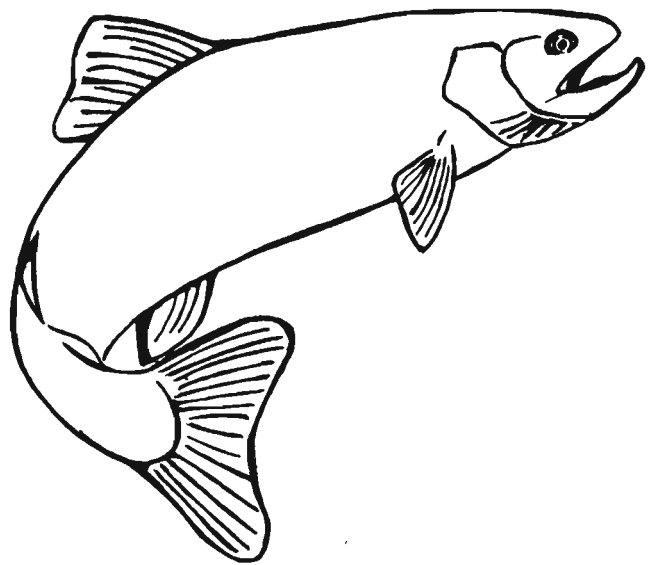
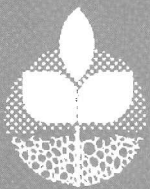


# *Field Guide to Common Marine and Bay Fishes of Oregon*



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Station Bulletin 607  
Revised November 1973  
Agricultural Experiment Station  
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# Foreword

This bulletin is a product of one of the primary objectives of the Department of Fisheries and Wildlife, namely the creation of new knowledge through an aggressive and prudently directed research program. The following is a summary of the fisheries research program.

## LIFE HISTORY OF FISHES

### *Oregon Fishes, Their Classification, Distribution, and Life History*

This long-term, continuing research is designed to provide basic information on Oregon's fish fauna.

### *Ecology of Recreationally Important Estuarine Fishes*

This research in coastal embayments provides a fundamental understanding of the factors which affect the abundance and well-being of recreationally important fishes, especially flounders and surf perches.

### *Early Life History Studies of Commercial Marine Fishes and Shellfishes*

The eggs and larvae of most commercial fishes and shellfishes live in the mid and surface water of the sea. Knowledge of their distribution and of the factors affecting their survival provides a basis for prediction of recruitment to exploitable stocks and for regulation of the fisheries.

## ECOLOGY OF AQUATIC ENVIRONMENTS

### *Alsea Watershed Study*

This is an evaluation of the effects of logging practices on salmonid fishes in a coastal stream.

### *Ecological Studies of an Experimental Stream*

Organic enrichment of streams promotes the growth of benthic slimes, which can alter plant and animal communities and can influence populations of economically important fishes and invertebrates. These studies expand knowledge of the complex relationships involved.

### *Ecological Studies in Laboratory Streams*

These studies identify pathways of energy transfer through aquatic communities and determine the differences in efficiency of utilization of sources of energy by aquatic communities. Such knowledge leads to better understanding of the effects of pollutants on production of fish and other aquatic organisms.

## WATER QUALITY REQUIREMENTS OF AQUATIC ORGANISMS

### *Effects of Pesticides on Marine Organisms*

This project defines acute and chronic toxicity of specific pesticides for representative forms of marine life and identifies pathways of transfer of pesticides in marine ecosystems.

### *Pesticides in Food Chains in Laboratory Streams*

This research measures the extent of accumulation of representative pesticides in the tissues of fishes and other selected aquatic organisms and relates this to knowledge of pathways of energy transfer within the aquatic community.

### *Dissolved Oxygen Requirements of Freshwater Fish*

The decomposition of organic materials in water results in a reduction of dissolved oxygen. The permissible degree of reduction of dissolved oxygen is almost always specified in water quality standards, and a primary guide in establishing these specifications is the oxygen requirements of fishes. Thus, this research determines the concentrations of dissolved oxygen necessary for unimpaired growth of freshwater fishes in their natural environment.

### *Poisoned Fish, Their Biochemistry and Physiological Ecology*

There is little information on the modes of action and effects of sublethal concentrations of toxic substances on

fishes and other aquatic organisms. This study is designed to determine what effect chronic poisoning has on growth, activity, utilization of food, tissue composition, and metabolism in fishes.

### *Pulp Mill Waste Degradation in Marine Waters*

This project develops bioassay methods for evaluating the toxicity of pulp mill wastes and for measuring the effectiveness of methods of treating such wastes.

### *Effects of Pulp and Paper Mill Effluents on the Growth and Production of Fishes*

This project develops methods of evaluating the chronic effects of mill effluents on the productivity of aquatic ecosystems.

## PARASITES OF AQUATIC ORGANISMS

### *"Salmon Poisoning" Disease*

This research identifies the natural definitive hosts for the fluke and rickettsiae and determines what animals other than canids harbor the rickettsiae. It also evaluates the effect of the parasite on fishes.

## GENETICS OF FISHES AND SHELLFISHES

### *Fish Genetics*

This study of fish genetics is concerned with race identification, improvements of hatchery stocks, and evolution of fishes.

### *Selective Breeding of Oysters*

This research seeks the degree to which certain attributes of oysters are genetically determined. Attributes under evaluation are growth, survival, fatness, shape, and total solids of body meat.

## CONTROL OF AQUATIC ORGANISMS

### *Control of Aquatic Plants*

This project seeks controls for nuisance aquatic plants which do not endanger fishes, other valuable aquatic organisms, or humans.

## AQUICULTURE

### *Limnology and Management of Farm Ponds and Other Small Impoundments*

This research provides the information needed for optimum production of salmonid and warm-water fishes in small impoundments.

### *Culture of Bivalve Molluscs*

This research evaluates systems for the culture of larval oysters and clams on a commercial scale in an experimental hatchery. It also seeks to define optimum conditions for the artificial seeding of clam and oyster grounds.

### *Cryogenic Preservation of Salmonid and Molluscan Gametes*

This project evaluates techniques for storing the sperm of oysters and salmon in a frozen state. Benefits from successful development of the techniques include reduction in hatchery costs by eliminating the need for maintaining large brood stocks and perfection of a means to facilitate selective breeding.

### *Culture of Pacific Salmon*

This research deals with the design, construction, and testing of streamside incubators, which simulate conditions in natural spawning beds, for pink and chum salmon. It also investigates methods of adapting juvenile fall chinook salmon to sea water to speed up their return to the sea.

Thomas G. Scott, Head  
Department of Fisheries and Wildlife

April 16, 1970

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# *Field Guide to Common Marine and Bay Fishes of Oregon*

ALAN J. BEARDSLEY and CARL E. BOND\*

## *Introduction*

A varied and complex assemblage of fishes inhabit the coastal waters of Oregon. The variety of habitats, the ocean current patterns, and the geographical placement ( $42^{\circ}$  to  $46^{\circ}$  N) of this coast allow for visitation and colonization by northern and southern inshore fishes as well as those from the open ocean. This bulletin describes some of the most common kinds of fish found in this faunally rich area. Those fishes were selected because of their present or potential use for food and sport as well as their general interest to vacationers.

For purposes of description the fishes can be separated into three general groupings: the jaw-

less fishes, the cartilaginous fishes, and the bony fishes. Jawless fishes (Figure 1) are represented by the hagfishes and lampreys, neither of which are often seen by the coastal visitor although the anadromous lamprey can be seen at dams on its spawning migration into fresh water. The hagfish is a burrowing scavenger of the ocean floor. Carti-

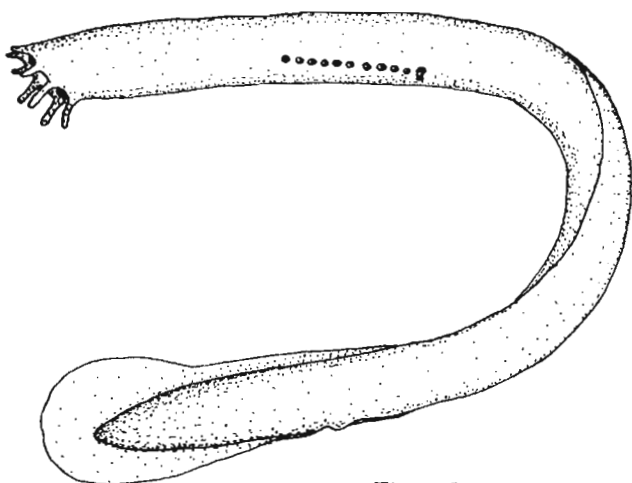


Figure 1  
Hagfish

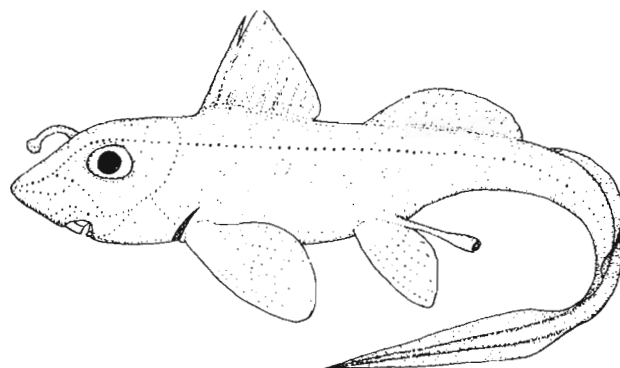


Figure 2  
Ratfish

laginous fishes include the sharks, skates, rays, and the ratfish (Figure 2). There are several species representing this general group. The bony, or "true," fishes are by far the most numerous in number of species. Many species of bony fishes are actively sought by anglers and commercial fishermen. Species of the other two groups are taken only incidentally.

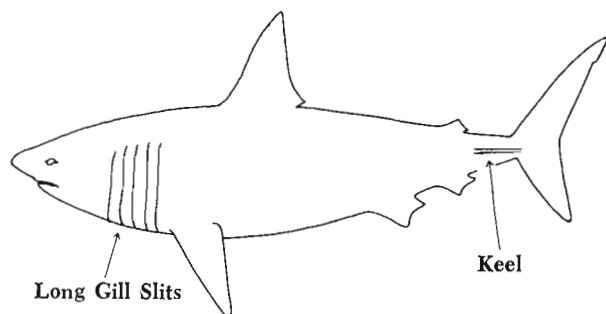
This bulletin combines a short description of selected species with simple drawings which show the general outline and main distinguishing features or markings. This method is useful only for identification of typical adult specimens.

The ranges given represent the eastern Pacific distribution unless otherwise noted.

\* Alan J. Beardsley is a former graduate research assistant and Carl E. Bond is professor of fisheries, Department of Fisheries and Wildlife, Oregon State University. Dr. Beardsley's present address is the Bureau of Commercial Fisheries, 2725 Mountlake Blvd. East, Seattle, Washington 98102. The research on which this publication is based was supported in part by the Bureau of Sport Fisheries and Wildlife, United States Department of Interior.

## Selected Species

### BASKING SHARK (*Cetorhinus maximus*)



*Distinguishing characteristics:* Keel on each side of the caudal peduncle; long gill slits.

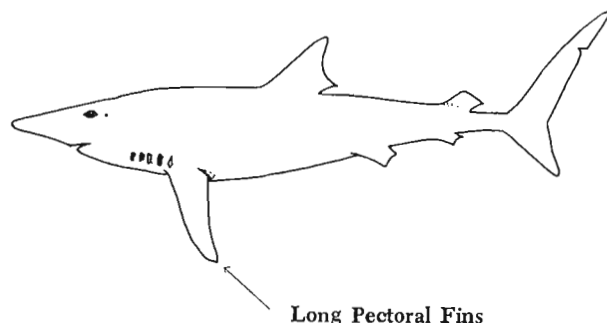
*Coloration:* Bluish or brownish gray on dorsal surface; lighter on sides and ventral surface.

*Size:* Length up to 45 feet.

*Range:* Southern California to Gulf of Alaska; fairly common in offshore waters.

The basking shark is named for its habit of lying motionless on the top of the water with only its dorsal fin exposed. It feeds on minute crustaceans and other small animals which it strains from the water by means of long horny gill rakers. Although large and powerful, it is not considered harmful to man.

### BLUE SHARK (*Prionace glauca*)



*Distinguishing characteristics:* Long pectoral fins equaling twice the height of the first dorsal fin; fifth gill slit above base of pectoral fin.

*Coloration:* Grayish blue on back, lighter on sides; almost white on ventral surface.

*Size:* Length to 13 feet.

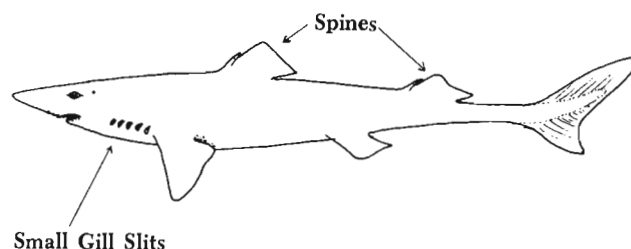
*Range:* Southern California to Alaska; common in the open ocean.

The blue shark appears off the Oregon coast in large numbers during the summer months when ocean waters approach 60° F at the surface. It is frequently seen swimming near the surface several miles from shore. The blue shark will occasionally strike a trolled herring or spoon, greatly surprising the angler. They have also been known to attack a hooked salmon. Commercial fishermen often carry a shotgun or rifle to subdue a struggling shark.

It is a very active fish, a voracious feeder, but has not been known to attack man. From time to time this shark has been placed in aquariums and under-sea observation chambers for viewing by the public. Specimens are short-lived in such environments.

The blue shark is not sought by sport fishermen in Oregon and is not generally eaten.

### SPINY DOGFISH (*Squalus acanthias*)



*Distinguishing characteristics:* Spine anterior to each dorsal fin; two dorsal fins; no anal fin; small gill slits.

*Coloration:* Slate gray to light brown on dorsal surface; dirty white on ventral surface; young have white spots on back.

*Size:* Length to about 5 feet.

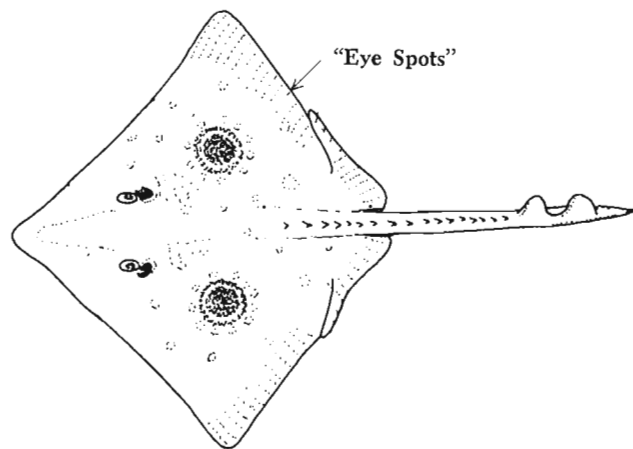
*Range:* Northern Baja California to Alaska; numerous.

The spiny dogfish is the most common of all sharks found off the coast of Oregon. Because of its small size and relative inactivity, this fish is the most suited of all local sharks for aquarium dis-

play. The long spines form more of a threat to persons who handle them than do their very small teeth.

The dogfish shark feeds on nearly all the locally abundant smaller fishes. Herring, anchovies, smelt, sandlances, small crustaceans, and squid seem to be preferred. It is often caught by sport and commercial fishermen using trolled herring. Before the manufacture of synthetic vitamin "A" in 1948, dogfish sharks were captured for the high vitamin "A" content of their livers. Today these fish have little commercial value, except for the small numbers taken by biological supply houses for classroom dissection.

### **BIG SKATE** (*Raja binoculata*)



**Distinguishing characteristics:** Depressed (flat); concave outer margin of pelvic fins; spines along tail; large spine short distance behind eye.

**Coloration:** Dorsal surface, dull olive brown to black with dark "eyespot" near center of base of pectorals; ventral surface, light and creamy white.

**Size:** Maximum length 6 to 8 feet.

**Range:** Southern California to Gulf of Alaska; common.

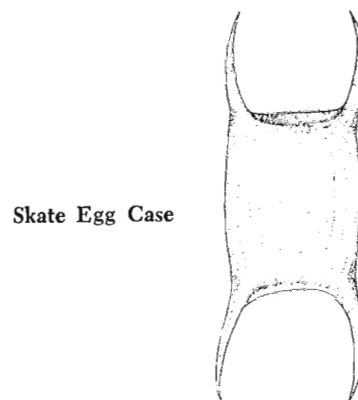
The empty leathery "mermaid's purses" which wash up on Oregon's beaches are usually egg cases of skates and less frequently those of sharks. Embryonic skates remain in the protective custody of the egg case until mature enough to survive the rigors of oceanic existence.

The skate is a relative of the shark, adapted for living on the ocean floor. The young of the big

skate are frequently found in many bays in Oregon. Large specimens, 4 feet from wingtip to wingtip, have been taken from Yaquina Bay. Larger individuals generally inhabit deeper waters of the continental shelf. They have been known to strike shrimp, clams, or trolled herring, but are seldom caught by sport fishermen because of their scattered distribution.

During World War II, enterprising restaurateurs were known to punch out pieces of skate wings with circular "cookie cutters" and serve the product as "scallops" to their patrons. Skate caught by commercial trawlers today are used in the mink food industry.

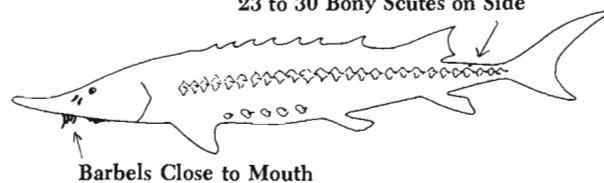
The long-nosed skate is similar to the big skate but does not have "eyespot" on the pectoral fins, and has a blue-grey underside.



Skate Egg Case

### **GREEN STURGEON** (*Acipenser medirostris*)

23 to 30 Bony Scutes on Side



Barbels Close to Mouth

**Distinguishing characteristics:** Long snout with four underlying barbels placed nearer the mouth than the tip of the snout; 23 to 30 bony scutes in main row on each side of the body.

**Coloration:** Blotched olive green on dorsal surface; sides silvery with green or white on ventral surface.

**Size:** Length to 7 feet; weight to 350 pounds.

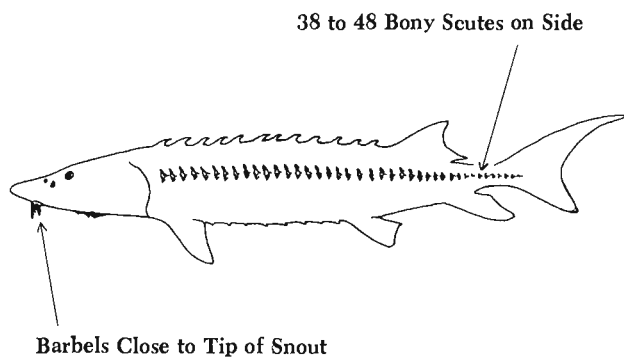
**Range:** Southern California to Alaska; common.

The green sturgeon, a large primitive bottom

fish, inhabits marine and brackish waters but is seldom found in fresh water. Occasionally it will enter the Columbia River and has been found at the head of coastal bays. Commercial trawlers obtain moderate numbers of these fish on the continental shelf. The dark flesh and strong taste of this fish make it unpopular on the market.

Green sturgeon inhabit several Oregon estuaries and may be taken on herring, clam necks, or lamprey fished near the bottom.

**WHITE STURGEON**  
(*Acipenser transmontanus*)



**Distinguishing characteristics:** Short wide snout, four barbels hanging from the snout in a position closer to the tip of the snout than the mouth, 38 to 48 bony scutes in one row on each side of the body.

**Coloration:** Uniform dark gray with no stripes on the sides; lighter on ventral surface.

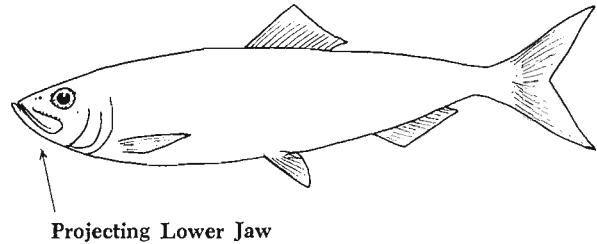
**Size:** Length to 20 feet; weight to 1,500 pounds.

**Range:** Northern California to Gulf of Alaska; common.

The white sturgeon is known better as a resident of salt and brackish water, although it is also found in deep holes in large rivers of Western North America. It is one of the few fish capable of moving freely from the river to the ocean and back again on spawning or feeding migrations. The white sturgeon is a slow growing fish and seldom spawns before reaching the age of 15 years. A 50-year-old fish may deposit as many as four million eggs.

This is a valuable food fish. The flesh is sold at a high price on the fresh or smoked fish market and caviar is made from the roe. Fishermen use strong rods and lines to battle this often large fish. Smelt, lamprey, or clam necks are often used for bait.

**PACIFIC HERRING**  
(*Clupea harengus pallasii*)



**Distinguishing characteristics:** No ridges on the gill covers; deciduous (easily removed) scales; projecting lower jaw; absence of scales on head; no black spots on upper sides.

**Coloration:** Bluish green on back; silvery on sides and ventral surface.

**Size:** Length to 13 inches.

**Range:** Southern California to Bering Sea; numerous.

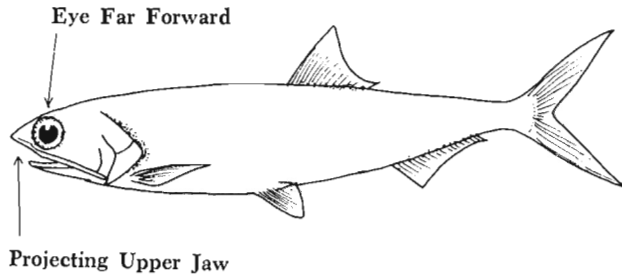
The Pacific herring is the most widely used bait fish in sports and commercial salmon troll fishery along the coast of Oregon. Herring will readily strike a small silver hook jerked repeatedly in the water. A series of these hooks tied on a piece of leader is called a "herring jig." Fishermen frequently jig their own fresh herring in one of Oregon's bays before going salmon fishing. Herring are available in markets for use as bait or as food. Pickling is a favorite means of preparation.

Herring can be unpredictable in their movements. They may be abundant in a bay one day and absent the next. Sea birds, which have gathered to feed on schooled herring, often guide commercial and sport fishermen to catches of large salmon.

Herring migrate into bays to spawn in winter. Females lay enormous numbers of adhesive eggs on rocks, eel grass, sea weeds, and pilings.

In addition to the very abundant Pacific herring, there are two others present along the Oregon coast: the Pacific sardine or California pilchard and the American shad. The latter was introduced from the east coast in 1871. During the 1930's, the sardine was the object of a great commercial fishery, pursued mainly in California. Disappearance of the large stocks during the later 1930's and early 1940's brought the fishery to an end. The shad is anadromous and is sought in fresh water by sport and commercial fishermen. Both the shad and the sardine have a row of round black spots on the upper side just behind the head.

**NORTHERN ANCHOVY**  
(*Engraulis mordax*)



**Distinguishing characteristics:** Large mouth; projecting snout; eye near end of snout; gill covers not united under head; very long maxillary reaching nearly to the edge of the gill cover.

**Coloration:** Metallic bluish or greenish on dorsal surface; silvery on sides.

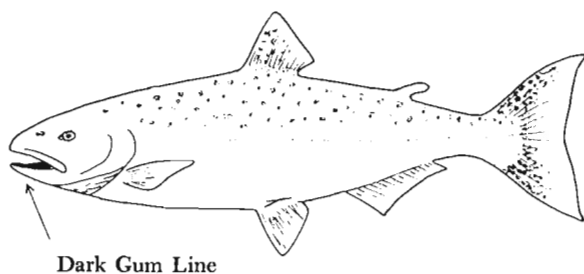
**Size:** Length to 9 inches.

**Range:** Cape San Lucas, Baja California to British Columbia; common.

This fish is valuable as bait in the salmon and tuna fisheries. Some sport fishermen prefer anchovies to the more commonly used herring for salmon trolling along the Oregon coast. The anchovy may be caught on herring jigs. Some are used for human consumption.

The anchovy is a schooling fish and often may be seen feeding near the surface. When frightened by feeding predatory fish, they may form a ball at the surface.

**CHINOOK SALMON**  
(*Oncorhynchus tshawytscha*)



**Distinguishing characteristics:** 13 to 19 rays in the anal fin; black pigment along gum line; spots in both upper and lower lobes of caudal fin; pyloric caeca (tubelike projections in a mass at the anterior portion of intestine) number 140 to 185.

**Coloration:** In ocean—greenish blue on dorsal surface; numerous irregular black spots on back,

dorsal fin, and both lobes of caudal fin; flesh red. In bays late in the fall—dark almost black in color; red blotches on sides; numerous spots present; hooked snout may develop in males; flesh becomes pink or white.

**Size:** Commonly seen in length to 3 feet and weight to 30 pounds, but weights to 60 pounds may be encountered; maximum weight 120 pounds.

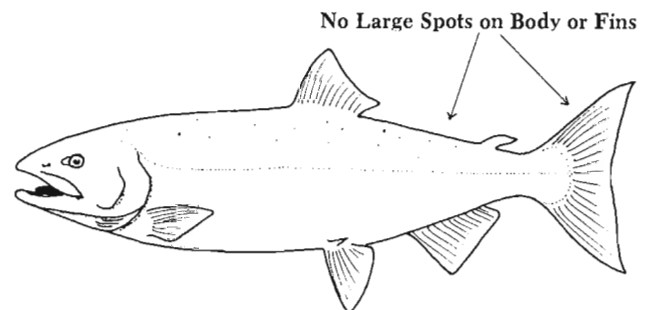
**Range:** Southern California to Bering Sea; common.

Oregon's anglers would probably vote the chinook salmon the most esteemed marine sport-fish. Commercial salmon trollers are paid more per pound for large chinook than for any other fish in their catch. Although not as numerous as the coho salmon, the chinook grows to a greater size. Several 50-pounders are taken each year in Oregon. Because of the tremendous fishing pressure and deterioration of their natural spawning beds, great numbers of chinook salmon are artificially propagated each year, particularly in hatcheries located along the Columbia River.

The flesh of the chinook salmon is usually deep red in color. Most often it is cut into steaks or roasts for cooking, but some is canned or smoked. Salmon to be frozen should be sealed in water or glazed with ice before storing.

The smaller pink salmon is similar in appearance to the chinook, but has larger spots and finer scales.

**CHUM SALMON**  
(*Oncorhynchus keta*)



**Distinguishing characteristics:** 13 to 17 rays in anal fin; no large spots on body or fins; slender caudal peduncle; all fins (except the dorsal) tinged with black; 140 to 186 pyloric caeca (fleshy projections from the anterior portion of the intestine).

**Coloration:** Metallic blue on dorsal surface; silvery



on sides and belly; no black spots; black tips on all fins except dorsal; maturing adults in brackish and fresh water have irregular brown or purple blotches on sides of body.

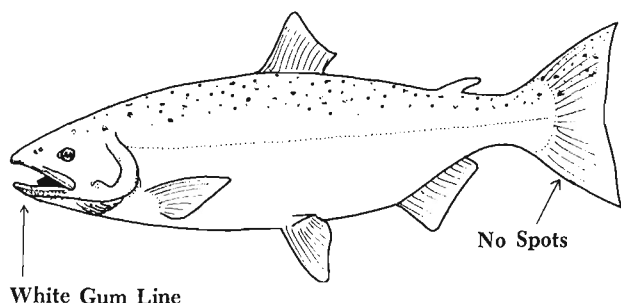
**Size:** Length to 40 inches.

**Range:** Northern California to Bering Sea.

The largest runs are in Tillamook Bay, although the species may be found in many streams on the Oregon coast. Spawning adults are seldom found more than a few miles from salt water.

The flesh of the chum salmon is not as highly prized as that of others, but commercial fisheries on the species exist from the Columbia River northward. Sport anglers do not usually seek the chum salmon because it rarely strikes a lure.

**COHO (SILVER) SALMON**  
(*Oncorhynchus kisutch*)



**Distinguishing characteristics:** 13 or 14 rays in anal fin; gums nearly white in color; spots on tail (if present) only in dorsal half; 45 to 83 pyloric caeca (fleshy projections from anterior portion of intestine).

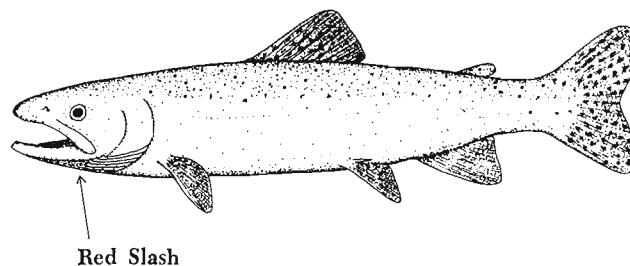
**Coloration:** In ocean—metallic green or blue on back; silver on sides and belly; small dark spots on back, dorsal fin, and upper portions of tail. In bays late in fall—spawning coloration may occur before the fish leave the estuary; mature males become deep red with a noticeable hook snout; a white spot may occur behind the eye on the gill cover in both sexes; females turn a dull bronze changing to black, lighter on the belly.

**Size:** Length to 36 inches, weight to 35 pounds.

**Range:** Northern California to Bering Sea.

The silver salmon supports an active sport and commercial fishery along the Oregon coast. It is considered a game fish and therefore must be taken on hook and line. Trolled herring or anchovies are the most common baits.

**COASTAL CUTTHROAT TROUT**  
(*Salmo clarki clarki*)



**Distinguishing characteristics:** 8 to 12 rays in anal fin; bright red slash under and side of lower jaw; teeth on the back portion of tongue.

**Coloration:** Greenish blue on back; silvery on sides and belly; in fresh water numerous black spots on sides of body, head, and tail; bright red dash on lower portion of each jaw.

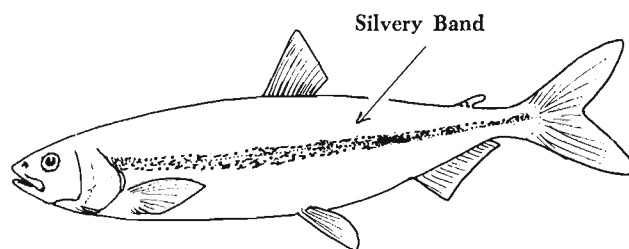
**Size:** Length to 25 inches; weight to 5 pounds.

**Range:** Northern California to Southeastern Alaska.

The sea-run coastal cutthroat trout is highly prized by Oregon sport fishermen. These savage fighters inhabit all coastal streams, spending part of their lives in the ocean or bays and lagoons. At maturity these trout ascend fresh-water streams to spawn. Several well-developed tide-water fisheries for cutthroat exist in Oregon. These fisheries, located predominantly in the central coast region of the state, begin in late July and reach a peak in August and early September. Trolling lures, herring, or spinner and worm from a boat is the most common method of angling.

The flesh of sea-run cutthroat trout is pink to red and is extremely tasty.

**SURF SMELT**  
(*Hypomesus pretiosus*)



**Distinguishing characteristics:** Upper jaw reaches to below front edge of eye; adipose fin present; dorsal fin originates farther forward than origin of pelvic fins.

**Coloration:** Light brown to green on back; silvery

band along sides; silver to white on belly; spawning males may have golden tones.

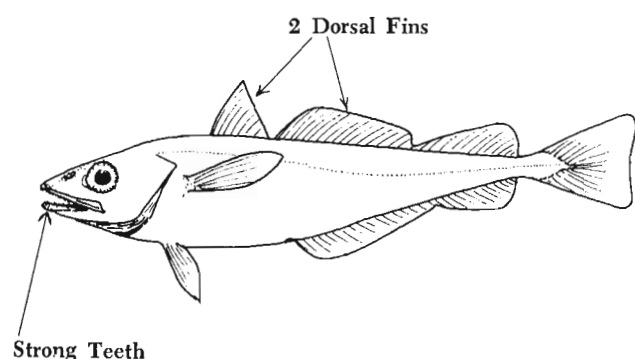
**Size:** Length to 10 inches.

**Range:** Northern California to Alaska.

The surf smelt is captured as it spawns on gravelly ocean beaches during the summer. Dip nets and a special "A-frame" net are used in the fishery. The best spawning beaches have pea-sized gravel, fresh-water seepage, and some afternoon shade.

Other smelts on the Oregon coast include the night surf smelt and the eulachon, which runs into the Columbia River and occasionally into coastal streams to spawn.

**PACIFIC HAKE**  
(*Merluccius productus*)



**Distinguishing characteristics:** Teeth; slender and strong; first dorsal fin short; second dorsal fin long and deeply notched; head and mouth large; lower jaw protruding; black lining in mouth; large eyes.

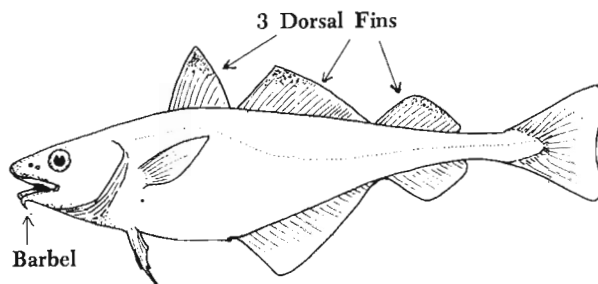
**Coloration:** Metallic black or gray on top; silvery on sides and belly; lining of mouth and gill covers is black.

**Size:** Length to 3 feet.

**Range:** Gulf of California to Alaska; common.

Hake are considered a pest by ocean anglers and many commercial fishermen. They eagerly take trolled herring, particularly when it is fished at a depth of 5 fathoms or more. The flesh of the hake is soft and not very palatable. The Bureau of Commercial Fisheries has recently subsidized a commercial fishery for hake as a potential source for fish protein concentrate. Russian trawlers during 1966 took 280 to 290 million pounds of hake off the Oregon and Washington coasts.

**PACIFIC TOMCOD**  
(*Microgadus proximus*)



**Distinguishing characteristics:** Small barbel on the lower jaw; three separate dorsal fins; two separate anal fins; anus positioned below first dorsal fin.

**Coloration:** Olive green to brownish on dorsal surface; white or silvery on sides and belly; dusky fins.

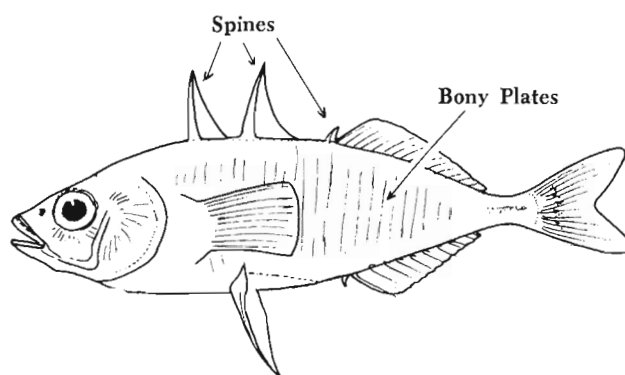
**Size:** Length to 12 inches.

**Range:** Central California to Gulf of Alaska; common.

The Pacific tomcod is not of commercial importance, but is the subject of a sport fishery at several locations on the Oregon coast. If a school is located, they may be taken on almost any bait kept in motion.

The flesh is white, delicate, and tasty. Despite the small size, they probably should receive more attention from anglers.

**THREESPINE STICKLEBACK**  
(*Gasterosteus aculeatus*)



**Distinguishing characteristics:** Large spines in dorsal and pelvic fins; vertical bony plates on sides of body; slender caudal peduncle (part before tailfin).

**Coloration:** Variable; silvery green, blue, or mot-

bled brown, depending on habitat; spawning males blue with orange on lower part of head and breast.

**Size:** Length to 4 inches.

**Range:** Southern California to Bering Sea; common.

These fish are too small to be of commercial or sport fishing importance. They are frequently abundant in brackish sloughs of estuaries. The threespine stickleback is an active fish, making an interesting display in many public aquaria. Aquarists enjoy the nest building and courtship behavior of this species.

#### **BAY PIPEFISH**

(*Syngnathus griseolineatus*)



**Distinguishing characteristics:** Snout long and tubular; body elongate, subcylindrical, and angular, encased in bony plates; no pelvic fins.

**Coloration:** Olive green with narrow horizontal gray lines.

**Size:** Length to 13 inches.

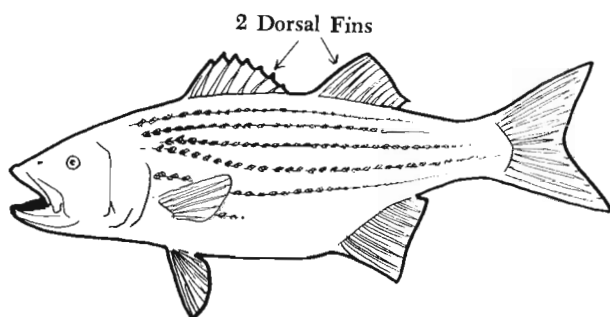
**Range:** Southern California to Southeastern Alaska.

The bay pipefish, relative of the sea horse, feeds on small crustaceans and is usually found in or near eelgrass beds. Although never taken on sport gear, it may be seen by clam diggers when it becomes stranded on mud flats in small tide pools. The pipefish is on display in many aquaria concessions along the Oregon coast.

The male incubates the eggs in a peculiar abdominal brood pouch.

#### **STRIPED BASS**

(*Morone saxatilis*)



**Distinguishing characteristics:** Two dorsal fins

completely separated; seven or eight horizontal blackish stripes along the sides of the body; torpedo shaped body.

**Coloration:** Steel blue to olive green or black becoming silvery on the sides and belly; copper reflection to sides; seven or eight horizontal stripes on sides.

**Size:** Maximum length to 4 feet; weight to 78 pounds.

**Range:** San Diego to Straits of Juan de Fuca; uncommon north of Winchester Bay, Umpqua and Smith Rivers.

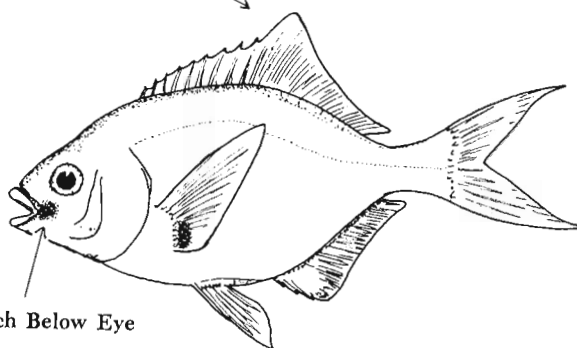
The striped bass was introduced to the Pacific coast in 1879 when 132 small fish were planted in San Francisco Bay. A supplemental plant of 300 fish was made in 1882. Having since spread northward, the Oregon striped bass population is chiefly located in Coos Bay, with lesser numbers in the Coquille and Umpqua Rivers. It is an anadromous fish, moving into fresh water to spawn. Spawning takes place primarily in May and June. A nine-pound female deposits about 900,000 eggs.

An extremely important sport fish, the striped bass is an unmatched test of skill to the most experienced fishermen. Summer and fall provide the best fishing opportunities, although it may be taken all year. The quality of this fish makes it excellent for eating.

#### **PILE PERCH**

(*Rhacochilus vacca*)

Long Soft Rays



Blotch Below Eye

**Distinguishing characteristics:** Anal fin with three spines and 25 to 30 soft rays; body oval in shape; dusky coloration with dark spot on each gill cover; vertical dark stripe on about the middle of each side; deeply forked tail.

**Coloration:** Dusky to dark gray on back; lighter on

sides; vertical dark stripe on each side; dark spot on gill cover.

**Size:** Length to 18 inches; weight to 5 pounds.

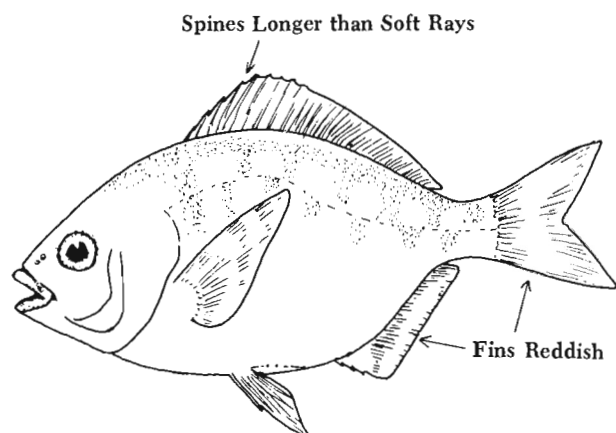
**Range:** Northern Baja California to Alaska.

This is the largest surfperch of the six or seven species found and gives sport fishermen an exciting fight on light tackle. When hooked near docks or pilings, this fish frequently will cut the line on the abrasive barnacles encrusting such structures.

Large pregnant females caught in June and July often give birth to several dozen lively young, when the adult is removed from the water. Young placed quickly back in the water have a good chance of survival.

The pile perch is large enough to make sizable, meaty fillets. The carcasses are useful for crab bait.

**REDTAIL SURFPERCH**  
(*Amphistichus rhodoterus*)



**Distinguishing characteristics:** Anal fin with three spines and 28 to 31 soft rays; body oval in shape; high angular spinous portion of dorsal fin; most spines longer than soft rays; 9 to 11 vertical reddish brown or bronze bars on the sides of the body; reddish color to tail and pelvic fins.

**Coloration:** Silvery background coloration with the above mentioned markings.

**Size:** Length to 12 inches; weight to 2 pounds.

**Range:** Southern California to Vancouver Island.

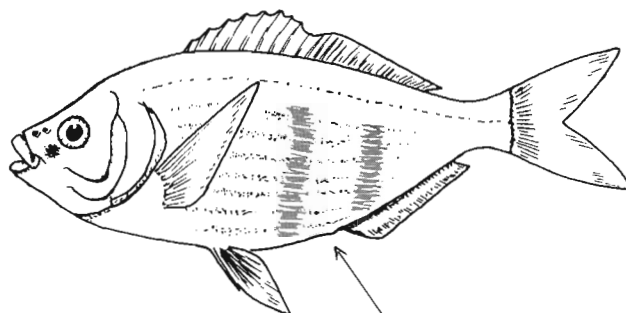
This colorful fish is most easily recognized by the reddish pelvic fins and tail, which contribute to its name.

Redtail surfperch are most frequently found in the surf zone of the ocean, but on occasion are

found in bays. The most common habitat is around pilings and jetties, especially over sandy bottoms.

Redtail surfperch are generally filleted and are of similar eating quality to the other members of the surfperch family.

**SHINER PERCH**  
(*Cymatogaster aggregata*)



**Distinguishing characteristics:** Anal fin with three spines and 22 to 25 soft rays; body oval in shape; vertical light yellow bars on the sides of the body, crossing faint horizontal stripes; large scales in proportion to body length; small size.

**Coloration:** Silvery or dusky on dorsal surface; dark linear markings on lower body; vertical light yellow bars on the sides of the body; males (recognized by swelling in anal fin) are nearly black in winter and spring.

**Size:** Length to 8 inches.

**Range:** Northern Baja California to Port Wrangel, Alaska.

The shiner perch gives birth to live young in the spring of the year. Fertilization takes place shortly after the young are born. Food consists of barnacles, small clams, shrimp, algae, and miscellaneous crustaceans.

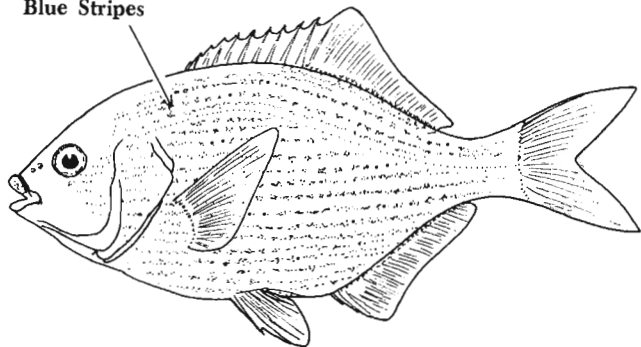
Adult fish will readily take a small hook baited with shrimp, clam necks, or barnacles. Many are caught on herring jigs, employing bare hooks or hooks with a small piece of red yarn attached. This schooling species provides excellent recreational fishing to youngsters on docks and piers. Although this is a marine fish, specimens are frequently found in brackish water, and sometimes in fresh water.

Although many people consider this fish too small for eating, its flesh is nevertheless very firm and tasty. The easiest method of preparation for

cooking is to remove the head, fins, and viscera prior to skinning. The body portion may then be breaded and fried.

**STRIPED SEAPERCH**  
(*Embiotoca lateralis*)

Orange and  
Blue Stripes



**Distinguishing characteristics:** Anal fin with three spines and 29 to 33 soft rays; body oval in shape; low spinous portion of the dorsal fin with length of the last spine about three-quarters of the length of the first ray.

**Coloration:** Bright orange and blue horizontal strips on head and body.

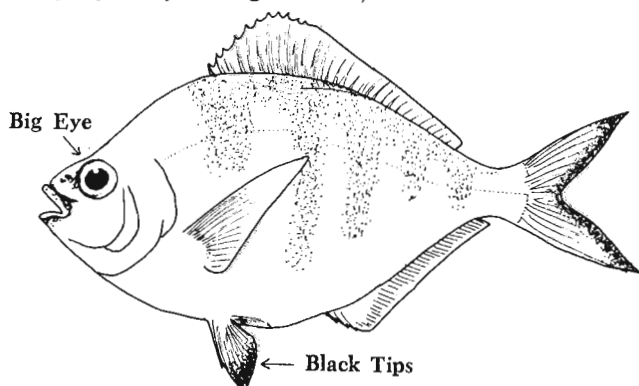
**Size:** Length to 15 inches.

**Range:** Northern Baja California to Alaska.

The striped seaperch is one of the most important bay sport fish in Oregon. Its vivid coloration makes it an attractive addition to an angler's catch. Scuba divers say the natural curiosity of the striped seaperch makes it an easy speargun target. Fishermen catch numerous striped seaperch in spring and summer, using ghost or mud shrimp and clam necks for bait. Seaperch can be enticed by slowly retrieving these baits along the bottom.

**WALLEYE SURFPERCH**  
(*Hyperprosopon argenteum*)

Big Eye



**Distinguishing characteristics:** Anal fin with three spines and 28 to 31 soft rays; body oval in shape; eyes very large (about one-third length of head); longest dorsal spine longer than soft rays; black tipped pelvic fins.

**Coloration:** Steely blue on dorsal surface; silvery on sides and ventral surface; sides have five faint bars which fade soon after death; pelvic fins tipped with black.

**Size:** Length to about 1 foot.

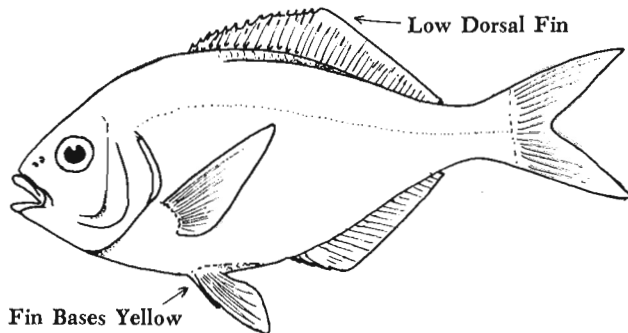
**Range:** Central Baja California to Vancouver Island.

The walleye surfperch is at times very common in bays and water adjacent to the surf zone along the Oregon coast. At times only scattered representatives are found in the sport catch, but on occasion walleye surfperch specimens are in the majority.

The flesh is comparable to other members of the family. Larger specimens can be filleted, although generally they are most easily prepared by skinning.

**WHITE SEAPERCH**  
(*Phanerodon furcatus*)

Low Dorsal Fin



**Distinguishing characteristics:** Anal fin with three spines and 29 to 34 soft rays; body oval in shape; continuous low margin of dorsal fin; deeply forked tail; often pelvic and pectoral fins yellow in color.

**Coloration:** Silvery white along dorsal surface and sides; pectoral and pelvic fins may be tinged with yellow; both sexes may appear deep gray in color during the winter months.

**Size:** Length to 12 inches.

**Range:** Northern Baja California to Vancouver Island.

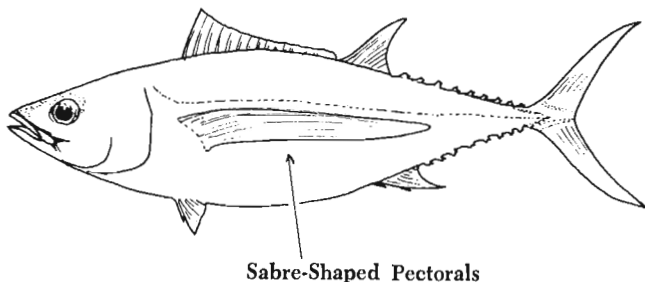
Common in all Oregon bays, the white seaperch is also caught in the ocean surf. Mature females

give birth to live young in the spring of each year.

The white perch is most frequently caught during the spring and summer months in estuaries. Most specimens are small in size and are most easily prepared by skinning. Larger individuals are filleted.

#### ALBACORE

(*Thunnus alalunga*)



**Distinguishing characteristics:** Slender caudal peduncle with seven or eight finlets above and

below; long sabre-shaped pectoral fins extending beyond front of anal fin.

**Coloration:** Dark steel blue above; silvery on the sides and underparts.

**Size:** Length to 4 feet.

**Range:** Baja California to Alaska; common depending largely on water temperature.

The albacore tuna migrates to Oregon waters during the summer months when off-shore ocean temperatures approach 60° F. Large tuna vessels (36-120 feet in length) seek the albacore off the Oregon coast, generally 30 to 100 miles from land. Most of the fish are canned. Albacore occasionally enter the sport fishery when they wander within several miles of the coastline. Extremely swift, this species is an exciting sport fish when hooked. Feathered jigs, trolled at a speed of about five knots, are the most common lures of sport and commercial fishermen.

Although sometimes baked, the dry meat of albacore is probably best prepared by canning.

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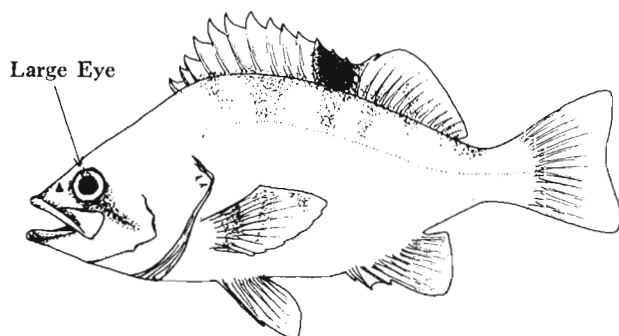
#### Rockfishes

The members of the rockfish family have been called by any number of common names. Among these are "snapper," "cod," "rockcod," and "sea bass" because of their resemblance to these other fishes. There are about 30 species along the Oregon coast, and many of these can be captured by anglers. Several species are of interest from the standpoint of commercial fishing, as the flesh is excellent.

Because of the great number of species and the difficulty encountered in identifying them, only six representatives are covered here.

#### BLACK ROCKFISH

(*Sebastes melanops*)



**Distinguishing characteristics:** Space between eyes is convex without spines; moderately large eyes; lining of abdominal cavity is white.

**Coloration:** Black dorsal surface; gray mottled with black on sides.

**Size:** Length to 20 inches.

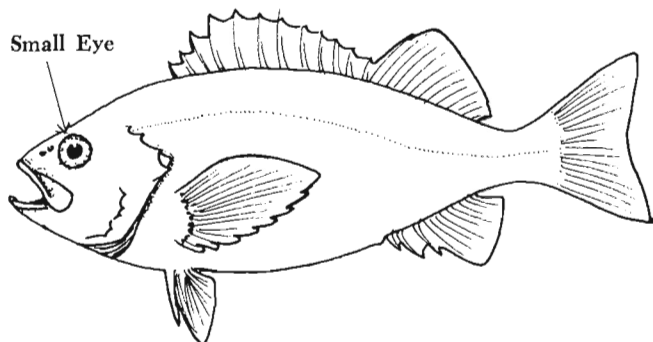
**Range:** San Miguel Island, California, to Sitka, Alaska; numerous.

The black rockfish is commonly caught near rock jetties and kelp beds in the ocean along the length of the Oregon coastline. Salmon fishermen frequently catch the fish on trolled herring. Specimens brought to the surface from some depth often will exhibit protruding viscera and eyes, due to the release of water pressure on the air bladder. Young fish (1 to 2 inches in length) are frequently seen near the surface in estuaries and in tidepools during the summer months.

Black rockfish fillets are of good quality. This fish is well worth keeping if caught. The species

represents a latent sport fishery of considerable importance.

**BLUE ROCKFISH**  
(*Sebastes mystinus*)



**Distinguishing characteristics:** Space between eyes is convex without spines; small eyes; lining of the abdominal cavity is black.

**Coloration:** Bluish to grayish black; mottled with paler color on sides; fins dark.

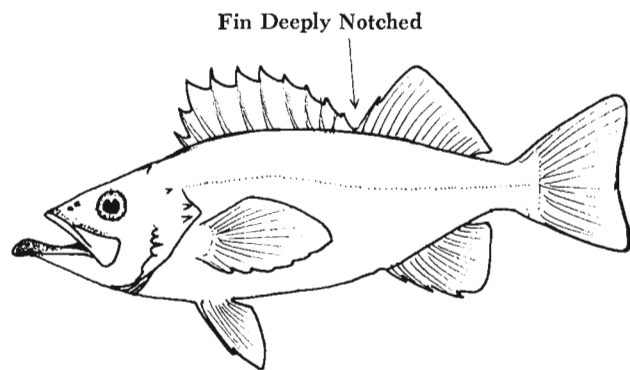
**Size:** Length to 20 inches.

**Range:** Baja California to the Bering Sea.

The blue rockfish normally occurs in water between 40 and 50 fathoms, and therefore is not as available to scuba divers and anglers as is the black rockfish, to which it is quite similar in appearance. The coloration of the peritoneum (lining of abdominal cavity) is probably the most foolproof method of distinguishing between the two (see above). A slowly trolled herring is the best fishing technique.

The flesh of the blue rockfish is flavorful, comparable to that of the black rockfish. Filleting is the easiest method of preparation.

**BOCACCIO**  
(*Sebastes paucispinis*)



**Distinguishing characteristics:** Highly convex between the eyes; large mouth with greatly projecting lower jaw; spines on top of head; deeply notched dorsal fin; normally nine anal soft rays; lining to abdominal cavity is white or silver.

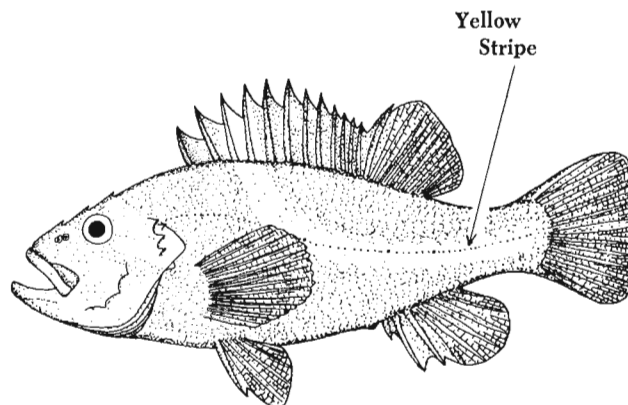
**Coloration:** Dorsal surface light to green to dark brown; dull orange or reddish on sides shading into pale pink to white below; intense black blotches with pale red.

**Size:** Length to 3 feet; weight to 21 pounds.

**Range:** Northern Baja California to British Columbia.

The bocaccio inhabits offshore waters along the Oregon coast. Occasionally they are caught in estuaries. It enters the commercial trawl catch and is most frequently found in water 40 fathoms or deeper.

**CHINA ROCKFISH**  
(*Sebastes nebulosus*)



**Distinguishing characteristics:** Broad yellow stripe on each side of the bluish-black body; strong spines on top of head; space between eyes concave.

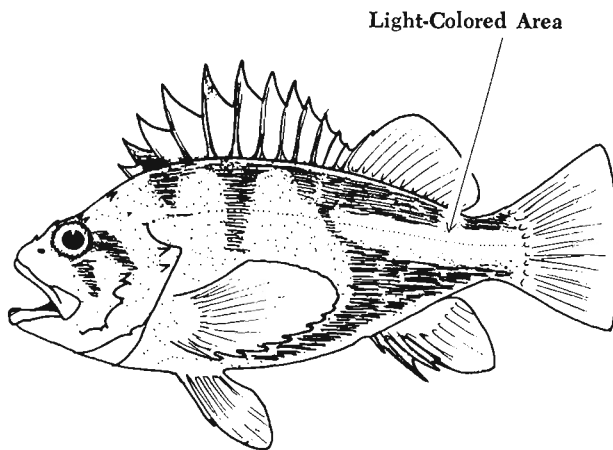
**Coloration:** Blackish to blue-black; everywhere speckled with yellowish or whitish spots which are sometimes tinged with blue; broad yellow stripe down each side terminating in tail fin.

**Size:** To about 16 inches.

**Range:** Central California to Alaska.

This species is found in waters of moderate depth. It makes an attractive aquarium display animal because of its brilliant coloration.

**COPPER ROCKFISH**  
(*Sebastes caurinus*)



**Distinguishing characteristics:** Coppery brown coloration; long blackish pectoral fins with thickened rays; lightly colored area along posterior two-thirds of lateral line.

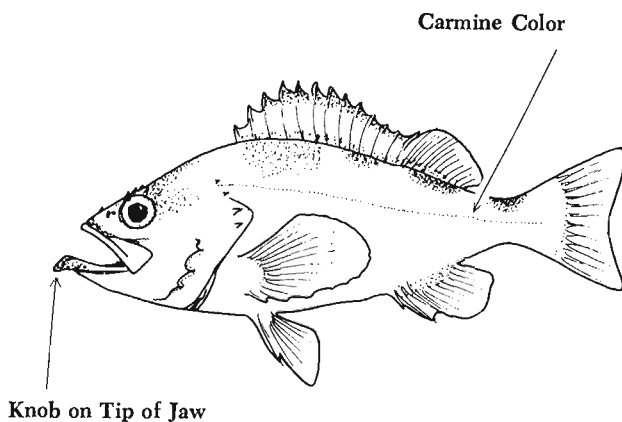
**Coloration:** Dark brown or olive brown; splashed with copper and occasionally splashed with dull yellow; posterior two-thirds of lateral line usually white.

**Size:** To 18 inches.

**Range:** Central California to Southeastern Alaska.

The copper rockfish enters the commercial trawl catch but is not of particular importance. Anglers occasionally take this fish along the open coast and off the jetties. It is often seen in aquarium displays.

**PACIFIC OCEAN PERCH**  
(*Sebastes alutus*)



Knob on Tip of Jaw

**Distinguishing characteristics:** Space between eyes slightly convex to flat; long lower jaw extending to a point meeting an extension of the upper profile of the head; large knob on tip of lower jaw.

**Coloration:** Carmine red with black markings on back and on dorsal surface of caudal peduncle.

**Size:** Length to 18 inches.

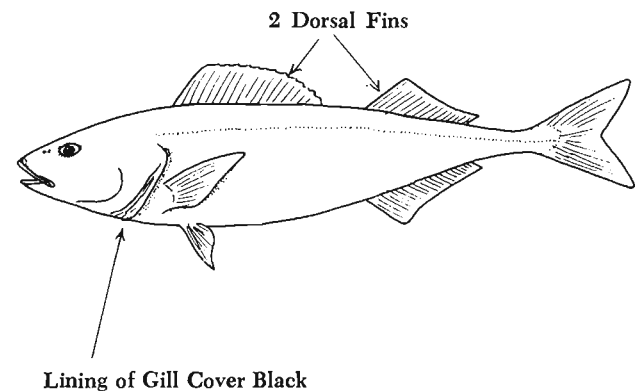
**Range:** Southern California to Bering Sea.

This is an excellent commercial fish and is sought by fishermen of many nations. The catch is marketed as fillets, both fresh and frozen.

The Russian trawling fleet reportedly took 25 to 50 million pounds of Pacific ocean perch off the coast of Oregon (chiefly in the Newport area) in 1966. The catch by fishermen from United States ports was therefore smaller than expected. The present 12-mile offshore limit for foreign fisheries does not protect the stocks effectively.

This species is generally found in waters deeper than those fished by anglers.

**SABLEFISH**  
(*Anoplopoma fimbria*)



Lining of Gill Cover Black

**Distinguishing characteristics:** First dorsal fin spinous, the second with soft rays; body covered with small scales; pelvic fins each with one spine and five soft rays; gill cover lined with black.

**Coloration:** Slate gray to greenish black on dorsal surface; lighter gray on ventral surface; pale on outer margins of all fins except spinous dorsal.

**Size:** Length to 3½ feet; weight to 25 pounds.

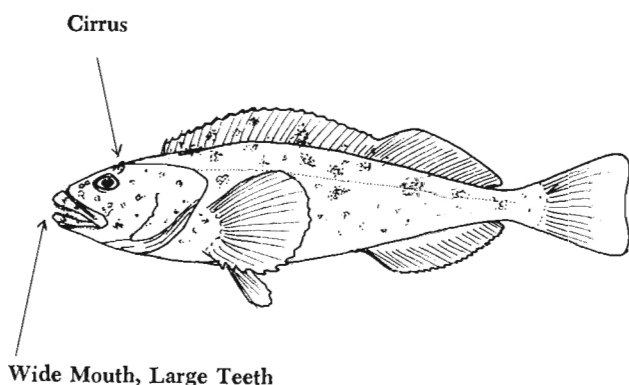
**Range:** Northern Baja California to Northwest Alaska.



The sablefish inhabits deeper offshore waters along the Oregon coast. It is captured chiefly by commercial long-lines, but some are taken by trawlers. Like most oily fish, the sablefish finds a ready market as a smoked product.

In some aquariums, the sablefish has been trained to eat herring from a scuba diver's hand. Large schools of juvenile sablefish are frequently observed near the surface during the summer months.

**LINGCOD**  
(*Ophiodon elongatus*)



**Distinguishing characteristics:** Teeth large and canine-like; dorsal fin long and deeply notched; two large fleshy flaps (cirri) above eyes; small smooth scales covering body and head.

**Coloration:** Highly variable, being closely associated with habitat; may appear light brown or tan with spots and blotches of brown, green, or orange; others appear a vivid green or bluish brown with darker blotches outlined in orange or pale blue.

**Size:** Length to 5 feet; weight to 75 pounds.

**Range:** Northern Baja California to Northwestern Alaska.

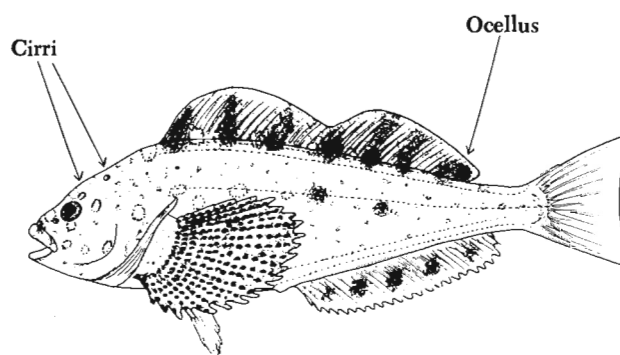
The lingcod is one of the most highly prized ocean sport fish. It can give anglers an exciting battle on light tackle and its flesh is highly palatable. Some people prefer it over salmon. Because of the sharp teeth, the hook must be removed with care. Although the flesh of some lingcod appears green or bluish, this does not impair the flavor. The meat turns white when cooked.

The lingcod inhabits rocky areas and kelp beds. It is a bottom-dwelling fish and bait (commonly

herring or filleted fish) should be trolled or placed as near the bottom as possible.

The lingcod possesses a large proportion of high-quality flesh. Filleting is the easiest method of removing the meat. The fillets can be fried in a pan or in deep fat for "fish and chips." Lingcod frequently can be purchased in a fish market or coastal restaurant.

**KELP GREENLING**  
(*Hexagrammos decagrammus*)



**Distinguishing characteristics:** Two pairs of fleshy flaps (cirri) on top of head; prominent transparent area on the posterior portion of the dorsal fin (ocellus); long dorsal fin with about 21 spines; five lateral lines on body.

**Coloration:** Female and young have brownish or grayish body covered with round, reddish-brown spots; light brown color on ventral surface; male is generally brown or slate gray in color with large, turquoise spots on the head and anterior portion of the body.

**Size:** Length to 22 inches.

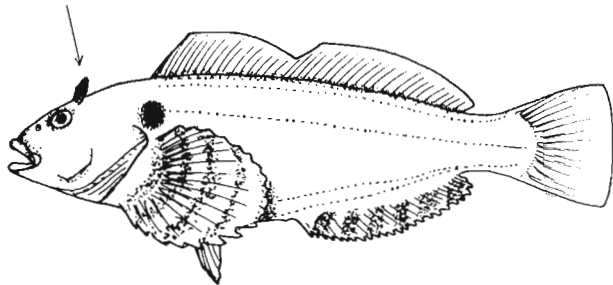
**Range:** Kodiak Island to Southern California; numerous.

The kelp greenling, a close relative of the lingcod, is an important sport fish in most Oregon bays and along rocky shorelines. It will take most bait, including shrimp, clams, and fish fillets. Occasionally, one is caught on a herring jig. Tolerant of brackish water, the kelp greenling can be found several miles landward from the mouth of a bay. This fish seems to be common over many bottom types.

Kelp greenling, also called sea trout, are easily filleted. Their flesh is of high eating quality.

**ROCK GREENLING**  
(*Hexagrammos lagocephalus*)

Large Cirrus



*Distinguishing characteristics:* Large fringed cirrus above each eye; length of cirrus equal to or greater than the diameter of the eye; round dark spot above the base of each pectoral fin; five lateral lines.

*Coloration:* Extremely variable from bright red and brown to bright green; sometimes with bright round spots; alternating light green and red spots on pectoral fins; red spots or bars usually on pelvic and anal fins; caudal fin green and tipped with red; black spot above pectoral fin.

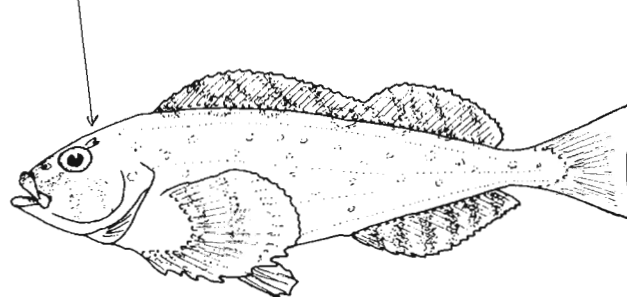
*Size:* Length to 2 feet.

*Range:* Southern California to Bering Sea.

The rock greenling frequently is confused with its relative the kelp greenling. The length of the cirrus probably is the easiest method of identification. The rock greenling is abundant north of Coos Bay in shallow water along rocky shorelines. Specimens are often found in bays where they are taken by sport fishermen. Clams or shrimp are the best bait. The flesh is firm and quite tasty.

**WHITE SPOTTED GREENLING**  
(*Hexagrammos stelleri*)

Small Cirrus



*Distinguishing characteristics:* Small cirrus above each eye; small white spots profusely scattered over body; five lateral lines (the first and fourth extremely short); slender caudal peduncle.

*Coloration:* Predominantly green, but may vary from pale red to tan with irregularly placed dark or dusky bars or spots; six dark spots or bars on anal fins with yellowish background; white spots evenly scattered over body.

*Size:* Length to 2 feet.

*Range:* Northern California to Bering Sea.

The white spotted greenling appears in sport catches less regularly than its relatives, the kelp and rock greenlings. It inhabits rocky areas along the open coast and frequently enters bays. Its flesh is comparable to other greenlings and therefore is esteemed by sport fishermen.

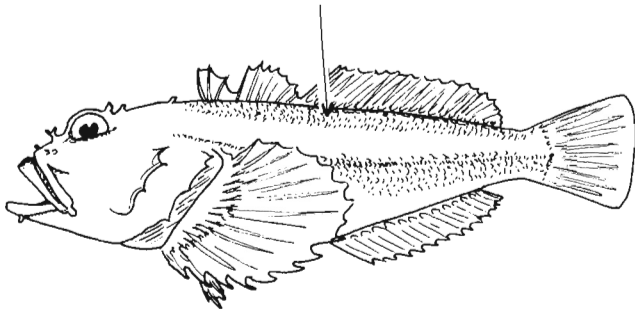
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**Sculpins**

More than 20 species of this family can be found in the salt and brackish waters of Oregon. They range in size from 2-inch inhabitants of tidepools to the 2½-foot cabezon sought by skin-divers. Similar body forms and variable coloration make many of the small species seem very similar and difficult to identify, although identification can be made with the aid of a microscope and a key of important characters. Only the large common species, those that most often are taken on hook and line, will be covered here. These are the brown Irish lord, red Irish lord, cabezon, buffalo sculpin, and stag-horn sculpin.

**BROWN IRISH LORD**  
(*Hemilepidotus spinosus*)

7 Scale Rows



*Distinguishing characteristics:* Six to seven rows of scales encircling the dorsal fin; emarginate (notched) portion of the dorsal fin; united gill membranes broadly joined at the isthmus.

*Coloration:* Predominantly brown, tinged with red; mottled with dark brown on the dorsal surface; white on the ventral surface.

*Size:* Length to 10 inches.

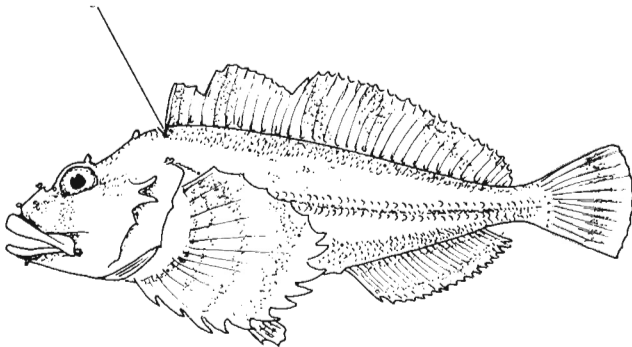
*Range:* Southern California to Vancouver Island.

The brown Irish lord at maturity has a total length of only 10 inches. Larger specimens probably will be its relative, the red Irish lord. The brown Irish lord usually frequents sheltered, rocky areas and tide pools along the Oregon coast, but may travel small distances up bays.

As is the case with most sculpins, the brown Irish lord is not considered an important food fish.

**RED IRISH LORD**  
(*Hemilepidotus hemilepidotus*)

4 Scale Rows



*Distinguishing characteristics:* Four rows of scales encircling the dorsal fin; emarginate (notched) spinous portion of the dorsal fin; united gill membranes narrowly joined at the isthmus.

*Coloration:* Mottled dull to brilliant red bands alternating with brownish red bars on dorsal surface; pale red to grayish green on ventral surface; profuse scattering of brown to black spots.

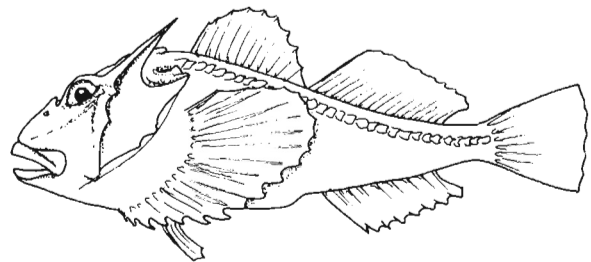
*Size:* Length to 20 inches.

*Range:* Northern California to Bering Sea.

The red Irish lord frequents rocky areas along the entire Oregon coast, and is often taken by fishermen using clams or shrimp for bait.

This sculpin is not sought as a food fish because of the small amount of boneless flesh contained on its body.

**BUFFALO SCULPIN**  
(*Enophrys bison*)



*Distinguishing characteristics:* Heavy stout appearance; very long pointed spines on upper part of gill cover; large raised bony tubercles on the high lateral line.

*Coloration:* Three broad black saddles across dorsal surface; dark green to brownish on dorsal surface and white on ventral surface; some specimens have maroon blotches on head and back; yellowish white bands on back and sides.

*Size:* Length to 12 inches.

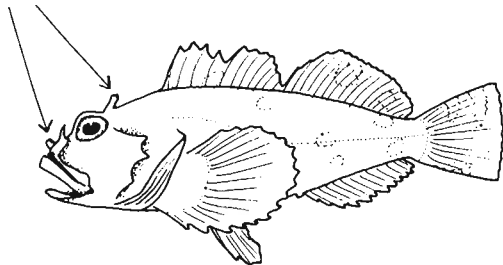
*Range:* Southern California to Gulf of Alaska.

The buffalo sculpin often takes bait from hooks intended for more desirable sport fish. It is caught frequently in all Oregon bays. When landed, the buffalo sculpin projects its preopercular spines, giving it a fearsome appearance. Care must be taken when removing the hook as these spines can inflict a painful puncture.

Although not prized for their palatability, many buffalo sculpins are used as crab bait by sport crabbers in bays.

**CABEZON**  
(*Scorpaenichthys marmoratus*)

Large Cirri



*Distinguishing characteristics:* Heavy body; chunky appearance; body scaleless; prominent fleshy flap (cirrus) on middle of snout and a larger pair just back of the eyes; anal fin with thick soft rays, but no spines.

*Coloration:* Variable from dark brown to red, tan, gray, or greenish; generally mottled or blotched; light areas frequently margined with darker shades of body color.

*Size:* Length to 30 inches.

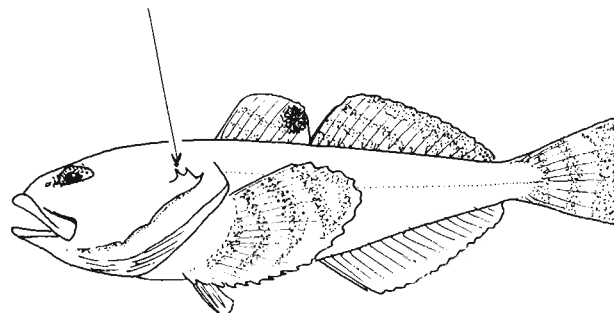
*Range:* Central Baja California to Northern British Columbia.

The cabezon is esteemed for its excellent eating quality. Although the fish is often well camouflaged, the cabezon's sluggish movements make it fairly easy prey for the spear gun of the scuba diver. Sport fishermen frequently catch this fish using shrimp, herring, or cut bait fished near the bottom. Among the largest of the sculpins, cabezon females may live to 13 years, males to 9. As many as 100,000 eggs may be deposited by a large female. Spawning occurs during the winter months, January through March.

Cabezon can be filleted or baked whole in a campfire. Beware! The roe of the cabezon is poisonous and can cause severe illness if eaten.

**PACIFIC STAGHORN SCULPIN**  
(*Leptocottus armatus*)

Antler-Like Spine



*Distinguishing characteristics:* Prominent antler-like spine on each side of the head; slender scaleless body; conspicuous black spot on the posterior portion of the spinous dorsal fin.

*Coloration:* Mottled olive-gray, green, or brown back; copper colored sides bordered below by yellow; white belly; black spot on the posterior portion of the spinous dorsal.

*Size:* Length to 12 inches.

*Range:* Northwest Alaska to Northern Baja California.

The staghorn sculpin can tolerate a great range of salinity and therefore is found to the head of tidewater in most Oregon bays. A great antagonist of sport fishermen, this is a clever robber of fishermen's bait. It is extremely abundant in all Oregon estuaries and provides a great deal of entertainment for juvenile fishermen. The head spines are sharp and merit caution when the hook is removed.

The staghorn sculpin is not considered a food fish.

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***Gunnels, Pricklebacks, and Relatives (Blennies)***

The gunnels and pricklebacks are often encountered under rocks and among vegetation at low tide. Their elongate, often ribbon-like bodies lead many observers to call them "eels," but these fishes are not close relatives of the eels, being derived from perch-like ancestors. Only a few selected representatives of the blennies can be covered in this bulletin. These are the wolf-fish, penpoint gunnel, saddleback gunnel, and Pacific snakeblenny.

**WOLFFISH (WOLF-EEL)**  
(*Anarrhichthys ocellatus*)



Large Canine and Molar Teeth

**Distinguishing characteristics:** Large canine and molar teeth; pelvic fins absent; elongate body; large black spots on side of body and dorsal fin.

**Coloration:** Gray, brown, or dark gray; black circular spots scattered about body; spots of varying size.

**Size:** Length to 8 feet.

**Range:** Southern California to Gulf of Alaska.

A ferocious looking fish, the wolffish generally creates a great deal of interest when put on public display. The name wolf-eel, by which it is often called, is actually a misnomer as there are no true eels on the Pacific coast of North America, north of Southern California.

The wolffish inhabits rocky areas in the ocean and bays. Scuba divers report that this fish is frequently hidden between rocks and debris with only its head revealed. They feed on crabs and other crustaceans. Specimens held in aquariums have been known to attack fish. Commercial crab fishermen dislike this species as it will bite through their crab pot wire in order to eat their crabs.

**PENPOINT GUNNEL**  
(*Apodichthys flavidus*)

Silver Line



Spine

**Distinguishing characteristics:** Silvery line across each side of head; pen-point-shaped spine in the anal fin (may be seen by pressing a sharp instrument behind anal region and moving it toward head); absence of pelvic fins.

**Coloration:** Brightly colored, varying from green to red, orange-brown, or yellow; distinctive silver bar above eye, black bar below.

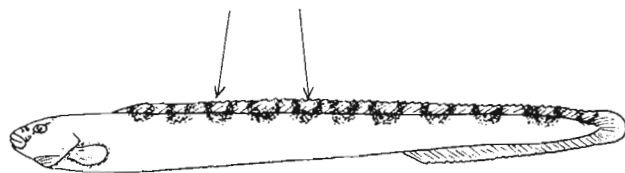
**Size:** Length to 18 inches.

**Range:** Southern California to Southeastern Alaska.

Not of importance as a food fish, the penpoint gunnel may frequently be found under rocks and on mudflats at low tide. It is an attractive aquarium display animal.

**SADDLEBACK GUNNEL**  
(*Pholis ornata*)

Saddle Markings



**Distinguishing characteristics:** Series of saddle-shaped markings along the base of the dorsal fin; minute pelvic fins located just anterior to and below pectoral fins; dark bar across top of head just behind eyes; vertical dark bar below eyes.

**Coloration:** Variable, green to brown on dorsal surface; ventral surface may be yellow, orange, or red; dark on top of head and underneath eyes.

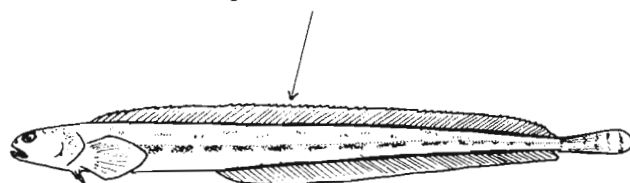
**Size:** Length to 12 inches.

**Range:** Northern California to Bering Sea.

The saddleback gunnel can frequently be found on mudflats at low tide, seeking shelter in water around eel grass or under rocks. It feeds on small crustaceans and molluscs, but it is not caught by sport fishermen. It makes an attractive display in small aquaria.

**PACIFIC SNAKEBLenny**  
(*Lumpenus sagitta*)

Spines in Dorsal Fin



**Distinguishing characteristics:** Very elongate body; pointed spines projecting from the length of the dorsal fin; short dark streaks horizontally positioned along the sides of the body.

**Coloration:** Light green or brown on dorsal surface; dirty white on ventral surface; short dark

green to brown streaks on sides; spots and bars on dorsal and caudal fins.

**Size:** Length to 20 inches.

**Range:** Northern California to Bering Sea.

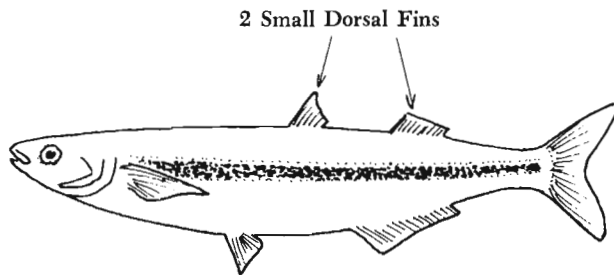
The Pacific snakeblenny enters Yaquina Bay in late April and is common until fall. Its bizarre shape and markings make it an interesting fish to observe. It is commonly placed in public aquariums, but it generally does not survive very long.

It is of little or no value to fishermen, although it will take a small baited hook.

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#### **JACKSMELT**

(*Atherinopsis californiensis*)



**Distinguishing characteristics:** Slender smeltlike body; small spinous dorsal fin a short distance in front of the soft dorsal; mouth and teeth small; operculum (gill-cover) scaly; silvery lateral band.

**Coloration:** Bluish green on dorsal surface, silvery on sides and belly; bright metallic band extends along side from pectoral fin to tail.

**Size:** Length to 22 inches; weight to 2 pounds.

**Range:** Southern Baja California to Northern Oregon.

The jacksmelt, a relative of the grunion, is considered a favorable sport fish by many anglers. Large jacksmelt are sometimes found feeding on the refuse from commercial fish and crab packing plants. Crab gills are often used as bait. Frequently these fish are pickled, although they are extremely tasty cooked fresh.

A schooling fish, jacksmelt may break the surface of the water as they try to escape a predator or approaching boat. The topsmelt is a similar species sometimes found in this area.

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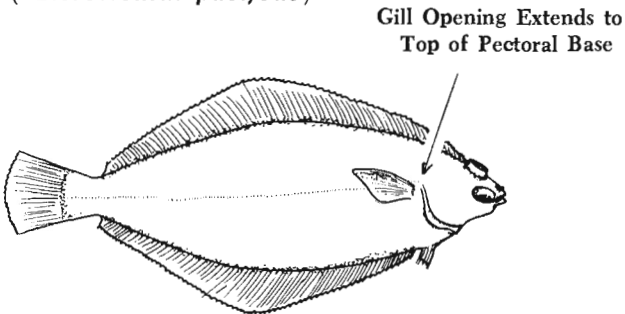
#### **Flatfishes**

About 20 species of flatfishes are found in Oregon waters. Most of these are in the righteye flounder family; there are only a few representatives of the lefteye flounders in the area, the two most common being the sand dabs.

Flounders often are called soles, but the true soles do not enter this area. Flatfish in general are excellent food, and a bottom fishery has developed in coastal waters. Some of the species not used for human consumption are utilized as food for mink or other animals. Six species are included here.

#### **DOVER SOLE**

(*Microstomus pacificus*)



**Distinguishing characteristics:** Profuse mucous or slime on body (the species is also called slime

sole); small scales; small mouth; gill openings extend only to top of bases of pectoral fins.

**Coloration:** Uniform brown on eyed side, darker on fins; light brown to cream on blind side.

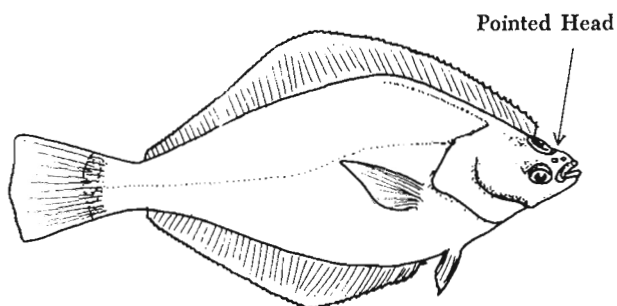
**Size:** Length to 28 inches.

**Range:** Southern California to Bering Sea.

Although the dover sole is difficult to fillet, it is one of the most important flatfish in the Oregon commercial fishery, accounting for more pounds landed than any of the other flounders. The flesh is palatable and readily accepted on the market.

It is usually found offshore in depths greater than 100 feet.

**ENGLISH SOLE**  
(*Parophrys vetulus*)



**Distinguishing characteristics:** Head pointed; mouth small; anterior body smooth; posterior scales rough; dorsal fin extends forward to middle of eye.

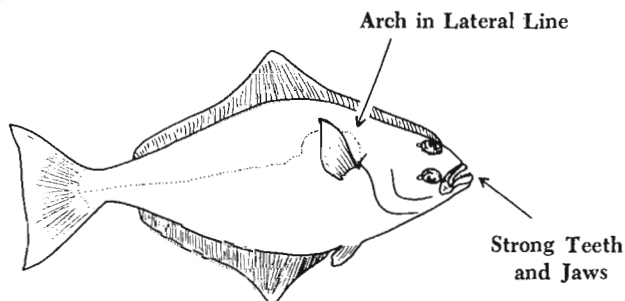
**Coloration:** Yellowish brown on eyed side, white to cream color on blind side.

**Size:** Length to 2 feet.

**Range:** Southern California to Alaska.

The English sole brings a high price at fish markets because of its delicate flavor and because it is easily filleted. The young of this species are abundant in estuaries, but adults are rarely found there. Sport fishermen seldom catch this fish because of its demersal habitat in deeper waters.

**PACIFIC HALIBUT**  
(*Hippoglossus stenolepis*)



**Distinguishing characteristics:** Lateral line with a high arch over pectoral fin; strongly developed teeth and jaws; mouth large; shallow fork in strong tail; narrow, smooth scales; more than 150 scales in the lateral line.

**Coloration:** Dark brown on ocular side, irregularly blotched with lighter spots; white on blind side.

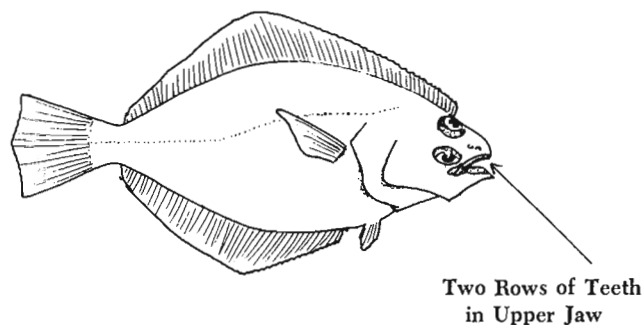
**Size:** Length to 9 feet; weight to 500 pounds.

**Range:** Central California to Bering Sea.

Halibut populations in the Pacific Ocean have increased in recent years due to restrictions on fishing quotas, which followed previous overfishing. This species has been intensely investigated in order to restore sustainable population levels. Halibut are most frequently caught on setlines, with smaller numbers being taken by salmon trollers, trawlers, and sport fishermen.

The halibut warrants a premium price due to its high palatability and keeping qualities.

**PETRALE SOLE**  
(*Eopsetta jordani*)



**Distinguishing characteristics:** Pectoral fin shorter than head; smooth scales on the blind side slightly rough scales on eyed side; two rows of teeth on each side of upper jaw; mouth large; stout spine just in front of anal fin.

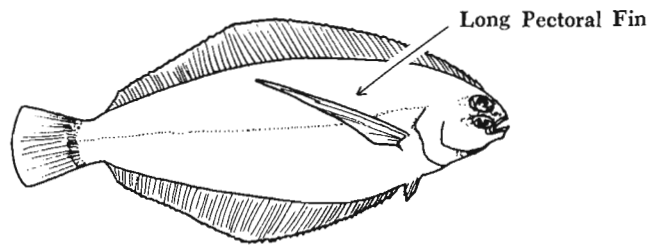
**Coloration:** Uniform olive brown on ocular side with vague pale blotches on dorsal and fins; white on blind side.

**Size:** Length to 28 inches.

**Range:** Northern Baja California to Alaska.

The petrale sole is widely sought by commercial trawlers because of the premium price its delicate flesh brings at the market. The fish is not caught by sport anglers, as it is found in deeper waters along the continental shelf.

**REX SOLE**  
(*Glyptocephalus zachirus*)



**Distinguishing characteristics:** Long pectoral fin on ocular side of body; lateral line nearly straight with no dorsal branch; small mouth; teeth and jaws better developed on the blind side.

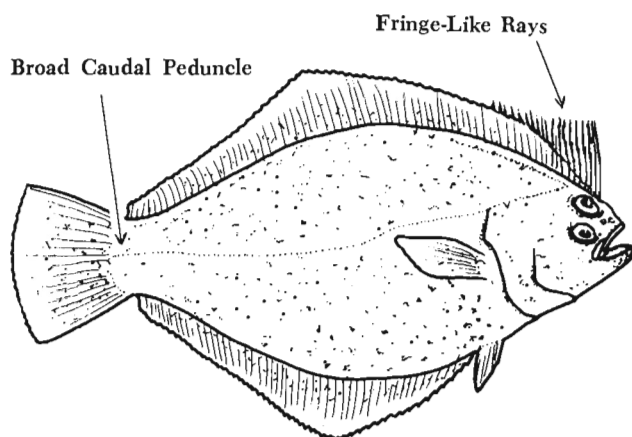
**Coloration:** Uniform brown on the ocular side, nearly white on blind side; fins darker brown than body.

**Size:** Length to 23 inches.

**Range:** Southern California to Bering Sea.

The rex sole rarely is seen in estuaries, as it more commonly inhabits ocean bottoms at a depth of 10 to 140 fathoms. Anglers therefore seldom hook this fish. Commercial trawlers bring fair numbers to port. This fish is considered very palatable.

**SAND SOLE**  
(*Psettichthys melanostictus*)



**Distinguishing characteristics:** Broad caudal area; long free rays in anterior portion of dorsal fin, which extends past eye; sandlike abrasiveness of scales on body.

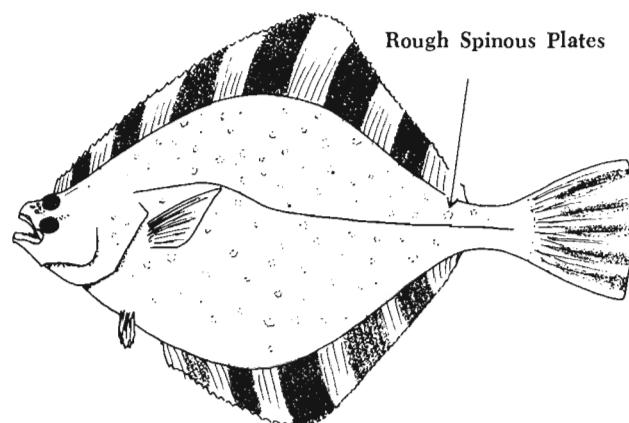
**Coloration:** Light greenish brown on ocular side, speckled with black; white on blind side.

**Size:** Length to 2 feet.

**Range:** Northern California to Bering Sea.

The sand sole is often taken in estuaries by sport fishermen. It generally is found lying over clean sand near the mouths of bays. Although this species occurs in trawl catches, it is not of great commercial importance.

**STARRY FLOUNDER**  
(*Platichthys stellatus*)



**Distinguishing characteristics:** Rough spinous plates scattered over the body.

**Coloration:** Dark brown to black with frequent blotches on ocular side, white on blind side; fins striped with black; orange to whitish between colored bands in dorsal, anal, and caudal fins.

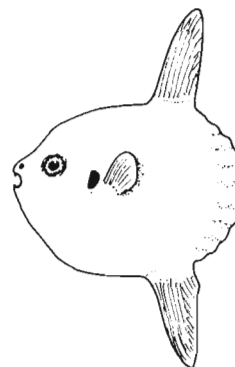
**Size:** Length to 3 feet.

**Range:** Southern California to the Bering Sea; also found in Western Pacific near Japan.

Sport fishermen usually seek the starry flounder from late winter to August in most Oregon estuaries. The species is present in good numbers through the year, but peak concentrations seem to appear in February, March, and April, when spawning takes place. Mud shrimp, ghost shrimp, and clam meats fished near the bottom are the most frequent baits used in angling.

Because of its willingness to bite, its fighting qualities, and its tasty flesh, this is one of the prized sport fishes of the bays.

**MOLA (OCEAN SUNFISH)**  
(*Mola mola*)





*Distinguishing characteristics:* Body short and deep, flattened from side to side; high dorsal and anal fins set back near broad tail; no pelvic fins; mouth small.

*Coloration:* Dark gray on dorsal surface, brownish gray on sides; light colored bands at base of dorsal, anal, caudal fins.

*Size:* Length to 9 feet.

*Range:* Southern California to Southeastern Alaska.

When warm surface temperatures occur in the ocean off Oregon, ocean sunfish can occasionally

be seen lying on their sides near the surface of the water. This sunning posture is responsible for their name. Occasionally ocean sunfish will be placed in a public aquarium, but they generally do not live long.

The ocean sunfish is not the object of a fishery, but it is of interest because of its size and unusual shape. When very young, they are normal fish shape with a caudal peduncle and caudal fin, but the posterior part of the body is resorbed as they grow. Adults may weigh several hundred pounds.

## Glossary

*Adipose fin*—A fleshy fin with no rays, located behind the dorsal fin.

*Anadromous*—Running from salt water to fresh water for the purpose of spawning.

*Anal fin*—Unpaired fin located behind the anus on the ventral surface.

*Barbel*—A slender tactile process ("feeler") usually located near the mouth or nostrils.

*Caudal fin*—Tail fin.

*Caudal peduncle*—The tapered portion of the body between the anal fin and the caudal fin. (The "handle" of the fish.)

*Demersal*—Living on the sea bottom.

*Dorsal fin*—Unpaired fins on the back.

*Isthmus*—Narrow, median portion forming lower boundary of gill cavities.

*Keel*—Raised, narrow ridge, usually on sides of the caudal peduncle.

*Maxillary (maxilla)*—The upper jaw bones that extend farthest back toward the corners of the mouth.

*Pectoral fins*—The paired fins on the sides just behind the gill openings.

*Preopercle*—Curved, flat bone forming the front part of the gill cover—often bearing a series of spines (preopercular spines).

*Ray (= fin ray)*—Stiffening elements of fins—so-called soft rays may be very flexible or fairly stiff. Spinous rays are usually harder, not branched and sometimes sharp.

*Scute*—A bony plate.

*Tubercle*—Small knoblike processes, or rough, raised projections.

*Ventral fins (pelvic fins)*—Paired fins on the belly or thoracic region.

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## *For Further Reading . . .*

The following fact sheets, bulletins, and special reports are available from the Department of Fisheries and Wildlife, Oregon State University, Corvallis, Oregon 97331:

*Catching, Cleaning and Cooking Bay Crabs* by Jay B. Long, Extension Circular 744, February 1970.

*Preparing Cluster Egg Baits from Salmon and Steelhead Roe* by Andy Landforce and Jay B. Long, Extension Fact Sheet 152, October 1968.

*Catching and Cooking Crayfish* by Jay B. Long, Extension Fact Sheet 56, October 1966.

*A Smokehouse for the Sportsman and Hobbyist* by M. G. Huber and Jay B. Long, Extension Bulletin 788, December 1966.

### *Endangered Plants and Animals of Oregon*

*I. Fishes* by Carl E. Bond, Experiment Station Special Report 205, January 1966.

*II. Amphibians and Reptiles* by Robert M. Storm, Experiment Station Special Report 206, January 1966.

*III. Birds* by David B. Marshall, Experiment Station Special Report 278, July 1969.

In addition, numerous separates and reprints of articles from scientific journals are available. These cover many aspects of research in biology and management of wildlife and fishes. A list can be obtained by writing the Department.