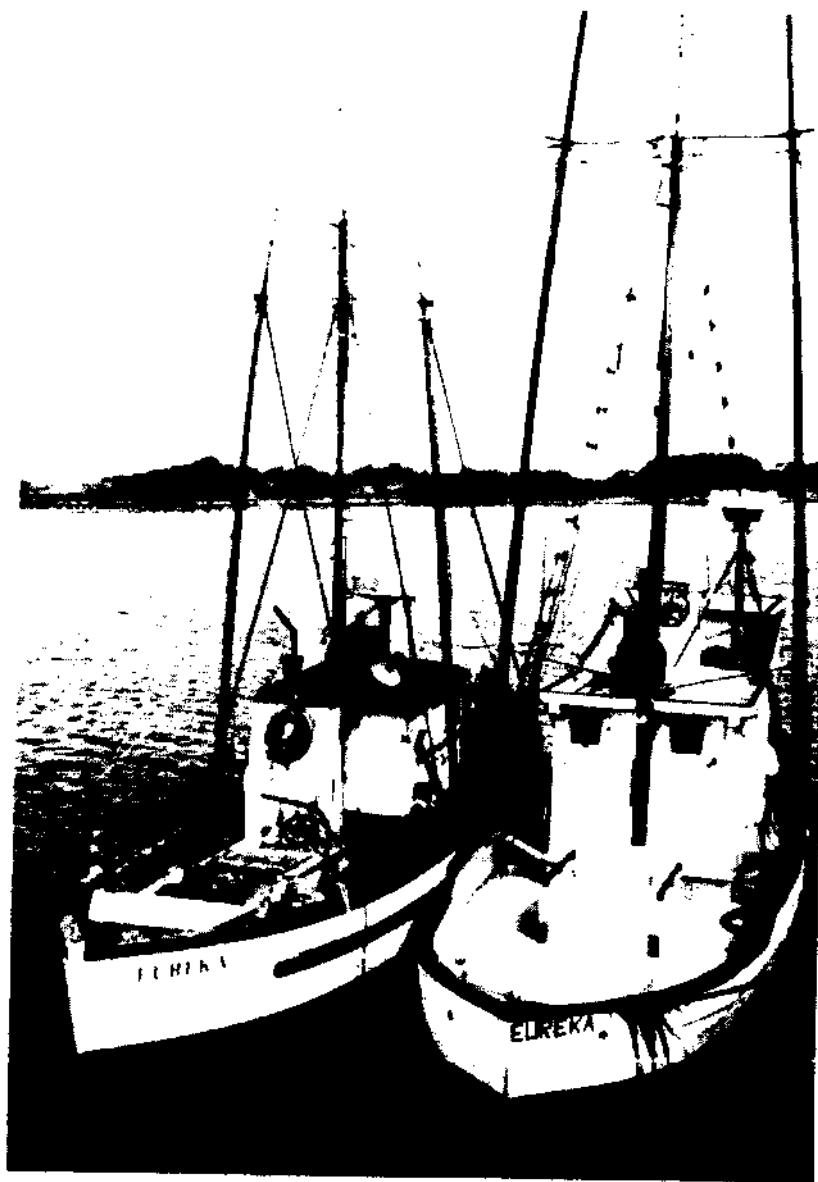


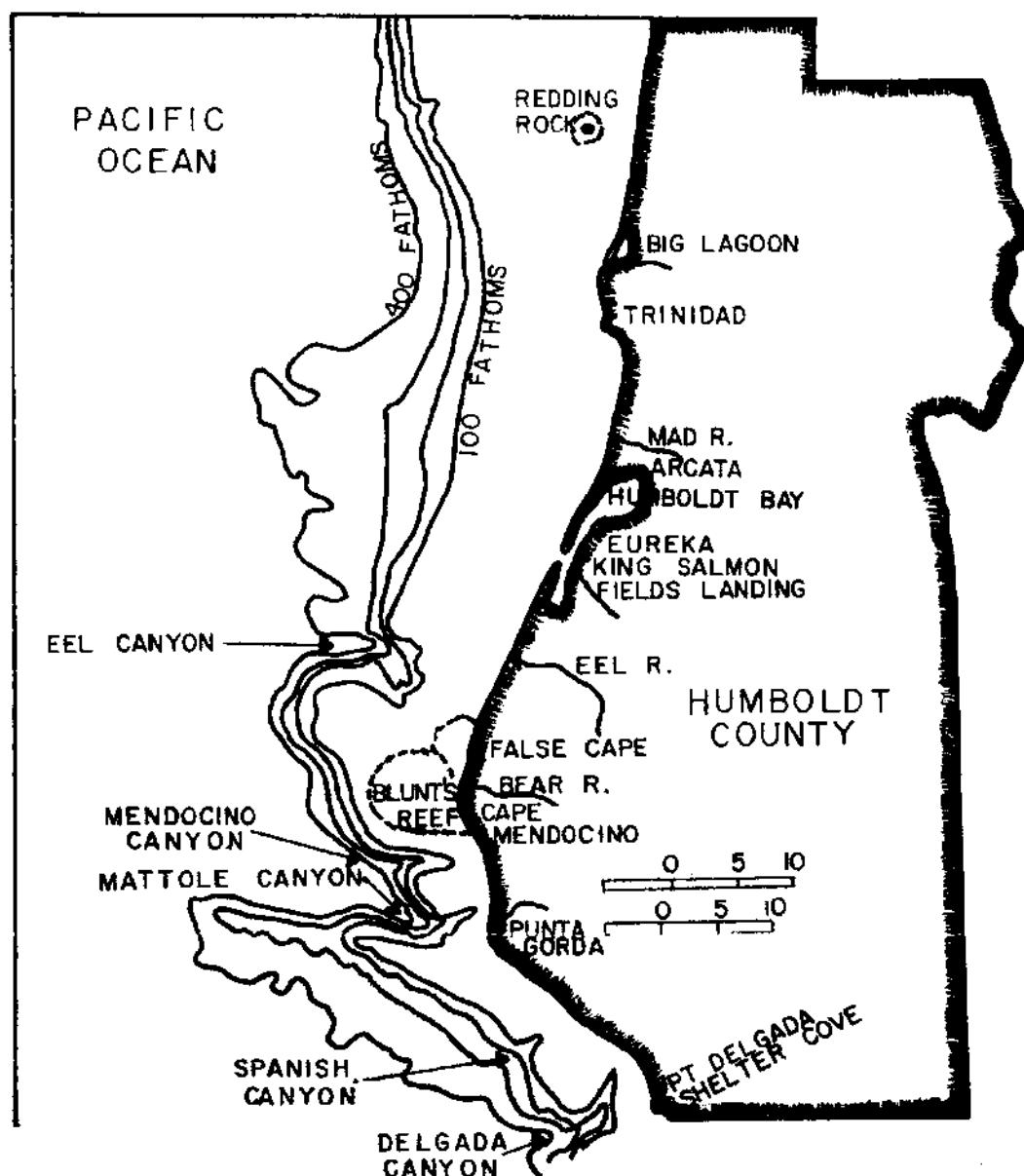
A GUIDE TO THE COMMERCIAL FISHERIES OF HUMBOLDT COUNTY



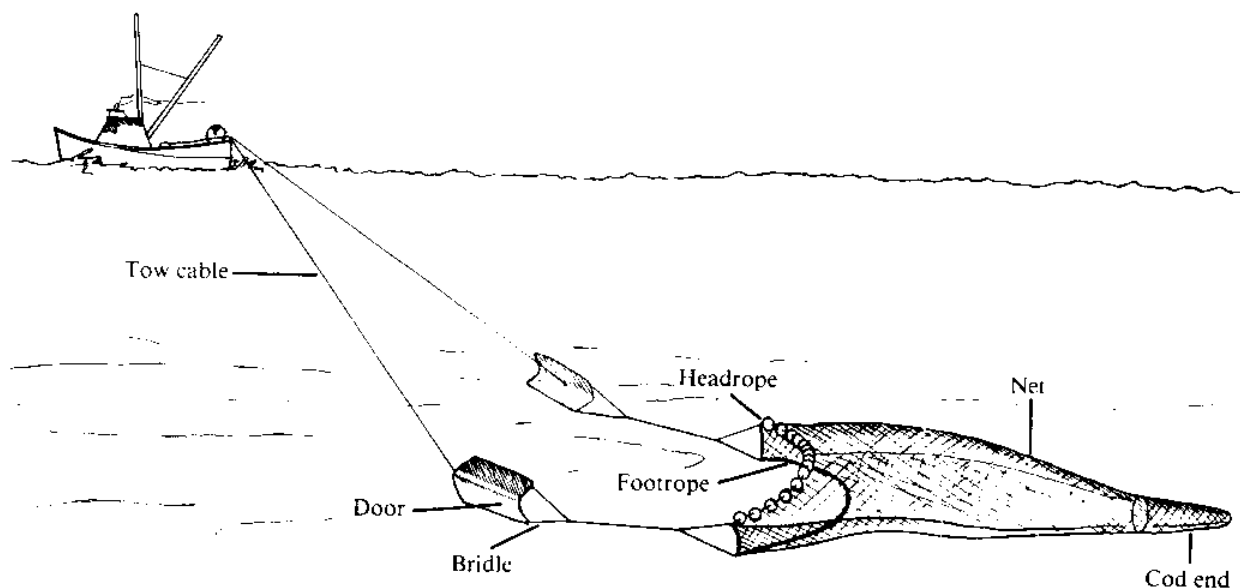
INTRODUCTION

Humboldt County has a long history of commercial fishing and ranks as one of the most productive fishing areas on the west coast. A variety of fish and shellfish are caught year-round in waters adjacent to the county. About 500 vessels fish primarily out of Eureka, Fields Landing, Trinidad, King Salmon, and Shelter Cove, landing seafood with a dockside value of \$10-20 million annually. Processors in Eureka and Fields Landing fillet and pack seafood, shipping Humboldt County products throughout the United States and overseas.

This guide was prepared to give the public an overview of the major commercial fisheries of Humboldt County. It is hoped that after reading it, you will have a greater appreciation for the diversity of fishing methods and types of seafood produced in our area.



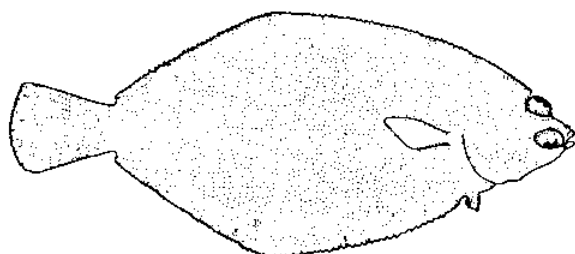
1. Trawling (Fish)



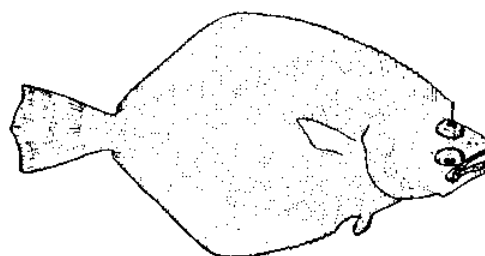
Trawlers tow a funnel shaped net along the bottom or through the water to harvest fish. The net is wide at the mouth with large meshes, and it tapers back to a narrow "cod end" of small mesh netting, which collects the fish. The net is opened horizontally by two metal "doors", which are attached so that as the boat moves forward, they tend to spread apart. A combination of floats on the headrope and a weighted footrope keeps the net open vertically. Rubber discs or metal bobbins are often attached to the footrope so the net can ride over rocks and other obstacles on rough bottoms.

Bottom trawling takes place year-round in waters beyond 3 miles from the shoreline. Eureka trawlers fish at depths from about 40-600 fathoms (240-3600 ft.). Most vessels are 40-80 feet long. Most boats ice their catch and make fishing trips lasting from 2-6 days. Fish are sorted on board and brought back to shore for processing.

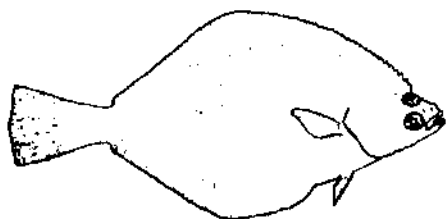
Some of the main species caught by bottom trawlers are pictured below:



DOVER SOLE
The most abundant fish
caught by Eureka trawlers.



PETRALE SOLE
The most valuable fish (per pound)
caught by Eureka trawlers.



ENGLISH SOLE

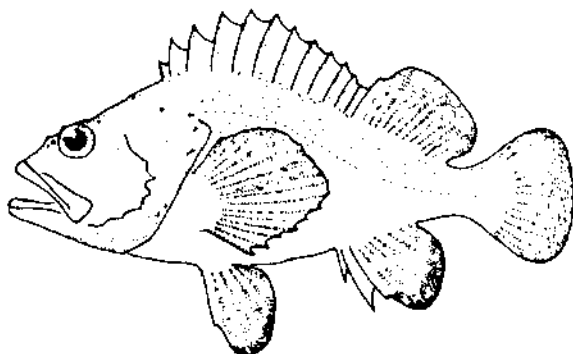


REX SOLE

ROCKFISH

(ROCK COD, SNAPPER, PACIFIC RED SNAPPER)

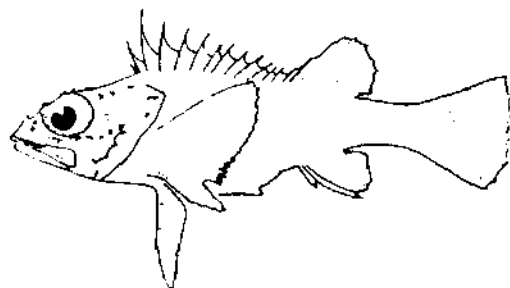
There are over 50 species of rockfish in northern California, with 30 or so being common in Eureka catches. Twelve of the red-colored species can legally be sold as "red snapper", although this is not the same as the "red snapper" caught in the southeast. One species of rockfish called the Pacific Ocean Perch, is often sold as "ocean perch" or "perch", although it is not related to the true perches.



THORNEYHEAD

(IDIOTFISH, CHANNEL ROCKFISH)

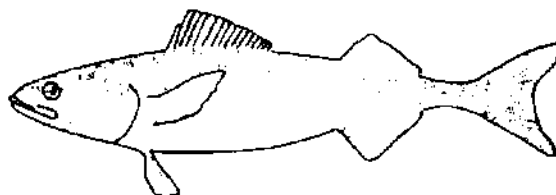
These fish are in the same family as rockfish.



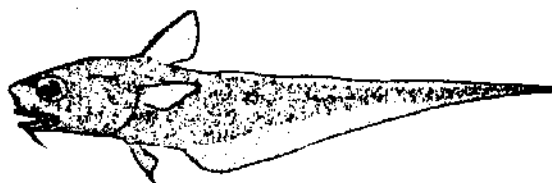
SABLEFISH

(BLACK COD, BUTTERFISH)

In addition to bottom trawls, this fish is sometimes caught with traps or with "longlines" (long ropes with baited hooks set along the bottom).

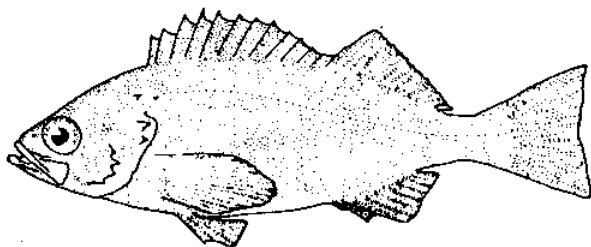


LINGCOD

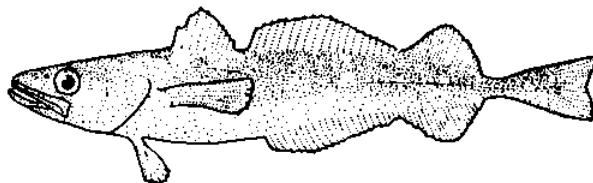


GRENADIER
(RATTAIL)

A specialized form of trawling, in which nets are pulled through the water rather than along the bottom, is called "midwater trawling". This gear is used to catch fish which school above the bottom. The main species caught are the widow rockfish and Pacific whiting.



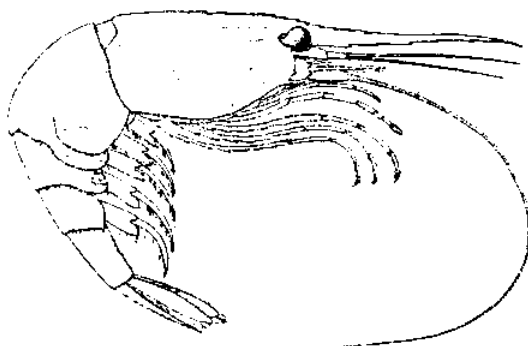
WIDOW ROCKFISH
(BROWNIE)



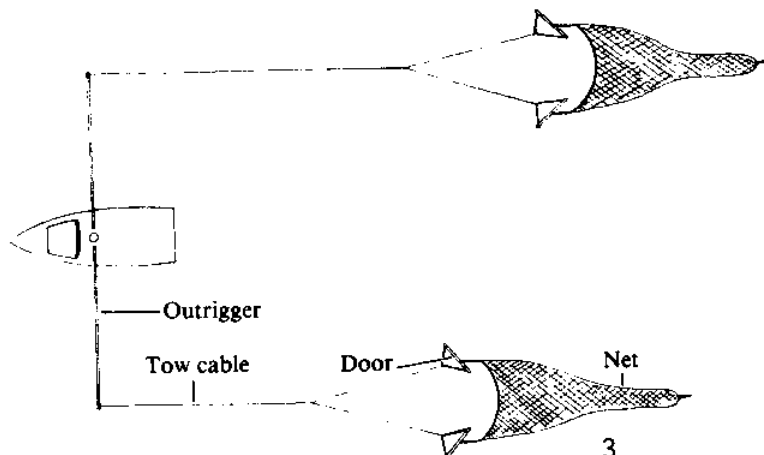
PACIFIC WHITING
(HAKE)

2. Trawling (Shrimp)

Fishing operations are essentially the same as in bottom trawling. The nets used have a smaller mesh size. Pink shrimp are found over mud or mud-and-sand areas at depths of about 40-100 fm (240-600 ft.). The main shrimp beds in our area range from Patrick's Point north to Point St. George. The season runs from April through October. Most boats make short trips and ice their catch.

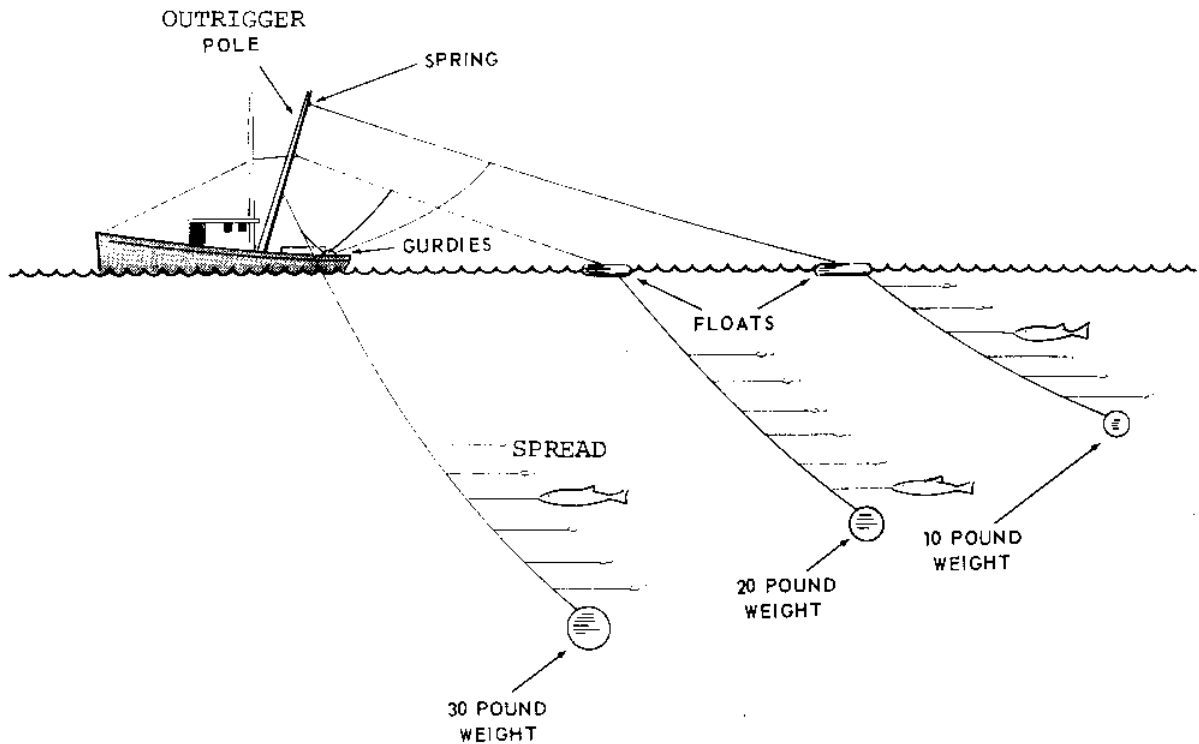


PINK SHRIMP
(OCEAN SHRIMP, COCKTAIL SHRIMP)

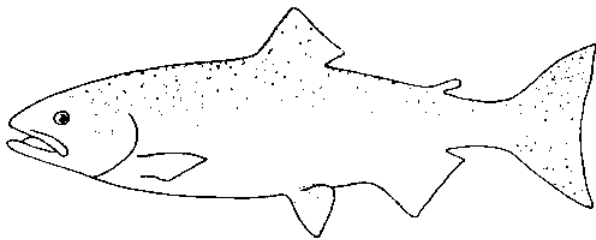


A few shrimp boats on the north coast are "double rigged" to pull two nets at once.

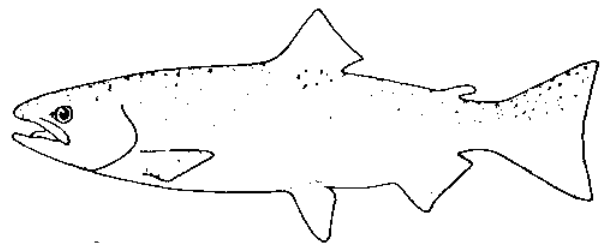
3. Salmon Trolling



Salmon trollers tow lures or baited hooks through the water at speeds from 1-4 knots. Attached to each "outrigger" pole are up to three (in recent years regulations have restricted these to two) stainless steel lines, which are weighted with 10-50 pound lead weights ("cannonballs"). As many as 15 lures or baited hooks on monofilament leaders ("spreads") are attached to each line at 2-4 fathom (12-24 ft.) intervals. The fishing lines are set and retrieved using hydraulic winches called "gurdies". Salmon gear can be fished to depths of about 80 fathoms (480 ft.) and fishing occurs from right along shore to about 8 miles offshore. The season has traditionally run from April-September, but recently every season has been set differently, depending on projected availability of fish. Vessels range from 20-foot "day boats" to "trip boats" up to 60 feet in length. Salmon are gilled and gutted on board and, except for some "day boats", are iced on board. The two species caught are:

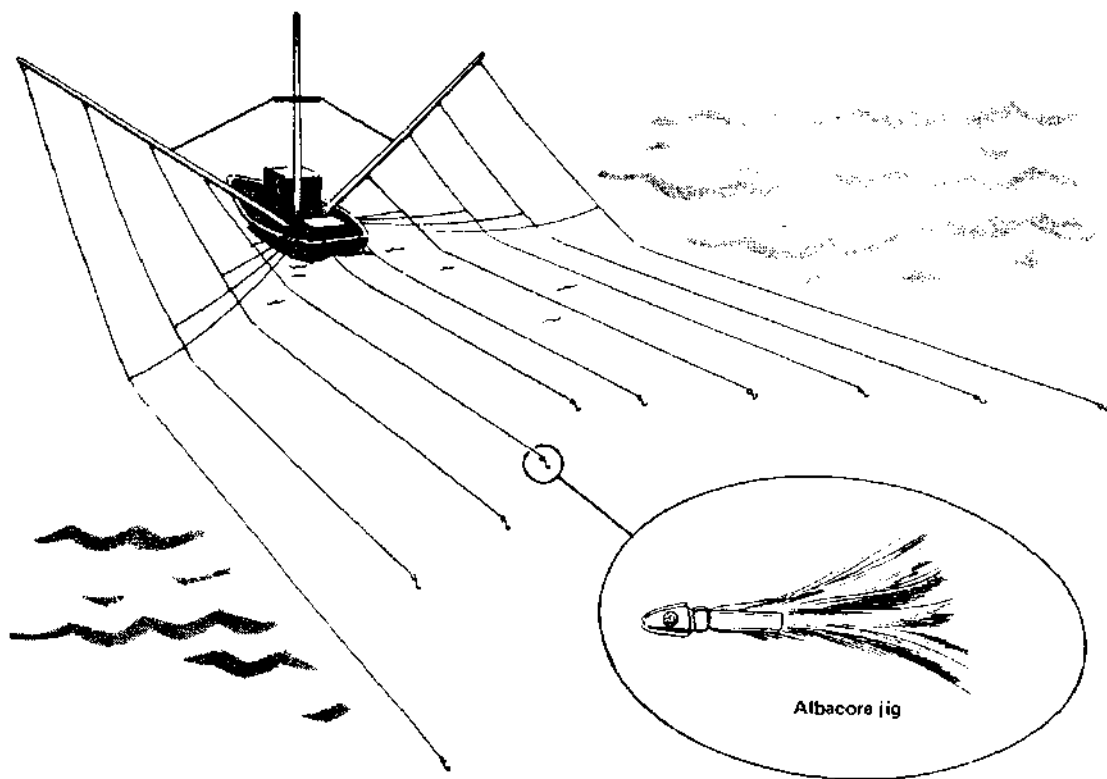


KING SALMON

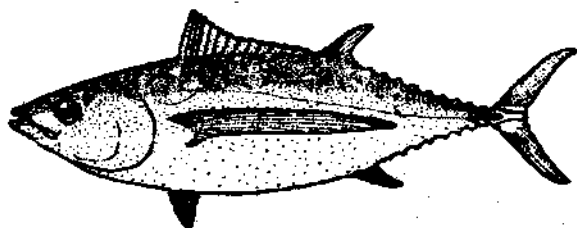


SILVER SALMON

4. Albacore Trolling

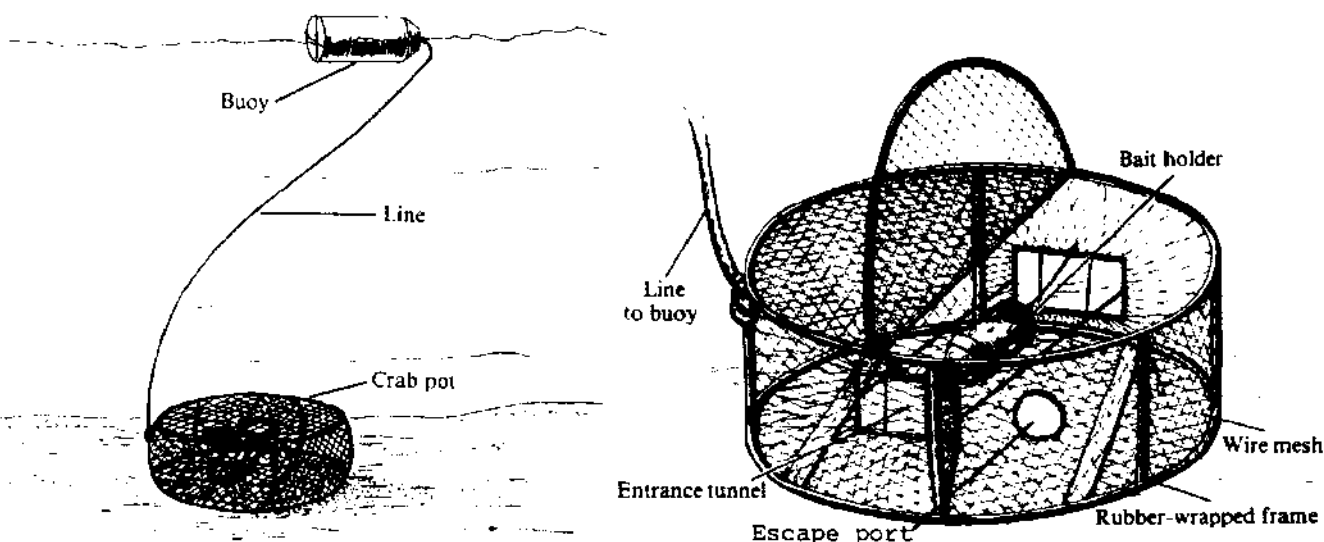


Albacore trollers tow lures at the surface to catch albacore tuna. Each boat tows up to 13 lines of varying lengths, and each line tows a "jig" with a metal head, plastic skirt or feathers, and barbless double hooks. Towing speed is 4-8 knots. The fishing season is generally from July through October, when surface water temperatures are 60-64°F. During warm water years some fishing may occur within 50 miles of shore, but during most seasons fishing ranges from 100-300 miles offshore. Most albacore boats are 50 ft. or longer. Many fish for salmon during the spring and early summer and then switch to albacore in the late summer and fall. Trips are often two months or longer and most boats freeze their catch.

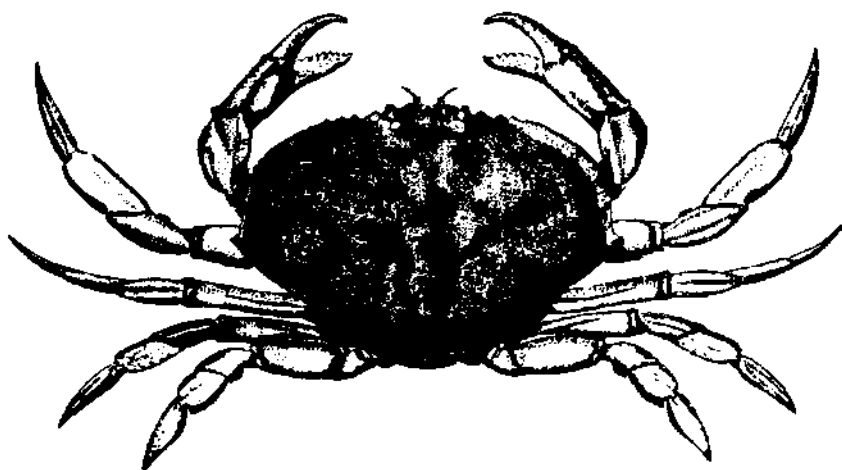


ALBACORE TUNA

5. Crab Fishing

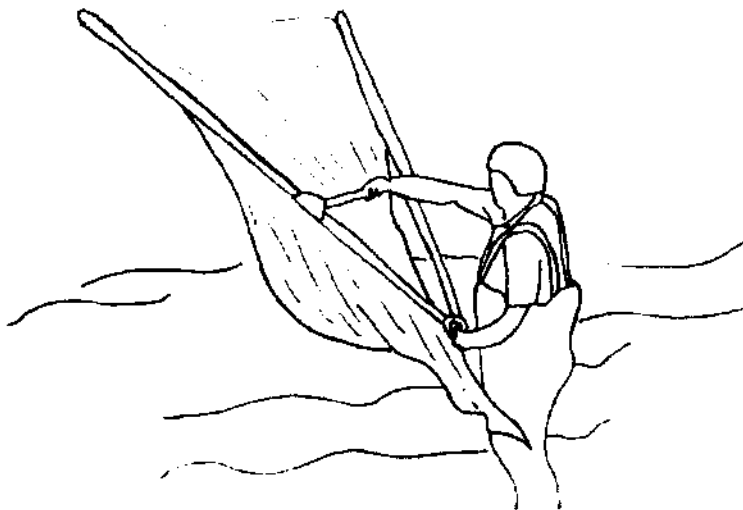


Crabs are caught in baited traps, or "pots", which are set on the ocean bottom at depths of 5-40 fathoms (30-240 ft.). A set of triggers on each entrance prevents large crabs from escaping. Escape rings insure that under-sized crabs can get out. Each pot is individually buoyed, and each buoy is color coded and numbered to distinguish its owner. Pots are set in a single line (a "string") along a given depth contour. Pots are retrieved by snagging the buoy line with a hooked pole and placing the line in a hydraulic power block that lifts the pot to the vessel. The season officially lasts from December through July but the vast majority of crabs are landed during the first two months of the season. Vessels range from large trawlers to small dories. Each vessel may fish from 50 to 1500 pots, depending on size.

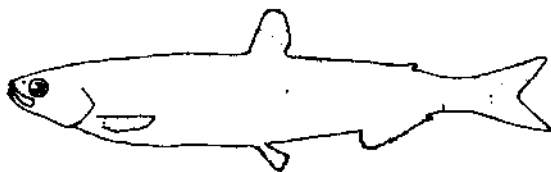


DUNGENESS CRAB

6. Smelt Fishing

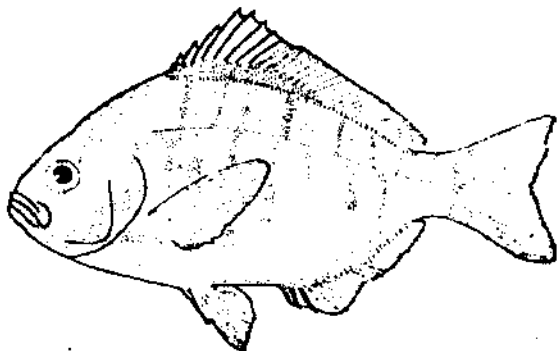


Smelt are caught by beach fishermen using 7-14 foot A-frame dipnets. Fishing occurs along Humboldt County beaches in the surf zone, where smelt come in to spawn. No fishing vessels are involved; but 4 wheel-drive vehicles are a necessity. Night smelt are caught during winter and early spring (at night) and surf smelt and white bait smelt are caught during daylight hours in the spring and summer. Fishing usually occurs on outgoing tides.



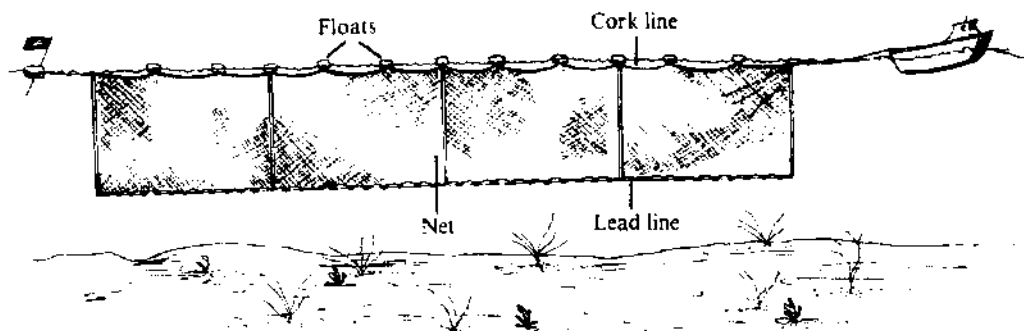
SURF SMELT

7. Surfperch Fishing

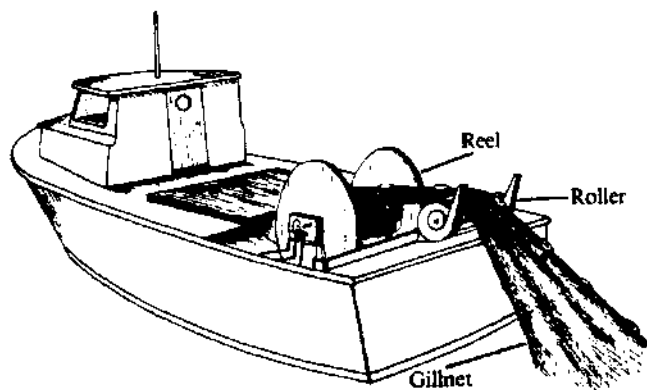


Redtail surfperch are caught commercially by hook and line along Humboldt County beaches, at the mouth of rivers and creeks, and in Humboldt Bay. There is also limited use of seines and traps to catch redtail and other species. The season runs from July 16 - April 30, but most caught in the early spring and late summer. The May 1 - July 15 closure is intended to protect surfperch during their spawning period.

8. Herring Fishing



Gillnets are used to catch herring during a limited fishery in Humboldt Bay. The nets are used to entangle the fish when they move into the bay to spawn. They are generally set in place and anchored (the diagram shows a net which is drifting with the boat, a variation not common in the herring fishery). Nets are set and retrieved using a hydraulic net reel and roller. Only four boats are permitted to fish for Humboldt Bay herring and there is a quota of 60 tons. The fishery runs from January through March, unless the quota is reached earlier. This is primarily a roe fishery and price is dependent upon the percentage of females and the percentage of roe (eggs) they are carrying. Nearly all the fish is sold to Japan.



PACIFIC HERRING

REFERENCES

Illustrations were taken from the following publications:

- Deweese, C.M., and J.K. Hooper. 1976. Major commercial fisheries in California. Univ. of Calif. Cooperative Extension. Leaflet 2272. 8 p.
- Extension Marine Advisory Program Staff. 1981. A guide to Oregon's commercial fishing vessels. Oregon State Univ. Pamphlet SG-68. 12 p.
- Gotshall, D.W. 1972. Populations size, mortality rates, and growth of northern California ocean shrimp, Pandalus jordani, 1965-1968. Calif. Dept. of Fish and Game, Fish Bull. 155. 47 p.
- Miller, D.J., and R.N. Lea. 1972. Guide to the coastal marine fishes of California. Calif. Dept. of Fish and Game, Fish Bull. 157. 249 p.
- Phillips, J.B. 1973. California market crab and its close relatives. Calif. Dept. of Fish and Game, Marine Resources Leaflet No. 5. 14 p.

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