish Cod <50-60 cm ate mainly crustaceans	Northern Gulf of Alaska	May- June	Crustacea Euphausiids Animal material Majidae Fish	90.0 87.0 0.5 0.5 7.5	90.0 83.0 19.0 16.0 9.0	99.6 95.5 - 2.8 0.3	139-560 mm	253- stomachs with food
	Feder 1977a	Predator	S.E. Alaska	July	Fish Shrimp Crab Cephalopods Gammarid amphipods	42.5 16.9 26.1 3.1 3.5	58.5 46.5 39.6 14.4 14.0		males 65.2 cm TL Ave. fe- males 68.6 cm TL Ave.	V% 439- stomachs with food F% 492- stomachs with food
	Feder 1977a		Cook Inlet, Alaska	Oct.	<u>Chionoecetes</u> Crangonidae Unident. fish Crangon sp.		62.8 51.1 23.2 9.3	42.9 34.9 15.9 6.3		41- stomachs with food 2-empty & not used
			S.E. Bering Sea		<u>Pandalus</u> <u>Theragra</u> <u>Amphipods</u> Crab		51.7 17.2 17.2 10.3	53.6 17.9 17.9 10.7		29- stomachs with food



Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
4. cont. Pacific cod <u>Gadus</u> macro- cephalus	Westrheim 1977		Vancouver Is. Hecate St.	April, July, & Oct. 1975 & Feb. 1976	Fish & Invertebrates				30-70 cm (males)	2,189- stomachs with food 252-empty & not used
5. Lingcod Ophiodon <u>elongatus</u>	Rosenthal 1980	Solitary bottom dweller, oppor- tunistic, pred- ator, Benthic feeder	N.E. Gulf of Alaska	Spring, Summer, & Fall	Various Fish Rockfish Kelp Greenling Sandlance				484-1,220 mm	
6. Sablefish <u>Anoplopoma</u> <u>fimbria</u>	Feder 1979b  Feder 1980		Kodiak Shelf  N.E. Gulf of Alaska	June- July  Nov.	Ammodytes Krill  Fish Scyphozoa Amphipoda Shrimp Euphausiids Squid Pandalidae		100. 93.9 6.5 6.1  35.1 30.4 26.3 21.7 21.0 17.4 17.5 14.5 12.3 10.1 5.3 4.3 1.8 1.4			31- stomachs examined  57- stomachs with food 33-empty & not used
	Mito 1974		Bering Sea	Oct.- Nov.	Decapoda Theragra  Decapoda Other fish Theragra Decapoda Other Fish Theragra		0.6  5.5 1.4 79.9 6.3 0.6 81.3		451-600 mm  501-550 mm  551-650 mm	28- stomachs examined  175- stomachs examined  100- stomachs
	Shubnikov 1963	A high fre- quency of food regurgitation was noted during the summer months.	Bering Sea	Aug.- Sept. 1958	Ophiuroidea Pandalidae Amphipoda Actiniaria		36.0 22.1 14.0 14.0		38-74 cm 50 cm Ave & 5 year old	198- stomachs examined

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
6. cont. Sablefish <i>Anoplopoma fimbria</i>				June-Aug. 1960	Ophiuroidea Coelenterata Pandalidae Actiniaria Octopodidae Semacostomidae	25.0 12.5 12.4 9.4 9.4			241-stomachs examined	
7. Pacific herring <i>Clupea harengus pallasii</i>	Barton 1979		Norton Sound	Spring	Cladocera Flatworms Copepoda Misc. items Cumacea	19.0 17.0 16.0 15.0 7.0			12-stomachs with food	
	Rumyantsev and Darda 1970	Feed vigorously in June & July	E. Bering Sea	May-Oct.	Euphausiids Fish fry Calanids Gammarids	84.0 8.0 6.0 2.0			1,346-stomachs with food	
	Wailes 1936	Diet changes in fish over 80 - 90 mm length	Southern British Columbia	Summer	Copepods Cirripedia Mollusks Eggs Bryozoa Cladocera Crustacea Euphausia p. Copepods Herring eggs			Fry 20-100 mm Adults >101 mm		
8. Pacific Ocean perch <i>Sebastes alutus</i>	Skalkin 1964 Somerton et al. 1978 Carlson and Haight 1976	Diurnal migration, feeds mainly at noon  Fish become demersal at age 1 year	South of Pribilof Is.  Gulf of Alaska S.E. Gulf of Alaska	April-Sept.  July-Sept. Year-round	Thysanoessa Calanus Calanus Euphausiids Fish Copepods Euphausiids Amphipods Chaetognaths Shrimp larvae Pteropods	38.2 25.7 34.8 84.7 8.1 42.2 40.0 1.5 1.3 1.7 1.1			489-stomachs with food 111-empty & not used	

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
9. Pacific sandlance <i>Ammodytes hexapterus</i>	Rogers et al. 1979		Kodiak Is. (near shore)	May-	Calanoids	63.0	83.0	Juveniles	355- stomachs examined	
				July	Gammarids Shrimp Cladocerans Harpacticoids	12.0 8.0 5.0 3.0	1.0 4.3 5.3 6.4	Adults		
	Barracclough 1967		Strait of Georgia, British Columbia	June	Copepods	45.0	75.6	Adults	5- stomachs examined	
					fish Cladocera Fish Ostracods Copepods Mysids Amphipods Decapods	8.0 6.0 3.0 3.0	2.6 3.8 10.3 7.7	99-122 mm Juveniles 52-73 mm		
10. Capelin <i>Mallotus villosus</i>	Smith et al. 1978	Pelagic plankton feeder	S.E. Bering Sea	Spring-	Crustaceans	93.0	98.0	141+12 mm		
				Fall	Euphausiidae Copepoda Chaetognatha	74.0 8.0 6.0	73.0 19.0 14.0	19.0 63.0 7.0		
11. Soft sculpin <i>Gilberti-dia sigalutes</i>	Hart and McHugh 1944		British Columbia	Summer	Mainly eats Euphausiids			Adults		
				April	Copepods & eggs			7-36 mm		
12. Buffalo sculpin <i>Enophrys bison</i>	Johnson 1968		California	Feb., Aug., & Oct.	Amphipods Seaweed Isopods Detritus	7.0 56.0 4.0 8.0	140.0 67.0 23.0 23.0	16.6 - 3.1 -	51- stomachs with food 1-empty & not used	

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
13. Tidepool sculpin <u>Oligo-</u> <u>cottus</u> <u>maculosus</u>	Nakamura 1971	Intertidal zone bottom dwell- ers, feeds on plankton & is carnivorous	British Columbia	June	Amphipods Isopods Copepods Annelids Insects Fish	93.8 31.3 75.0 43.8 81.3 25.0		34.2-91.3 mm	16- stomachs	
14. Fluffy sculpin <u>Oligo-</u> <u>cottus</u> <u>snyderi</u>	Nakamura 1971		British Columbia	June	Amphipods Isopods Copepods Annelids Insects	90.4 47.6 19.0 57.1 19.0			21- stomachs	
15. Rongheye rockfish <u>Sebastes</u> <u>aleu-</u> <u>tianus</u>	Feder 1980		Gulf of Alaska Yakutat Bay	Nov.	Shrimp Fish Mysidacea Squid	75.0 50.0 12.5 12.5	50.0 33.3 8.3 8.3		8- stomachs with food 2-empty	
16. China rockfish <u>Sebastes</u> <u>nebulosus</u>	Rosenthal 1980		N.E. Gulf of Alaska		<u>Ophiopholis</u> <u>Pugettia</u> <u>gracilis</u> Caridean shrimps Cancer Caprellid amphs. velutina sp.	18.0 8.0 4.0 3.0 2.0 2.0	77.2 9.4 4.7 3.6 3.6 2.0	160-330 mm 655 g Mean wt	19- stomachs with food 1-empty	
17. Yelloweye rockfish <u>Sebastes</u> <u>ruber-</u> <u>rimus</u>	Rosenthal 1980				Lithodid crab Pleuronectidae Snail Fish remains			287-587 mm 3,361 g mean wt	4- stomachs with food 11-empty	
18. Quillback rockfish <u>Sebastes</u> <u>maliger</u>	Rosenthal 1980				Gammarid Amphipods Euphausiids Mysids Cuma- ceans Caridean shrimp			200-340 mm 620 g Mean wt	6- stomachs with food 6-empty	

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
19. Dusky rockfish <u>Sebastes ciliatus</u>	Rosenthal 1980	Schools observed feeding near stands of bull kelp. Diets varied seasonally.			Calanoid copepods Limacina helicina Chaetognaths Unident. Fragments Larval Fish Mysids Polychaetes Fish eggs	20.0 5.0 5.0 9.0 4.0 9.0 6.0 1.0	46.6 46.0 4.0	128-360 mm 647 g Mean wt	35- stomachs with food 7-empty	
20. Black rockfish <u>Sebastes melanops</u>	Rosenthal 1980	Generalized predator, nocturnal feeder	N.E. Gulf of Alaska		Limacina helicina Ammodytes Gam. Amphipods Unident. Fish Brachyuran meg Calanoid copepods Herring Polychaetes Chaetognaths Caridean shrimps Juv. Rockfish Zaprora Octopus beaks	5.0 19.0 10.0 7.0 2.0 3.0 3.0 2.0 3.0 2.0 1.0 2.0	65.4 10.3 8.9 1.6 3.5	160-456 mm 956 g Mean wt	37- stomachs with food 4-empty	
21. Shortspine thorny-head <u>Sebastes lobus alascanus</u>	Feder 1980	Prefers shrimp	N.E. Gulf of Alaska Yakutat Bay		Shrimp Pandalidae Eualus sp. Polychaetes Hippolytidae Stichaeidae Eelpouts Pandalus Pandalopsis Eualus Cumacea Mysidae	56.1 19.5 12.2 4.9 4.9 2.4 2.4 2.4 2.4	44.2 15.4 9.6 9.6 3.8 3.8 3.8 1.9 1.9 1.9 1.9		41- stomachs with food 9-empty	

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V	%W	%N		
22. Northern rockfish <u>Sebastes poly-spinis</u>	Mito 1974		Bering Sea	Oct.- Nov.	Squid Pagurus sp. Pandalus <u>T. inermis</u> Pollock 0-age Waste Pollock Digestive material	28.7 23.0 20.4 18.4 4.2 72.9 11.1			201-400 mm 300 mm Mean Ave.	26- stomachs examined
23. Yellow-tail rockfish <u>Sebastes flavidus</u>	Pereyra et al. 1969	Mesopelagic	Wash.-Oregon Coastal shelf	June	<u>Stenobrachius</u> l. Sergestes similis Thysanoessa s. Pasiphaea p. <u>Gonatus fabricii</u> Euphausia p. Unident Euphausia <u>Stenobrachius</u> l. Crustacea Squid Other	100 91.0 86.0 55.0 27.0 23.0 18.0 74.8 13.5 3.5 8.2			44-52 cm	22- stomachs with food
24. Widow rockfish <u>Sebastes entomelas</u>	Pereyra et al. 1969		Wash.-Oregon shelf	June	<u>Stenobrachius</u> l. Plankton	54.0				4-stomachs examined
25. Crescent gunnel <u>Pholis laeta</u>	Rogers et al. 1979	Adults are Benthic. Juveniles are Benthic and Pelagic	Kodiak Is.	May June July April June July	Polychaetes Gam. Amphipods Copepods Ostracods Gam. Amphipods Copepods Polychaetes Gam. Amphipods Copepods Ostracods	39.0			Adults     Juveniles	30- Stomachs with food



Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
30. Searcher Bathy- master signatus	Feder 1978a	Predator	Cook Inlet	Oct.	Anthozoan Snow crab Crangonidae Crustacean	25.0 25.0 25.0 25.0			4-stomachs with food 17-empty & not used	
31. Snailfish Cyclop- teridae					<u>Crangon dalli</u>	100			4-stomachs with food	
32. Sawback poacher Sarritor frenatus	Mito 1974			Oct.- Nov.	Gammaridea Gammaridea-D Eusiridae-A Mysidae-A Jassidae-B	25.7 20.6 16.4 5.9 1.5		191-270 mm	16- stomachs with food	
33. Northern Spearnose poacher Agonopsis emmelane	Barraciough et al. 1968		Saanich Inlet British Columbia	June- July	Copepoda Nauplii	100	100	9-10 mm	2-stomachs with food	
34. Surf smelt Hypomesus pretiosus	Hart and McHugh 1944		British Columbia	Summer	Euphausiids Shrimp larvae Amphipods Polychaetes			Adults		
35. Longfin smelt Spirin- chus thaleich- thys					Euphausiids Copepods Cumacea Shrimp ( <u>Neomysis m.</u> )			Adults  Juveniles		
36. Saffron cod Eleginus gracilis	Craig and Haldorson 1981		S.E. Chukchi Sea	Nov.	Fish Mysids Decapods Misc.	68.0 15.0 13.0 3.0		207-283 mm 238 mm Ave	30- stomachs with food 3-empty & not used	



Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size		
						%V or %W	%FO	%N				
37. Snake prickle- back Lumpenus <u>sagitta</u>	Rogers et al. 1979	Benthic feeder	Kodiak Is. (near shore)	June	Polychaetes	44.4			Adults 345 mm (Mean)	16- stomachs with food 1-empty & not used		
					Fish Eggs	36.3						
					Gammarids	14.5						
					Mollusca	4.7						
				July	Gammarids	71.6			Juveniles 197 mm (Mean)	10- stomachs with food		
				July	Fish eggs	21.0						
					Polychaetes	7.4						
					Gammarids	73.7			Adults 287 mm (Mean)	23- stomachs with food 4-empty & not used		
					Decapods	14.7						
					Polychaetes	11.6						
38. High cockscorb Anoplar- chus <u>purpurens</u>	Feder 1978a		Outer Kenai Peninsula	Aug.	Urochordates	100			100.	91 mm	2-stomachs with food	
					Amphipods				28.6			
					Crustaceans				14.3			
					Urochordates				14.3			
					Crab				14.3			
					Bivalve				14.3			
					Snail				14.3			
39. Spiny dogfish Squalus <u>acanthias</u>	Feder 1980	Preys mainly on Fish	N.E. Gulf of Alaska Yakutat Bay	Nov.	Other Fish		40.0	22.2			25- stomachs with food 18-empty	
					Pandalus				16.0	8.8		
					Jordani							
					Thaleichthys							
					P.				16.0	6.6		
					Pleuronectidae				12.0	6.6		
					Pandalidae				12.0	6.6		
					Unident. remains				12.0	4.4		
					Stichaeidae				8.0	4.4		
					Atheresthes				8.0	4.4		
Hippolytidae				8.0	4.4							
Other shrimp				8.0	4.4							

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
40. Yellow Irish Lord Hemilepidotus <u>Jordani</u>	Rogers et al. 1979		Kodiak Is.	June-July	Shrimp Fish Crabs Crustacea Shrimp Crabs Fish Gammarids Crustacea	54.0 26.0 12.0 2.0 65.0 10.0 9.0 3.0 2.0	60.3 7.9 23.8 7.9 20.5 34.2 2.7 4.1 38.4	Adults 281-293 mm Mean Juveniles 150-171 mm Mean	205-stomachs with food 55-empty & not used	
41. Kelp Greenling <u>Hexagrammos decagrammus</u>	Rosenthal 1980	Solitary bottom dweller, opportunistic predator, benthic feeder	N.E. Gulf of Alaska	Spring, Summer, & Fall	Amphipods Annelids Gastropods Shrimp Brachyuran Crabs Detritus & Gravel			90-385 mm	45-stomachs with food 1-empty & not used	
42. Rock Greenling <u>Hexagrammos lagocephalus</u>					Amphipods Polychaete worms Gastropods Crabs Shrimp			158-367 mm	24-stomachs	
43. White-spotted Greenling <u>Hexagrammos stelleri</u>					Caridean shrimp Polychaetes Gastropods Brachyuran Crabs Fish eggs Detritus			130-380 mm	30-stomachs with food 1-empty & not used	



Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%N	%FO		
46. cont. Chum salmon <u>Oncorhynchus keta</u>	Rogers et al. 1979	Copepods most important food item	Kodiak Is. (near shore)	May-	Insects	27.0	6.2	443-stomachs examined		
				July	Harpacticoids Gammarids Calanoids Eggs	25.0 25.0 9.0 5.0	52.6 10.3 8.2 22.7			
47. Coho Salmon <u>Oncorhynchus kisutch</u>	LeBrasseur 1966		N.E. Gulf of Alaska (Coastal area)	May-	Euphausiids	47.7	50-68 cm	28-stomachs with 10% empty		
				June	Fish Squid	35.8 12.8			7-stomachs with 43% empty	
	Manzer 1968		N.E. Gulf of Alaska (Subarctic area)		Squid	100.				
				Gulf of Alaska	Amphipods Decapods Euphausiids Pteropods	5.0 80.0 15.0 <1.0	50.0 25.0 25.0	2-stomachs with food 2-empty & not used		
48. Pink salmon <u>Oncorhynchus gorbuscha</u>	Kanno and Hamai 1971		Western & Central Bering Sea	June-	Squid	91.3	94-stomachs with food & 13-empty & not used			
				July	Fish Amphipods	6.6 1.2		73-stomachs with food & 6-empty & not used		
			South & Central Bering Sea		Fish Amphipods Euphausiids	53.2 27.5 16.4				
			N.E. Gulf of Alaska (Coastal area)	May-	Fish	34.8	45-62 cm	94-stomachs with 4% empty		
				June	Euphausiids Miscellaneous Limacina Amphipods	25.0 17.7 11.2 9.5				
			N.E. Gulf of Alaska (subarctic)		Squid Amphipods Fish	74.6 14.6 10.8	45-62 cm	47-stomachs with 15% empty		

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
48. cont. pink salmon <u>Oncorhynchus gorbuscha</u>	Manzer 1968		Gulf of Alaska	Jan.- Feb.	Amphipods	97.0	42.0	26-36.5 cm	15- stomachs with food 9-empty & not used	
					Fish Euphausiids Unident. material Squid	1.0 1.0 <1.0 <1.0	13.0 13.0 13.0 8.0			
	Rogers et al. 1979	Copepods most important food item for both fish	Kodiak Is. (near shore)	May- July	Harpacticoids	42.0	61.0	35-70 mm (juveniles)	496- stomachs examined	
					Calanoids Gammarids Larvaceans Eggs	24.0 13.0 5.0 4.0	25.6 8.9 2.2 2.2			
49. Sockeye salmon <u>Oncorhynchus nerka</u>	Kanno and Hama 1971		Western & Central Bering Sea	June- July	Squid	95.3			91- stomachs with food 12-empty & not used	
					Fish Euphausiids	2.9 1.3				
			South & Central Bering Sea		Euphausiids	43.0			63- stomachs with food 79-empty & not used	
					Fish Amphipods	27.7 25.1				
	LeBrasseur 1966		N.E. Gulf of Alaska (coastal area)	May- June	Euphausiids	47.5		31-38 cm	16- stomachs with 28 % empty	
					Squid Fish Amphipods	31.0 12.2 9.2				
			N.E. Gulf of Alaska (subarctic area)		Euphausiids	59.1		49-69 cm	293- stomachs with 10% empty	
					Fish Copepods Squid	15.3 11.4 9.2				
					Squid	74.5		31-38 cm	116- stomachs with 21% empty	
					Amphipods Copepods	19.6 2.6				
					Squid Miscellaneous Fish	88.7 5.1 4.4		49-69 cm	71- stomachs with 14 % empty	

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
49. cont. Sockeye salmon <u>Oncorhynchus nerka</u>	Manzer 1968		Gulf of Alaska	Jan.-Feb.	Fish Squid Amphipods Euphausiids Decapods	71.0 27.0 <1.0 <1.0 1.0	35.0 16.0 11.0 5.0 3.0	26.5-59 cm	44-stomachs with food 43-empty & not used	
50. Steelhead Salmo <u>gairdneri</u>	LeBrasseur 1966		N.E. Gulf of Alaska (coastal area) N.E. Gulf of Alaska (subarctic area)	May-June	Fish Amphipod	89.0 9.0		Adults	7-stomachs with food	
	Manzer 1968		Gulf of Alaska	Jan.-Feb.	Squid Octopods Fish Unident. material Euphausiids	94.3 2.4 1.9 1.4 21.0 60.0 10.0 9.0 <1.0	43.0 14.0 14.0 14.0	44-74 cm	20-stomachs with 10% empty 4-stomachs with food 3-empty & not used	
	Taylor and LeBrasseur 1957		Gulf of Alaska	Summer	Fish Amphipods Squid Euphausiids Shrimp Unident. material	63.0 2.0 31.0 <1.0 4.0 <1.0	16.0 8.0 2.0 1.0 1.0 2.0	28-88 cm 2-7 years of age	21-stomachs with food 8-empty & not used	
51. Alaska plaice <u>Pleuronectes quadrituberculatus</u>	Skalkin 1963		S.E. Bering Sea	May-July	Polychaetes Amphipods Mollusks Ascidians Shrimp			Adults		
	Mineva 1968		S.E. Bering Sea	Summer	Mollusks Worms			22-52 cm 34.4 cm Ave 200-1,350 g 540 g Ave.	190-stomachs	

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary				Predator Size Range	Sample Size
						% V or % W	% FO	% N			
52. Arrow-tooth flounder <u>Atheresthes stomias</u>	Gotshall 1969	Opportunistic crustacean & fish feeder	N. Calif.	Year-round	Shrimp Krill Fish Crustaceans Empty	38.3	40.2			132-790 mm	425-stomachs
						7.4	14.4				
						46.7	18.8				
	Kabata and Forrester 1974	Midwater forager	British Columbia	May-June	Crustaceans Fish	60.7	40.5			743-stomachs	
	Smith et al. 1978	Feeds on free swimming prey; fish & crustaceans	N.E. Gulf of Alaska	May-August	Crustaceans Fish	40.1	53.8	78.7		236-stomachs with food	
53. Arctic flounder <u>Liopsetta glacialis</u>	Craig and Haldorson 1981	Inhabits shallow coastal waters	Beaufort Sea	Summer	Amphipods Isopods Fish Polychaetes Mysids	58.0	30.0			96-267 mm	16-stomachs with food 15-empty
						7.0	3.0				
							1.0				
54. Greenland halibut <u>Reinhardtius hippoglossoides</u>	Smith et al. 1978	Feeds less during winter	Bering Sea	April-May	Unident. Fish Theragra c. Gadidae Gadiformes <u>Mallotus villosus</u> osus Cottidae Decapoda	9.5	62.5	59.4		101-451 mm	54-stomachs with food 69-empty & not used
						9.8	16.7	20.3			
						79.4	13.0	12.5			
						0.3	1.85	1.6			
						0.4	1.85	1.6			
	Shuntov 1970	Fish & Crustacean feeder	Bering Sea		Zooplankton Pollock					50-900 mm	
	Feder 1978b	Predatory feeder	Bering Sea	Sept.	Unident. Fish Theragra c. Gadidae Mallotus villosus Cottidae Decapods	28.9	64.9			187-stomachs with food 128-empty & not used	
						7.0	15.8				
						6.3	14.0				
						1.0	1.8				
						1.0	1.8				
						1.0	1.8				

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
55. Pacific halibut Hippo- glossus steno- lepis	Rosenthal 1980		Gulf of Alaska		Crabs Fish Octopus			53.3 37.7 4.4	3.5-162 cm	17- stomachs with food & 6-empty & not used
	Feder 1977a	Predator	Cook Inlet, Alaska	Oct.	Chionoecetes b. Unident. Fish Lumpenus s. Trichodon	32.7 32.7 13.5 13.5	35.4 35.4 14.6 14.6			48- stomachs with food & 4-empty & not used
	Smith et al. 1978		Bering Sea		Shrimp Unident. Fish Sandlance Crab Other Fish	32.0 25.0 15.0 7.0 7.0			Juveniles	132- stomachs with food
	Novikov 1964		S.E. Bering Sea.		Crustaceans Mollusks	88.9 11.1			<30 cm	9- stomachs with food
56. Rex sole Glypto- cephalus zachirus	Kravitz et al. 1976	Benthophagous	Oregon Coast	April	Fish Crustaceans	61.5			30 to 60 cm	182- stomachs with food
						32.7				230- stomachs with food
						85.6			60 to 90 cm	stomachs with food
						13.0				stomachs with food
					Fish Mollusks	86.8 10.5		>90 cm	76- stomachs with food	
					Amphipods Polychaetes *Nematodes Pelecypods	100. 71.4 38.0 9.5				21- stomachs with food & 1-empty & not used
	Smith et al. 1978		N.E. Gulf of Alaska	May- July	Polychaetes Snow crabs Euphausiids Pandalus sp.	66.0 55.0 28.0 25.0			11-34 cm	80- stomachs with food



Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
56. cont. Rex sole <u>Glypto-</u> <u>cephalus</u> <u>zachirus</u>			Gulf of Alaska	May- June	Polychaetes Snow crabs Amphipods Cumacea Pelecypoda Euphausiids Pandalidae	54.6 4.8 0.8 0.2 3.1 4.3 7.5	79.7 38.8 27.3 26.6 16.8 16.8 9.1	42.3 13.6 14.2 6.0 6.3 3.7 3.3	121-267 mm 228 mm Ave	293- stomachs combined
				Feb. 65 to Jan. 66	Mysids Shrimp Clams Fishes Polychaetes Other items Euphausiids Caridea	35.9 15.3 5.8 38.6 2.8 1.6	77.4 9.5 5.1 9.7 7.8 9.1	65.2 8.0 4.3 8.2 6.6 7.7	40-440 mm TL	1,952- stomachs examined 30.6% empty & not used
57. Flathead sole <u>Hippo-</u> <u>glos-</u> <u>soides</u> <u>elassodon</u>	Miller 1970	Benthic & Nektonic feeder	N. Puget Sound	Summer						
				Predatory feeder	Kodiak Is.					
58. Rock sole <u>Lepidop-</u> <u>setta</u> <u>billineata</u>	Mito 1974	Benthic feeder Daytime feeder	Bering Sea	Oct.- Nov.	Mysidae Ophiura sp. Eusiridae	39.0 30.0 18.0			Group C. 151-350 mm	393- stomachs used
				Predator	Cook Inlet	Oct.	Amphipods Crustaceans	22.6 3.8	85.7 14.3	
	Mito 1974		Bering Sea	Oct.- Nov.	Amphipods Polychaetes Ophiura sp.	57.0 31.0 11.2			251-310 mm	27- stomachs with food
						Polychaetes Ophiura sp.	12.0 82.0		240-330 mm	32- stomachs with food
					Polychaetes Ophiura sp.	8.0 71.0		301-350 mm	63- stomachs with food	
Rogers et al. 1979		Juveniles are snippers	Kodiak Is.	April- July	Fish Polychaetes Clam siphons	40.0 27.0 10.0		Adults		

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V	%W	%FO		
58. cont. Rock sole <u>Lepidopsetta</u> <u>bilineata</u>	Smith et al. 1978		S.E. Bering Sea	Aug.- Oct.	Fish Polychaetes Clam siphons Gammarids Polychaetes Mollusks Cumacea Amphipods Pandalidae Ammodytidae	10.0 45.0 15.0 8.0 36.9 9.2 0 5.3 1.9 33.2	74.4 17.4 7.0 26.7 1.2 3.5	48.2 2.0 1.3 46.7 0.1 0.3	Juveniles	
59. Yellowfin sole <u>Limanda</u> <u>aspera</u>	Rogers et al. 1979		Kodiak Is.	April- July	Polychaetes Shrimp Fish Clam siphons Eggs	24.0 19.0 10.0 7.0 1.0	37.9 4.5 3.0 30.3 24.2	Adults 260 mm Ave	330- stomachs with food 155-empty & not used	
	Skalkin 1963	Benthic Feeder, Food items vary with depth	S.E. Bering Sea	April- Sept.	Fish Polychaetes Crabs Clam siphons Eggs Amphipods Shrimps Mysids Mollusks Ophiurids Euphausiids Echiuroids Hyperidae Ascidians	22.0 20.0 18.0 14.0 1.0 100. 98.0 90.0 85.7 83.0 79.0 55.0 50.0	1.1 19.1 3.4 51.7 24.7	Juveniles 150 mm Ave	470- stomachs examined (pooled)	548- stomachs examined
	Feder 1977b	Predator	Kodiak Is.	Summer	Empty stomachs Pelecypoda Fish Tanner Crab Macoma sp. Osmeridae Mallotus villosus Spisula <u>Polydora</u> <u>Siliqua alta</u>	47.1 17.7 17.7 11.8 11.8 5.9 5.9 5.9 5.9			9- stomachs with food 7-empty	

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary				Predator Size Range	Sample Size
						%V or %W	%FO	%N			
60. Dover sole <u>Microstomus pacificus</u>	Pearcy and Hancock 1978	Catholic diet, feeds on infaunal & epifaunal invertebrates. Opportunistic feeder.	Oregon	Aug. 68 to Aug. 70	Polychaeta Crustaceans Annelids Mollusks Echinoderms Coelenterates	- 11.2 64.4 18.3 3.4 2.6	105. 42. - 12. 12. -		51-400 mm	325- stomachs with food 1-empty & not used	
61. English sole <u>Parophrys vetulus</u>	Feder 1980		Yakutat Bay	Nov.	Polychaetes Ophiuroidea Ophiura sarsi <u>Amphipoda</u> Unident. Remains Bivalves	76.1 37.3 19.4 17.9 9.0 4.5	49.5 17.5 12.6 11.6 5.8 2.9			67- stomachs with food 25-empty	
	Hulberg and Oliver 1978		Monterey Bay California Sta. 1 Monterey Bay Sta. 2	June- July & Oct.	Polychaetes Crustaceans Mollusks	65.0 32.0 10.0		140-352 mm, 228 mm Mean	45- stomachs examined		
	Kravitz et al. 1976	Benthophagous	Oregon Coast	Spring	Polychaetes Ophiuroidea Amphipods Pelecypods Gastropods Nemertinea	75.0 5.0 25.0	94.6 83.8 83.8 27.0 13.5 13.5		230-450 mm	37- stomachs with food 13-empty	
62. Sand sole <u>Psettichthys melano-</u> <u>stictus</u>	Feder 1980		Yakutat Bay	Nov.	Other Fish <u>Atheresthes</u>		75.0 25.0	75.0 25.0		4- stomachs with food 6-empty & not used	
	Miller 1967	Daytime Feeder	Orcas Is. Wash.	June- July & Jan.- June	Herring Other Fish Mysids Shrimp Squid		67.0 24.0 4.0 3.0 2.0		284-454 mm, 2-4 years old (All Females)		

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
63. Starry flounder <u>Platichthys stellatus</u>	Jewett and Feder 1980	Benthophagic	Norton Sound	Sept.- Oct.	Ophiuroidea <u>Yoldia hyperborea</u> Echinoidea	15.3	43.7		325-397 mm (Adults)	279- stomachs with food 28-empty
						41.5	81.3			
						38.3	52.9			
						6.9	1.4			
Feder 1978a			Chukchi Sea	Oct.	Echiuroidea Fish Ascidiacea Ophiuroidea	50.9	46.1		31- stomachs with food 24-empty	
						23.7	42.3			
						9.4	15.3			
						7.8	3.8			
						56.4	45.6			
Rosenthal 1980		Bottom Feeder	Prince William Sound	April- Sept.	Stomachs with food Spisula Polynya Crangon dalli Chionoecetes b. Crangon sp. Herring eggs Clam siphons Cranecroid Crabs Brittle Stars Polychaetes	40.0	32.3		450-560 mm	9- stomachs with food
						12.7	10.3			
						7.3	5.9			
						3.6	2.9			
64. Butter sole <u>Isopsetta isolepis</u>	Feder 1981	Bottom Feeder	Kodiak Shelf	Feb.	Polychaetes <u>Macoma sp.</u> Pandalus borealis Shrimp Snow crab Fish	66.6	25.0			6- stomachs with food 14-empty & not used
						33.3	12.5			
						33.3	12.5			
						33.3	12.5			

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
64. cont. Butter sole <u>Isopsetta</u> <u>isolepis</u>	Feder 1980		Yakutat Bay	Nov.	Ophiuroidea Polychaetes Crustacea	57.4 25.9 20.4	55.4 25.0 19.6		54- stomachs with food 63-empty & not used	
	Forrester 1969	Small Mouthed Bottom Feeder	British Columbia		Polychaetes Small Clams Small Crabs Sandlances					
65. King crab <u>Paralitho-</u> <u>oides</u> <u>camtscha-</u> <u>tica</u>	McLaughlin and Hebard 1961		S.E. Bering Sea	June- July	Mollusks Echinoderms Decapod Crust. Polychaetes Other Crust. Algae	69.0 42.2 22.8 17.5 16.0 14.3		63.-193. mm Carapace Length	329- stomachs (Cardiac section used)	
	Feder 1977 a	Scavenger, Predator	Cook Inlet, Alaska	Oct.	<u>Nuculana</u> <u>Macoma</u> Polychaetes	66.7 26.7 6.7			15- stomachs	
Feder 1977 b			Kodiak Is.	June- Aug.	<u>Nuculana</u> Pelecypoda Teleostei Margarites	47.1 29.4 17.7 11.8		90.-200. mm Carapace Length	13- stomachs with food 4-empty & nottused	
	Feder 1978b		Bering Sea	March to June	<u>Clinocardium</u> <u>SolarIELIA</u> sp. <u>Nuculana</u> <u>Cistenides</u> sp. <u>Amphiuridae</u> Snails	66.9 54.8 50.0 34.7 34.7 24.2	25.2 20.7 18.8 13.1 13.1 9.1		115- stomachs with food 9-empty & not used	
66. Tanner crab <u>Chiono-</u> <u>ecetes</u> <u>bairdi</u>	Feder 1978a	Scavenger, Predator	Cook Inlet Kodiak Is.	Oct.	Bivalve Crab Crustacea Sediment Paguridae (Crab) Decapod	20.8 12.0 10.6 9.1 8.5 5.1	31.4 18.1 16.0 13.7 12.9 7.8	0.8-1.4 kg	428- stomachs with food 287-empty	

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						%V or %W	%FO	%N		
66. cont. Tanner crab <u>C. bairdi</u>	Feder 1981		Izhut bay, Kodiak shelf, & Kiliuda bay	Year-round	Crustacea	36.6	46.9		40-192 mm	1,025-stomachs examined
					Unident. Animal mat. Fish Mollusks Annelids	32.7 13.8 12.2 3.0	59.7 21.4 46.8 18.1			
67. Tanner crab <u>Chionocetes opilio</u>	Feder 1978b		Bering Sea	Year-round	Polychaetes		52.2	32.4		16-stomachs with food 7-empty
					Ophiura sp. Debris Ophiuroidea Pelecypod Fish Amphipods	26.1 17.4 13.0 13.0	16.2 10.8 8.1 8.1			
	Feder 1979a		Cook Inlet Kodiak Is.	Nov.	Sediment		37.	26.9		146-stomachs with food 14-empty
					Crustacea Crab Bivalve Crust. Unident	34. 24. 22. 20.	25.1 17.4 16.0 14.6			
				March	Paguridae sp. Sediment Crangonidae Crust. Unident Bivalve Unident.		35.0 26.0 9.0 9.0	41.6 31.2 10.4 10.4		76-stomachs with food 15-empty
				July	Bivalve Polychaete Paguridae Nuculoidea Amphipoda		6.0 15.0 12.0 12.0 9.0 6.0	6.5 28.0 22.4 22.4 16.0 11.2		122-stomachs with food 110-empty

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary					Sample Size
						%V or %W	%FO	%N	Predator Size Range		
68. Dungeness crab <u>Cancer magister</u>	Feder 1979		Cook Inlet	Nov.	<u>Spisula polynyma</u>	48.0			Carapace width 50-210 mm Adults	251- stomachs with food 98-empty	
					Balanus sp. Amphipods Unident. Bivalves Foraminifera	11.0 6.0 6.0 4.8					
					Sand	27.0			Carapace width 22-45 mm Juveniles	51- stomachs with food 13-empty	
					Foraminifera Polychaetes Balanus sp. <u>Spisula polynyma</u> Paguridae Unident. Bivalves	23.0 18.0 18.0 9.0 8.0 6.0					
	Feder 1980		N.E. Gulf of Alaska Yakutat Bay	Nov.	Centric diatoms Bivalves Nuculana sp. <u>Yoldia</u> sp. Crustacea Nephtyidae Other Polychaetes Hydroids Ophiuroidea Crab Gastropoda Fish	58.0 46.4 43.5 30.4 26.1 20.3 14.5 14.5 13.0 11.6 11.6 10.1	19.3 15.5 9.7 10.1 8.7 6.8 4.8 4.8 4.3 3.9 3.9 3.4		69- stomachs with food 8-empty		

Table 1.--Continued.

Predator Name	Reference	Type of Feeder	Study Region	Season	Prey	Diet Summary			Predator Size Range	Sample Size
						% V or % W	% FO	% N		
69. Pandalid shrimp <u>Pandalus</u> sp.	Feder 1981	Scavenger	Izhut bay Kodiak Is.	June	Sediment	92.3		91- stomachs with food 9-empty & not used		
					Unid.					
					Crustacea	73.6				
					Centrales diatoms	60.4				
					Pennales	46.1				
					Foraminifera	42.8				
					Animal material	28.6				
					Chaetoceros	25.3				
					Polychaetes	23.1				
					Sediment	94.8				
			Kodiak Shelf	June- July	Unid.			174- stomachs with food 26-empty & not used		
					Crustacea	50.0				
					Decapoda	31.0				
					Shrimp	31.0				
					Foraminifera	29.9				
					Bivalvia	29.3				
					Animal material	24.1				
					Centrales	23.6				
70. Oceanic squid <u>Todarodes pacificus</u>	Lipinski 1973	Predator, Migrates to surface at night to feed	N.W. Pacific	Winter	Fish	86.0		86.0 Adults		
					Squid			8.5 20-30 cm		
					Crustaceans	5.5		5.5 200-500		
					Euphausiids			Juveniles <20 cm		



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