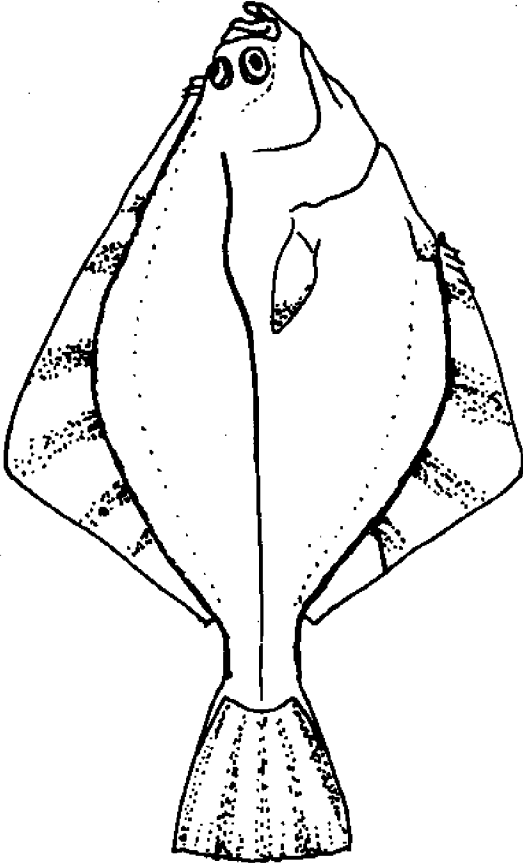


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# WHITE FISH IDENTIFICATION GUIDE

Compiled by:

Richard S. Lee

Marine Advisory Program

University of Alaska

Marine Advisory Bulletin No. 9



Alaska Sea Grant Program  
University of Alaska  
Fairbanks, Alaska 99701

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ACKNOWLEDGMENTS

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## INTRODUCTION

The term "white fish" is potentially confusing. In the context of the Alaska marine fishing industry, it refers to those species which are commonly thought of as "bottomfish." The latter term is not used for several reasons: ecologically speaking, some of the more important species, such as pollock, are not typically bottom dwellers; the term "bottomfish" has an unappealing and unaesthetic connotation for marketing these species; and the term "white fish" is considered proper by the European fishermen and processors, so that it is advantageous for Alaskans to bring our terminology in line with that of other fish producing nations. "White fish" is not, however, to be confused with the term "whitefish," which denotes a definite family of freshwater fishes related to trout and salmon, and of great importance to Alaska's subsistence fishery.

This guide is by no means a complete list or key to the marine fishes of Alaska. We have selected only those groups or individual species that are likely to have some commercial importance. In some of the larger families there are many potentially important species, as well as species that may never have a place in the markets, but most of the Alaskan members of the family have been included to help identify the most valuable species when sorting the catch.

This approach to fish identification is a departure from the orthodox scientific keys. In most cases, we have tried to isolate easily remembered characteristics that are obvious by sight or touch.



An examination of the diagrams on pages 3 through 8 will assist the reader in the use of the text. These diagrams point out the significant shapes, forms of fins, and body characteristics that help the user find the proper section of the manual in the minimum amount of time.

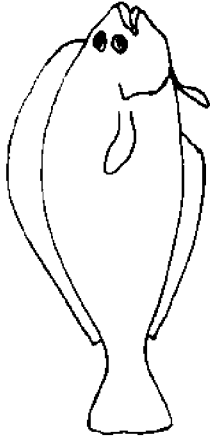
This guide was developed for a white fish processing training course presented by the University of Alaska Marine Advisory Program in Kodiak in April 1979. It included only the cods, flatfishes, and rockfishes, since these three families comprise the bulk of Alaska's burgeoning white fish industry. This revision includes several other isolated species, such as the lingcod, that are currently fished commercially. It also includes species that are currently used for bait but have potential as a food source (such as wrymouth and giant sculpin); species that are occasionally numerous, but not fished commercially (rattails, skates, eel pouts, etc.); and one species, the lumpsucker, which is harvested primarily for its roe.

Information for this guide was gathered from several sources. The material on rockfishes was drawn from Hitz's (1977) excellent field guide. Much of the material on other species was drawn from Hart's (1973) volume which provides us with one of the most comprehensive guides currently available on the fishes of our more southern waters. For the northern species, materials from the National Marine Fisheries Service were liberally used.

A BREAKDOWN OF THE POTENTIALLY IMPORTANT WHITE FISH  
SPECIES IN ALASKAN WATERS

FLATTENED SHAPES:

Both eyes on the right or left side of the head



Flatfishes.....Page 9

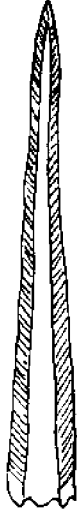
One eye on each side of the head; pectoral fins winglike



Skates.....Page 148

EEL SHAPED:

Without a definite tail fin



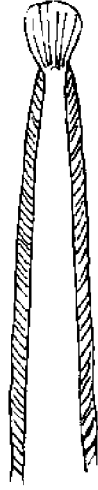
Body with heavy dark spots

Wolf-eel.....Page 160

No obvious dark spots

Eel pouts.....Page 162

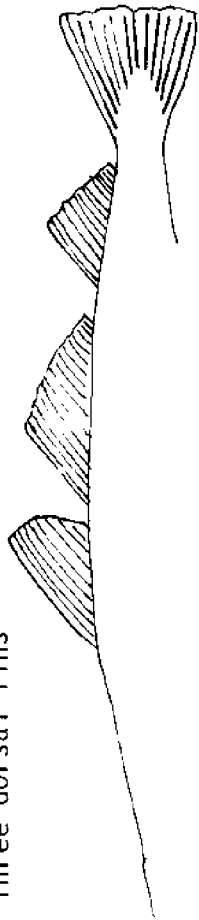
With definite tail fin



Wrymouth.....Page 158

BODY NORMAL (not eel-like; not flattened):

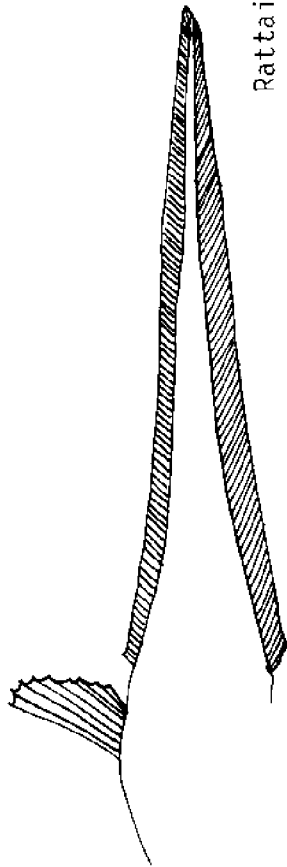
Three dorsal fins



Cods.....Page 137

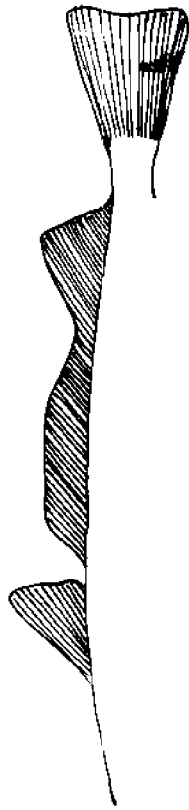
Two dorsal fins

Rear dorsal fin very long; pointed tail



Rattails.....Page 152

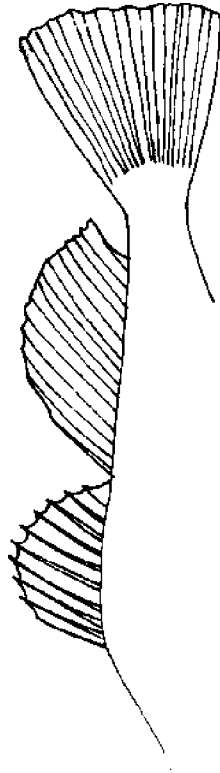
Rear dorsal fin long and hatched



Hake (Whiting).....Page 144

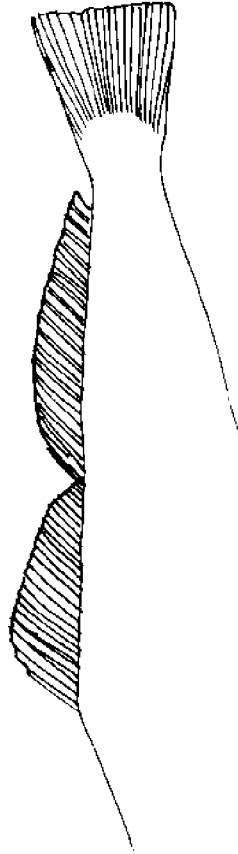
BODY NORMAL (Continued):

Two dorsal fins almost touching each other



Giant Sculpins.....Page 156

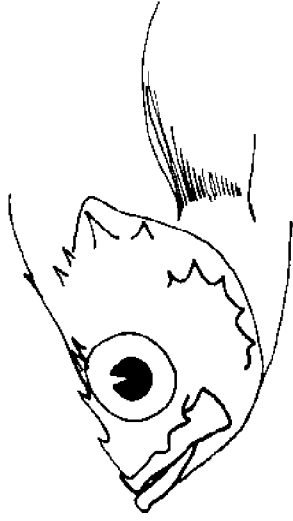
One long notched dorsal fin



Greenling.....Page 154

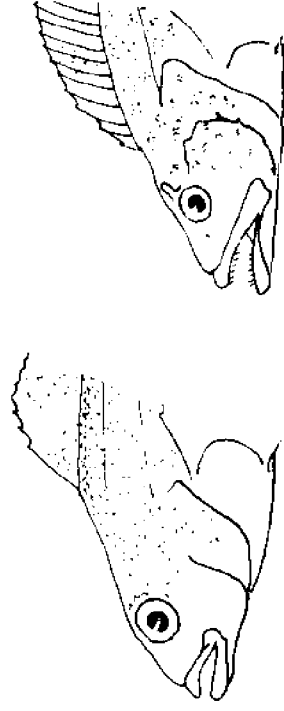
BODY NORMAL (Continued):

Head and cheeks with spines



Rockfishes.....Page 58

No spines on head and cheeks



Greenling and Lingcod..Pages 154 and 150

BODY NORMAL (concluded):

One very short dorsal fin set far back on the body



## SECTION A - THE FLATFISHES

The flatfishes, as a group, are sometimes difficult for the layman to identify. However, there are several characteristics which, when used together, can allow rapid identification of any species taken in Alaskan waters. The most basic characteristic separates the two major families of these fish-- "left-eyed" or "right-eyed." By placing the fish on a table eyed side up, with the anal fin toward you, the head of the fish will be facing either to your right or left. If it faces right, it is a right-eyed fish; if it faces left, it is a left-eyed fish. Only two species, the Pacific and the speckled sanddabs, have eyes always on the left side. All others are right-eyed, with the exception of the starry flounder, which can be either right- or left-eyed.

The other identifying characteristics are: the shape of lateral lines; the presence or absence of a sharp spine at the base of the anal fin; the size of the mouth; and the presence or absence of an accessory branch of the lateral line. (The accessory branch of the lateral line is sometimes difficult to see, and therefore should be used as a secondary feature for identification.) All Alaskan flatfish may be identified by using a combination of these characteristics.

To use this manual, first familiarize yourself with the diagrams on page fourteen. These diagrams contain all of the important diagnostic characteristics needed to separate out the flatfishes.



Next, look at the Flow Chart on pages 11, 12, and 13. Use this chart in the following manner.

Assume, for example, that you have a fish with the following characteristics:

large mouth, sharp teeth, straight lateral line, and cheek pores

You will note that only three species--halibut, arrowtooth flounder, and Greenland turbot--have a large mouth and sharp teeth. As you move down the page, the next item to check is the lateral line. Of the three possible species, the halibut has a high arch in the lateral line, so is thus eliminated. Checking down the list, the next characteristic of the fish to classify is no accessory branch. This is true of both the arrowtooth flounder and the Greenland turbot. The last identifying characteristic, cheek pores, is true only of the Greenland turbot.

After this procedure, check the diagram on page 26 to verify identification. Thus, by the process of elimination, the species can be identified.

FLATFISH FLOW CHART

Diagnostic Groups - Page

Left-eyed

- Pacific sanddab 16
- Speckled sanddab 18
- Starry flounder (occasionally) 20

Right-eyed

All others

Large mouth (to mid-pupil of lower eye or longer)

- Alaska plaice 56
  - Arrowtooth flounder 22
  - Flathead sole 30
  - Greenland turbot 26
  - Pacific halibut 24
  - Petrale sole 32
  - Sand sole 28
- All with well developed teeth
- 

Small mouth (to less than mid-pupil of lower eye)

- Butter sole 50
- C-O sole 54
- Curlfin sole 52
- Deepsea sole 46
- Dover sole 38
- English sole 40
- Rex sole 36
- Rock sole 40
- Slender sole 34
- Starry flounder 20, 42
- Yellowfin sole 44

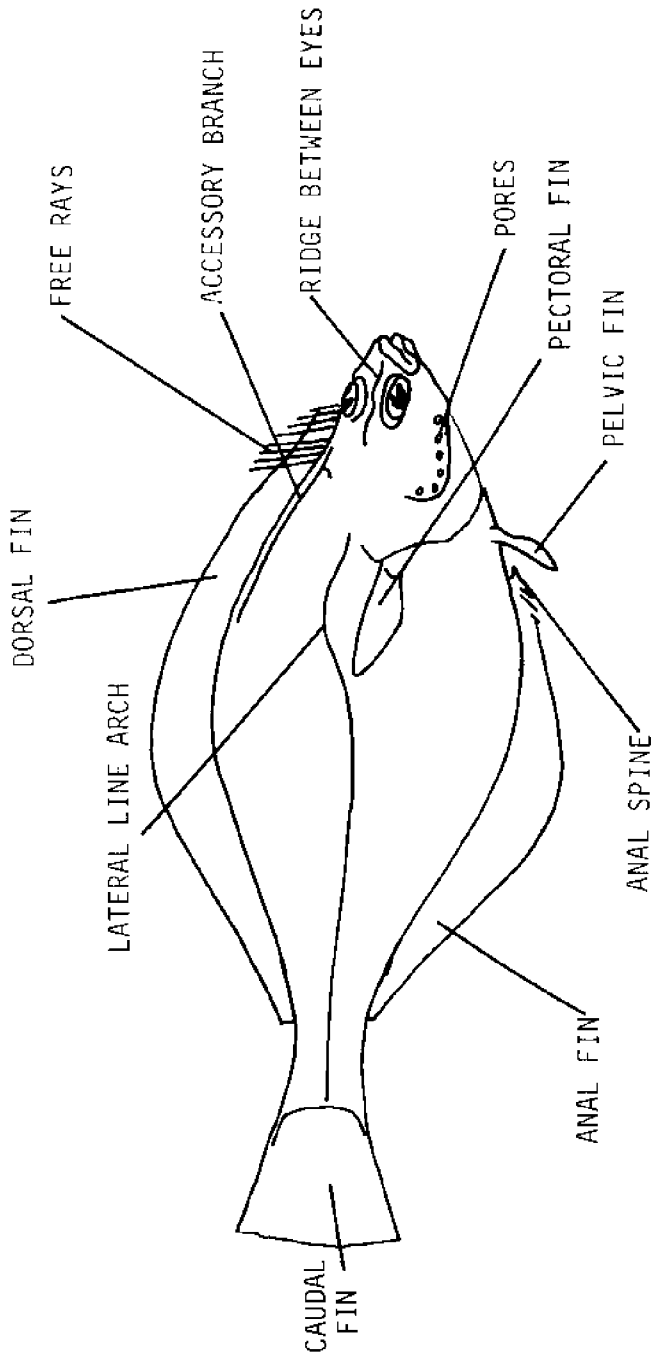
Diagnostic Groups - Page

Lateral line with strong arch	
Alaska plaice	56
Pacific halibut	24
Lateral line with only moderate arch or nearly straight	
Arrowtooth flounder	22
Butter sole	50
C-O sole	54
Curlfin sole	52
Deepsea sole	46
Dover sole	38
English sole	40
Rock sole	48
Yellowfin sole	44
Accessory branch present	
Alaska plaice	56
Butter sole	50
C-O sole	54
Curlfin sole	52
Anal spine present	
Butter sole	50
C-O sole (spine small, hidden)	54
Curlfin sole	52
English sole	40
Flathcad sole	30
Pacific halibut	24
Flathead sole	26
Petrale sole	32
Rex sole	36
Sand sole	28
Slender sole	34
Starry flounder	20, 42
Dover sole (very short)	38
English sole	40
Rock sole	48
Sand sole	28
Petrale sole	32
Rex sole	36
Rock sole	48
Sand sole	28
Slender sole	34
Starry flounder	20, 42
Yellowfin sole	44

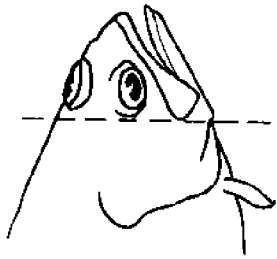
Diagnostic Groups - Page

Ridge between eyes	
C-O sole	54
Curlfin sole ("horns")	52
Slender body	
Dover sole	38
English sole	40
Cheek pores	
Greenland turbot	26
Slimy	
Dover sole	38
Forward dorsal fin supports not connected by membrane at their tips	
Sand sole	28
Dorsal fin extends on to blind side of head	
Curlfin sole (to mouth)	52
C-O sole (above mouth)	54
Five bony spines between upper eye and gill cover	
Alaska plaice	56

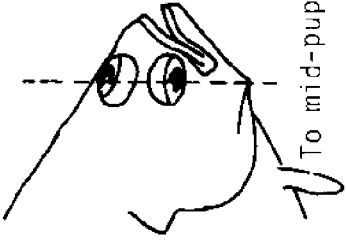
FLATFISH DIAGNOSTIC CHARACTERISTICS



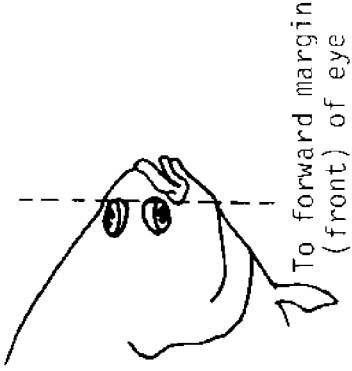
HYPOTHETICAL RIGHT-EYED FLATFISH



To rear margin of eye

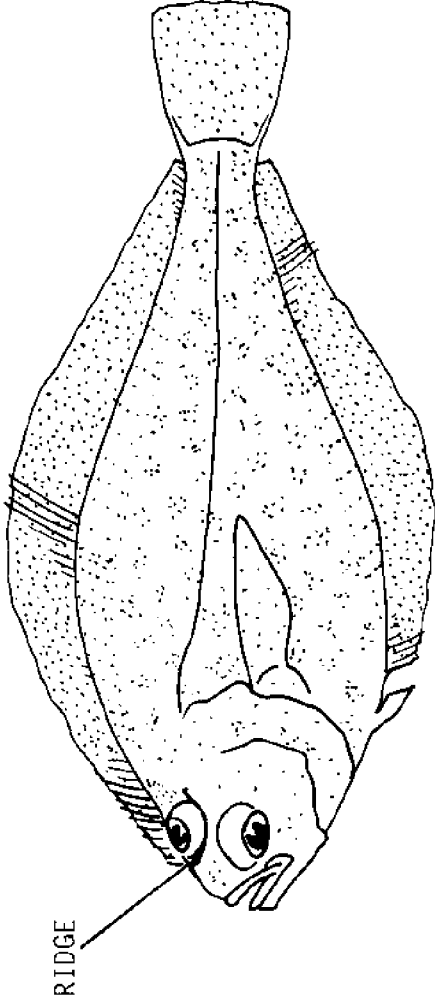


To mid-pupil



To forward margin  
(front) of eye

### MEASUREMENT OF MOUTH



PACIFIC SANDDAB

PACIFIC SANDDAB

*Citharichthys sordidus*

Characteristics:

Eyes on left side of head  
Tail nearly square at end  
Ridge above lower eye

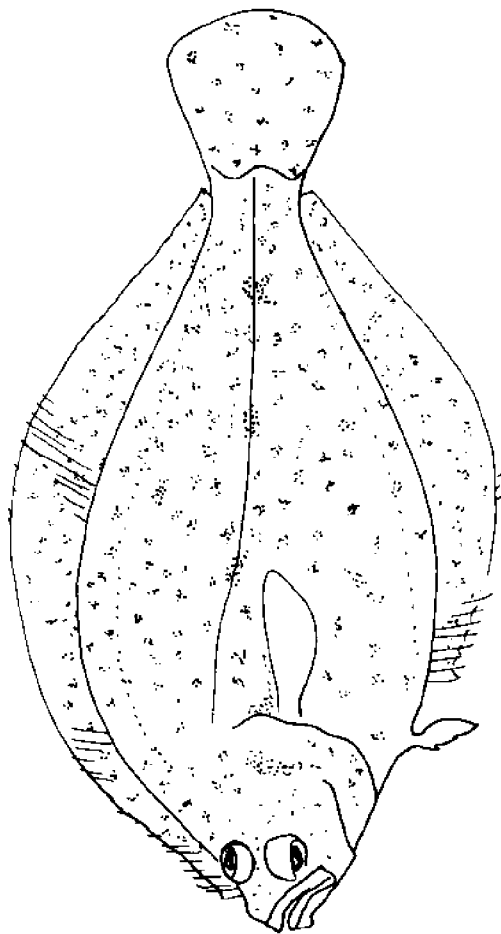
Size: To 16 inches (41 cm)

Range: Baja California to Bering Sea

Depth: To 167 fm (306 m)

Commercial Importance: Excellent food fish, taken in large amounts in California; only a small demand in Northern waters





SPECKLED SANDDAB

SPECKLED SANDDAB

*Citharichthys stigmaeus*

Characteristics:

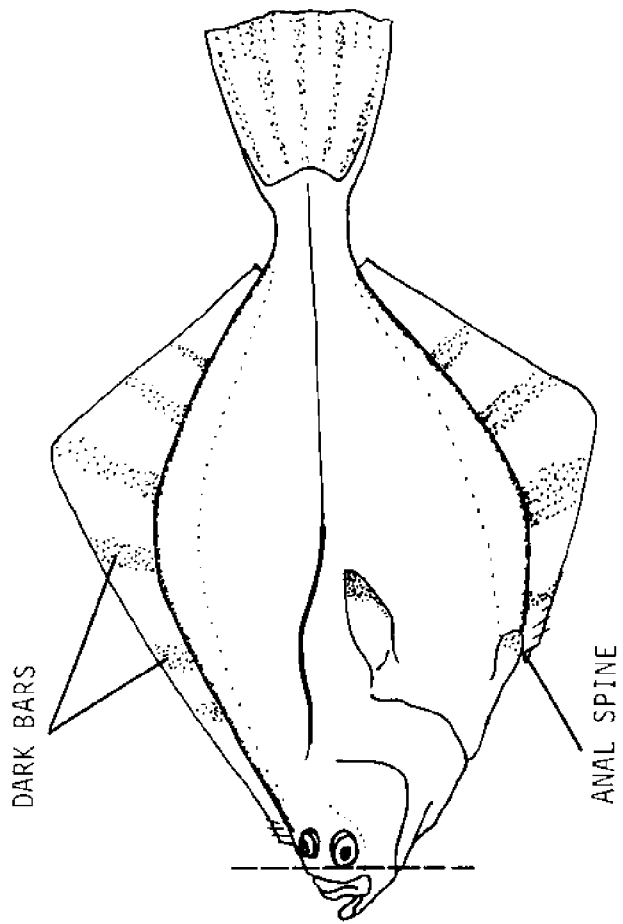
Eyes on left side of head  
Tail rounded at end  
NO ridge above lower eye

Size: To 6 inches (15 cm)

Range: Baja California to Southeast Alaska

Depth: Shallow water over sandy beaches

Commercial Importance: None



STARRY FLOUNDER (Left-eyed)

STARRY FLOUNDER (Left-eyed)

*Platichthys stellatus*

Characteristics:

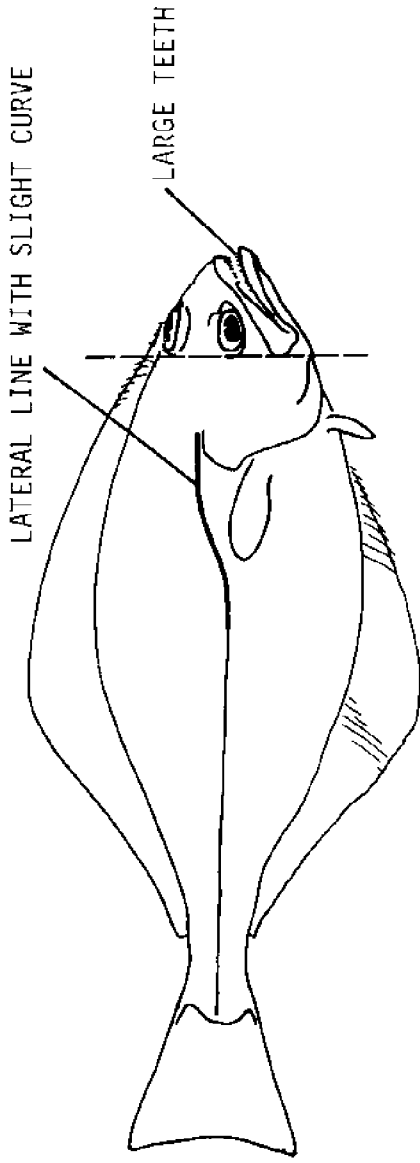
Eyes on left side of body  
Very small scales  
Small mouth  
Slight arch in lateral line  
No accessory branch  
Strong anal spine  
Prominent banding on dorsal and anal fins

Size: To 36 inches (91 cm)

Range: Southern California to Chukchi Sea

Depth: Shallow to more than 150 fm (275 m)

Commercial Importance: Presently most important flounder being harvested in Alaska. Popular because of good flavor and size and firm texture of filets.



ARROWTOOTH FLOUNDER

## ARROWTOOTH FLOUNDER

*Atheresthes stomias*

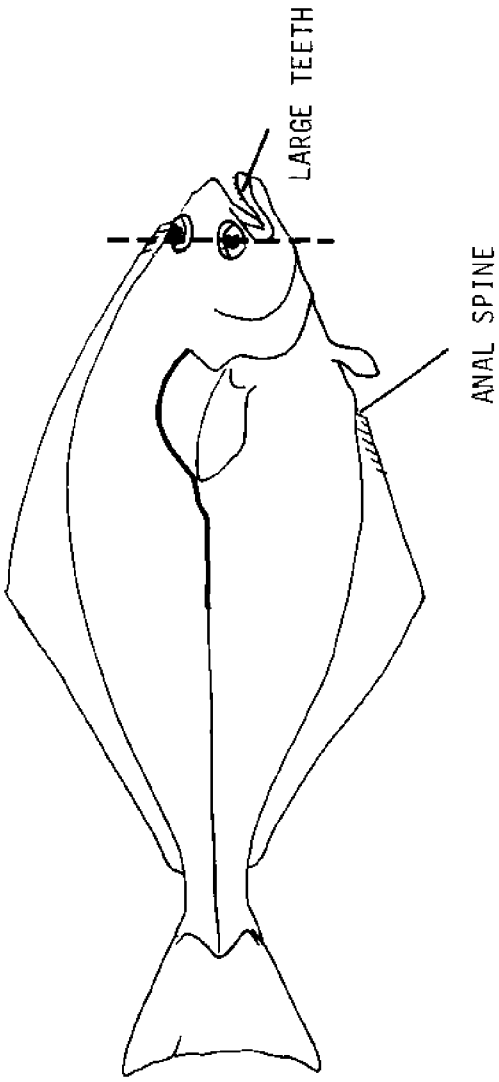
### Characteristics:

Eyes on right side of head  
Mouth extending past rear margin of pupil  
Lateral line only slightly curved  
No accessory branch  
No anal spine  
Large arrow-shaped teeth  
White or cream to light gray on blind side

Size: To 33 inches (84 cm)

Range: Southern California to the Bering Sea. In the western Bering Sea it is replaced by the Asiatic arrowtooth flounder (*A. evermanni*).

Commercial Importance: Fair market for animal food, no large established market for human consumption. Frequently marketed as "turbot."



PACIFIC HALIBUT

PACIFIC HALIBUT

*Hippoglossus stenolepis*

Characteristics:

Eyes on right side of head  
Large size  
Mouth large, reaching mid-pupil of lower eye  
Lateral line with high arch  
No accessory branch  
Teeth large and well developed  
Anal spine  
Region between tail and rear margin of dorsal and anal fins quite narrow  
Whitish on lower side

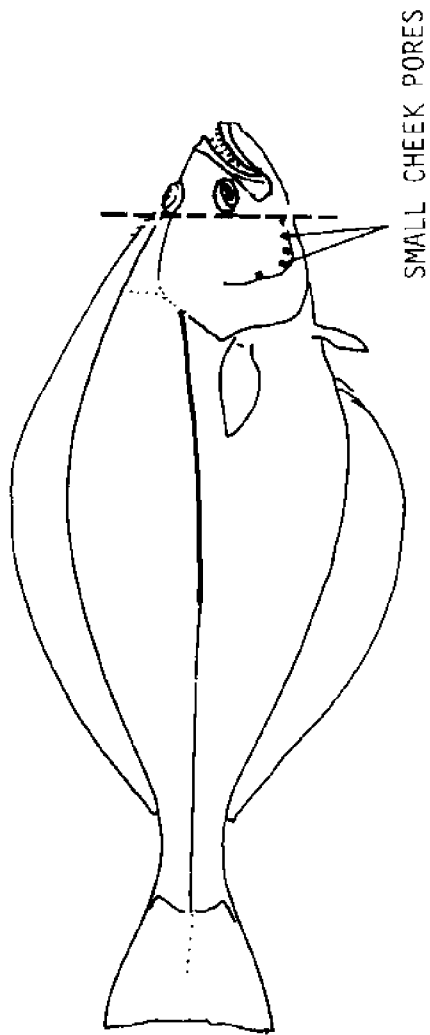
Size: To 8 feet, 9 inches (267 cm)

Range: Central California to Norton Sound

Depth: Surface to 600 fm (1100 m)

Commercial Importance: Historically the most valuable and sought-after flatfish.





GREENLAND TURBOT

GREENLAND TURBOT

*Reinhardtius hippoglossoides*

Characteristics:

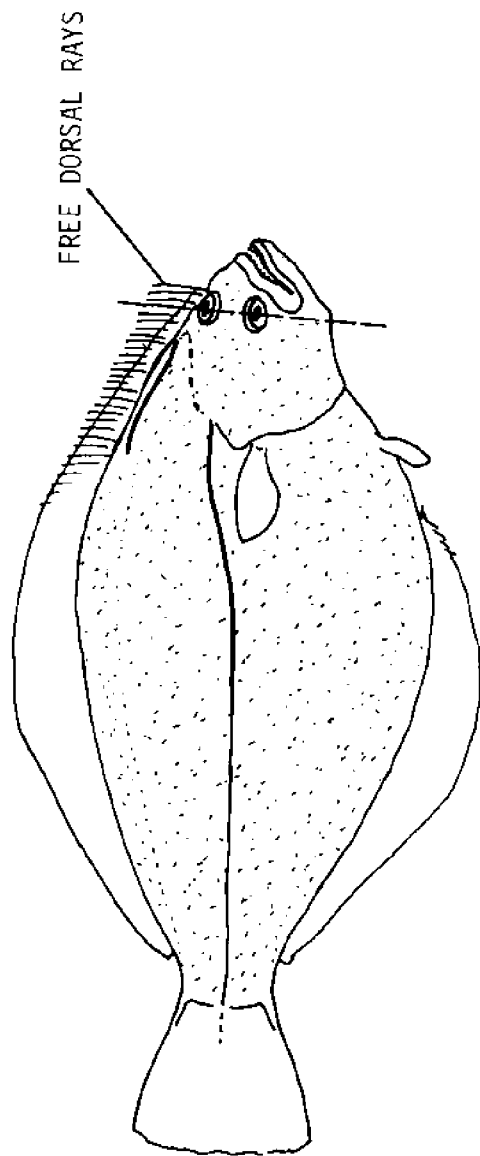
Eyes on the right side of head  
Large mouth extending to rear of lower pupil  
Strong, well developed teeth  
Lateral line with slight slope  
Forked tail  
No accessory branch  
No anal spine  
Color on blind side dark with lighter blotches  
Series of pores on face below and behind eye, may be hard to distinguish

Size: To 40 inches (102 cm)

Range: North Atlantic and Pacific Oceans north to Bering Sea

Depth: Primarily a deep water fish

Commercial Importance: Significant importance on east coast



SAND SOLE

SAND SOLE

*Psettichthys melanostictus*

Characteristics:

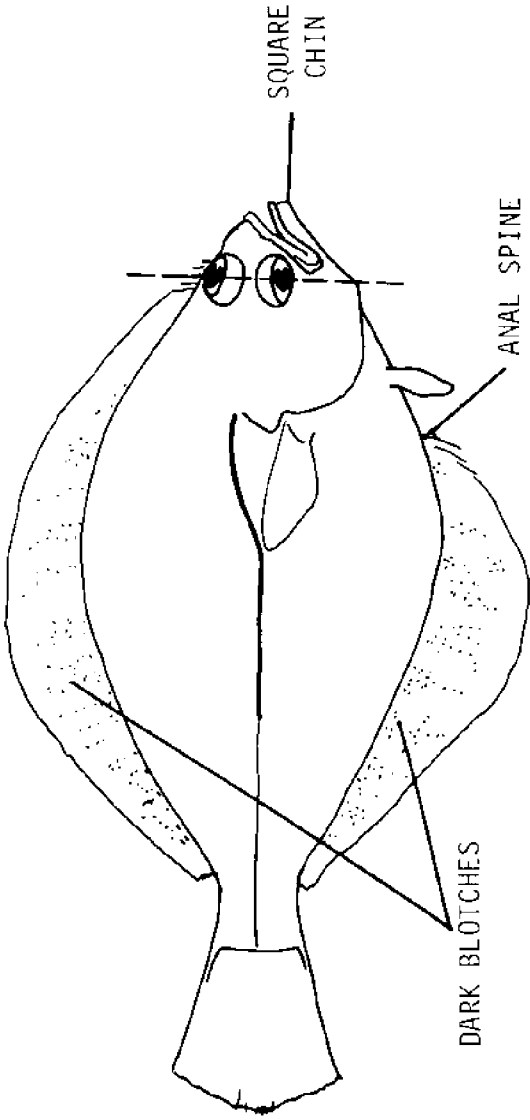
Eyes on the right side of the head  
Forward rays of dorsal fin extend beyond fin membrane  
Mouth large, extending to mid-pupil of lower eye  
Lateral line slightly curved  
Short accessory branch  
Strong anal spine

Size: To 24.8 inches (63 cm)

Range: Southern California to Bering Sea

Depth: Shallow water to 100 fm (183 m)

Commercial Importance: None, except for domestic use



FLATHEAD SOLE

FLATHEAD SOLE

*Hippoglossoides elassodon*  
*H. robustus*

Characteristics:

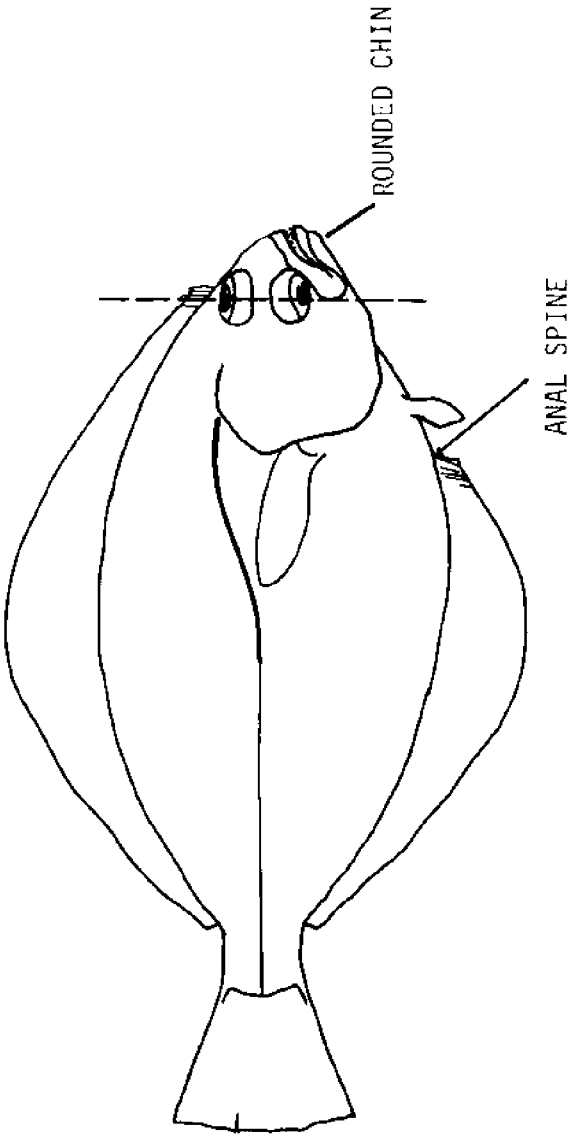
Eyes on right side of head  
Moderately broad body  
Mouth large, reaching to mid lower pupil  
Lateral line with low arch  
No accessory branch  
Strong anal spine  
Dorsal and anal fins with dark blotches  
Pointed lower jaw  
Tail comes to a slight point in the center  
Similar to Petrale sole, but has only one series of teeth on the upper  
jaw, and a more pointed lower jaw

Size: To 18 inches (46 cm)

Range: (*H. elassodon*) Northern California to Bering Sea. Replaced in Northern  
Bering Sea by *H. robustus*, which is very similar in appearance.

Depth: 150-200 fm (275-366 m)

Commercial Importance: Limited



PETRALE SOLE

PETRALE SOLE

*Eopsetta jordani*

Characteristics:

Eyes on right side of head  
Mouth large, reaching to mid-pupil of lower eye  
Lateral line slightly curved  
No accessory branch  
Strong anal spine present  
Similar to flathead sole, but has two series of teeth in upper jaw, while flathead sole has only one; flathead has a more prominently pointed lower jaw

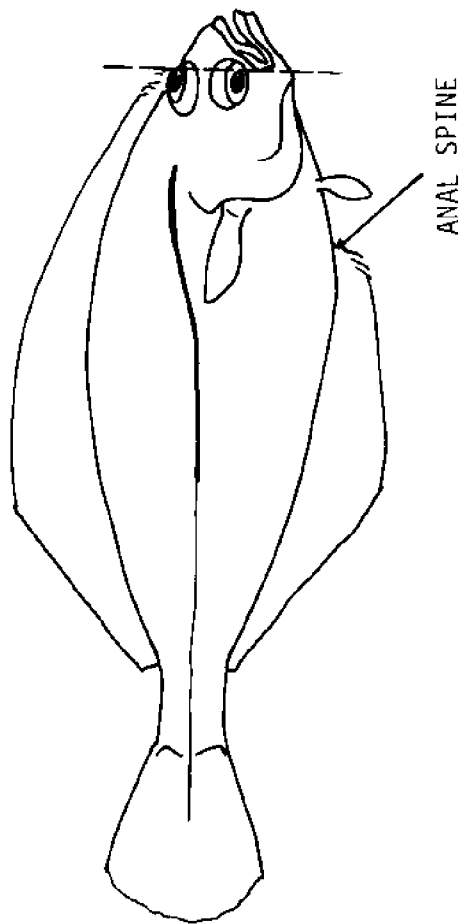
Size: To 27.5 inches (70 cm)

Range: Baja California to Bering Sea

Depth: Winter: 170-250 fm (310-460 m)  
Summer: 40- 70 fm ( 73-128 m)

Commercial Importance: High demand for fresh or frozen filets





SLENDER SOLE  
ARCTIC FLOUNDER

SLENDER SOLE  
ARCTIC FLOUNDER

*Lyopsetta exilis*  
(*L. glacialis*)

Characteristics:

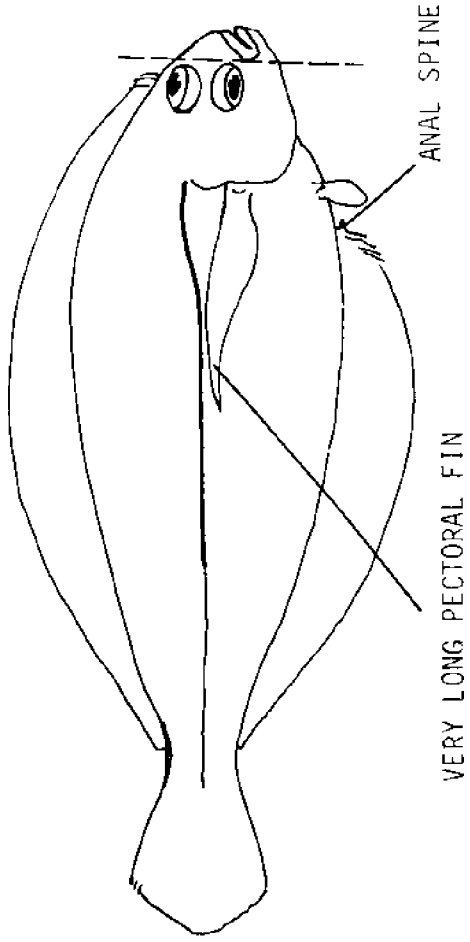
Eyes on right side of head  
Mouth reaches pupil of lower eye  
Lateral line with gentle slope  
No accessory branch  
Slender body  
Strong anal spine  
Similar to flathead sole, but with more slender body

Size: To 13.7 inches (35 cm)

Range: (*Lyopsetta exilis*) Southern California to Southeast Alaska. Replaced  
in the Bering Sea and northwards by the Arctic flounder (*L. glacialis*)

Depth: Shallow to 280 fm (513 m)

Commercial Importance: Excellent flavor, but too small to have commercial use



REX SOLE

REX SOLE

*Glyptocephalus zachirus*

Characteristics:

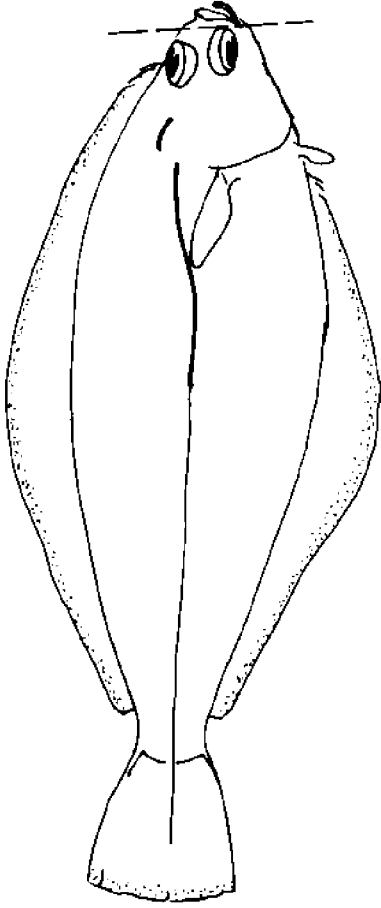
Eyes on right side of head  
Body long and slender  
Mouth small, reaching only to front of eye  
Lateral line nearly straight  
No accessory branch  
Strong anal spine  
Pectoral fin very long

Size: To 23.2 inches (59 cm)

Range: Southern California to the Bering Sea

Depth: To 400 fm (730 m)

Commercial Importance: Excellent and abundant food fish, but because of small size and thinness not heavily utilized commercially



DOVER (SLIME) SOLE

DOVER (SLIME) SOLE

*Microstomus pacificus*

Characteristics:

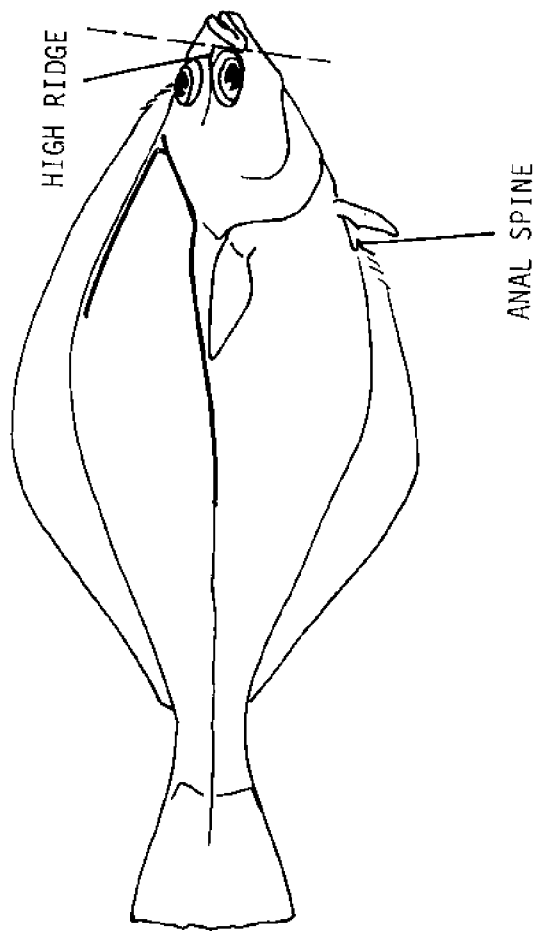
Eyes on right side of head  
Very small mouth  
Soft body  
Large amount of slime produced by body  
Lateral line nearly straight  
Short, unconnected accessory branch often difficult to see  
Very small scales  
Grayish anal spine  
Small paired fins  
Larger fish may be broader than indicated in the picture

Size: To 28 inches (71 cm)

Range: Baja California to Bering Sea

Depth: Surface to 600 fm (1100 m)

Commercial Importance: In spite of soft body, flesh keeps well and has good flavor, making it highly valuable commercially.



ENGLISH SOLE

ENGLISH SOLE

*Parophrys vetulus*

Characteristics:

Eyes on right side of head  
Long, pointed head  
Lateral line nearly straight  
Long accessory branch  
Mouth small, reaching to front of lower eye  
Slender body  
Strong anal spine  
High ridge between eyes

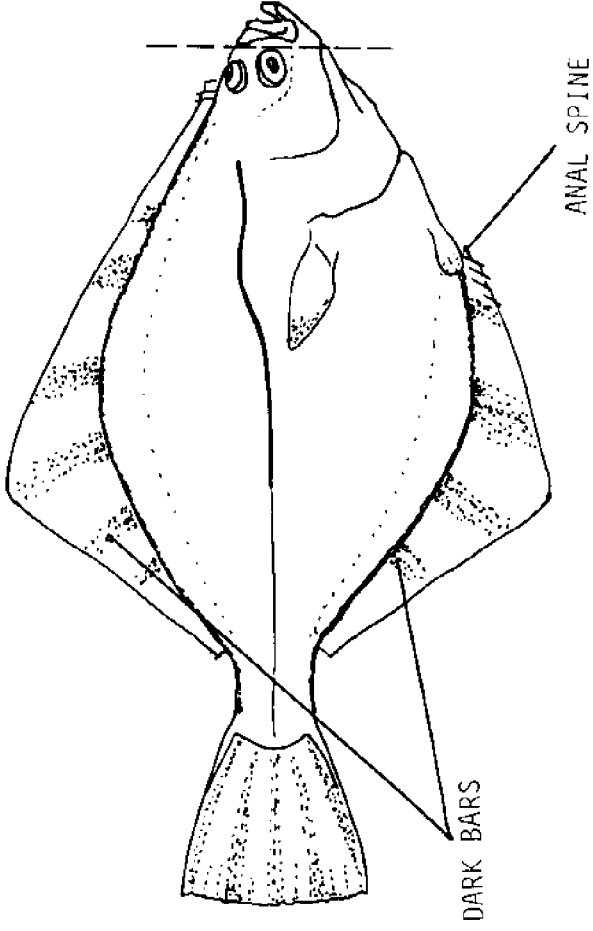
Size: To 22.5 inches (57 cm)

Range: Baja California to Aleutian Islands

Depth: Surface to 300 fm (550 m). Greatest numbers at 70 fm (128 m)

Commercial Importance: Good flavor, high demand in local markets





STARRY FLOUNDER (Right-eyed)

STARRY FLOUNDER (Right-eyed)

*Platichthys stellatus*

Characteristics:

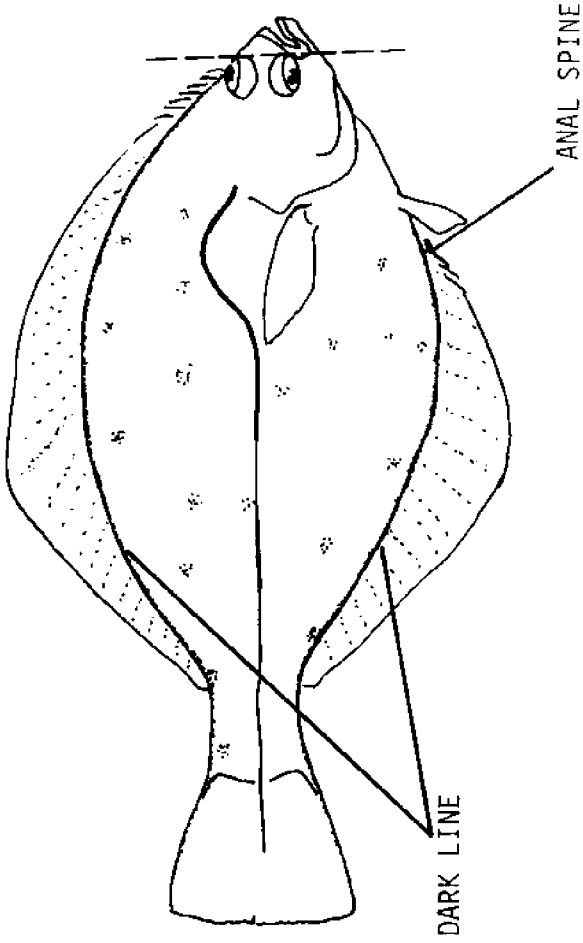
Eyes on right side of body  
Very rough scales  
Small mouth  
Slight arch in lateral line  
No accessory branch  
Strong anal spine  
Prominent banding on dorsal and anal fins

Size: To 36 inches (91 cm)

Range: Southern California to Chukchi Sea

Depth: Shallow to more than 150 fm (275 m)

Commercial Importance: Low; mainly taken for domestic uses. Popular because of good flavor and size, and firm texture of filets.



YELLOWFIN SOLE  
LONGNOSED FLOUNDER

YELLOWFIN SOLE  
LONGNOSED FLOUNDER

*Limanda aspera*  
*L. proboscidea*

Characteristics:

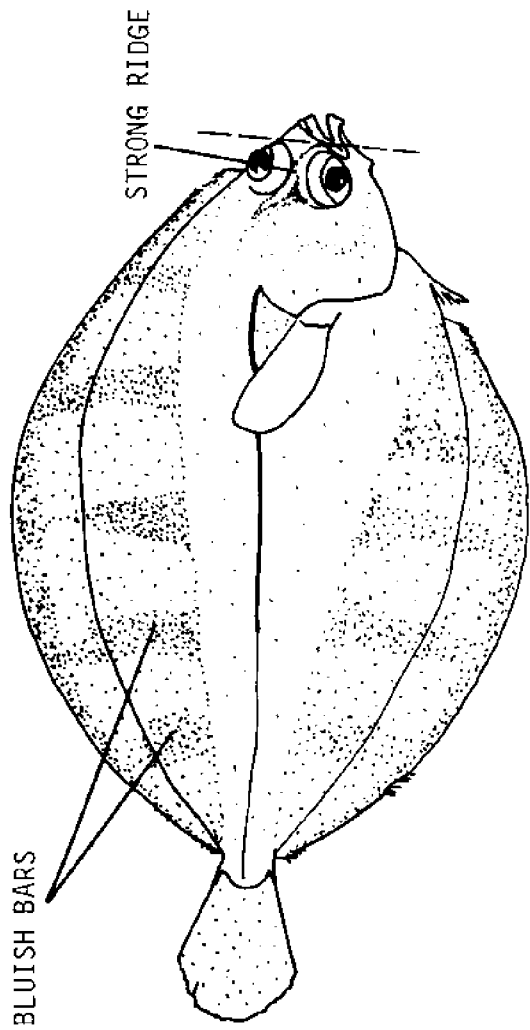
Eyes on right side of head  
Mouth small, reaching to front of lower eye  
Lateral line with high arch  
No accessory branch  
Strong anal spine  
Yellow cast to fin bases  
Dark line along base of dorsal and anal fin obvious when fresh

Size: To 17.6 inches (45 cm)

Range: (*Limanda aspera*) British Columbia to Bering Sea; replaced in Bering Sea (North) and Chukchi by long-nosed flounder (*L. proboscidea*)

Depth: Shallow to maximum of 100 fm (183 m)

Commercial Importance: Primary target for Japanese and Russian trawlers in the Eastern Bering Sea during the 50's and 60's, and were heavily overfished. The stock has since started to rebuild and currently supports a limited fishery.



DEEPSEA SOLE

DEEPSEA SOLE

*Embassichthys bathybius*

Characteristics:

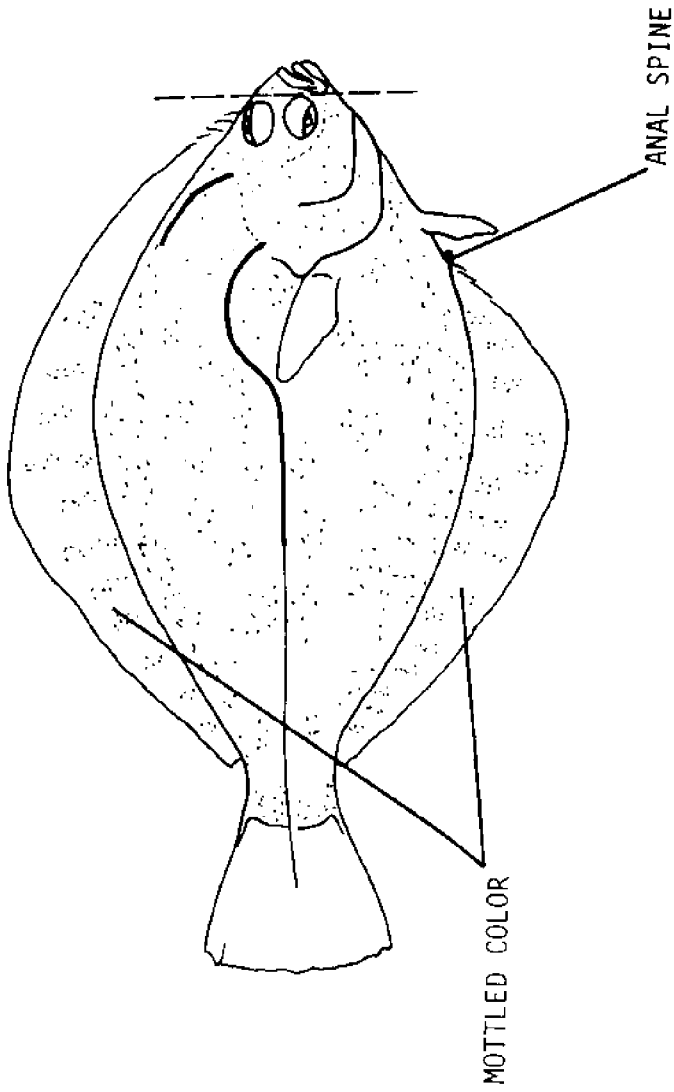
Eyes on right side of head  
Mouth small  
Blue blotches on eyed side  
Brown on blind side  
Strong ridge between eyes  
Lateral line nearly straight  
No accessory branch  
No anal spine

Size: To 18.5 inches (47 cm)

Range: Southern California to Southeast Alaska

Depth: Deeper than 175 fm (320 m)

Commercial Importance: None



ROCK SOLE

ROCK SOLE

*Lepidopsetta bilineata*

Characteristics:

Eyes on right side of head  
Mouth small, reaching front of lower eye  
Lateral line with a high arch  
Short accessory branch near base of dorsal fin  
Strong anal spine  
Fins mottled

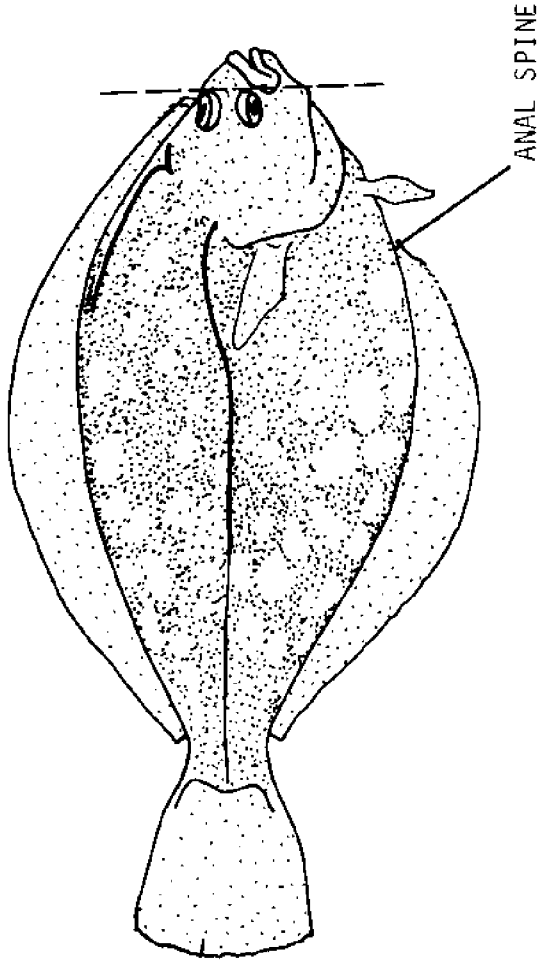
Size: To 23.5 inches (60 cm)

Range: Southern California to Bering Sea

Depth: Mostly shallow, but known to 200 fm (366 m)

Commercial Importance: The most utilized of the smaller flatfishes





BUTTER SOLE

BUTTER SOLE

*Isopsetta isolepis*

Characteristics:

Eyes on right side of head  
Mouth small, reaching to front of lower eye  
Lateral line only moderately curved over pectoral fin  
Accessory branch along dorsal base to above rear quarter of pectoral fin  
Strong anal spine  
Gray color, spotted with yellow or green

Size: To 18 inches (46 cm)

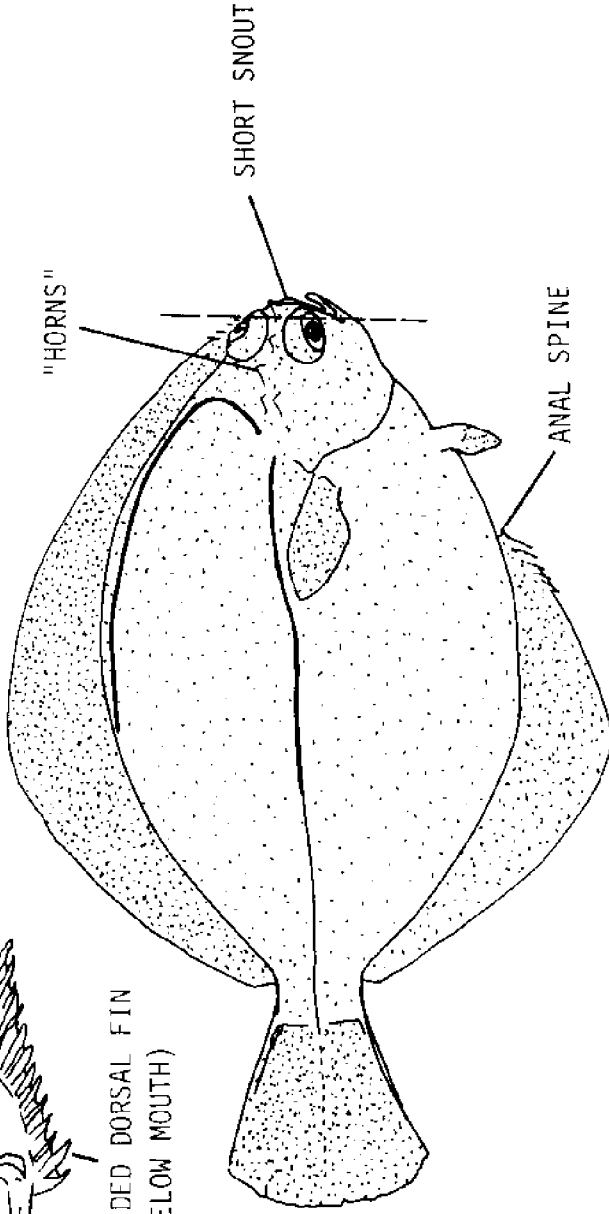
Range: Southern California to Southern Bering Sea (Quast & Hall, 1972)

Depth: Shallow to 200 fm (366 m)

Commercial Importance: Small in size and difficult to fillet, but excellent flavor



EXTENDED DORSAL FIN  
(BELOW MOUTH)



CURLFIN SOLE

CURLFIN SOLE

*Pleuronichthys decurrens*

Characteristics:

Eyes on the right side of head  
Round shape  
Mouth small  
Short snout  
Dorsal fin reaches point of mouth on blind side  
2 or 3 prominent "horns" behind eyes  
Lateral line slightly curved  
Long accessory branch  
Sharp anal spine

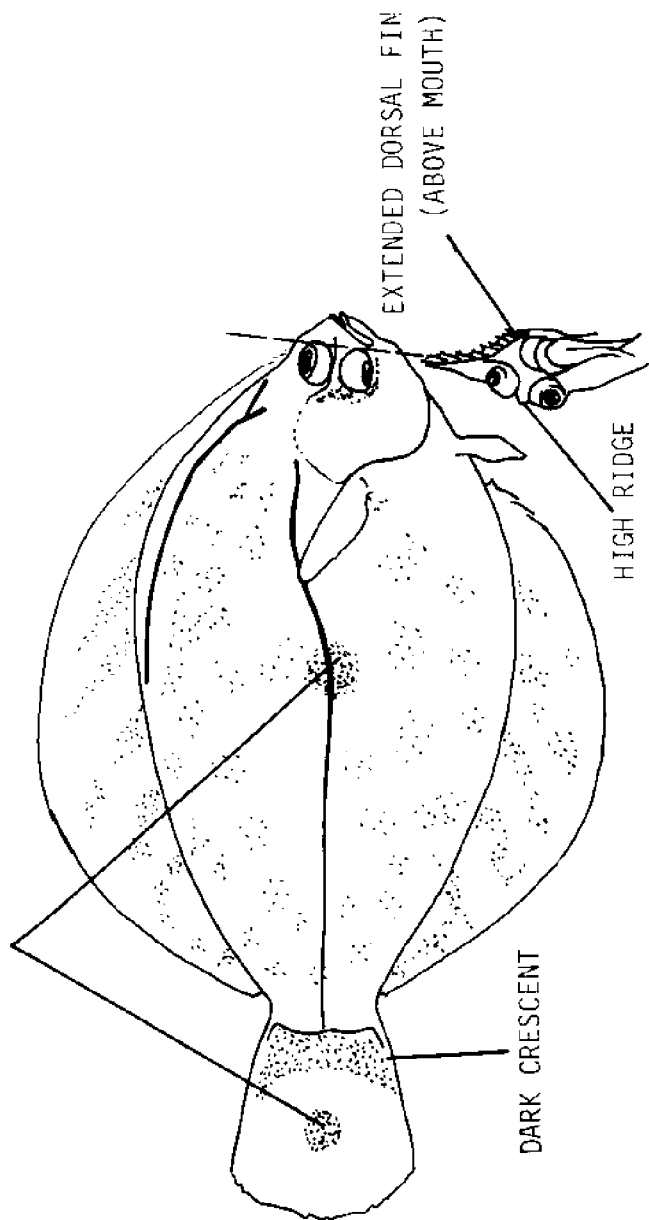
Size: To 12 inches (30 cm)

Range: Baja California to Southeast Alaska

Depth: 21-291 fm (38-533 m)

Commercial Importance: Good flavor, but importance limited by small size.

PROMINENT DARK SPOTS



EXTENDED DORSAL FIN:  
(ABOVE MOUTH)

HIGH RIDGE

DARK CRESCENT

C-0 SOLE

C-O SOLE

*Pleuronichthys coenosus*

Characteristics:

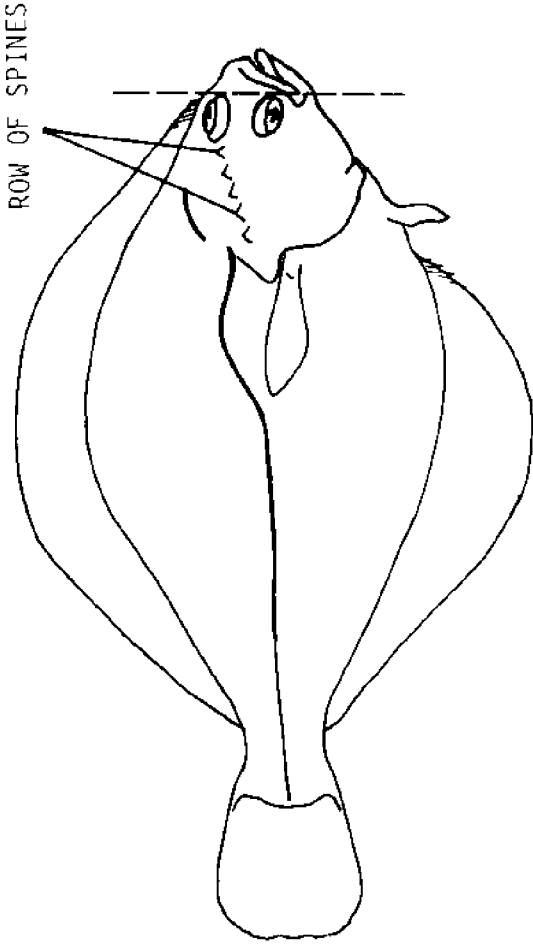
Eyes on the right side of head  
Dorsal fin extends down on blind side to point above jaw  
Mouth small  
Dark spot on mid-body and mid-tail  
Lateral line with slight curve  
Long accessory branch  
Small, hidden anal spine  
High ridge between eyes

Size: To 14 inches (36 cm)

Range: Baja California to Southeast Alaska

Depth: 10-191 fm (18-350 m)

Commercial Importance: Difficult to fillet due to small size and tough skin



ALASKA PLATICE

ALASKA PLAICE

*Pleuronectes quadrituberculatus*

Characteristics:

Eyes on right side of head  
Moderately broad body  
Mouth moderate, extending to mid-pupil of lower eye  
Lateral line with moderately high arch  
Small accessory branch  
No anal spine  
Row of five regular bony spines behind upper eye  
Blind side of fish yellowish in color

Size:      To 24 inches (57 cm)

Range:     From Northern Southeast Alaska to the Bering and Chukchi Seas

Commercial Importance:   Only of importance as incidental catch in foreign  
                                  Bering Sea trawl catches



## SECTION B - THE ROCKFISHES

Many of the rockfishes of the northeastern Pacific have potential market value, but only the Pacific ocean perch has received much attention. It has been harvested to the point of overfishing. Still, other rockfishes are large enough to bring a good market price and have strong populations that can support a managed fishery.

Most rockfishes are sold as fresh fillets (especially the larger species) or are used in the production of fish and chips. In the central California trawl fishery, small species are sold for animal food as are other commercially unimportant (or "trash") species.

Because they are quite similar, rockfishes are particularly hard to identify. The material used here is largely from Hitz (1977) and has been modified to make it easier for laymen. The characteristics used for species separation and identification are:

Color:

- (a) strongly striped
- (b) primarily dark (brown, black, or gray) or dark with lighter blotches
- (c) primarily red, orange, or pink body color
- (d) blotched reddish

Headspines:

On most species of rockfishes, there are from one to eight pairs of spines along the top of the head from the nose to the neck. These may be easily detected by touch, depending on how well developed they are.

Comparative length of anal spines:

If the spines in the anal fin are depressed backward, the second (middle) spine may be longer, the same as, or shorter than the third spine. This comparative length, when used in combination with other characteristics, is often a very good diagnostic clue to the fish's identity.

Peritoneum (lining of the body cavity):

This membrane may be either dark or light and is constant for the species in our region (with one exception--the black rockfish).

In order to use this section of the field guide, first decide which color grouping the specimen in question best fits. Next, match the other characteristics listed. In cases where there may be confusing similarities, similar species and their distinguishing characteristics are noted under the heading "comments."

To practice using the rockfish flow chart which begins on page 62, assume that you have a fish with the following characteristics: primarily reddish to orange, yellow, or pinkish color; 2nd anal spine shorter than 3rd; range to the Bering Sea; and head spines weakly developed. Beginning with color, you will note that there are 18 species in this color category, so further comparisons are obviously necessary. Referring next to the relationship of the 2nd anal spine to the 3rd, you will note that there are 11 of the species from the same color category whose 2nd anal spine is shorter than or equal to the 3rd. The next characteristic to compare is range, and you will note that there are still five species who range to the Bering Sea.

Checking the head spines, there are still two species who have all the other characteristics, as well as weakly developed head spines. These two are: Pacific ocean perch, p. 104, and redstripe rockfish, p. 108. Referring to these pages, you will find specific characteristics which are distinguishing between these two species: the redstripe has a clear, light red stripe along the lateral line; the Pacific ocean perch shows a darker area at the base of the tail and under the rear portion of the dorsal fin.

Thus, by the process of elimination, the species can be identified. (Identification is a much more lengthy process for rockfish than for flatfish.)

## ROCKFISH FLOW CHART

Diagnostic Groups - Page**Color****Strong stripes:**

Redbanded Rockfish 72  
 Tiger Rockfish 70

**Primarily dark (black, brown, blue, or gray):**

Black Rockfish 80  
 Blue Rockfish 78  
 China Rockfish 86  
 Dusky Rockfish 82  
 Silvergray Rockfish 84  
 Widow Rockfish 74  
 Yellowtail Rockfish 76

**Distinct yellow stripe or blotch on body:**

Brown Rockfish 90  
 Quillback Rockfish 88

Diagnostic Groups - Page

Color

Reddish cast:

Northern Rockfish 98

Blotched reddish rockfish (light along lateral line):

Copper Rockfish 92

Greenstriped Rockfish 96

Pygmy Rockfish 94

Primarily reddish to orange, yellow, or pinkish rockfish:

Blackgill Rockfish 128

Bocaccio 102

Darkblotched Rockfish 106

Harlequin Rockfish 112

Longspine Thornyhead 133

Orange Rockfish 100

Pacific Ocean Perch 104

Puget Sound Rockfish 126

Red Snapper 122

Redstripe Rockfish 108

Rosethorn Rockfish 130

Rougheye Rockfish 124

Sharpchin Rockfish 114

Shortraker Rockfish 120

Shortspine Thornyhead 132

Splitnose Rockfish 118

Stripetail Rockfish 116

Yellowmouth Rockfish 110

Diagnostic Groups - Page

## Head Spines

## Strongly or moderately developed:

Blackgill Rockfish 128  
 Brown Rockfish 90  
 China Rockfish 86  
 Copper Rockfish 92  
 Darkblotched Rockfish 106  
 Greenstriped Rockfish 96  
 Harlequin Rockfish 112  
 Longspine Thornyhead 133  
 Orange Rockfish 100  
 Puget Sound Rockfish 126

Pygmy Rockfish 94  
 Quillback Rockfish 88  
 Red Snapper 122  
 Redbanded Rockfish 72  
 Rosethorn Rockfish 130  
 Rougheye Rockfish 124  
 Sharpchin Rockfish 114  
 Shortspine Thornyhead 132  
 Splitnose Rockfish 118  
 Stripetail Rockfish 116  
 Tiger Rockfish 70

## Weakly developed:

Black Rockfish 80  
 Blue Rockfish 78  
 Bocaccio 102  
 Dusky Rockfish 82  
 Northern Rockfish 98  
 Pacific Ocean Perch 104

Redstripe Rockfish 108  
 Shortraker Rockfish 120  
 Silvergray Rockfish 84  
 Widow Rockfish 74  
 Yellowmouth Rockfish 110  
 Yellowtail Rockfish 76

Diagnostic Groups - Page

2nd Anal Spine

	<u>Shorter than 3rd</u>	<u>Same as 3rd</u>	<u>Longer than 3rd</u>
Black Rockfish 80	X		
Blackgill Rockfish 128	X	X	
Blue Rockfish 78	X		
Bocaccio 102	X		
Brown Rockfish 90	X	X	
China Rockfish 80		X	X
Copper Rockfish 92	X	X	
Darkblotched Rockfish 106	X		
Dusky Rockfish 82	X		
Greenstriped Rockfish 96			X
Harlequin Rockfish 112			X
Longspine Thornyhead 133	X		
Northern Rockfish 98		X	
Orange Rockfish 100	X		
Pacific Ocean Perch 104	X		
Puget Sound Rockfish 126			X
Pygmy Rockfish 94			X



## 2nd Anal Spine

	<u>Shorter than 3rd</u>	<u>Same as 3rd</u>	<u>Longer than 3rd</u>
Quillback Rockfish 88		X	X
Red Snapper 122	X	X	X
Redbanded Rockfish 72		X	X
Redstripe Rockfish 108	X		
Rosethorn Rockfish 130		X	X
Rougheye Rockfish 124	X		
Sharpchin Rockfish 114		X	
Shortraker Rockfish 120	X		X
Shortspine Thornyhead 132		X	
Silvergray Rockfish 84	X	X	
Splitnose Rockfish 118		X	
Stripetail Rockfish 116			X
Tiger Rockfish 70	X		
Widow Rockfish 74	X		
Yellowmouth Rockfish 110	X		
Yellowtail Rockfish 76	X		

All Rockfishes (sebastes) have 13 to 14 dorsal fin spines.

All Thornyheads (*sebastolobus*) have 15 to 17 dorsal fin spines.

Rockfish by Range:

To Southeast Alaska:

Brown Rockfish 90  
China Rockfish 86  
Orange Rockfish 100  
Pygmy Rockfish 94

Shorthead Rockfish 120  
Splittnose Rockfish 118  
Stripetail Rockfish 116  
Tiger Rockfish 70  
Yellowmouth Rockfish 110

To Gulf of Alaska:

Bocaccio 102  
Copper Rockfish 92  
Greenstriped Rockfish 96  
Longspine Thornyhead 133  
Puget Sound Rockfish 126

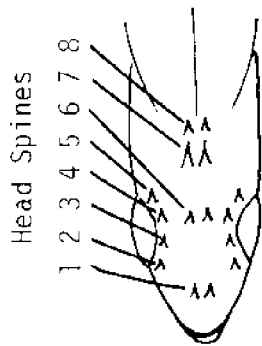
Quillback Rockfish 88  
Red Snapper 122  
Rosethorn Rockfish 130  
Sharpchin Rockfish 114  
Widow Rockfish 74  
Yellowtail Rockfish 76

To Bering Sea:

Black Rockfish 80  
Blackgill Rockfish 128  
Blue Rockfish 78  
Darkblotched Rockfish 106  
Dusky Rockfish 82  
Harlequin Rockfish 112

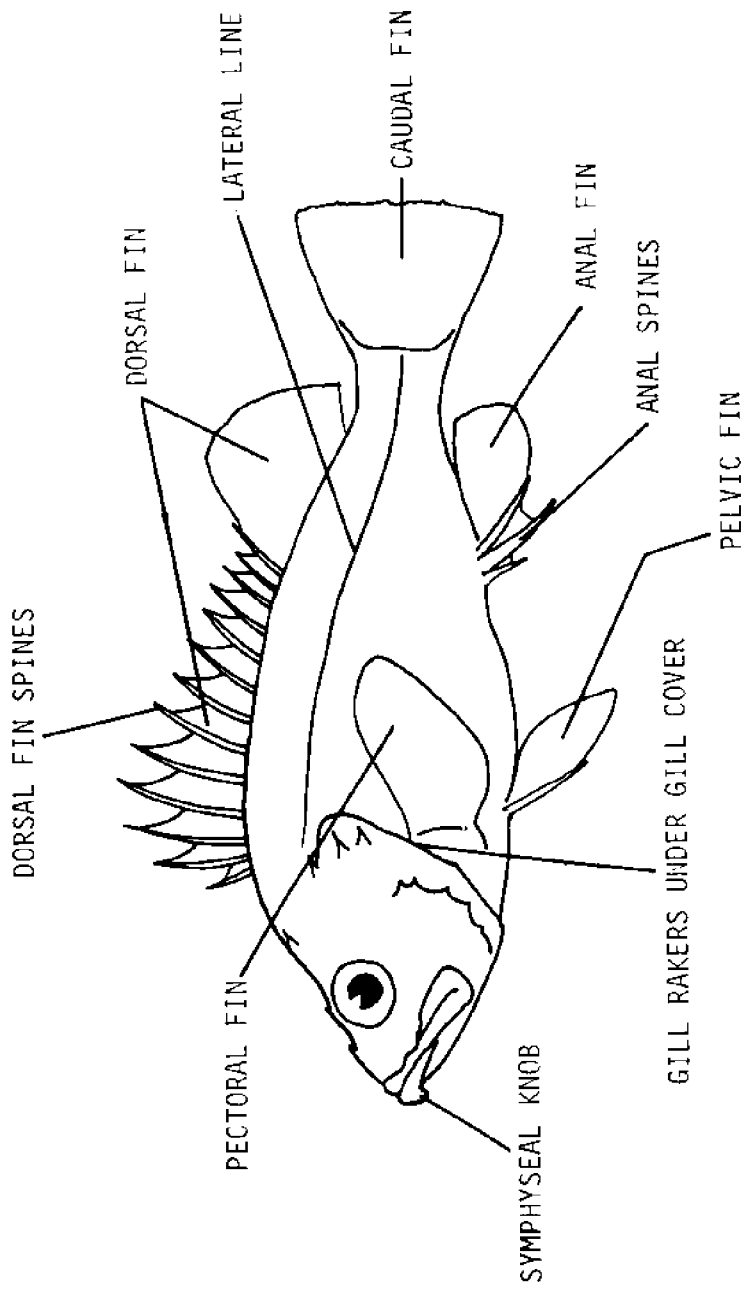
Northern Rockfish 98  
Pacific Ocean Perch 104  
Redbanded Rockfish 72  
Redstripe Rockfish 108  
Rougheye Rockfish 124  
Shortspine Thornyhead 132  
Silvergray Rockfish 84

ROCKFISH DIAGNOSTIC CHARACTERISTICS



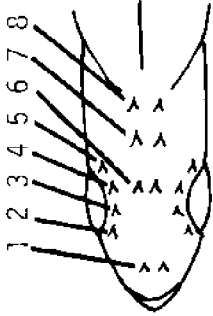
HEAD SPINES

- 1 - Nasal
- 2 - Preocular
- 3 - Supraocular
- 4 - Postocular
- 5 - Tympanic
- 6 - Coronal
- 7 - Parietal
- 8 - Nucha

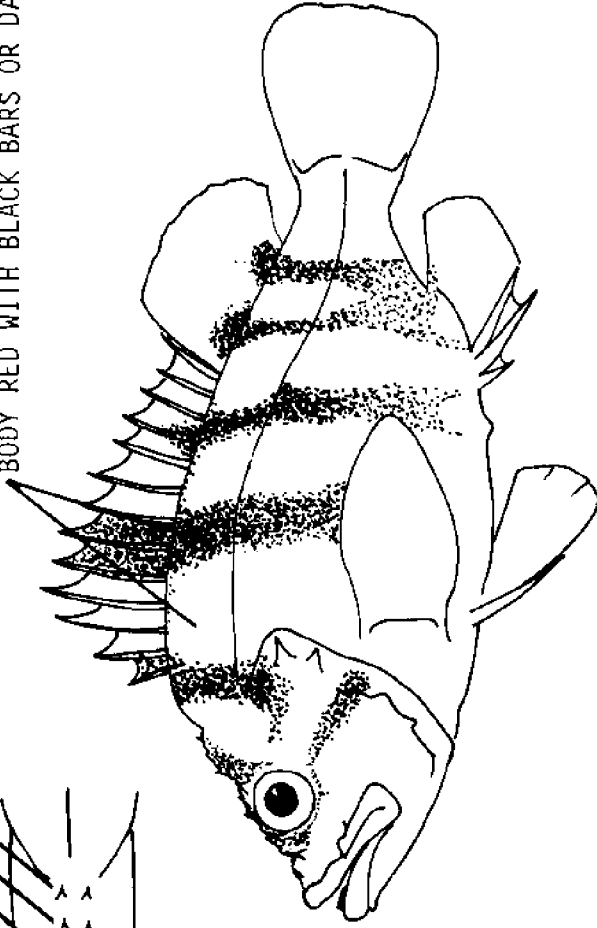


HYPOTHETICAL ROCKFISH

Head Spines



BODY RED WITH BLACK BARS OR DARK RED BARS



TIGER ROCKFISH

TIGER ROCKFISH

*Sebastes nigrocinctus*

Characteristics:

Color: Striped with black bars on red body  
Head Spines: Strongly developed  
2nd anal spine: The same length as or shorter than the 3rd  
Peritoneum: Light  
Head between eyes: Concave

Size: To 24 inches (61 cm)

Range: North to Naha Bay (Southeast Alaska)

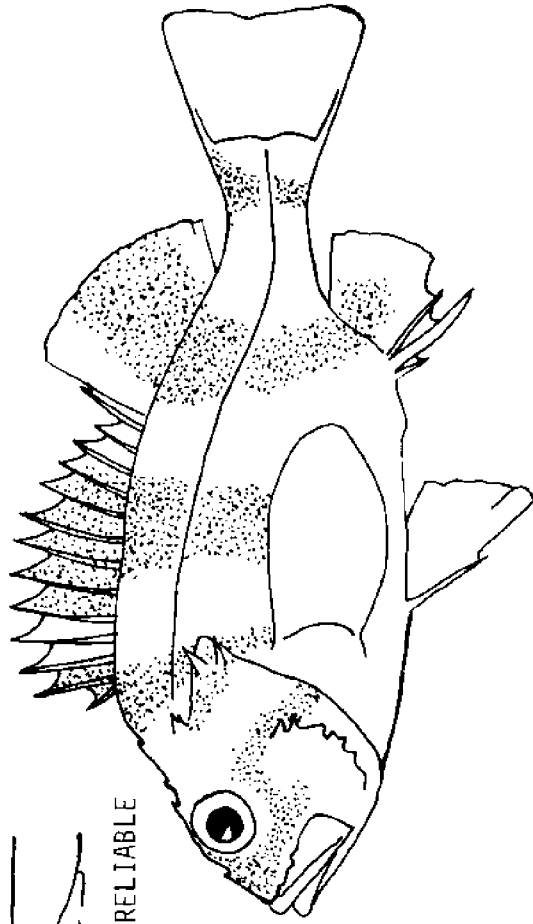
Depth: To 150 fm (275 m)

Head Spines

1 2 3 4 5 6 7 8



SPINE COUNT NOT RELIABLE



REDBANDED ROCKFISH

REDBANDED ROCKFISH

*Sebastes babcocki*

Characteristics

Color: Striped with dark red bars over light pinkish body  
Head Spines: Strongly developed  
2nd anal spine: Longer than 3rd  
Peritoneum: Silvery to black, often blotched  
Head between eyes: Concave to flat

Size: To 25 inches (64 cm)

Range: California to Bering Sea

Depth: 50-240 fm (92-439 m)

Comments: Very similar to Flag rockfish of California waters



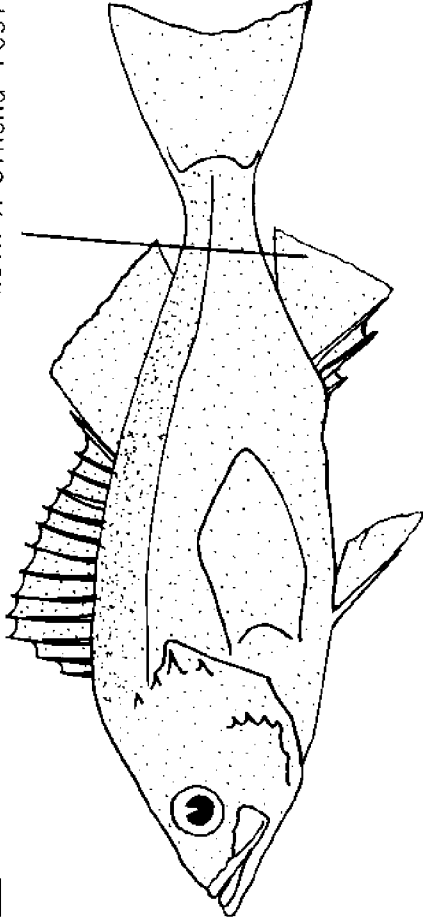
74

Head Spines

1 2 3 4 5 6 7 8



ANAL FIN WITH A STRONG POSTERIOR SLANT



WIDOW ROCKFISH

WIDOW ROCKFISH

*Sebastes entomelas*

Characteristics:

Color: Uniform dusky brown with traces of light yellow  
Head Spines: Weakly developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: Dark  
Head between eyes: Convex

Size: To 20.5 inches (52 cm)

Range: California to Gulf of Alaska

Depth: To 120 fm (220 m) (Hitz) 50-200 (91-366) (Hart)

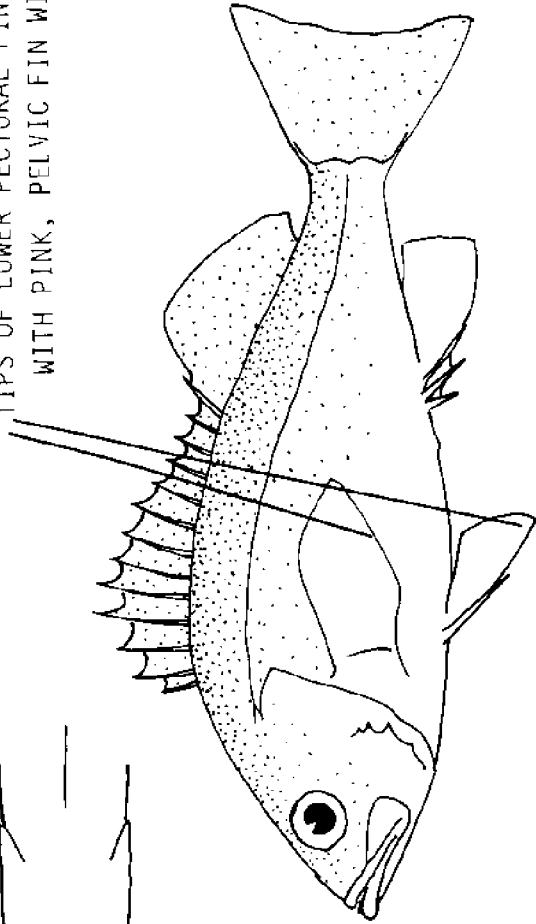
Comments: Similar to Yellowtail Rockfish (has anal fin square instead of slanted); and to Dusky Rockfish, which lacks head spines

Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



TIPS OF LOWER PECTORAL FIN RAYS TINGED  
WITH PINK, PELVIC FIN WITH YELLOW



YELLOWTAIL ROCKFISH

WIDOW ROCKFISH

*Sebastes entomelas*

Characteristics:

Color: Uniform dusky brown with traces of light yellow  
Head Spines: Weakly developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: Dark  
Head between eyes: Convex

Size: To 20.5 inches (52 cm)

Range: California to Gulf of Alaska

Depth: To 120 fm (220 m) (Hitz) 50-200 (91-366) (Hart)

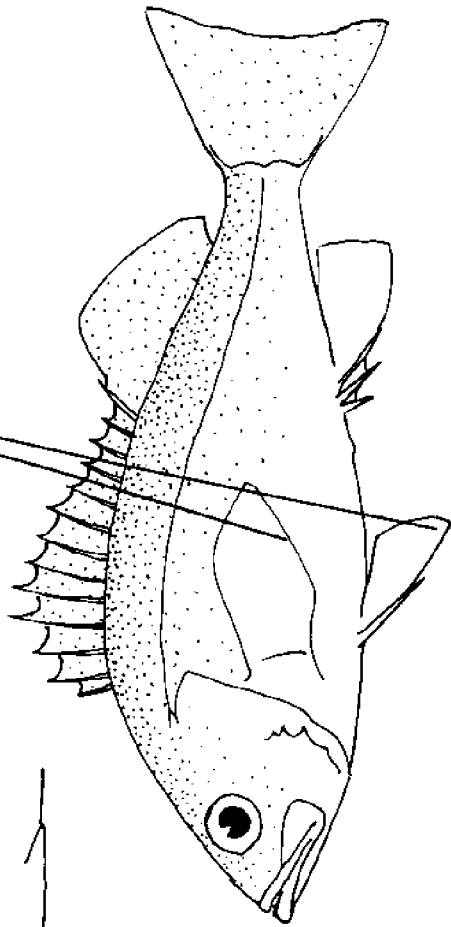
Comments: Similar to Yellowtail Rockfish (has anal fin square instead of slanted); and to Dusky Rockfish, which lacks head spines

Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



TIPS OF LOWER PECTORAL FIN RAYS TINGED WITH PINK, PELVIC FIN WITH YELLOW



YELLOWTAIL ROCKFISH

YELLOWTAIL ROCKFISH

*Sebastes flavidus*

Characteristics:

Color: Gray-brown on top, gray on sides, white belly, tip of tail fin yellow, other fins yellowish. Body washed with greenish tinge

Head Spines: Only front pair (nasal) developed

2nd anal spine: Shorter than 3rd

Peritoneum: Light

Head between eyes: Convex

Size: To 26 inches (66 cm)

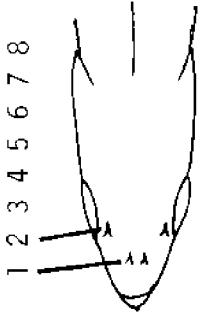
Range: San Diego, California to Gulf of Alaska

Depth: Surface to 300 fm (550 m) (Hart)  
80 fm (146 m) (Hitz)

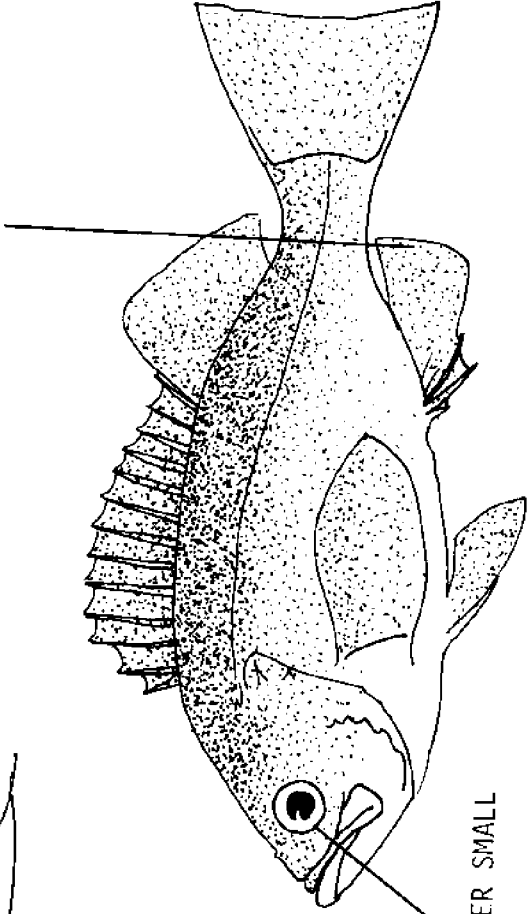
Comments: Similar to Widow Rockfish which has anal fin with a strong slant towards tail; and to Dusky Rockfish which has a dark peritoneum

Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



ANAL FIN PROFILE VERTICAL OR SLANTED POSTERIORLY



EYE DIAMETER SMALL

BLUE ROCKFISH

BLUE ROCKFISH

*Sebastes mystinus*

Characteristics:

Color: Bluish-black, paler on sides, fins dark  
Head Spines: Only 1st two pairs (nasal and over front  
of eye) developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: May be either light or dark  
Head between eyes: Convex

Size: To 21 inches (53 cm)

Range: Baja California to Bering Sea

Depth: To 50 fm (91m) (Hiltz)  
Surface to 300 fm (550 m) (Hart)

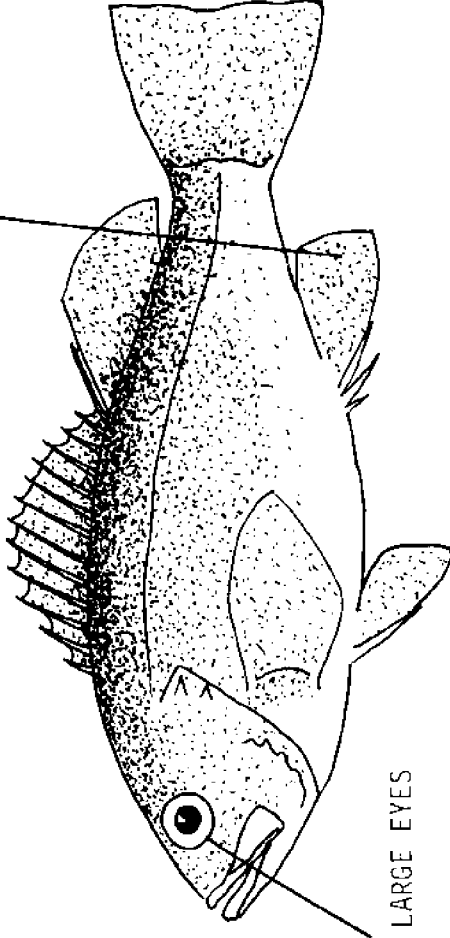


Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



ANAL FIN PROFILE ROUNDED OR  
WITH GREATER PORTION SLANTED ANTERIORLY



MODERATELY LARGE EYES

BLACK ROCKFISH

BLACK ROCKFISH

*Sebastes melanops*

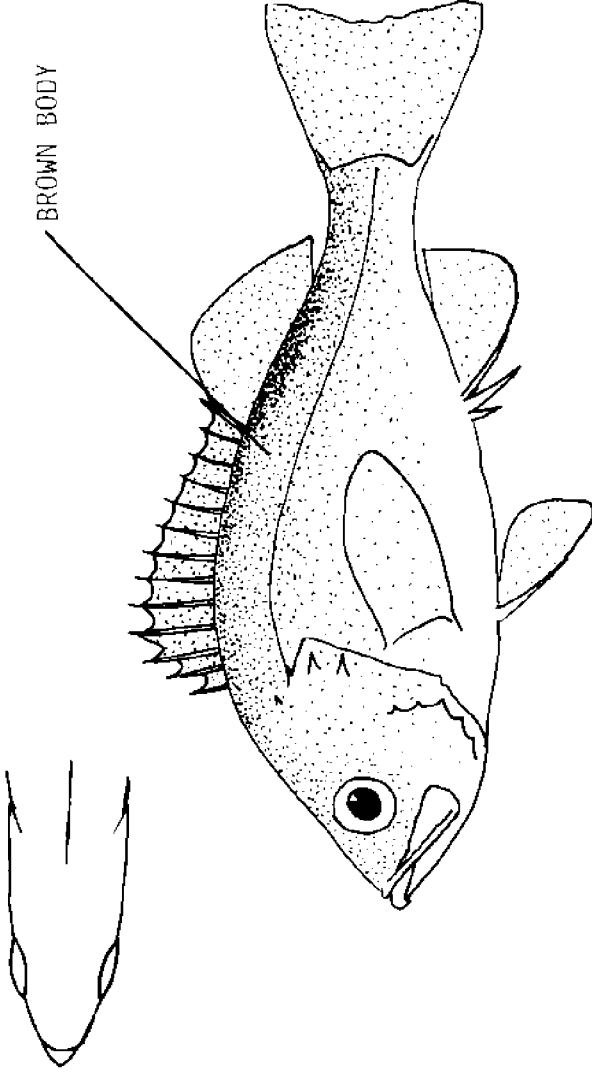
Characteristics:

Color: Black above, shading to mottled gray on sides; fins dark  
Head Spines: Weakly developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: Light  
Head between eyes: Convex

Size: To 20 inches (51 cm) (Hitz)  
23.25 (59 cm) (Hart) (p. 427)

Range: California to Bering Sea

Depth: To 60 fm (110 m) (Hitz)  
Surface to 200 fm (366 m) (Hart)



DUSKY ROCKFISH

DUSKY ROCKFISH

*Sebastes ciliatus*

Characteristics:

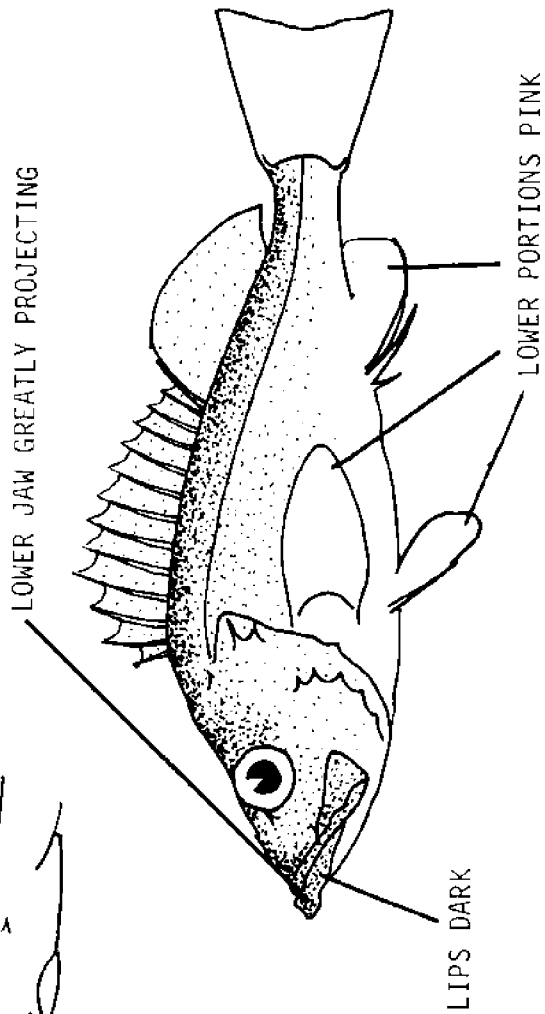
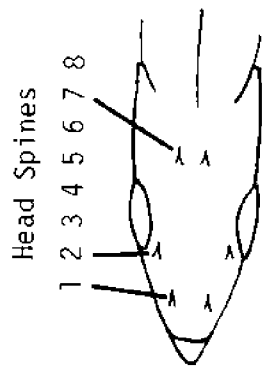
Color: Gray, tan, or brown on back or sides, darker  
under rear part of dorsal fin  
Head Spines: Weak or absent  
2nd anal spine: Shorter than 3rd  
Peritoneum: Dark  
Top of head between eyes: Convex

Size: To 16 inches (41 cm)

Range: British Columbia to Bering Sea

Depth: To 100 fm (183 m) (Hiltz)  
100 to 149 fm (183-273 m) in Gulf of Alaska (Hart)

Comments: Similar to Yellowtail Rockfish, which has a light peritoneum;  
and to Widow Rockfish which has a more strongly slanted anal  
fin, and better developed head spines. Has little commercial  
value because of its small size.



SILVERGRAY ROCKFISH

SILVERGRAY ROCKFISH

*Sebastes brevispinis*

Characteristics:

Color: Dark gray above, silvergray on sides, white on belly  
Head Spines: Weakly developed  
2nd anal spine: As long as, or shorter than 3rd  
Peritoneum: Light  
Top of head between eyes: Convex

Size: To 28 inches (71 cm)

Range: Central California to Bering Sea

Depth: To 130 fm (237 m) (Hitz)  
Surface to 200 fm (366 m) (Hart)

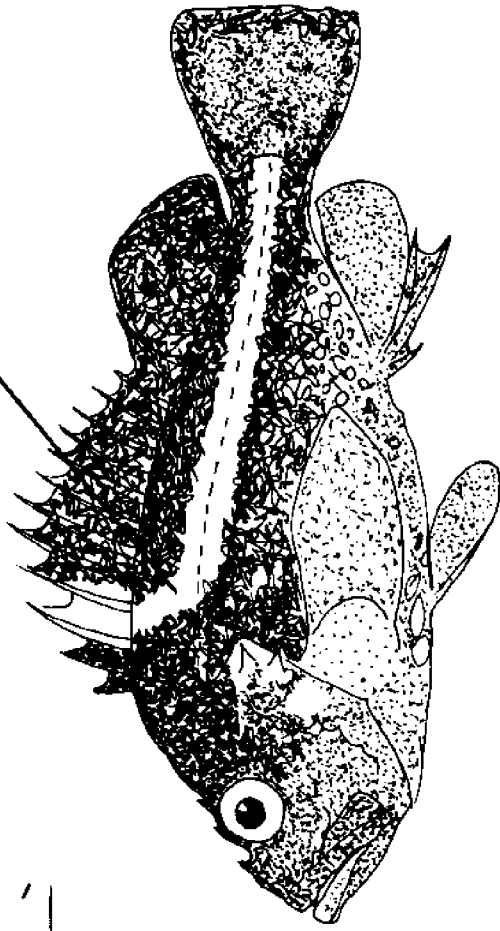
Comments: Similar to Bocaccio which is more brown  
in color, with more pink on sides

Head Spines

1 2 3 4 5 6 7 8



YELLOW STRIPE PRESENT



CHINA ROCKFISH

CHINA ROCKFISH

*Sebastes nebulosus*

Characteristics:

Color: Dark bluish-black mottled with yellow, broad yellow stripe, light mottling on sides, fins dark  
Head Spines: Strongly developed  
2nd anal spine: As long as or longer than 3rd  
Peritoneum: Light  
Top of head between eyes: Concave

Size: To 16 inches (40 cm) (Hitz)

Range: Northern California to Southeast Alaska

Depth: To 70 fm (127 m)

Comments: Generally not large enough for high commercial value

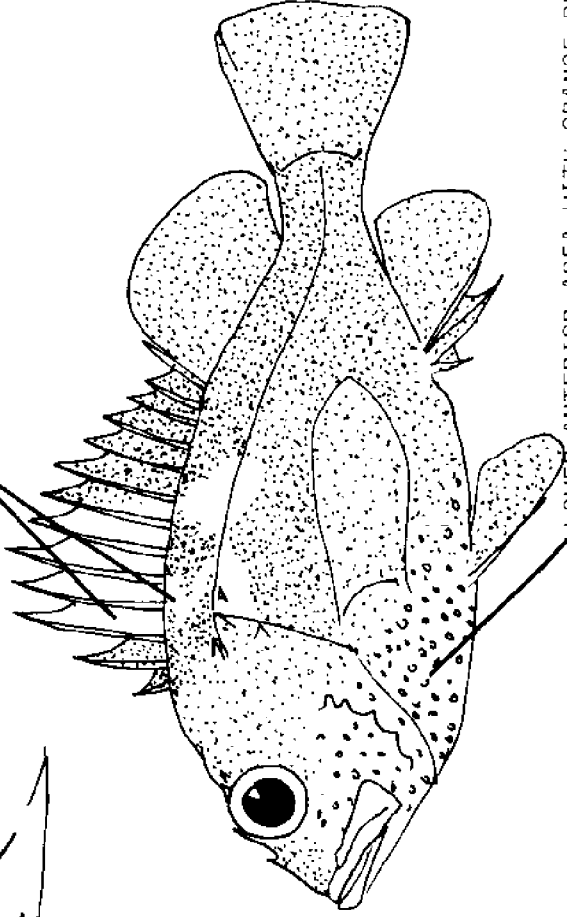


Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



DORSAL AREA WITH DISTINCT YELLOW AREAS



LOWER ANTERIOR AREA WITH ORANGE-BROWN SPOTTING

QUILLBACK ROCKFISH

QUILLBACK ROCKFISH

*Sebastes maliger*

Characteristics:

Color: Brown mottled with yellow near head, fins  
dark except forward portion of dorsal fin  
Head Spines: Strongly developed  
2nd anal spine: As long as or longer than 3rd (Hitz)  
Peritoneum: Light  
Head between eyes: Convex to concave

Size: To 24 inches (61 cm)

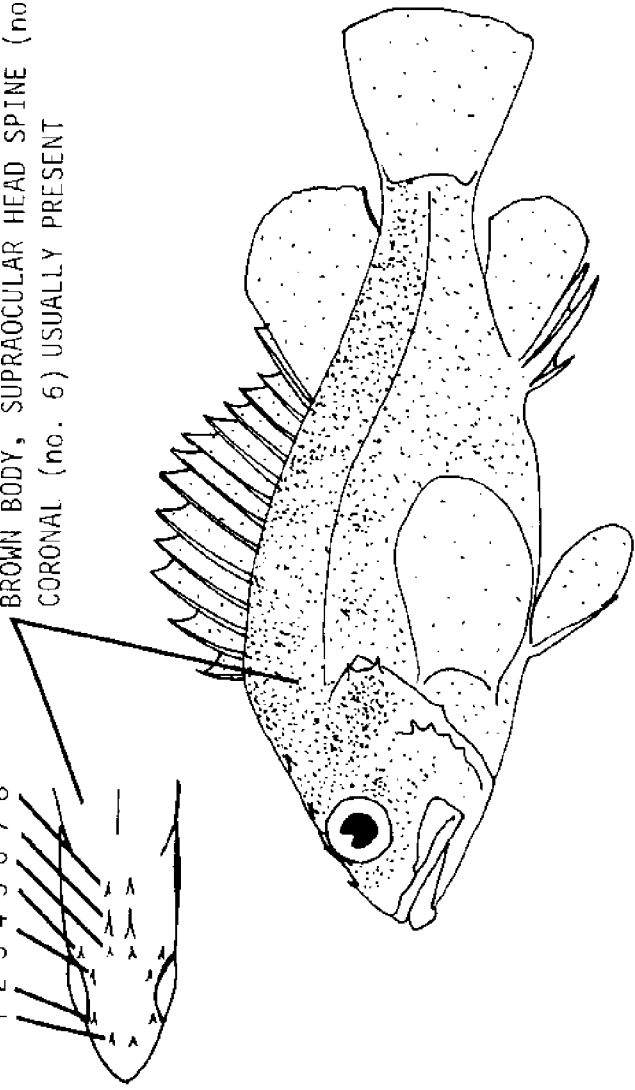
Range: Central California to the Gulf of Alaska

Depth: To 150 fm (275 m)

Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

BROWN BODY, SUPRAOCULAR HEAD SPINE (no.3) ABSENT,  
CORONAL (no. 6) USUALLY PRESENT



BROWN ROCKFISH

BROWN ROCKFISH

*Sebastes auriculatus*

Characteristics:

Color: Mottled brown with darker blotch on upper part of gill cover. Fins dusky pink

Head Spines: Strongly developed

2nd anal spine: As long as, or shorter than 3rd

Peritoneum: Light

Top of head between eyes: Convex to flat

Size: To 18 inches (45 cm) (Hitz) 20.5 (52 cm) (Hart)

Range: Baja, California to Southeast Alaska

Depth: Tp 30 fm (54.6m)

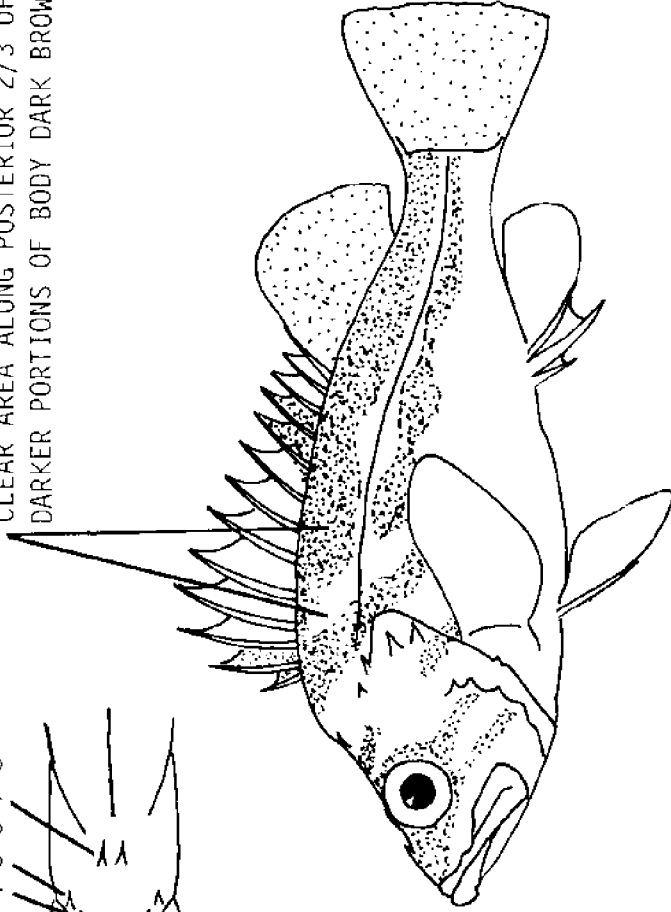
92

Head Spines

1 2 3 4 5 6 7 8



CLEAR AREA ALONG POSTERIOR 2/3 OF LATERAL LINE,  
DARKER PORTIONS OF BODY DARK BROWN



COPPER ROCKFISH

COPPER ROCKFISH

*Sebastes caurinus*

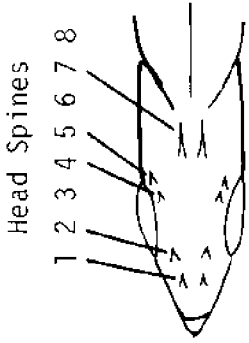
Characteristics:

Color: Brown, washed with copper-pink, splashed with yellow. Lower sides and belly white  
Head Spines: Strongly developed  
2nd anal spine: May be shorter, as long as, or longer than 3rd  
Peritoneum: Light  
Top of head between eyes: Convex to flat

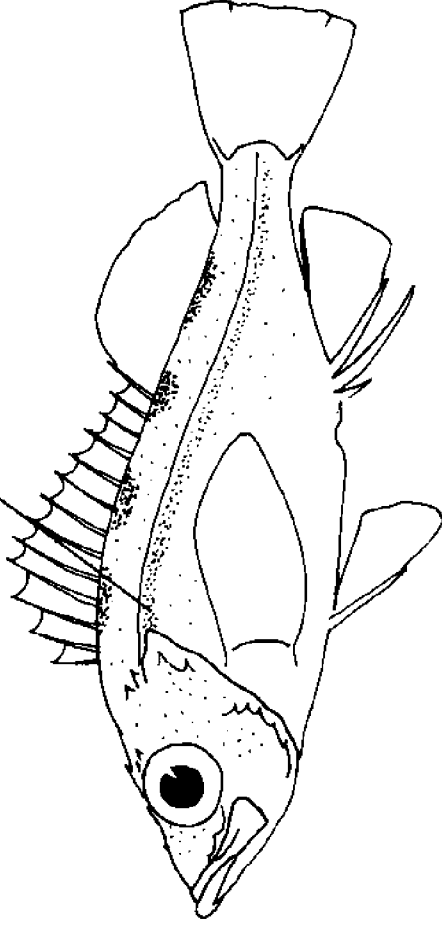
Size: To 20 inches (51 cm)

Range: Central California to the Gulf of Alaska

Depth: To 50 fm (91 m)



A BROWNISH RED STRIPE BELOW LATERAL LINE



PYGMY ROCKFISH

PYGMY ROCKFISH

*Sebastes wilsoni*

Characteristics:

Color: Light brown with reddish flush. Four dark blotches along base of dorsal fin. Brownish red stripe below lateral line

Head Spines: Strongly developed

2nd anal spine: Longer than 3rd

Peritoneum: Dark

Top of head between eyes: Flat

Size: To 7.5 inches (19 cm) (Hitz) 8.25 (21 cm) (Hart) (p. 449)

Range: Central California to Southeast Alaska

Depth: To 70 fm (127 m) (Hitz) 150 fm (274 m) (Hart)

Comments: Of no commercial value due to small size

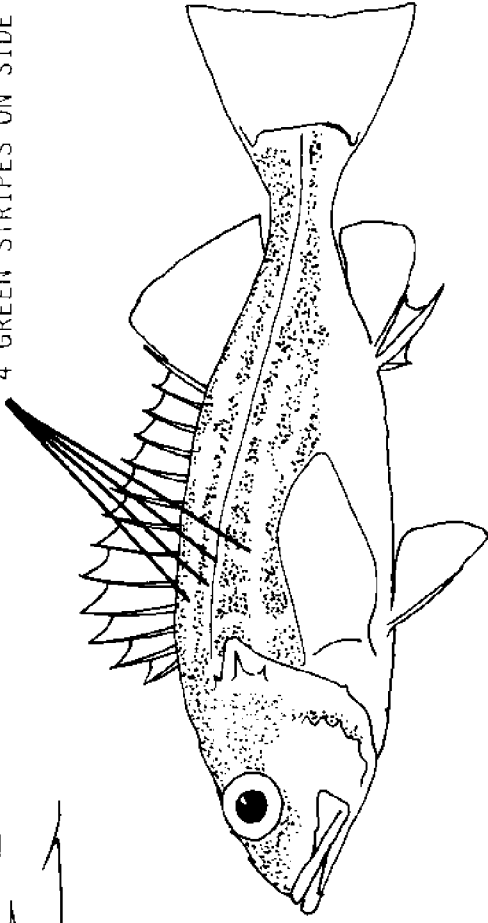


Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



4 GREEN STRIPES ON SIDE OF BODY



GREENSTRIPED ROCKFISH

GREENSTRIPED ROCKFISH

*Sebastes elongatus*

Characteristics:

Color: Pink with four horizontal green stripes joining  
near tail. Pink stripe along lateral line  
Head Spines: Strongly developed  
2nd anal spine: Longer than 3rd  
Peritoneum: Dark  
Top of head between eyes: Concave

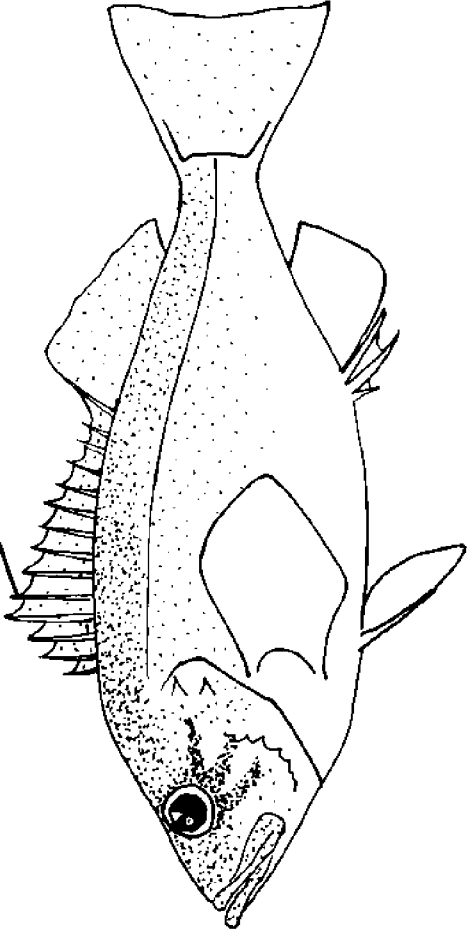
Size: To 15 inches (38 cm)

Range: Baja California to the Gulf of Alaska

Depth: To 130 fm (237 m) (Hitz) 50-200 fm (91-366 m) (Hart)



A TOTAL OF 14 DORSAL FIN SPINES



NORTHERN ROCKFISH

NORTHERN ROCKFISH

*Sebastes polyspinis*

Characteristics:

Color: Dark with reddish cast  
Head Spines: Weakly developed  
2nd anal spine: As long as 3rd  
Peritoneum: Dark  
Top of head between eyes: Convex

Size: To 16 inches (40 cm)

Range: Southeast Alaska to the Bering Sea

Depth: To 120 fm (218 m)

Comments: Resembles Pacific Ocean perch which has 13 dorsal  
spines and a longer lower jaw with a large knob  
at the tip

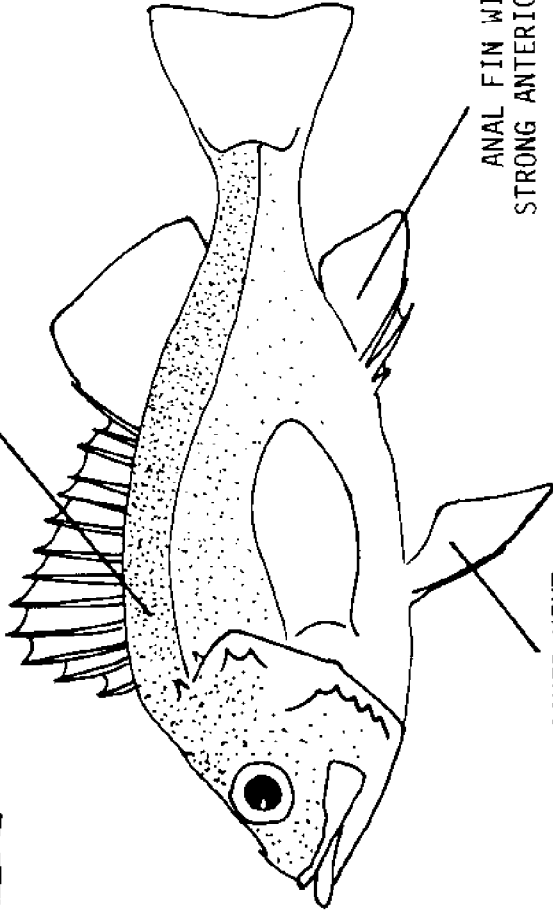
100

Head Spines

1 2 3 4 5 6 7 8



BODY BRIGHT ORANGE



ANAL FIN WITH A  
STRONG ANTERIOR SLANT

PELVIC FIN REACHES VENT

ORANGE ROCKFISH (CANARY ROCKFISH)

ORANGE ROCKFISH (CANARY ROCKFISH)

*Sebastes pinniger*

Characteristics:

Color: Olive gray with bright orange, fins orange  
Head Spines: Strongly developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: Light  
Top of head between eyes: Convex

Size: To 30 inches (76 cm)

Range: Baja California to Southeastern Alaska

Depth: To 110 fm (200 m) (Hitz) 50-200 fm (91-366) (Hart)

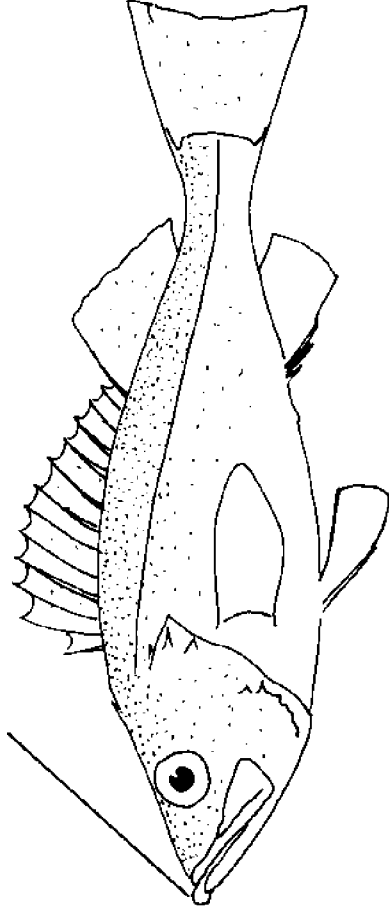
102

Head Spines

1 2 3 4 5 6 7 8



LOWER JAW GREATLY PROJECTING



BOCACCCIO

BOCACCIO

*Sebastes paucispinis*

Characteristics:

Color: Light olive brown above shading to pink on sides  
Head Spines: Weakly developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: Light  
Top of head between eyes: Convex

Size: To 36 inches (91 cm)

Range: Baja California to Gulf of Alaska

Depth: To 175 fm (318 m)

Comments: Similar to Silvergray Rockfish which has no red or pink on the body

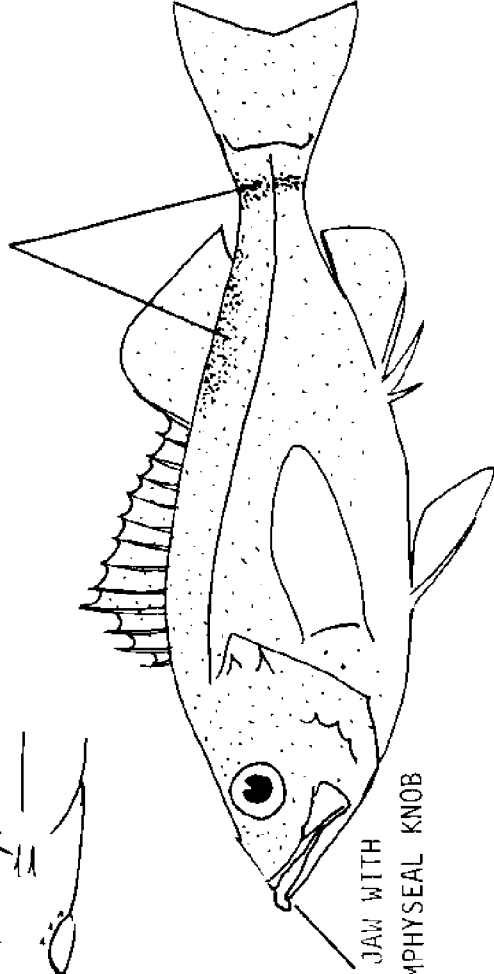


Head Spines

1 2 3 4 5 6 7 8



DARK AREA ON BACK AND CAUDAL PEDUNCLE



LONG LOWER JAW WITH  
A LARGE SYMPHYSEAL KNOB

PACIFIC OCEAN PERCH

PACIFIC OCEAN PERCH

*Sebastes alutus*

Characteristics:

Color: Fins and body light red with darker area at base of tail  
and under rear portion of dorsal fin  
Head Spines: Weakly developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: Dark  
Top of head between eyes: Convex to flat

Size: To 20 inches (51 cm)  
In Alaskan waters to 18 inches (45 cm)

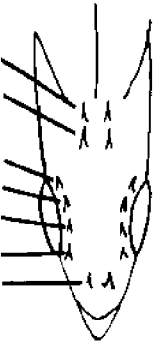
Range: Southern California to Bering Sea

Depth: To 300 fm (546 m) (Hitz) 350 (640 m) (Hart)

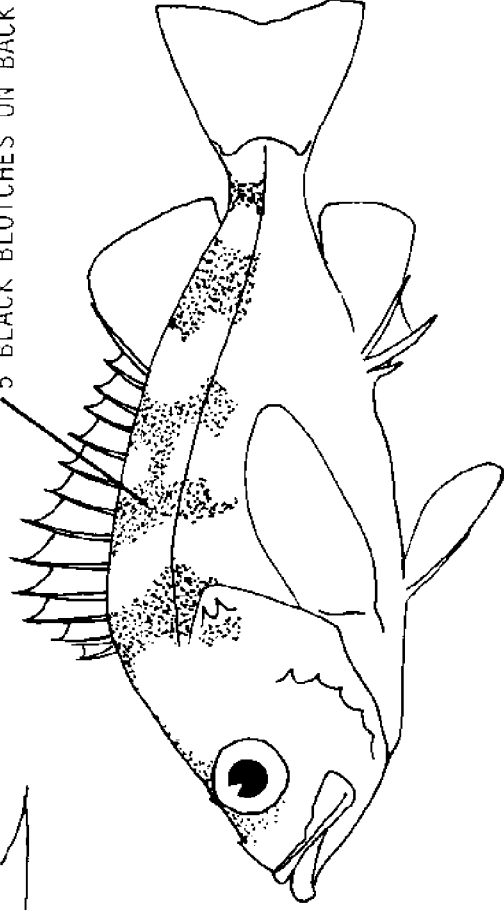
Comments: a. Distinguished from Northern Rockfish by having 13 instead of 14 spines in dorsal fin b. Distinguished from Rougheye Rockfish which has strongly developed head spines c. Shortraker Rockfish lacks the dark area at base of tailfin and base of rear part of dorsal fin d. Shortraker Rockfish has bony ridge below nostril e. Yellowmouth Rockfish has yellow and black blotches inside mouth

Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



5 BLACK BLOTCHES ON BACK



DARKBLOTCHED ROCKFISH

DARKBLOTCHED ROCKFISH

*Sebastes crameri*

Characteristics:

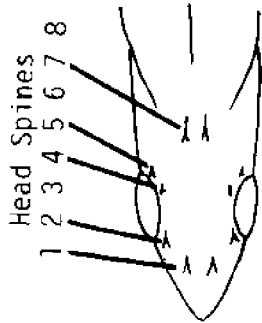
Color: Pink with five dark patches on back  
Head Spines: Moderately developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: Dark  
Top of head between eyes: Convex

Size: To 20 inches (51 cm) (Hitz) 22.5 inches (57 cm) (Hart)

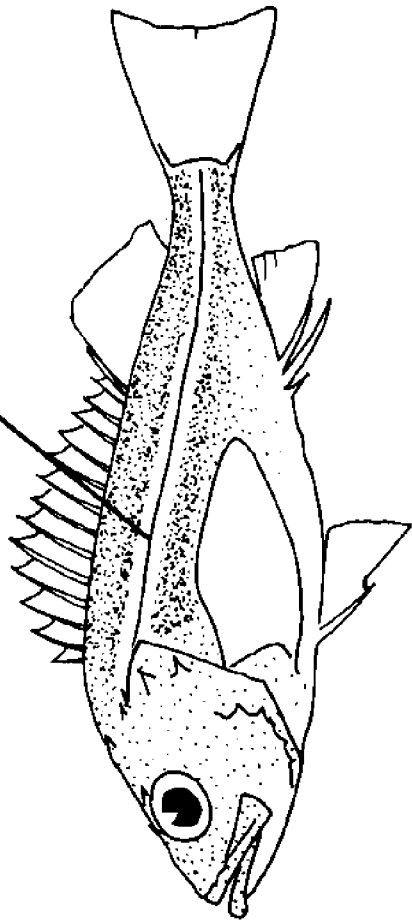
Range: Central California to the Bering Sea

Depth: To 200 fm (364 m) (Hitz) 300 fm (550 m) (Hart)

Comments: a. Similar to Yellowmouth Rockfish which lacks dark blotches and has black and yellow blotches in mouth b. Similar to Harlequin Rockfish and the Sharpchin Rockfish in which the 2nd anal spine is longer than the 3rd



RED STRIPE ALONG LATERAL LINE



REDSTRIFE ROCKFISH

REDSTRIPE ROCKFISH

*Sebastes Proriger*

Characteristics:

Color: Light red with olive mottling above shading to yellow below.  
Clear light red stripe along lateral line. Lips dark  
Head Spines: Weakly developed  
2nd anal spine: Shorter than, or as long as 3rd  
Peritoneum: Dark  
Top of head between eyes: Convex

Size: To 20 inches (51 cm)

Range: Southern California to the Bering Sea

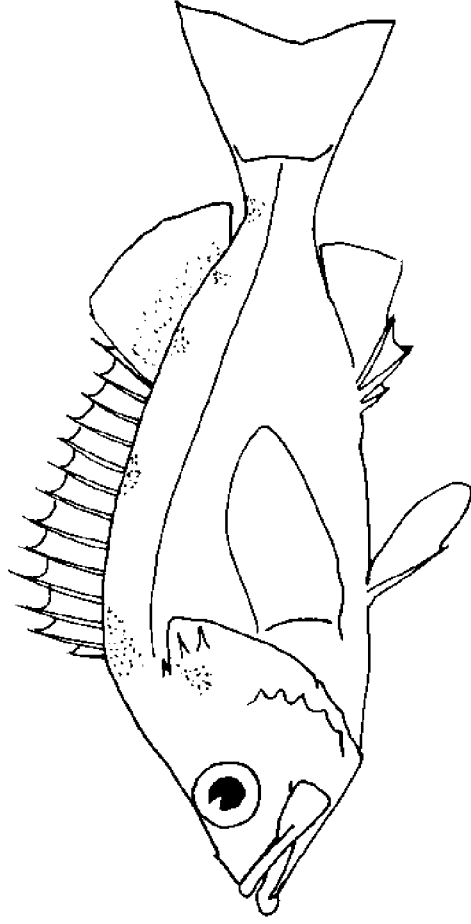
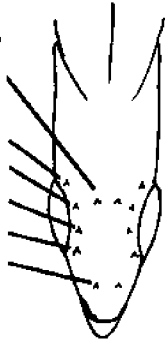
Depth: To 100 fm (182 m) (Hitz) 50-200 fm (92-366 m) (Hart)

Comments: a. Differs from Yellowmouth Rockfish which has yellow and black blotches in mouth b. Harlequin Rockfish is also similar but has strongly developed head spines

110

Head Spines

1 2 3 4 5 6 7 8



YELLOWMOUTH ROCKFISH

YELLOWMOUTH ROCKFISH

*Sebastes reedi*

Characteristics:

Color: Red mixed with black in fishes less than 16 inches (41 cm).  
Red mixed with yellow-orange in fishes that are larger. The  
only rockfish with yellow and black blotches in mouth

Head Spines: Weakly developed  
2nd anal spine: Shorter than 3rd  
Peritoneum: Light  
Top of head between eyes: Convex to flat

Size: To 22.4 inches (56 cm)

Range: California to Southeast Alaska

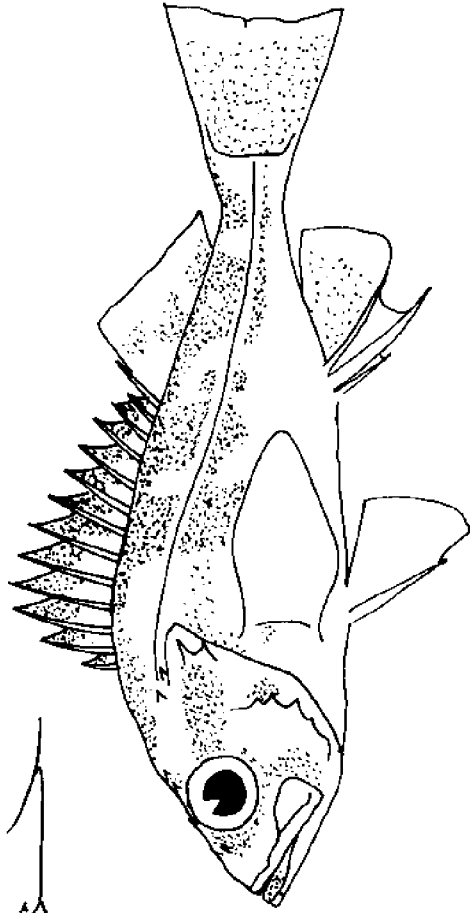
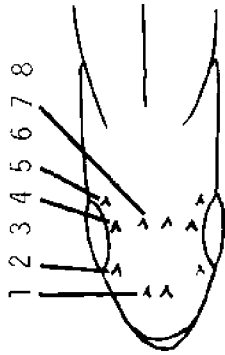
Depth: To 200 fm (366 m)



112

Head Spines

1 2 3 4 5 6 7 8



HARLEQUIN ROCKFISH

HARLEQUIN ROCKFISH

*Sebastes variegatus*

Characteristics:

Color: Pink to deep red with dark blotches. Clear area along lateral line

Head Spines: Strongly developed

2nd anal spine: Longer than 3rd

Peritoneum: Dark

Top of head between eyes: Flat to convex

Size: To 13 inches (33 cm)

Range: British Columbia to the Bering Sea

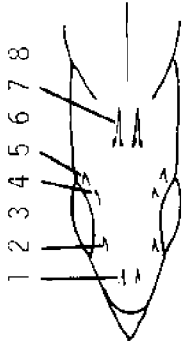
Depth: At moderate depths (Hart 1973)

Comments: Too small to be of great commercial value

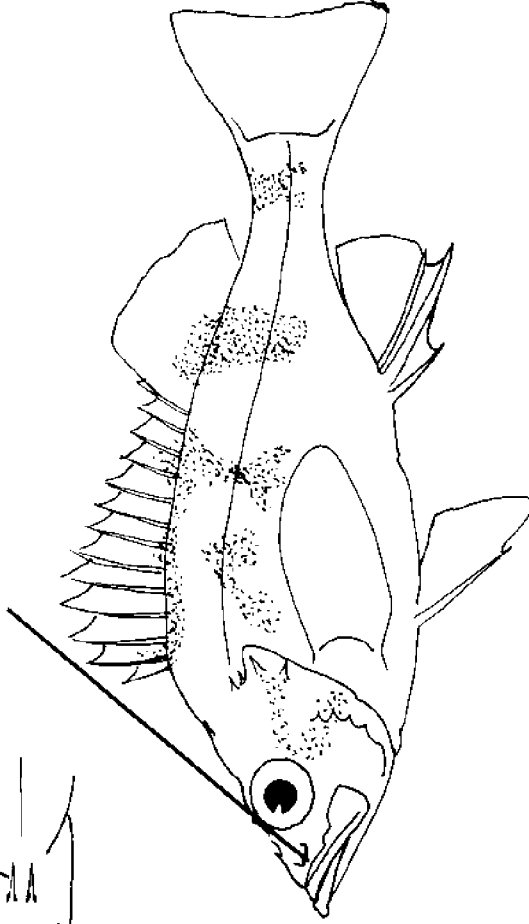
114

Head Spines

1 2 3 4 5 6 7 8



RIDGE ON SUBORBITAL BONE JUST BELOW NOSTRIL,  
NO SPINES ON EDGE OF GILL COVER



SHARPCHIN ROCKFISH

SHARPCHIN ROCKFISH

*Sebastes zacentrus*

Characteristics:

Color: Light red with vague brown blotches on back  
Head Spines: Moderately developed  
2nd anal spine: Longer than 3rd  
Peritoneum: Dark  
Top of head between eyes: Convex to concave

Size: To 13 inches (33 cm)

Range: Southern California to Gulf of Alaska

Depth: To 500 fm (91 m)

Comments: Differs from Harlequin Rockfish which has strong head spines; from Pacific Ocean Perch which has 2nd anal spine shorter than 3rd; from Shortraker Rockfish which also has 2nd anal spine shorter than 3rd; and from Darkblotched Rockfish in the same characteristic

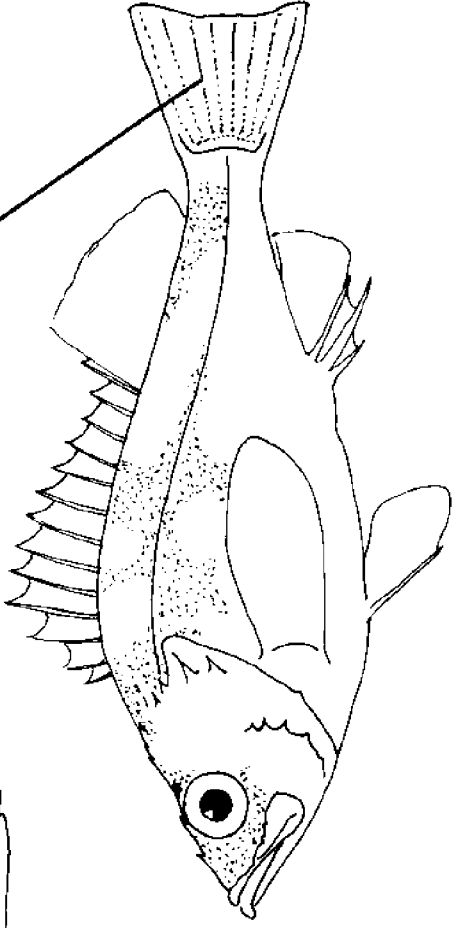
116

Head Spines

1 2 3 4 5 6 7 8



GREEN STREAKS ON CAUDAL FIN



STRIPETAILED ROCKFISH

STRIPETAILED ROCKFISH

*Sebastes saxicola*

Characteristics:

Color: Yellowish pink with some light green, dusky blotches on back,  
with green streaks on tailfin  
Head Spines: Strongly developed  
2nd anal spine: Longer than 3rd  
Peritoneum: Dark  
Top of head between eyes: Flat to concave

Size: To 13 inches (33 cm)

Range: Baja California to Southeast Alaska

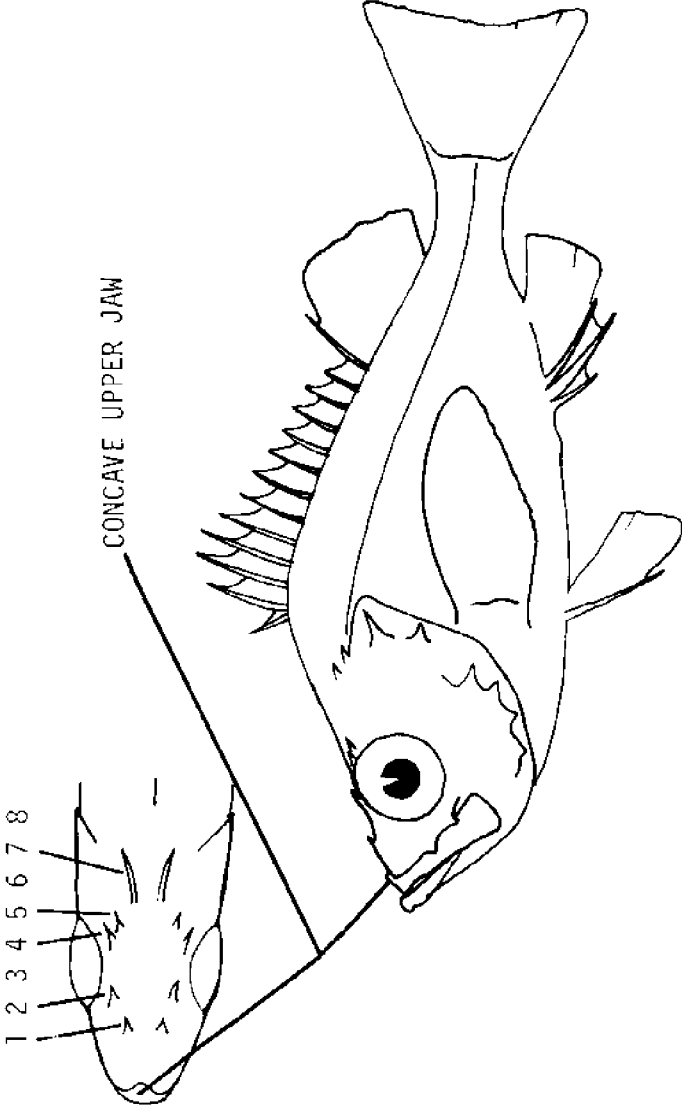
Depth: To 130 fm (237 m)

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Head Spines

1 2 3 4 5 6 7 8

CONCAVE UPPER JAW



SPLITNOSE ROCKFISH

SPLITNOSE ROCKFISH

*Sebastes diploproa*

Characteristics:

Color: Rose red  
Head Spines: Strongly developed  
2nd anal spine: As long as 3rd  
Peritoneum: Dark  
Top of head between eyes: Flat to concave

Size: To 18 inches (46 cm)

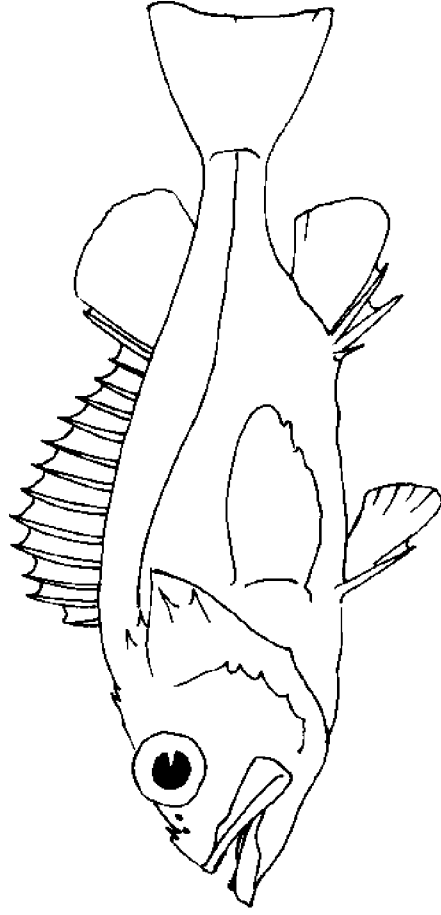
Range: Baja California to Southeast Alaska

Depth: To 250 fm (455 m) (Hitz) 50-316 fm (91-578 m) (Hart)

Comments: May be separated from all other Alaskan rockfishes by the  
concave outline of the upper jaw



Head Spines (Hart 1973)



SHORTRAKER ROCKFISH

SHORTRAKER ROCKFISH

*Sebastes borealis*

Characteristics:

Color: Pink to orange pink, reddish fins sometimes edged with black

Head Spines: Weakly developed

All present except #4, #5 (Hart, 1973)

All present except #6 (Hitz, 1977)

2nd anal spine: Shorter than 3rd

Peritoneum: Light

Top of head between eyes: Flat to concave

Size: To 36 inches (91 cm)

Range: Vancouver Island to Southeast Alaska

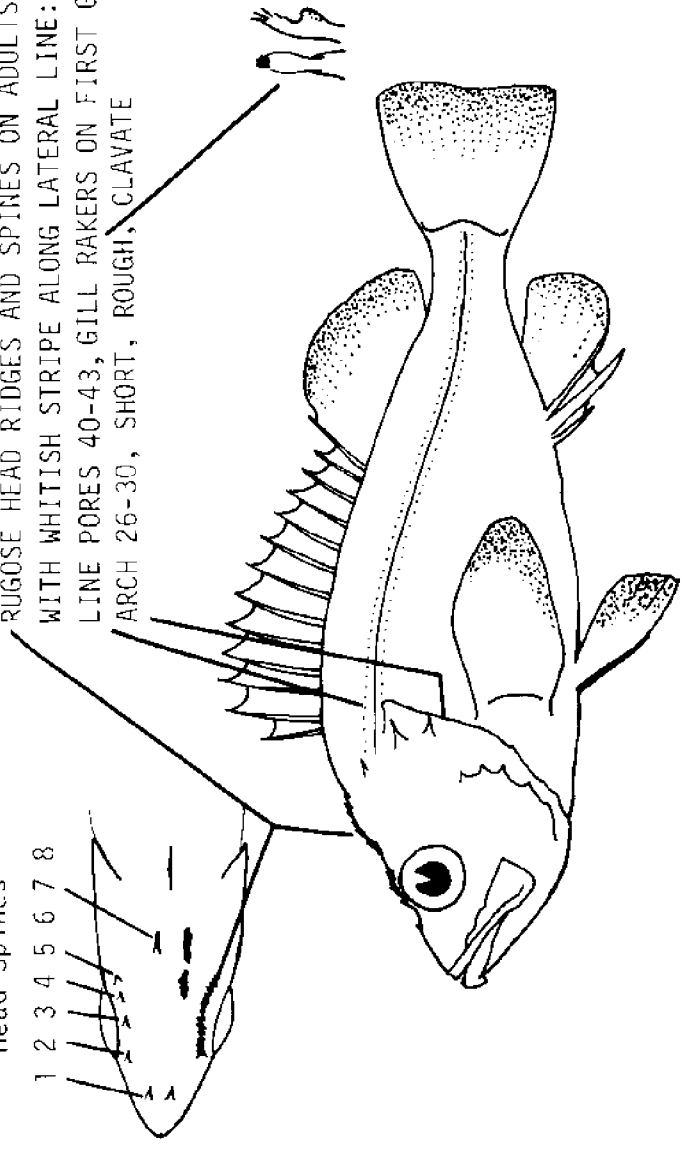
Depth: No depth data available

Comments: A rare and only recently recognized species, similar to the  
Rougheye Rockfish, which has 2-10 spines below the eyes, while  
the Shortraker Rockfish has 0-1 spines below the eye

RUGOSE HEAD RIDGES AND SPINES ON ADULTS, YOUNG  
WITH WHITISH STRIPE ALONG LATERAL LINE: LATERAL  
LINE PORES 40-43, GILL RAKERS ON FIRST GILL  
ARCH 26-30, SHORT, ROUGH, CLAVATE

Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



RED SNAPPER

RED SNAPPER

*Sebastes ruberrimus*

Characteristics:

Color: Red on back shading to orange-yellow below. Fins dark at tips  
Head Spines: Strongly developed  
2nd anal spine: Shorter, as long as, or longer than 3rd  
Peritoneum: Light  
Top of head between eyes: Concave

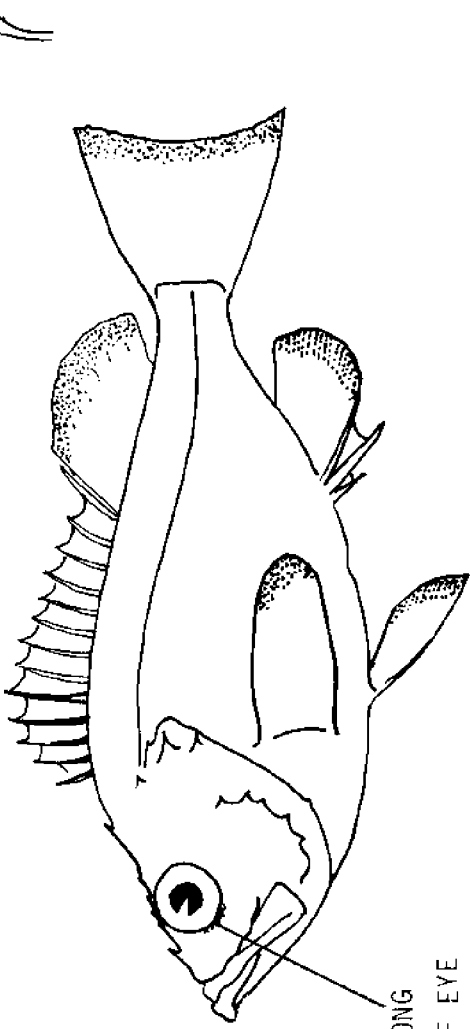
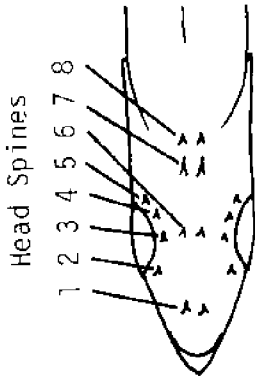
Size: To 36 inches (91 cm)

Range: Baja California to the Gulf of Alaska

Depth: To 150 fm (275 m)

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ALL HEAD SPINES PRESENT, FIN TIPS BLACK,  
LATERAL LINE PORES 29-34, GILL RAKERS ON FIRST  
GILL ARCH 30-34, LONG AND SLENDER



2-10 SPINES ALONG  
LOWER MARGIN OF EYE

ROUGHEYE ROCKFISH

ROUGHEYE ROCKFISH

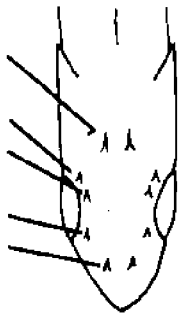
*Sebastes aleutianus*

Characteristics:

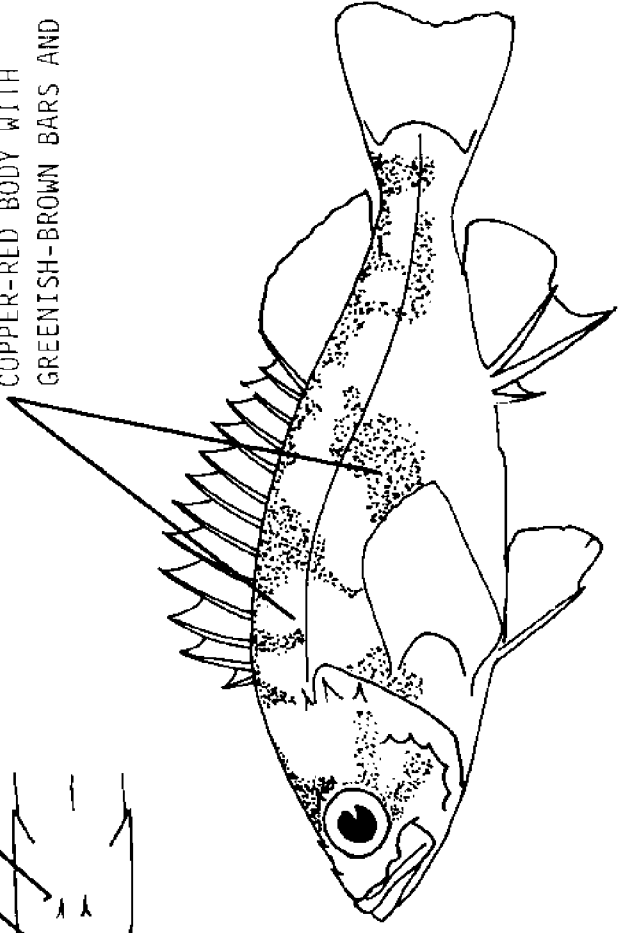
- Color: Red on back, shading to pink on sides; fins reddish, often dark tipped
- Head Spines: Strongly developed, with 2-10 small spines along lower rim of eye
- 2nd anal spine: Shorter than or as long as 3rd
- Peritoneum: Light
- Top of head between eyes: Convex to flat
- Size: To 30 inches (76 cm) (Hitz) 38 inches (97 cm) (Hart)
- Range: California to the Bering Sea
- Depth: To 250 fm (455 m) (Hitz) 50-400 (92-732 m) (Hart)
- Comments: Pacific Ocean Perch has a large knob at tip of lower jaw;  
Shortraker Rockfish has 0-1 spines under the eye, while this species has 2-10 spines under the eye

Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



COPPER-RED BODY WITH  
GREENISH-BROWN BARS AND BLOTCHES



PUGET SOUND ROCKFISH

PUGET SOUND ROCKFISH

*Sebastes emphaeus*

Characteristics:

Color: Copper red with green to brown bars and blotches. Front dorsal fin green with red near tips of spines. Rear dorsal black at base, red at outer margin. Other fins red

Head Spines: Moderately developed

2nd anal spine: Longer than 3rd

Peritoneum: Dark

Top of head between eyes: Convex

Size: To 6 inches (15 cm)

Range: Puget Sound to the Kenai Peninsula

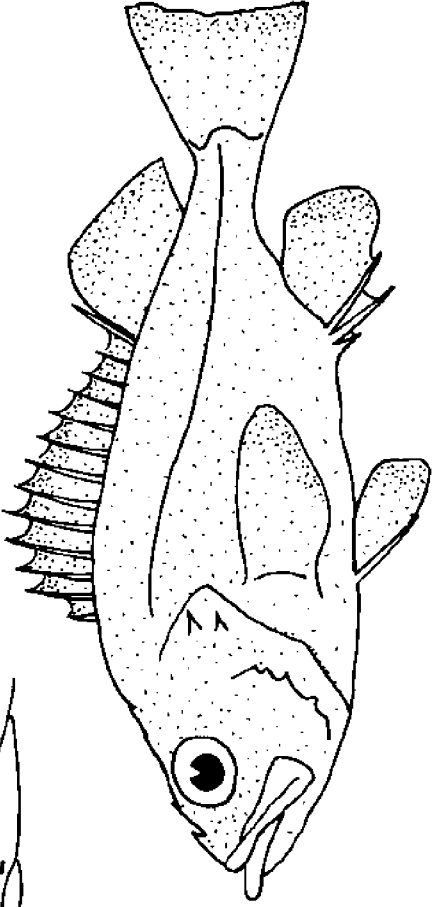
Depth: To 45 fm (82 m)

Comments: Rare in Alaskan waters and too small to be of commercial value



Head Spines

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



BLACKGILL ROCKFISH

BLACKGILL ROCKFISH

*Sebastes melanostomus*

Characteristics:

Color: Dark red with black fin tips; mouth, membrane below and between gills, and gill cavity black  
Head Spines: Strongly developed  
2nd anal spine: Shorter than, or as long as 3rd  
Peritoneum: Dark  
Top of head between eyes: Flat to concave  
Number of lateral line pores: 29 to 31  
Number of gill rakers on first gill arch: 29 to 35

Size: To 24 inches (61 cm)

Range: Baja California to the Bering Sea

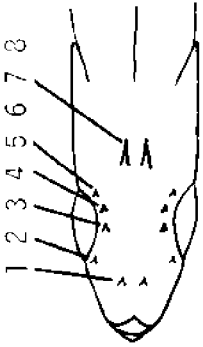
Depth: To 300 fm (546 m)

Comments: Not listed by Hart or Hitz, but included in Quast and Hall's (1972) list of Alaskan fishes

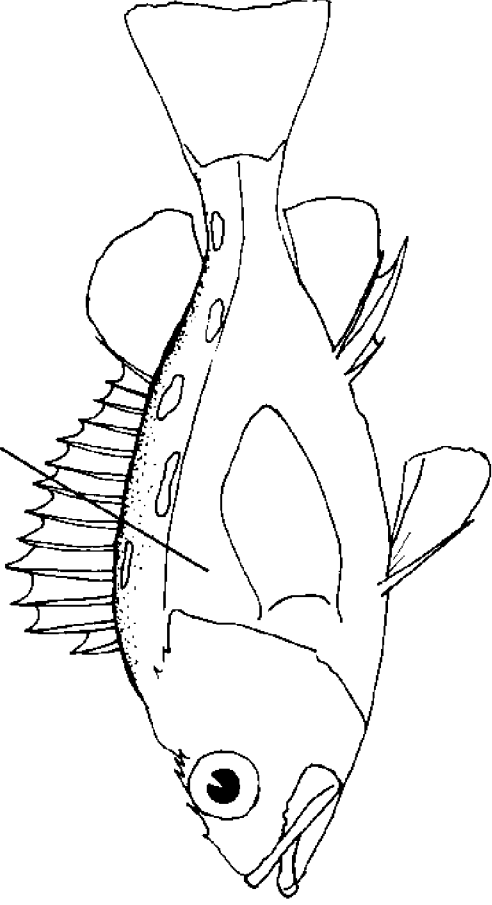
130

Head Spines

1 2 3 4 5 6 7 8



BODY ORANGE-YELLOW



ROSETHORN ROCKFISH

ROSETHORN ROCKFISH

*Sebastes helvonomaculatus*

Characteristics:

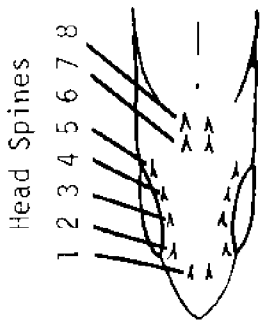
Color: Mottled orange yellow on body with four or five white spots  
on back. Fins pink with yellow-green overtone  
Head Spines: Strongly developed  
2nd anal spine: Longer than 3rd  
Peritoneum: Dark  
Top of head between eyes: Concave

Size: To 13 inches (33 dm)

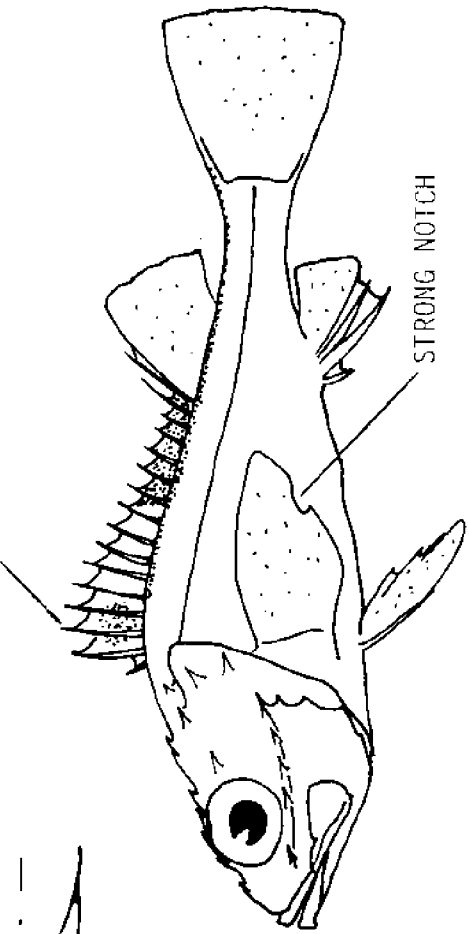
Range: Baja California to Gulf of Alaska

Depth: To 250 fm (455 m)

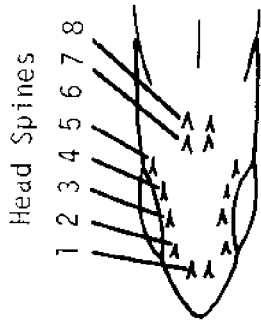
132



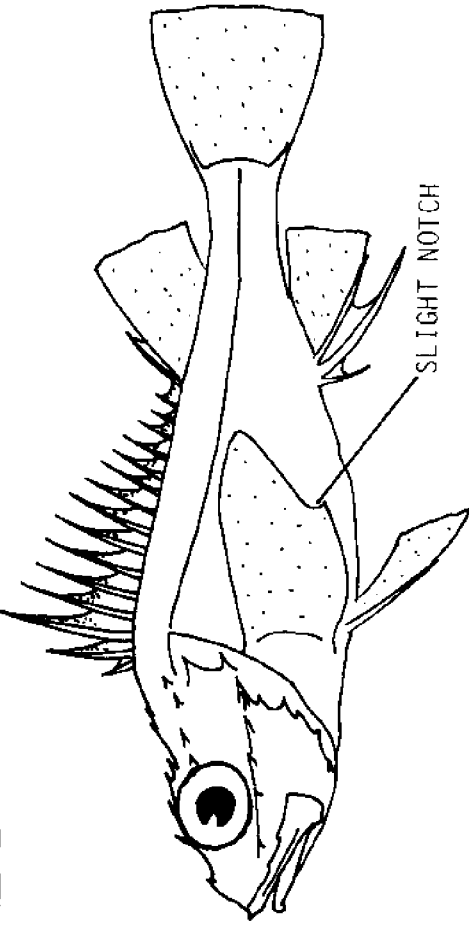
3rd SPINE NOT MUCH LONGER THAN 2nd



SHORTSPINE THORNYHEAD



3rd SPINE MUCH LONGER THAN 2nd



LONGSPINE THORNYHEAD

Two species occur in Alaskan waters:

1. The Shortspine Thornyhead (*S. alascanus*) is distinguished by having the second and third dorsal spines almost the same length  
Size: To 29.4 inches (75 cm)  
Range: From Baja California to the Bering Sea  
Depth: 50-800 fm (92-1,460 m)
2. The Longspine Thornyhead (*S. attivelis*) is distinguished by having the 3rd dorsal spine almost twice as long as the second, and by having only a slight notch in the pectoral fin  
Size: To 15 inches (38 cm)  
Range: Baja California to the Aleutian Islands  
Depth: 110-958 fm (200-1,750 m)

THORNYHEADS (IDIOT ROCKFISH)

*Sebastolobus* Sp.

Characteristics:

Differs from all rockfishes (*Sebastes*) by being more nearly round rather than oval in cross section; having 15 to 17 spines in the first dorsal fin (instead of 13 to 14); and by having a notched pectoral fin.

Color: Bright red, often with black on fins

Head spines: Very strongly developed, including a horizontal row of about 5 spines along the cheek below the eye

2nd anal spine: As long as, or longer than 3rd

Peritonium: White with black dots

Top of head between eyes: Concave



NOTES

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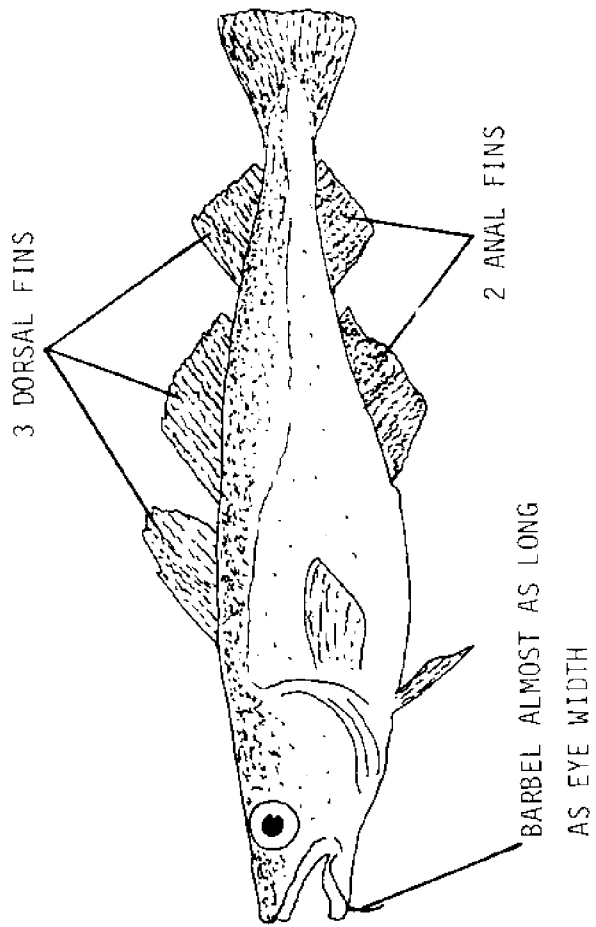
## SECTION C - THE CODS

The cods have long been important commercial fishes in the waters of the northern hemisphere. In Alaskan marine waters there are six species of cods with an additional species (the burbot) limited to fresh water.

The identification of Alaskan cods is relatively easy. The important characteristics to immediately look for in combination are the number of dorsal fins (cods are among the few species that may have more than two dorsal fins) and the absence or presence (as well as the length of) the barbel, or whisker at the tip of the lower jaw. This section describes and illustrates five species of cods. The sixth species, the Arctic cod (*Boreogadus saida*), is limited to our most northern waters; having no commercial importance, it has not been included.

The cods are few enough in number and are different enough in appearance that they are easily identified by comparing the fish with the diagrams and the written descriptions.

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GRAY (TRUE) COD

GRAY (TRUE) COD  
(Also called Pacific Cod)

*Gadus macrocephalus*

Characteristics:

- 3 dorsal fins
- 2 anal fins
- Long barbel (whisker)

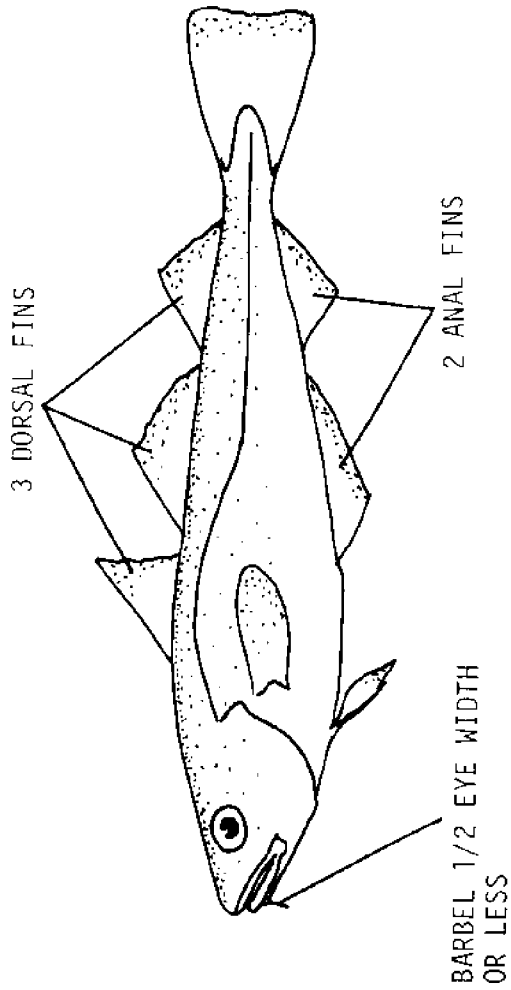
Size: To 3 feet 3 inches (1 cm)

Range: Southern California to the Bering Sea

Depth: To 300 fm (550 m)

Commercial Importance: An excellent food fish, and the basis for a strong commercial fishery

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PACIFIC TOMCOD

SAFFRON COD

PACIFIC TOMCOD  
SAFFRON COD

*Microgadus proximus*  
*Eleginus gracilis*

Characteristics:

3 dorsal fins

2 anal fins

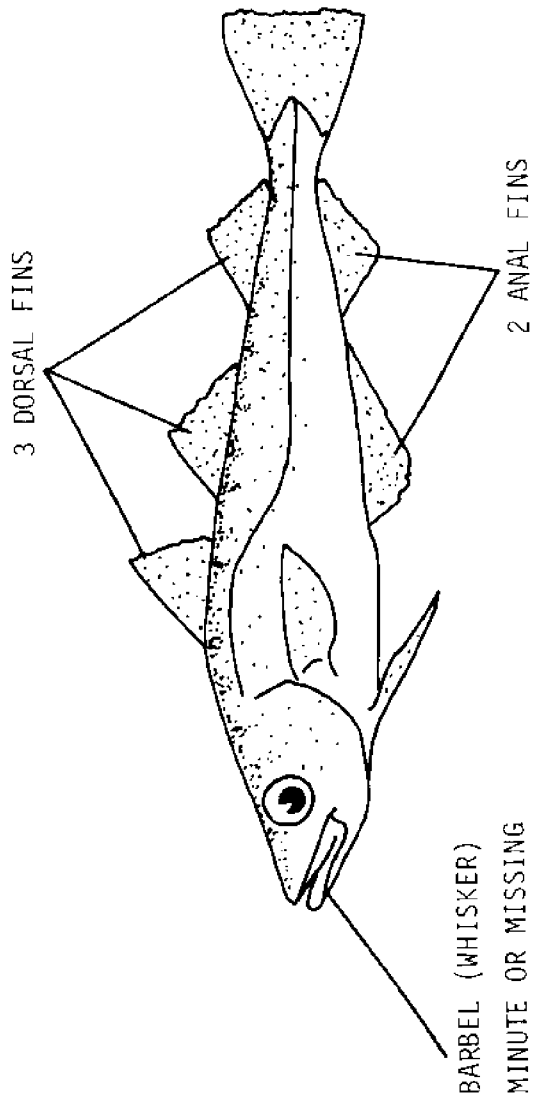
Short barbel (whiskers)

The first (front) dorsal fin of the Tomcod overlaps the base of the second when depressed. The first dorsal of the Saffron Cod only meets the base of the second when depressed.

Size: Small - to about 12 inches (30.5 cm)

Range: Tomcod from California to Gulf of Alaska -  
Saffron Cod from Gulf of Alaska to Northern  
Bering Sea

Commercial Importance: Not of sufficient size to be of great commercial value, but in some areas both species are important in the subsistence fishery.



WALLEYE (ALASKA) POLLOCK

WALLEYE (ALASKA) POLLOCK

*Theragra chalcogramma*

Characteristics:

- 3 dorsal fins
- 2 anal fins
- Barbel (whisker) minute or missing

Range: Central California to St. Lawrence Island

Depth: Surface to 200 fm (366 m) or more

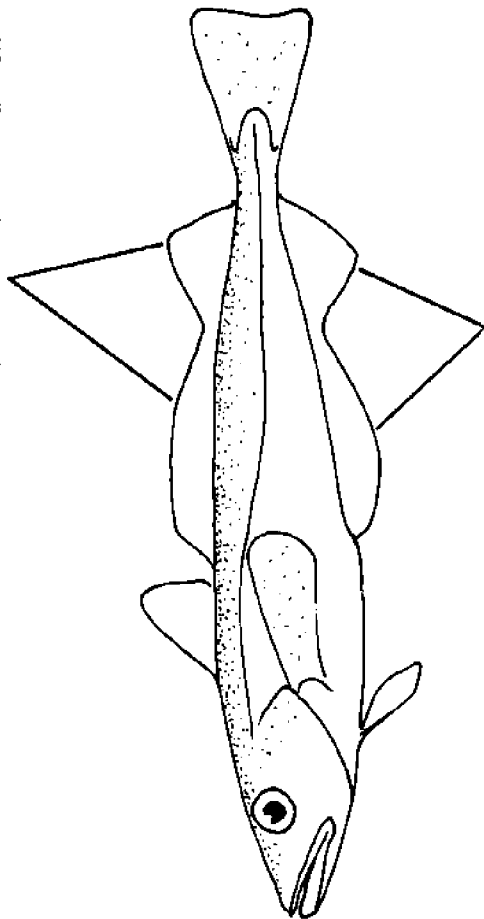
Size: To 3 feet (91 cm)

Commercial Importance: Currently the most important species of the American and foreign fisheries in Alaskan waters.



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LONG NOTCHED 2nd DORSAL FIN



LONG NOTCHED ANAL FIN

PACIFIC HAKE (WHITING)

PACIFIC HAKE (WHITING)

*Merluccius productus*

Characteristics:

2 dorsal fins  
1 anal fin  
No barbel

Range: Gulf of California to Gulf of Alaska

Depth: Surface to 491 fm (900 m)

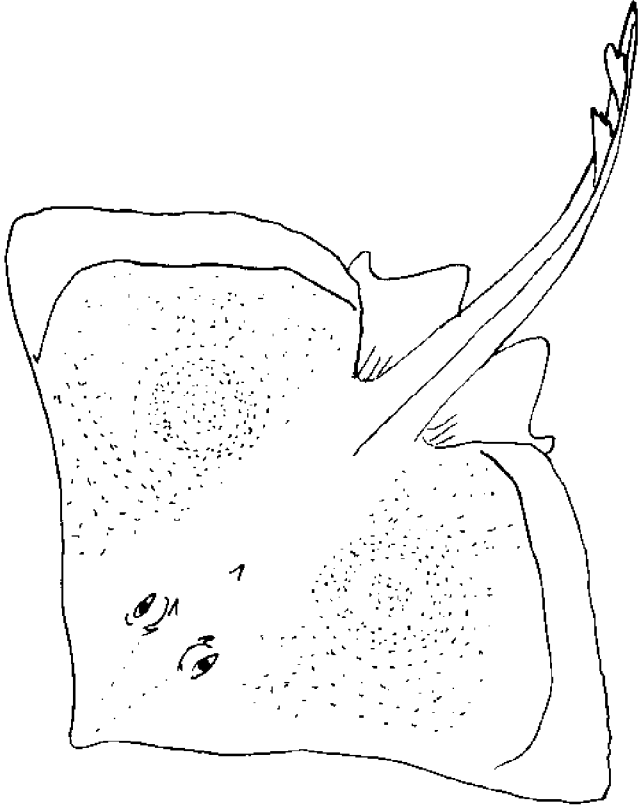
Size: To 3 feet (91 cm)

Commercial Importance: Not abundant in Alaska but basis of a large fishery to the south.



#### SECTION D - OTHER COMMON SPECIES

This section includes fishes that are most likely to be encountered in a trawl fishery. The skates, lingcod and greenlings are of present commercial importance. The wrymouth and wolf-eel are excellent bait for longline fishing. The lumsuckers may have a potential for roe. The roe of one species of lump-sucker is used to manufacture imitation caviar. The eel pouts are a large family of many species, and they are abundant in arctic and temperate waters. The rattails are another potential fishery resource that inhabit the deeper waters of Alaska.



SKATES

Raja Sp.

Characteristics:

Body flat, with pectoral fins forming large "wings". Tail long and narrow with a row of spines down the top and two reduced dorsal fins along the top.

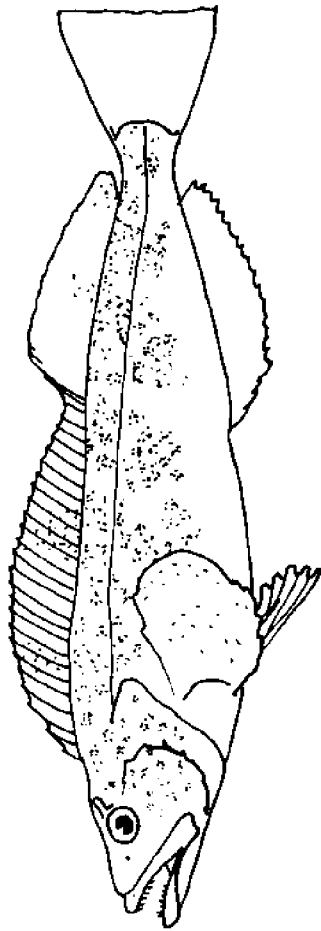
Size: To 8 feet (2.4 m) and 200 pounds (91 kg)

Range: Entire North American coast to Bering Sea

Depth: Shallow waters to 1588 fm (2910 m)

Comments: The flesh in the "wings" is excellent eating, reminiscent in flavor of scallops, thus skates have some future potential as food fish. Only a few species are large enough to be of value.

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LINGCOD

LINGCOD

*Ophiodon elongatus*

Characteristics:

Very large mouth with well developed canine teeth  
Long single, notched dorsal fin  
Small smooth scales  
Small flap (cirrus) over each eye

Size: To 5 feet (152 cm)

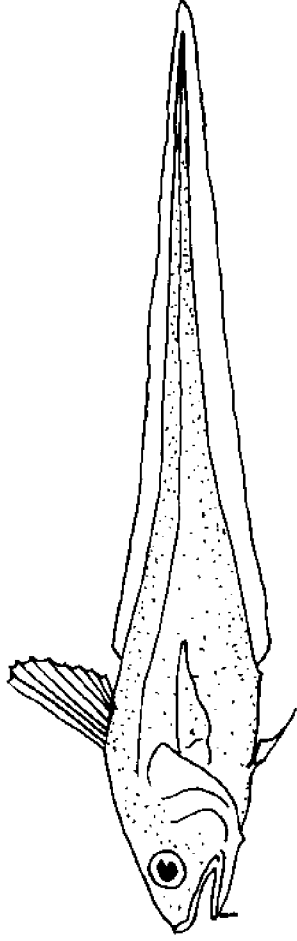
Range: Baja California to the Shumagin Islands

Depth: Intertidal to 230 fm (421 m)

Comments: Its large size and fine flesh combine to make this species a prized commercial and sport fish. Taken by trawl, longline, hand line, and sunken gillnet.



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RATTAILS

RATTAILS

*Coryphaenoides* Sp.

Characteristics:

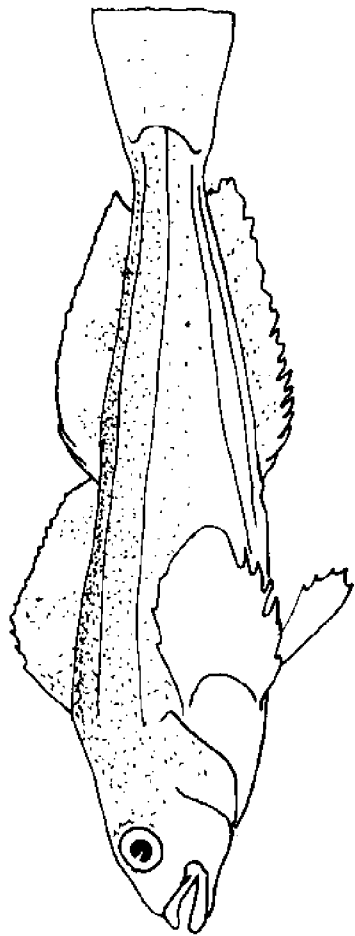
Long pointed tail with no tail fin - 2nd dorsal and anal fins meet at point of tail.  
Barbel (whisker) present  
Snout pointed, overhanging the mouth

Size: To 43 inches (109 cm)

Range: Deep waters of the world

Depth: To 1000 + fm (1820 + m)

Comments: Excellent flesh, like codfish, but generally too deep for most commercial fisheries.



GREENLINGS

*Hexagrammos* Sp.

Characteristics:

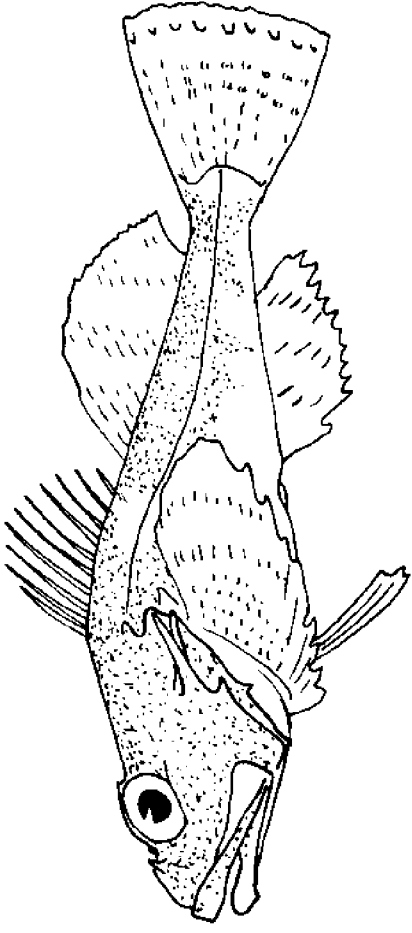
Four lateral lines  
Long single notched dorsal fin  
A flap (cirrus) over each eye  
Similar to the closely related Lingcod, but has smaller mouth,  
and multiple lateral lines.

Size: To 21 inches (53 cm)

Range: California to the Bering Sea

Depth: Shallow waters around rocky headlands and reefs

Comments: Four small species of little importance to the commercial fishery, but excellent food value, and popular light tackle sport fish.



GIANT SCULPINS

GIANT SCULPINS

*Myoxocephalus* Sp.

Characteristics:

Mottled coloring  
Very large mouth and head  
Scales limited or absent  
Heavy spines on head  
Very large pectoral fins

Size: To 30 inches (76 cm)

Range: Coast of Washington to the Bering Sea

Depth: Shallow to moderate depths

Comments: Commercially important as halibut or crab bait, but has some slight potential as a food fish.



GIANT WRYMOUTH

GIANT WRYMOUTH

*Delolepis gigantea*

Characteristics:

Long, eel-like shape  
No pelvic fins  
Large, heavy head with small sharp teeth  
Definite tail (caudal) fin

Size: To 4 feet (121 cm)

Range: Northern California to the Bering Sea

Depth: 18-70 fm (33-128 m)

Comments: Found usually in untrawlable areas, thus often taken only with longlines. The very tough skin makes the wrymouth an excellent halibut bait. It is also an excellent but seldom used food fish.





WOLF-EEL

WOLF-EEL

*Anarrhichthys ocellatus*

Characteristics:

Long slender eel-like body  
Moderate head, with large molar teeth  
Body and fins marked with rows of large dark spots  
Pelvic fins absent  
No prominent tail (causal fin)

Size: To 8 feet (2.4 m)

Range: Southern California to Aleutian Islands

Depth: To 123 fm (225 m)

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EEL POUTS

EEL POUTS

Family Zoarcidae

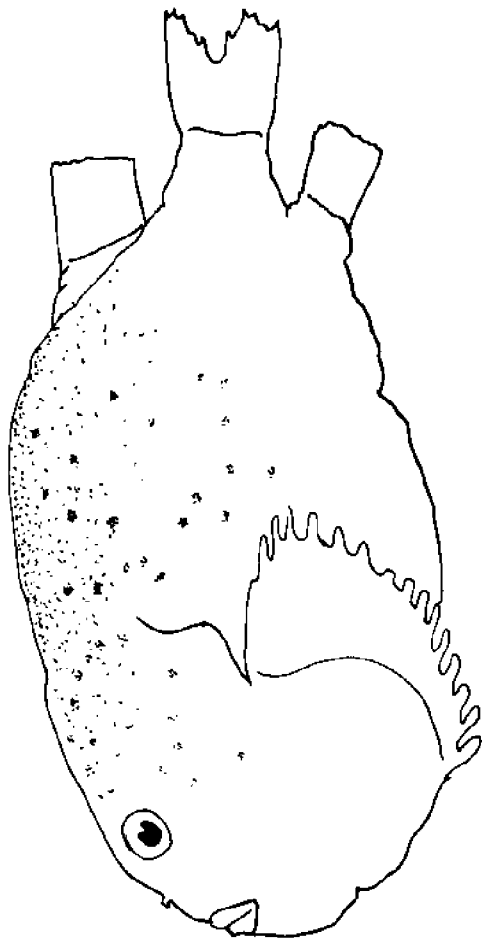
Characteristics:

Body somewhat eel-like  
Pelvic fins very small or missing  
Long, soft dorsal and anal spines  
No conspicuous tail (caudal) fin  
Not spotted as with the wolf-eel

Size: To 22 inches (56 cm)

Range: Throughout the world's oceans; coastally, along the entire North American coastline into the Arctic ocean.

Comments: A common component as trawl and trap catches, but without known commercial value.



SMOOTH LUMPSUCKER

SMOOTH LUMPSUCKER

*Aptocyclus ventricosus*

Characteristics:

Football-shaped body  
Sucking disc on belly  
No scales  
No lateral line  
Dorsal and anal fin set far back near tail  
Brown color with small blackish spots

Size: To 11 inches (28 cm)

Range: British Columbia to the Bering Sea

Depth: Subtidal to 123 fm (225 m)

Comments: Taken in Japan with sunken gillnets for flesh and for roe which is prized as caviar.

## GLOSSARY OF TERMS

- Accessory branch of the lateral line - On some flatfishes, a small and sometimes inconspicuous line of pores near the head, frequently running back along the base of the dorsal fin.
- Anal fin - An unpaired fin between the anus and the tailfin, on the lower side of the body.
- Anal spine - A hard, sharp spine at the front of the anal fin.
- Clavate - Club-shaped.
- Dorsal fin - An unpaired fin on the back of the fish between the tail fin and the head.
- Dorsal spines - Hard and usually sharp fin supports that are located in the front portion of the dorsal fin in some fishes.

- Gill arch - The foundation or bony portion of the gill.
- Gill rakers - Hard protuberances on the inside of the gill arch.
- Lateral line - A line of pores along the side of a fish which allows the fish to sense vibrations in the water.
- Peritoneum - The lining of the body cavity.
- Rays - Soft supporting elements in the fins.
- Rugose - Rough, ridged (like a rasp).



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NOTES

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