

**SPORT FISHING IN HAWAII  
GUAM AND AMERICAN  
SAMOA**

**WITH CHARTS TO FISHING  
GROUNDS  
AND  
AN ILLUSTRATED GUIDE TO  
PACIFIC FISHES**

by  
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## Publisher's Preface

**This handbook to sport fishing in the Hawaiian Islands, American Samoa & Guam, with associated fishing ground charts and guide to marine game fishes, is selected for the convenience of fishermen from the Angler's Guide to the United States Pacific Coast (first published by the U. S. Department of Commerce.)**

**All entries in the marine game fishes has been left intact as fishes on the American West Coast are of interest to sport fishermen in Pacific Island Waters. The introduction to the original work has been slightly reduced by omitting sections referring to sport fishing outside of the areas covered in the charts.**

# CONTENTS

Introduction	v
Hawaiian Islands	2
American Samoa	12
Guam	14
Marine Game Fishes	17
Glossary of Terms	46
Index to Common Names of Fishes	48
Acknowledgements	53

# Introduction

While there are millions of individual fish in the ocean and bays, the obvious problem facing the marine sport angler is how and where and when to catch them. Anglers who have a "local knowledge" of the seasons and locations of good fishing areas usually are the more successful ones, but most realize that pinpointing the exact location, season, and time for catching a certain species of fish is impossible. This is due to seasonal variation in the geographical distribution and quantity of stocks of fish available, which, in turn, is a result of changes in the total marine environment (temperature, salinity, food, etc.), and the biological success of each species in the competition for survival. Even so, certain species usually are taken in generally well defined fishing areas: some may be taken only during a certain seasonal period while others may be present throughout the year.

The purpose of this Guide is to provide a general source of information on those areas that are more frequently fished and the species of fish that are commonly taken. Accompanying each chart is a general description of the chart area, and notes that supplement the chart information concerning some of the common game fishes and their availability to the angler.

It is important to realize that marine game fishing is the only segment of the U. S. fisheries that has grown rapidly during the past 15 years. In 1960 the first national marine angling survey was made. It reported an estimated 1.4 million marine anglers along the west coast from the Mexican border to Alaska catching over 79 million fish. By 1965 the number of marine anglers had grown to almost 2 million (1,977,100) and the catch to over 87 million fish. The 1970 survey showed over 2 million (2,205,000) west coast marine anglers who caught over 61 million fish. Thus, during the past decade, the number of west coast anglers has increased 64%; however, the number of fish caught as reflected in the 1970 survey has not kept pace with the increased angling pressure. This increase in angling pressure is to be found throughout the central and eastern Pacific, with a 34% increase in southern California, which has 40% of all marine angling along the west coast. A 47% increase was found from central California northward into Alaska, an area which accounts for 60% of all west coast fishing.

Effective long-range planning for marine game fish conservation programs and associated research activities must be based on a thorough knowledge of the scope and magnitude of the recreational fishery resources; seasonal distribution of fish; the operating sport fishery and its fishing locations; the location, type and number of fishing facilities available; and information on the values that anglers attach to the various facets of the sport.

## TYPES OF FISHING

Pacific marine game fishing is centered near the coastal population centers. An abundance of desirable game fish is usually available along all coasts in the ocean, bays, and brackish-water areas, depending on the place and season of the year. Over 300 species are commonly taken by marine anglers who fish the west coast and Pacific Islands; in addition, they incidentally catch many other species.

The sport angler has five types of "fishing" — pier fishing, rock or jetty fishing, surf or bank fishing, private boat fishing, and sport boat (party or charter boat) fishing. The type of marine environment fished usually dictates what species are most likely to be caught. The marine angler must take this into consideration by use of suitable equipment and careful selection of bait or lure to achieve the greatest chance for success.

A diversity of fishing gear is used by the Pacific angler, with conventional hook and line being the most common method of fishing in all areas.

## CHOOSING A FISHING AREA

If you are unfamiliar with an area, there are a few basic criteria that should be used in selecting a place to try your luck. Knowledge of hydrographic conditions (tidal flow, bottom types, and depths) is most important whether you are fishing in the open ocean, nearshore, surf zone, tidal inlets, bays, or in the intertidal portion of a river. On the open ocean, sea state is another important factor in fishing. Many pelagic species that frequent the surface are usually found at greater depths when the surface is rough. Weather is a particularly important factor, especially in the ocean. Where weather is more favorable for offshore fishing, we usually find a greater number of offshore anglers.

In fishing offshore for marlin, water color and temperature are important factors. Changes in these factors are good indicators of changes in water mass, and it is in the vicinity of these changes that concentrations of the larger predators are often found. Along edges of changes in water temperature and color sometimes can be found higher concentrations of forage animals — plankton and small fish. These smaller animals attract the larger predator fish, making an area with a temperature or color discontinuity a favorable place to explore. Locations near schools of forage fish often have good fishing potential. These frequently are found by observing seabirds swooping down on forage fish driven to the surface by larger predator fish. Sometimes yellowfin tuna and marlin are found around schools of porpoise, and trolling nearby may be productive.

Along shore, water depth frequently can be determined by color, the darker blue color indicating a deeper area. These deep spots or holes, drop offs, and open channels are all good spots for surf or shore anglers to investigate. In fishing the surf, wave action is most important in evaluating a

good fishing spot; as a wave proceeds toward the shore, it will usually crest and break over a shallow spot, either the sand beach itself or an offshore bar. If the wave breaks some distance from shore over a submerged sandbar and the water becomes smooth again before slightly breaking on the beach, this indicates a depression or hole on the inside of the bar — a likely spot for surf fishes. If rocky outcroppings are observed immediately offshore along a sandy beach, casting to a point close to the rock can be productive since larger fish tend to congregate around such locations. The same is true for offshore reefs, kelp beds, or wrecks. These habitats provide shelter or protection as well as a ready food supply for game fishes, which eat the abundant small organisms attached to the solid substrate and the baitfish frequently found nearby.

Rocky shores usually are productive fishing areas; however, many anglers are reluctant to fish these places because of the possibility of losing their terminal gear of sinkers and hooks. Careful selection of a fishing spot off a rocky point or over sharp drop offs to deep water which may have a smooth bottom could produce results. Although a cautious approach should be taken in testing such an area, after discovering good fishing in a rocky location you may have found your own exclusive fishing spot.

Fishing results in bays are highly variable. Usually the best spots are near the entrances, in or adjacent to the main tidal channels. Fishing in the entrance from a boat can be productive either by trolling (usually against the tide), casting with the tide, or drift fishing with the tide. Tidal fluctuations in bays markedly affect fishing in the nearshore area or over the tidal flats. Water current velocities and patterns created by tidal flow in turn affect the movement and availability of food material for all bay fishes. Many shallow areas are evident, and some are exposed at extreme minus tides. When the tide is high these areas are covered, and predator fish can move over the tidal flats to feed on small invertebrates that live on the bottom. On an ebbing or outgoing tide, good places for fishing are usually found in channels or about the mouths of tidal sloughs that drain the tide flats, or at any narrow channel or creek mouth at the point it empties into a bay.

In bays as well as in the ocean, logical spots for fishing in your area may be found on the marine nautical charts issued by the National Ocean Survey. These navigational charts show channels and depressions and sometimes show rough or rocky-reef areas. A good marine angler can determine areas that may have good fishing potential by consulting these charts, and if you plan to fish from your own boat, knowledge of the bottom topography is essential for normal navigation.

Another easy method of gaining knowledge of the better fishing sites is to follow those sport anglers who know where to fish. Good fishing areas attract fishing boats and concentrations of anglers. The activities of commercial sport fishing boats are among the most reliable indicators of good fishing spots. Professional sport fishing boat skippers keep in constant contact by

radio with other boats concerning fishing conditions, and they are the experts in the offshore fishing business. For this reason a great deal of knowledge about fishing techniques for different species and fishing locations can be obtained by fishing from a commercial sport fishing boat. Records indicate that in most cases catches are above average for these boats, and their equipment will get you to the fishing grounds and back with speed and safety. Once the fishing grounds are reached, all necessary bait (live bait in many cases), tackle, and instruction on equipment and techniques are available to you.

Finally, for more specific knowledge about fishing in a particular area, one of the most logical places is the local bait and tackle store or sporting goods supplier. Local fish and game wardens usually are most helpful, and of any group of individuals, they are probably most aware of seasonal fishing opportunities. Above all, before fishing any area always be sure to consult your State fish and game department for local regulations concerning current laws.

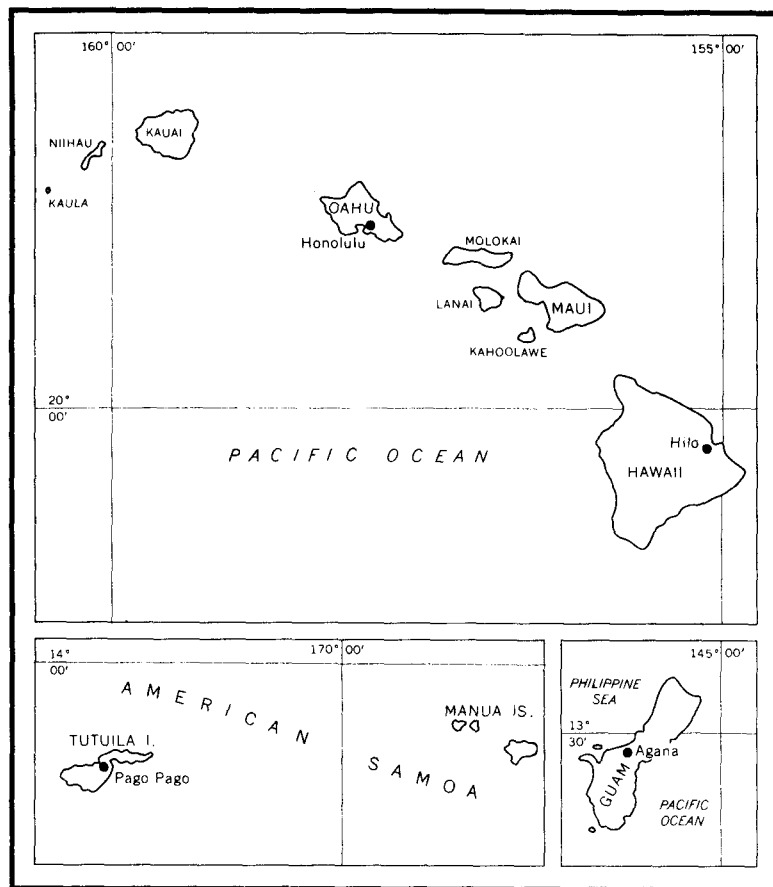
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## PACIFIC ISLANDS

The following pages describe marine game fishing around the tropical islands of Hawaii, American Samoa, and Guam. The Hawaiian Islands rise out of the central Pacific Ocean near the margin of the tropics, while American Samoa lies below the equator approximately 2,600 miles south of Honolulu. Guam, the largest and westernmost territory of the United States, is located in the western Pacific Ocean less than 1,700 miles south of Tokyo, Japan. Although widely separated geographically, these islands all fall within the boundaries of a large region characterized by a distinct marine fauna—a region that extends from East Africa across the Indian Ocean into the central Pacific Ocean. Thus many similar or identical species occur in Hawaii, American Samoa, and Guam.

All of these islands are volcanic in origin with the sea bottom plunging fairly rapidly away from shore, and in many locations excellent deep-sea fishing opportunities are available within a relatively short distance from port. Some of the billfish and tuna grounds have produced record-sized fish and earned a worldwide reputation in big-game fishing

circles. But although the glamour and excitement of deep-sea fishing draws many to the offshore grounds, much of the fishing conducted about the islands is for the great variety of smaller tropical fishes found over inshore reefs and along rocky and sandy shores. The most sought-after fishes are not necessarily the largest or the ones with the best fighting ability—many islanders judge the value of a fish by its taste and by the traditional values attached to catching it and preparing it for the table.

Visitors should always first check locally about the area they plan to fish unless accompanied by a professional skipper or guide. If you intend to fish from shore, ask about surf conditions, accessibility, and restricted areas. Double check the edibility of your catch, particularly in American Samoa and Guam, where a few species are reported to be poisonous. Those known or suspected to be poisonous are discussed in the accompanying text and in the section on Marine Game Fishes of the Pacific Islands.

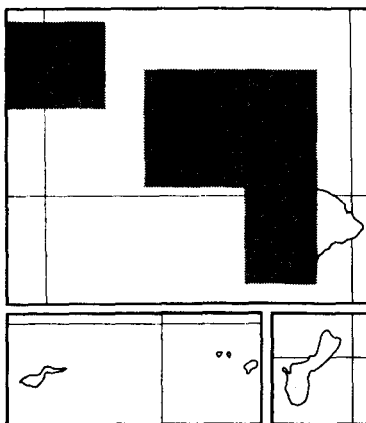
## HAWAIIAN ISLANDS

The beautiful islands of our 50th State, Hawaii, are situated in the north Central Pacific Ocean over 2,000 miles southwest of mainland North America. The Hawaiian archipelago comprises eight major islands and a number of rocky islets and small coral islands. The larger islands are actually the high peaks of an undersea chain of volcanic mountains and rise steeply and majestically out of the deep clear-blue waters of the Pacific. Geologically, the islands were formed west to east, the youngest island being the island of Hawaii, which still has active volcanoes. The oldest are the tiny coral sand islands at the westernmost tip of the chain.

The climate is largely influenced by the northeast trade winds that travel over the cool, westward flowing North Equatorial Current, and then are affected by the high elevations and contours of the islands. As a result, the islands have a relatively cool, wet windward side and a warm, dry leeward side, and there is wide variation in temperature, wind, and rainfall according to locality. In general, temperatures range from 56° to 90°F, are lower from November through April, and mild to warm the rest of the year. Warmest months are July, August, and September when temperatures may reach 80° to 90°F. Occasionally a southerly or "Kona" wind brings mugginess to the islands and rain to the leeward coasts.

The population is unevenly distributed; 82% of the people live on Oahu, and three-quarters of these in the city of Honolulu. Hawaii, the largest island with six and a half times the land area of Oahu, has only 8% of the population.

The islands of Hawaii offer a variety of excellent year-round fishing—deep-sea, inshore, and shoreline fishing.



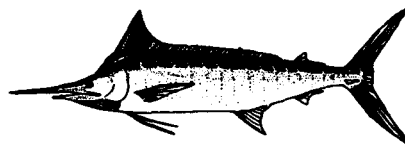
### 34/Hawaii Big Game Fishing

Hawaii's blue marlin and tuna grounds are world famous, and the professional skippers and crews that fish these waters are among the most experienced blue-water anglers in the world. Charter boats provide full equipment and operate year-round on a nonscheduled basis. Advance reservations should be made with individual boat operators or with charter services. International Game Fish Association's scales and weighmasters are available on all the main islands.

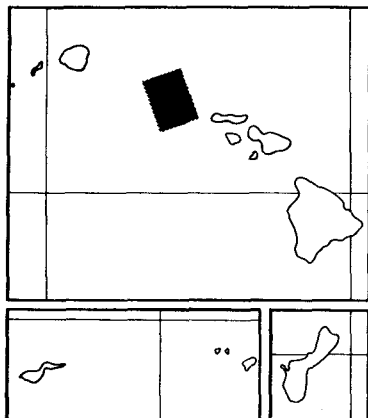
The major trolling grounds for Hawaii's sport fishing fleet are shown on Chart 34. Most fishing is done off the calmer leeward coasts of the islands. The windward coastal waters and the channel areas between the islands are just as productive for big

game fish, but the seas in these blustery areas are often rough and tend to discourage most anglers. Fishes that are taken by trolling include blue, black, and striped marlins (all called "a'u" by the islanders), 'ahi (yellowfin tuna), aku (skipjack tuna), mahimahi (dolphin), ono (wahoo), kawakawa (little tunny), and kamanu (rainbow runner or Hawaiian salmon). Most trolling occurs in water 1,000 fathoms or less; although off the Kona coast of Hawaii, boats may fish over water up to 2,000 fathoms or more deep in search of marlin and tuna.

There are two basic types of fishing strategies—area fishing and ledge fishing. Anglers who "fish the area" work over a known productive fishing ground such as Penguin Bank or the "Chicken Farm," watching for flocks of seabirds which feed on the baitfishes that marlin and large tuna chase to the surface. Ledge fishing involves trolling along submarine shelf areas where marlin, tuna, and other smaller fish are known to concentrate and feed. Aside from being excellent marlin and tuna areas, these precipitous ledges also produce impressive numbers of ono and kahala (amberjack), as well as the large deepwater snappers which are caught handlining on the bottom.







## 35/Oahu

Oahu (Chart 35) is the political and commercial center of the Island State, where the bustling capital city of Honolulu is located. It is here that most of Hawaii's people live and work.

The island is formed by two rugged parallel volcanic mountain ranges separated by a wide valley carpeted with sugarcane and pineapple. Many shore recreation spots and scenic views are within easy access along highways that circle and cross the island.

### OFFSHORE FISHING

Honolulu's Kewalo Basin, only a 5-minute drive from the Waikiki hotel district, has fine fleets of deep-sea cruisers. Charter boats fish close-in and offshore for many different types of game fish—marlin, 'ahi, mahimahi, kawakawa, ono, and sometimes the deepwater snappers—depending on what is running. Marlin have been caught within a mile of the harbor. Honolulu boats often fish from Penguin Bank to the east of the island or work from the western or leeward shore along Barbers Point to Kaena Point off the Waianae coast. Penguin Bank is noted for large schools of small tuna and mahimahi as well as marlin and ono. The Waianae coast offers the comfort of fishing in the calm lee of the island and a promise of exceptionally large marlin and yellowfin tuna ('ahi). Charter boats out of Pokai Bay Boat Harbor also fish this area. On the windward coast, charters are available at Heeia Boat Harbor in Kaneohe Bay, and when weather permits, there is good marlin fishing along the 100-fathom drop off between Makapuu Point and Mokapu Point.

### NEAR SHORE AND SHORELINE FISHING

Fishing from shore is probably the most popular way to fish throughout

the Pacific Islands. Getting to shore is relatively easy in most places, and the cost of this type of recreation is nominal. A variety of methods are used—pole and line, netting, spearing, and trapping. Only a few places in Hawaii rent fishing tackle, but all of the islands have sporting goods stores where inexpensive gear can be purchased.

Heavy bait-casting gear is used mainly for ulua, an island term for large-sized jacks. These fish are highly prized by shore anglers and some are reported to reach 5 feet long. Ulua are found around rocky headlands and points, usually in turbulent water. Some of the best fishing spots for ulua on Oahu are Koko Head, Bamboo Ridge (north of Hanauma Bay and to the south of the Blow Hole), Diamond Head, Makapuu Point, and Kaena Point. This type of fishing can be dangerous for the beginner because of the rugged nature of the terrain in most ulua fishing areas. Access to some of the better fishing spots is sometimes difficult, and the surf can be treacherous—reports of anglers being swept from the rocks by waves are not uncommon.

Young jacks, called "papio," are favorite light tackle quarry for pier and shoreline anglers. Papio are caught all around the island, being most abundant from August to November. Another member of the jack family, the akule, is also a popular light tackle fish. Most pole fishing is for young akule or "hahalalu" (often pronounced simply "halalu"), which are caught in bays and harbors, such as Pokai Bay and Haleiwa Harbor, and in Honolulu Harbor by pier fishing under lights. Hahalalu are caught mostly at night, as are a variety of other inshore fishes.

Some fishes that are active at night—wekes, aholehole, and 'ama'ama—are caught by "torch fishing." On calm dark nights when the tide is low, persons armed with spears or hand nets wade out over the reef carrying lights to locate marine animals. Years ago, torches were made from dried coconut leaves, but now gasoline lanterns and battery-powered lights are used. Lobsters and "squid" (octopus to mainlanders) are also taken torch fishing.

The "hukilau" is another traditional island fishing method. It involves a group of people. A large surround net is used to encircle the fish, usually in protected waters. Once the net is set in place everyone pulls on the two end ropes, forcing the fish into the net as it is drawn into shallow water. Usually all kinds of fishes are caught with the hukilau net, and custom dictates that anyone who wets his feet during netting be given a portion of the catch.

Some of the popular shore fishing

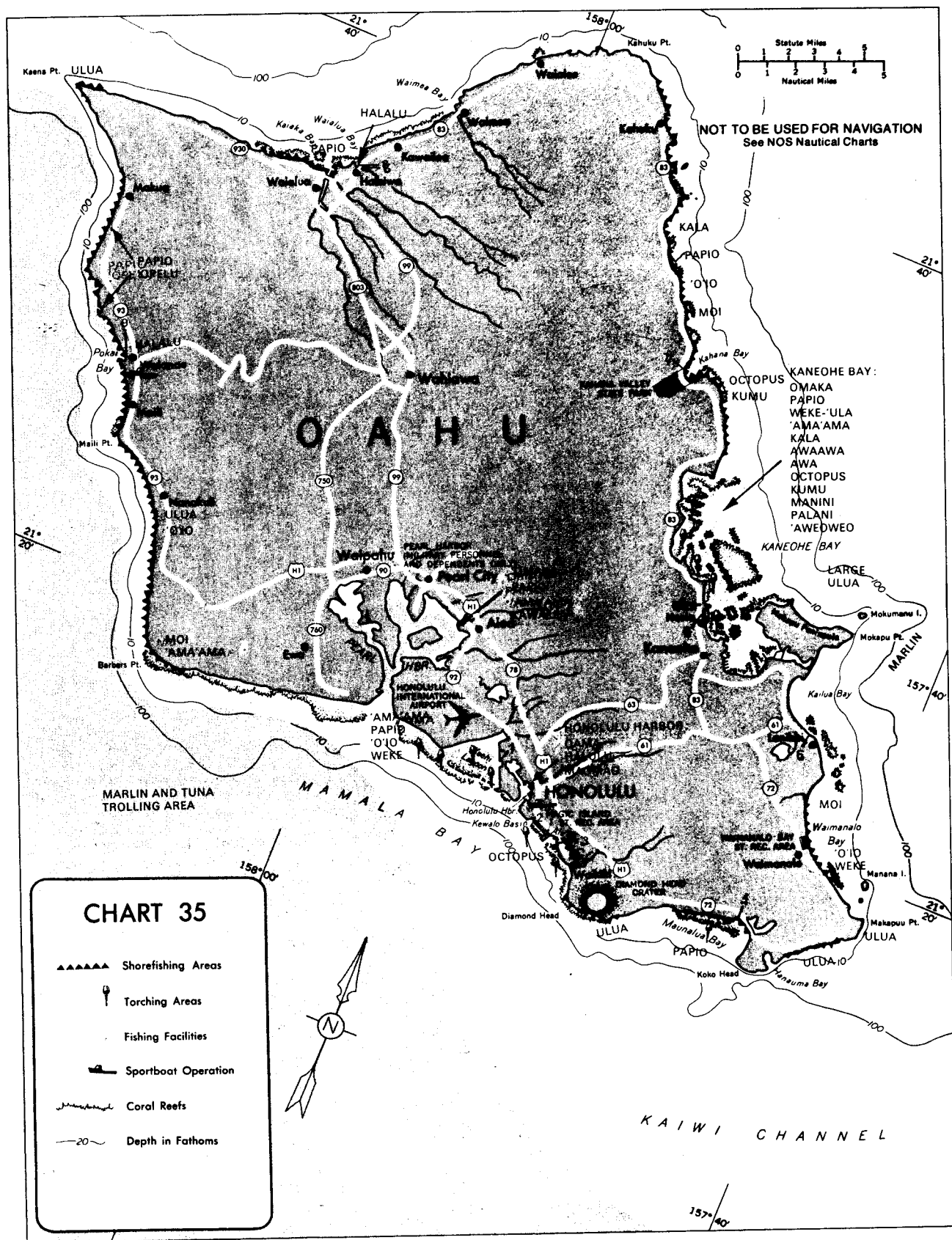
FACILITY NUMBER  
 SPORT BOAT OPERATION  
 PIER FISHING  
 SKIFF RENTALS  
 LAUNCHING  
 JETTY FISHING  
 LOCATION

- |   |           |                       |
|---|-----------|-----------------------|
| 1 | ● ● ● ●   | Keelhi Boat Basin     |
| 2 | ● ● ● ● ● | Kewalo Basin          |
| 3 | ● ●       | Ala Wai Boat Harbor   |
| 4 | ●         | Maunaloa B. Beach Pk. |
| 5 | ●         | Kailua Beach Park     |
| 6 | ● ● ●     | Heeia-Kea Boat Harbor |
| 7 | ● ●       | Kahana Bay            |
| 8 | ● ●       | Haleiwa               |
| 9 | ● ● ●     | Pokai Bay Boat Harbor |

and torching areas are shown on the map. In Honolulu Harbor there is pier fishing for 'oama, halalu, and maomao. The shallow reef around Honolulu Airport is a favorite location for netting 'ama'ama; spinning for papio and 'o'io; and, on calm nights, torching for weke. Parts of Waikiki Beach are good for torch fishing, especially for "squid" (octopus). There is also fishing from shore for aholehole, papio, 'ama'ama, and awa along the Ala Wai Canal that cuts through the Waikiki Beach district. Along Waimanalo Beach, 'o'io and weke are caught from shore, and moi are taken near the mouths of creeks emptying into Waimanalo Bay.

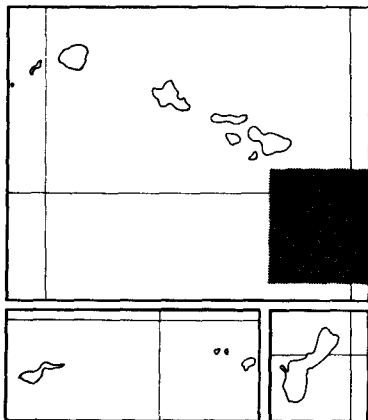
Farther north, Kaneohe Bay has netting for surgeonfish (manini and kala), 'ama'ama, akule, awaawa, and awa. Kaneohe Bay is also one of the better areas for octopus or "squid," and underwater spearing for kumu, manini, palani, and weke-ula. 'Omaka are abundant seasonally, and 'aweoweo on occasions enter the bay in great numbers. All along the north-eastern coast there is shore casting over reef-and-sand bottom for papio and weke; over sand bottom for moi and 'o'io; and cast netting and gill netting inside of the reef for surgeonfish, 'ama'ama, and akule.

In Haleiwa Bay, hahalalu school in great numbers in late summer, and many are taken by pole fishing from shore. Hahalalu and 'opelu are taken in the surf along the coast north of Waianae; 'o'io and ulua are caught off the shores around Nanakuli; moi and



'ama'ama are taken by netting and shore casting around Barbers Point. Fishing in Pearl Harbor is restricted by the military, and it is fished by service personnel and their dependents. The harbor is good for cast netting 'ama'ama; pole fishing for papio, 'omaka, nehu, and palani; and spin-fishing with lures for kawalea.

There is a considerable amount of small-boat fishing in reef-protected areas and in bays and harbors around the island. All facility locations indicated on the map have launching ramps, except Kewalo Basin. 'Omaka, 'aweoweo, menpachi, papio, and weke-'ula are caught from boats in Kaneohe Bay, and hahalalu sometimes are taken by skiff anglers in Haleiwa Bay. Large ulua are taken in the area north of Mokapu Peninsula, and boats bottom-fish for 'omaka in Pearl Harbor.



### 36/Hawaii

The island of Hawaii (Chart 36), often referred to as the "Big Island," contains two-thirds the land area of the entire island chain. It consists of five volcanic mountains about 20 miles apart and linked together by saddles, 3,000 to 7,000 feet high, formed by overlapping lava flows. Along the northeast coast, the island takes the full brunt of the northeast trades and is exposed to heavy rains. The rest of the island is rather dry and arid owing to the spongelike porosity of the rocks and lack of rain on the leeward side. All around the island, water depth plunges dramatically and rapidly away from shore.

#### OFFSHORE AND NEARSHORE FISHING

Most offshore game fishing occurs on the calmer leeward or Kona coast during spring, summer, and fall. In winter, especially during January,

there is little fishing activity because of rough seas, but fishing usually picks up again in February. Blue marlin can be caught all year, but are most abundant from June through October. Striped marlin appear to be more abundant during times when blue marlin are least abundant (during winter and early spring), and are not caught by sports anglers in as many numbers as the blues. Best time for 'ahi is November through April. Aku are taken all year, but best catches are made in the summer. Ono are most abundant from April through August.

The Kona coast is famed for its smooth, clear water and ideal fishing conditions. It is also famous for the Hawaiian International Billfish Tournament, which is staged every summer at Kailua-Kona. Anglers from all over the world come to fish the waters of the Kona Coast, where several marlin over 1,000 pounds have been landed in recent years. The most popular grounds fished by the charter fleet are off Keahole Point—less than an hour's run from Kailua-Kona. Boats also fish along the entire leeward coast as far south as Kauna Point in search of marlin and tuna.

Farther inshore, 'ahi and ono are taken in good numbers by trolling over the steep 100-fathom ledge. This drop-off area also is good for handlining onaga and kahala. From about 40 to 100 fathoms there is handlining and netting for akule, 'opelu, 'opakapaka, and some of the goatfishes or wekes—weke-'ula and moana. Nearshore out to about 50 fathoms deep, menpachi, manini, and moano are taken. The Kawaihae (Kohala) coast on the northwest side of the island is especially good for ono and 'ahi as well as other smaller game fishes. However, waters tend to get a little rough in the afternoon, when the wind usually picks up in this area of the coast. Boats based at Kawaihae often make the run down to "the grounds" off Keahole Point for marlin and tuna. When weather permits, overnight trips are made from the Kona area down to South Point for 'ahi, ono, and 'opakapaka.

The windward coast has limited offshore fishing by private boats based out of Hilo for marlin, 'ahi, ono, mahimahi, and kawalea. These grounds are fished only by experienced anglers familiar with the area—the extremely heavy swells and rough seas are not for the novice angler and boat handler. Akule, opelu, and ta'ape are taken farther inshore, and within the protection of Hilo Bay fishing is excellent for moi and other small game fishes.

#### SHORE FISHING

Although access is difficult, if not impossible, along much of Hawaii's

FACILITY NUMBER  
SPORT BOAT OPERATION  
POLE FISHING  
SKIFF RENTALS  
LAUNCHING  
JETTY FISHING  
LOCATION

1	● ●	Mahukona
2 ● ●	● ●	Kawaihae
3	●	Puako
4 ●	● ●	Honokahau Harbor
5 ● ●	●	Kailua-Kona
6 ● ●	●	Keauhou B. Anchorage
7	●	Honaunau Bay
8	● ● ●	Miloli
9	●	Kaulana Bay
10	●	Poholiki
11 ●	● ●	Hilo
12	●	Laupahoehoe
13	●	Kukuihaele

\*Movex to Kailua occasionally.  
\*\*High tide only.

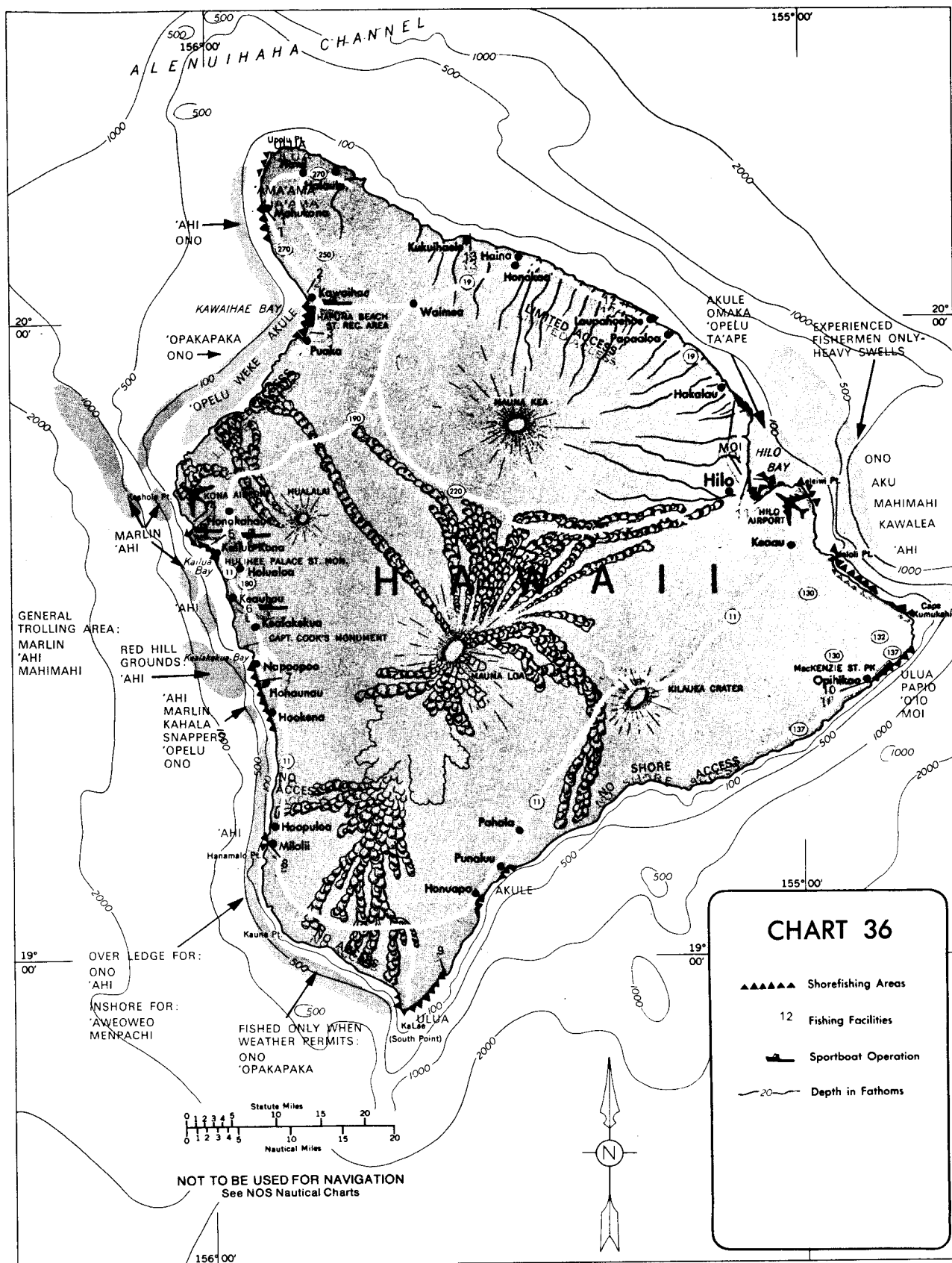
coastline, there are still many places where one can fish from shore. An assortment of fishes are taken: among them the most sought after appear to be large ulua and their younger offspring "papio"; the convict tang or manini; and young akule or hahalalu.

Hawaii's rugged coastline is particularly suited for ulua fishing. One of the best areas for ulua is at South Point, where black ulua are most abundant in the winter, and white ulua are caught year-round, dominating the catch in summer. Other good areas are Upolu Point, Kealakekua Point just north of Kealakekua Bay and the area south of the Bay, and all along the windward coast south of Hilo.

The small but tasty manini is a very popular shore fish on the island of Hawaii. They are caught all around the island—mostly by cast netters.

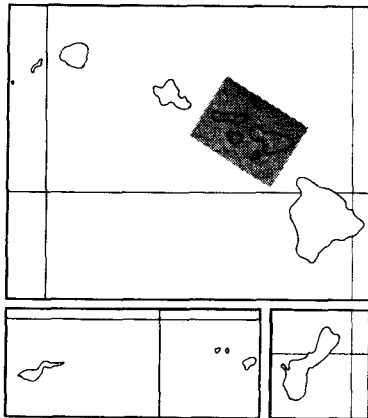
Papio are abundant and are caught pole fishing along the coast and in bays and harbors. Hahalalu are also taken pole fishing in bays and harbors, particularly at Hilo, Kawaihae, Honokahau, Kailua, and Keauhou.

Some of the more popular shore-fishing areas are indicated on the map. Along the leeward coast, 'ama'ama



and manini are taken from shore between Kawaihae and Puako. There is limited access over the lava fields south of Puako, but Honokakau Harbor and the coast south to Kailua offer some shore fishing. South of Kailua-Kona there is intermittent access to shore along the highway—some areas are privately owned. From about Keauhou south to Kealahou Bay the fishing is reported to be excellent, but access is difficult—only by way of a dirt trail about one-half mile south of Keauhou Bay. In most of Kealahou Bay, fishing is restricted, but to the south there is shore fishing for ulua, menpachi, and papio (about a 5-minute walk to the beach). A limited amount of shore fishing occurs near Hoopuloa and Milolii.

The windward or Hilo coast of the island has shore fishing along Hilo Bay for moi, and from the Hilo breakwater for moi, manini, hahalalu, weke, and papio. The area south of Leleiwi Point is good for moi, manini, aholehole, uouoa, weke, 'o'io, and ulua. From around Kaloli Point south to Cape Kumukahi, large ulua are taken from shore as well as menpachi and some of the fishes mentioned above. Farther south at Opihikao, islanders fish for menpachi, manini, moi, 'o'io, papio, and ulua. Punaluu Harbor and Honuapo Bay have a limited amount of fishing for akule.



### 37 Maui, Molokai, Lanai, Kahoolawe

This island group (Chart 37) was probably once a single island, but now is separated by channels 6 to 9 miles wide and up to 100 fathoms deep. The island of Maui is called "The Valley Isle" from the low-lying valley or isthmus that links the two volcanic mountains that form east and west Maui. It is the largest island of the

group and the second largest island in the Hawaiian chain. The windward or eastern side is a succession of gorges rich in lush vegetation, cascading waterfalls, and black sand beaches. The leeward or western side of the island is characterized by golden sand beaches, secluded coves, and very clear waters.

The island of Molokai also is formed by two volcanic mountains. Its windward side is very scenic with precipitous cliffs, rising sheerly 500 to 4,000 feet from the ocean, and indented by magnificent valleys. The leeward side is a patchwork of ancient fish ponds fringed with coral reef.

The islands of Lanai and Kahoolawe are both single mountains. Lanai, owned by the Dole Pineapple Company, is primarily a pineapple plantation. Kahoolawe is uninhabited and sometimes used as a target area by the U.S. Armed Forces.

#### OFFSHORE FISHING

Sport fishing boats are available for charter on Maui at the old whaling port of Lahaina, close to the Kaanapali Beach resort area. Most deep-sea fishing takes place in the triangle formed by the islands of Maui, Lanai, and Kahoolawe. Fishing around Molokai and Lanai can be arranged through Maui charter services. At the time of this writing, charters were also available on an intermittent basis out of the port of Kaunakakai on Molokai, but this should be checked with the charter services.

Boats out of Lahaina troll for mahimahi, kawakawa, ono, and blue marlin, or bottomfish for deepwater snappers and weke-ula. Most fishing is done in the protected lee of the islands, but during calm weather some boats venture out in the channel areas to bottomfish over the productive submarine ledges of the Pailolo Channel, the 100-fathom ledge where Auau and Kealahou channels meet, and around the island of Kahoolawe. It is best to check with the Hawaii Division of Fish and Game about fishing around Kahoolawe; sometimes it is restricted during Naval operations. The area to the west of Lanai and Molokai is fished by privately owned vessels and the charter fleet out of Oahu.

#### INSHORE AND SHORELINE FISHING

Beaches, rocky points, and reefs along the coastlines of these islands offer excellent opportunity for spin fishing, surf casting, net fishing, and spearing. On Maui, skiffs can be rented at Lahaina for nearshore fishing along the Lahaina coast from Lipoa Point to Maalaea Bay along Highway 30.

FACILITY NUMBER  
SPORT BOAT OPERATION  
PIER FISHING  
SKIFF RENTALS  
LAUNCHING  
JETTY FISHING  
LOCATION

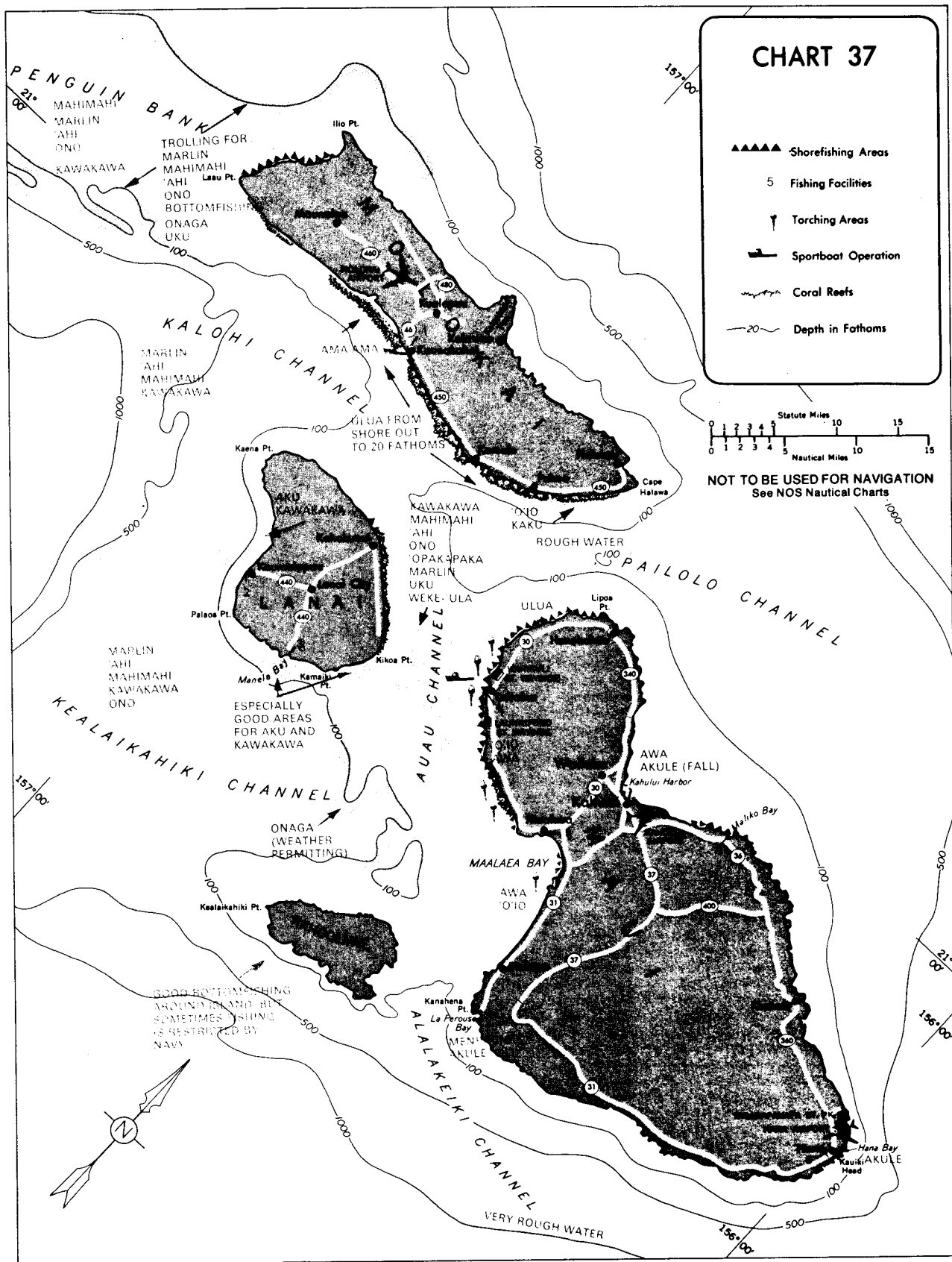
1	● ● ●	Kaunakakai, Molokai
2	●	Kaumalapau pier, Lanai
3	●	Manele Boat Hbr., Lanai
4	● ● ● ● ●	Lahaina, Maui
5	● ● ●	Maalaea Boat Hbr., Maui
6	●	Hana, Maui
7	●	Maliko Bay, Maui
8	● ● ●	Kahului, Maui

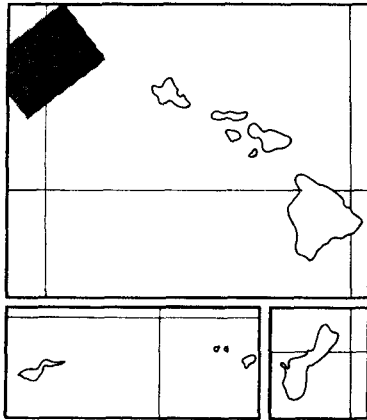
Perhaps Maui's most popular shore fish is the 'o'io (bonefish), which grows to a substantial size in Hawaiian waters. 'O'io and awa are taken from shore and skiffs along the Lahaina coast south to Maalaea and along the shore of Maalaea Bay and to the south. Large ulua also are taken along the Lahaina coast at the areas shown on the chart. On the eastern or windward side of Maui, awa and akule are caught in Kahului Bay during the fall; akule also are taken in Hana Bay. South of Hana Bay there is occasional shore fishing in winter for moi, aholehole, and manini. At the southwestern tip of the island at La Perouse Bay, akule, menpachi, and a wide assortment of reef fishes are taken from shore.

On Lanai, most shore fishing takes place on the northeastern side of the island, which is edged with luxurious coral reef. Kaumalapau Harbor has pier fishing and fishing for awa just outside of the harbor entrance.

On the island of Molokai, shore and skiff fishing for ulua is exceptional all along the leeward coast inshore of 20 fathoms. From Kaunakakai to Halawa there is fishing from shore for 'o'io, awa, and 'ama'ama. The western shore offers ulua, moi, and 'o'io fishing.







### 38/ Kauai, Niihau, Kaula

The island of Kauai (Chart 38), about 63 miles west-northwest of Oahu, is the oldest, most weathered, and most verdant of the larger islands. This beautiful "Garden Isle" abounds in rivers and cascading waterfalls. The island consists mainly of a single mountain, Waialeale (5,080 feet), with marginal lowlands except on the northwest. The chief scenic attractions are Waimea Canyon—the "Grand Canyon of the Pacific"; the spacious Hanalei Valley where rice and taro are cultivated on native-built terraces; and the Na Pali coast on the northwest with its 4,000-foot high precipices. Niihau, a small island southwest of Kauai, is privately owned and operated as a cattle ranch. Kaula Island is uninhabited, and access is sometimes restricted by the military.

#### OFFSHORE AND NEARSHORE FISHING

Kauai has some of the finest year-round deep-sea fishing in Hawaiian waters and boasts some world-record-size 'ahi, 'o'io, and kamanu. Charters are available out of Nawiliwili Harbor, Hanalei, and Port Allen. At Hanalei you have a choice of either deep-sea or inshore bonefishing excursions.

Ledge fishing (trolling and bottomfishing) is excellent around these islands. The submarine ledges are productive bottomfishing areas for 'opakapaka, uku, and kahala, which are taken in water about 100 fathoms deep. Ono and small 'ahi (usually under 100 pounds) are plentiful year-

round from about 25 to 100 fathoms. The peak of ono fishing is September, October, and November, when huge schools of akule, upon which ono feed, move into the area. It is also the peak time for small 'ahi; both ono and 'ahi are taken by trolling.

Anglers troll for marlin and large 'ahi (over 100 pounds) in deeper waters from about 100 to 1,000 fathoms. Tremendous schools of 'ahi move into Kauai waters in the late spring, with sizes known to reach a world record of 276 pounds. Marlin are fished year-round, but most fishing is in summer (May to September) when aku, the prime bait for marlin, move into the area in large schools. From September to January, aku are still present around the island, but are not as tightly schooled.

Mahimahi, although caught in Kauai waters, are not as abundant here as around the islands located farther east.

#### SHORE FISHING

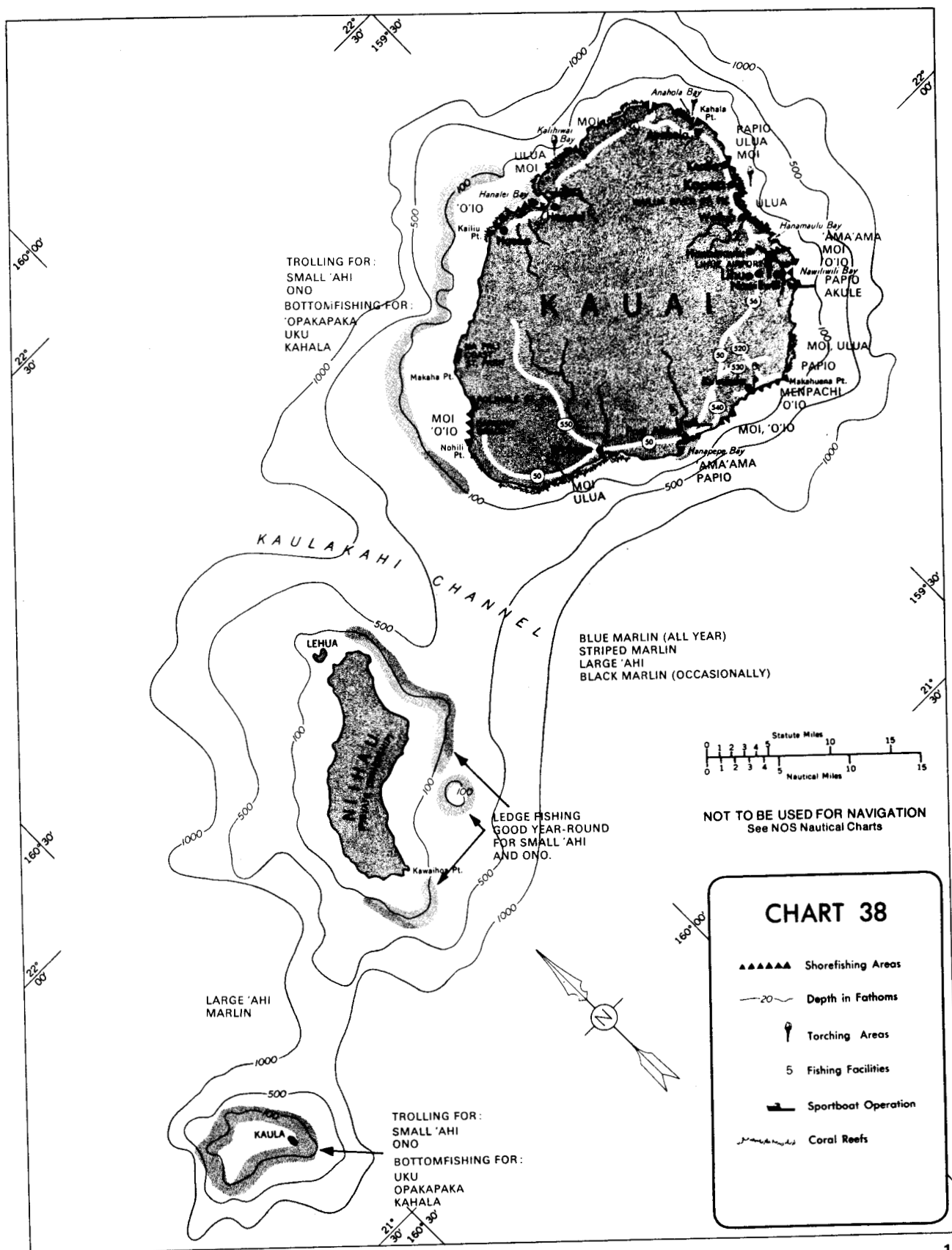
'O'io, papio, moi, and 'ama'ama are abundant all around the island of Kauai. 'Aweoweo, menpachi, hahalalu, and various kinds of goatfish are taken by shore anglers. Torch fishing and "squidding" are popular, especially in Kapaa Bay, Anahola Bay, and over the reef off Haena. At Haena during moonlit nights at low tide, the local people enjoy reef fishing with bamboo poles for 'upapalu or "moonlight fish." There is pier fishing for a variety of

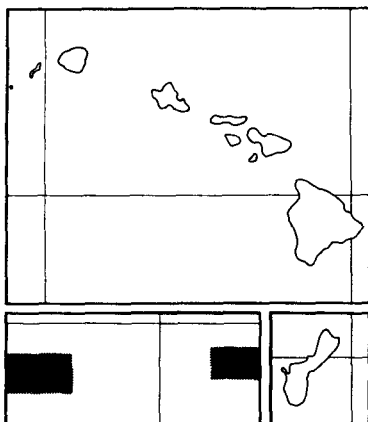
fishes at Nawiliwili Harbor, Hanalei, Port Allen, and Kukuiula Harbor.

One of the finest bonefishing grounds in the world is located off Hanalei along the north shore, where the former world record was held for years (18 pounds 2 ounces). Hawaiian bonefish ('o'io) are taken surf fishing or bottomfishing with cut bait—water conditions are not conducive to fly fishing.

FACILITY NUMBER  
SPORT BOAT OPERATION  
PIER FISHING  
SKIFF RENTALS  
LAUNCHING  
JETTY FISHING  
LOCATION

- |   |             |                      |
|---|-------------|----------------------|
| 1 | ● ● ● ● ● ● | Nawiliwili Harbor    |
| 2 | ● ● ● ●     | Wailua Marina        |
| 3 | ● ● ● ● ● ● | Hanalei              |
| 4 | ● ● ● ● ● ● | Kikiaola Boat Harbor |
| 5 | ● ● ● ● ● ● | Port Allen           |
| 6 | ● ● ● ● ● ● | Kukuiula Boat Harbor |





### 39/AMERICAN SAMOA

The tropical islands of American Samoa (Chart 39) are in the south Central Pacific Ocean, approximately 2,200 miles southwest of the Hawaiian Islands and 1,600 miles northeast of the northern tip of New Zealand. American Samoa is an Unincorporated Territory of the United States and comprises seven islands—Tutuila, Aunu'u, Ta'u, Olosega, Ofu, Swains, and Rose Atoll. Five of these islands are mountainous and volcanic in origin, and two (Rose Atoll and Swains Island) are tiny coral atolls each less than 2 miles in diameter. The combined land area of all the islands is a scant 76.2 square miles, or about one-sixteenth the land area of our smallest State, Rhode Island.

The five larger islands are surrounded intermittently with narrow stretches of coral reef, beyond which the water depth plunges fairly rapidly away from shore. Submerged bank areas may extend out ½ to 4 miles before dropping dramatically from 50 fathoms to depths greater than 500 fathoms. The islands are bathed by the warm waters of the South Equatorial Current system, with sea surface temperatures ranging from 75° to 86°F over the course of a year.

The climate of American Samoa is tropical, and air temperatures are fairly uniform, averaging 78° to 80°F at sea level. Rainfall is generally heavy, increases with altitude, and is greater on the south and east coasts. Trade winds blow from the southeast quarter about 80% of the time but are relatively light compared to those of Hawaii. Best weather is from November to April when these winds are generally lightest.

About 90% of the total population of 27,000 is located on Tutuila Island, the largest of the island group and where Pago Pago is located. The island is about 18 miles long and 5 miles wide

with a mountain range along its length. It is nearly bisected by the deep waters of Pago Pago Harbor, one of the finest and most beautiful ports in the South Pacific.

A tourist industry is developing rapidly on Tutuila Island, and the increased tourism has brought a growing interest in the sport fishing potential of Samoa's productive grounds which now yield high commercial catches of billfish and tuna. Two licensed sport fishing boats are now available for charter out of Fagatogo on Pago Pago Bay. Fishing grounds are close in and offshore of the island.

#### OFFSHORE FISHING

Large game fish are abundant throughout the year in Samoan waters, and many good fishing locations are within a relatively short run from port. Billfish grounds off Tutuila Island produce saula (blue marlin), saula-lele (sailfish), asi (yellowfin tuna), atu (skipjack tuna), rainbow runner, masimasi (dolphin), and ono (wahoo). Waters on the north side of the islands are virtually unfished, but show potential of being excellent big game fishing grounds as well. While they are caught year-round, the best time for large asi is March to July, and for atu, October to March.

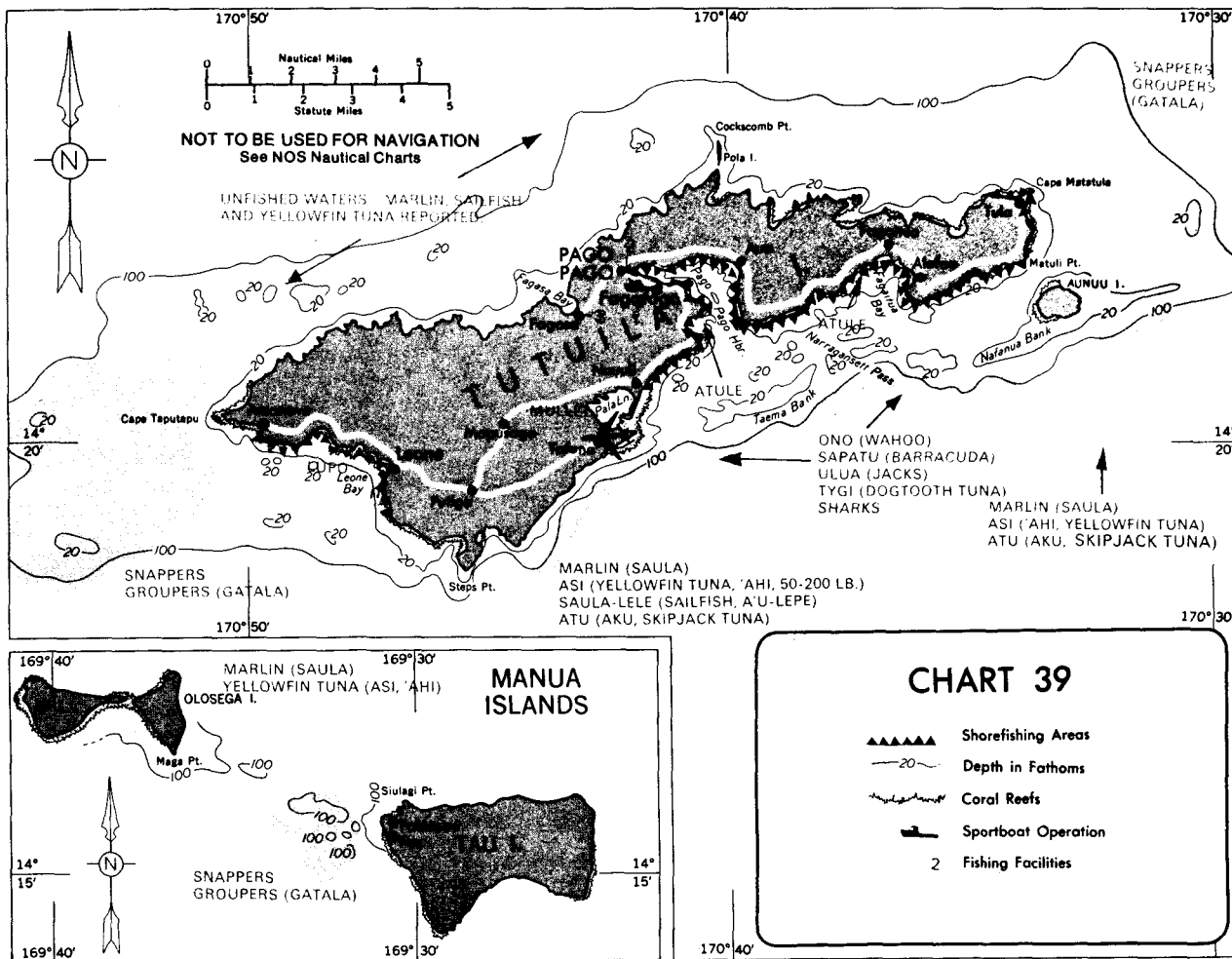
Inshore of the billfish grounds along the 100-fathom drop off, there is handlining and trolling for ono, tagi (dogtooth tuna), sapatu (barracuda), and large jacks or ulua. Most tagi are caught handlining at dusk or at night. Sharks are also common along these ledge areas, particularly the gray reef shark.

Bottomfishing is excellent and usually takes place in waters 100 fathoms or less; the main catch consists of groupers and snappers. Visitors to the island should be warned that the flesh of some snappers may be

toxic, and it is wise to inquire locally about the edibility of certain species. Groupers, collectively called "gatala" by Samoans, are generally taken at 10 to 40 fathoms over reefs and ledge areas. The most common species are gatala, gatala moana, i'a manai, and ata'ata, which is similar to California's giant sea bass and ranges up to 500 pounds but generally is from 100 to 400 pounds. Of the snappers, the most common varieties are the colorful bluelined snapper or savani, which is the most abundant; the green snapper or filoa (reported to be slightly toxic in Samoan waters); and the red snapper or mala'i. Another common snapper caught handlining, known locally as mu, is definitely known to cause ciguatera poisoning and should not be eaten. Aso'ama, (uku), a nontoxic snapper, is sometimes taken over bottomfishing areas along with some of the large jacks, atule (akule), sapatu, tagi, and sharks. Deepwater snappers such as opakapaka and palu (onaga) are more abundant farther offshore over ledges at 200 to 300 fathoms. These deeper areas, however, are

FACILITY NUMBER  
SPORT BOAT OPERATION  
PIER FISHING  
SKIFF RENTALS  
LAUNCHING  
JETTY FISHING  
LOCATION

- |   |             |           |
|---|-------------|-----------|
| 1 | ● ● ● ● ● ● | Fagatogo  |
| 2 | ● ● ● ● ● ● | Pago Pago |
| 3 | ● ● ● ● ● ● | Fagasa    |



seldom fished because fishing for other game fishes is so good closer to Tutuila Harbor. The same is true for the bottomfishing areas around the Manua Island group, which are fished mainly by natives who launch canoes in the surf on the west end of Ta'u Island. Rose Atoll, a turtle and bird preserve, is also too far from port to be a feasible fishing ground at this time.

#### SHORE FISHING

The inshore reefs of Tutuila abound with over 600 varieties of colorful fishes, and few have gone untasted by the Samoans, who prefer to comb nearby reefs rather than venture to offshore fishing grounds. As a result, these reefs have been subjected to heavy fishing pressure over the years and, unfortunately, are showing signs of depletion.

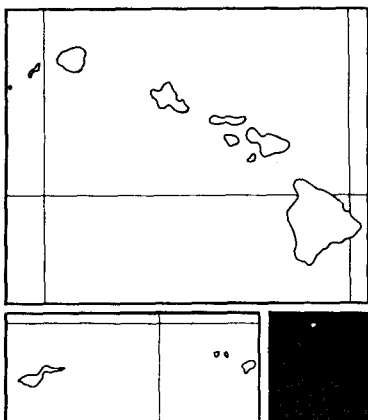
Most shore fishing is done by wading out over the reefs at high tide. A variety of sea creatures are captured in an almost equal variety of

ways—with traps, nets, spears, hook and line, or simply bare hands and a pail. The most common methods are bamboo pole fishing and cast netting. Young snappers and groupers are the main catch, but "lupo" (young jacks), "malau" and other squirrelfishes, goatfishes, and even an occasional butterflyfish and surgeonfish are taken. The shore is accessible all along the southern side of the island and on the north shore at Pagasa where the road follows the shoreline. It is advisable to check with local chiefs or matai before fishing near their villages—just as you would ask a property owner permission before fishing on his land. Spearing is legal, but generally discouraged.

Atule and mullet are fished in lagoons and bays around the island. Atule are caught in good numbers by pole fishing from shore in Pago Pago Harbor, mainly from the docks and piers on the west side of the harbor. Unlike his Hawaiian counterpart, the Samoan atule is caught easily during the day as well as at night. Skiff

anglers also catch this tasty little fish handlining. Mullet are taken in sandy bays and lagoons with cast nets, and Palu Lagoon is considered one of the best fishing areas for this silvery schooling fish.

A very unusual fishery exists in American Samoa, one which the population looks forward to with eager anticipation. It is the fishery for palolo. Each year at a predictable time in either October or November, the tail ends of a species of reef-dwelling sea worm become detached and swim to the surface in wriggling masses. The tail sections are full of eggs and sperm which are discharged into the water. On these nights, and usually only for a few hours, the reef comes alive with great swarms of palolo. The natives, armed with dip nets, pails, and other capturing devices, wade out over the reefs to scoop up large quantities of this unusual Samoan delicacy. Palolo are usually eaten raw, but for the less brave they can be cooked with chopped onions or scrambled with eggs.



## 40/GUAM

Guam (Chart 40), about 3,340 miles west of Honolulu and 1,500 miles east of Manila, is the largest and southernmost island in the Marianas island group. Administered by the U.S. Navy for over half a century, the territory was placed under the administrative jurisdiction of the Department of the Interior in 1950 by executive order of the President of the United States. That year, the Organic Act was passed by the U.S. Congress and became Guam's Constitution, giving Guamanians U.S. citizenship and establishing the present 21-seat legislature.

The island is important as a distribution center for Micronesia and as a major link between these islands and the rest of the world. Because of its strategic geographical location and beautiful tropical setting, Guam has several large military bases, a growing tourist industry, and many thriving new businesses.

The physical geography of the island contrasts sharply north to south. The northern part of the island is a low-lying limestone plateau covered by a thick growth of jungle vegetation. The south, rising to more than 1,000 feet above sea level, is characterized by high volcanic hills covered with sword grass. The island is about 23 miles long and varies from 4 to 8 miles wide.

The climate is tropical with air temperatures ranging from 70° to 90°F. Daytime temperatures are usually in the mid-80's. Average rainfall is about 90 inches, three-quarters of which falls during the rainy season from July to October. The driest month is April.

Guam's offshore waters abound with a variety of game fish; undoubtedly the most famous is the Pacific blue marlin. On 21 August 1969, a world-record blue marlin was

caught off Ritidian Point near the northern tip of Guam. This huge fish weighed in at 1,153 pounds with a total length of 14 feet 8 inches. A fishing derby is held each year at the end of the Liberation Day celebration in July, and many sport anglers register for this annual event.

Most offshore fishing takes place on the leeward or western side of the island because of rough waters usually prevalent on the windward or eastern side. The trolling grounds produce blue marlin, black marlin, sailfish, yellowfin tuna, skipjack tuna, mahimahi, rainbow runner, tosun or wahoo, barracuda, and sharks. Marlin, wahoo, and tuna are caught occasionally throughout the year; the best time for mahimahi is during January and February; and yellowfin and skipjack tuna are usually most abundant February through August.

Bottomfishing is excellent over submarine ledge areas surrounding the island and over offshore banks. The catch consists mostly of snappers and groupers. Some of the more common snappers are the pink kali kali, pink paka, yellowtail, gendai, lehi, ehu, onaga or red, and tagafi. Groupers are collectively called "gadao" by Guamanians. Dogtooth tuna and jacks (called collectively tarakito) are also taken in some of the bottomfishing areas.

Many people on the island enjoy fishing from shore, and the most popular methods seem to be spin fishing and surround netting. The island is rimmed by many miles of beautiful coral reefs and the water over these reefs ranks among the clearest in the world, especially during the dry season. Anglers with spinning gear cast from the reef shelves for snappers, groupers, and jacks, and from the piers and in boat channels for atulai (akule or bigeye scad) and tataga (kala, unicornfish). Other fishes such as young snappers, wrasses, mullet, tarakityos (young jacks), needlefish, and achuman ('opelu or mackerel scad) are taken occasionally by hook-and-line anglers. The surround net captures an assortment of reef fishes including those mentioned above as well as some of the goatfishes and

parrotfishes. Cast net operators fling their circular nets over the water for fish that wander about the reefs in schools, such as manini (known locally as "kicho"), young mullet, goatfish, and sesjun (rabbitfish). There is also some spearing for octopus, parrotfish, and surgeonfish, as well as other reef fishes.

Some of the more popular shore-fishing areas are shown on the chart. Atulai are taken during most of the year (May to March) along the channel area that cuts through the reef at Agana and at the southern tip of the island near Merizo. There is shore fishing in Apra Harbor for papio, atulai, and occasionally achuman ('opelu). Tataga are taken at Agana and sometimes at the north side of Cabras Island, as well as near the reef's outer edge on the southern shore of Ylig Bay. The latter area also is good for snappers—mafuti, kakaka, and bua. It is advisable to check locally about the waters you plan to fish, since currents over the reefs are sometimes dangerous.

Sport fishing boats are available for charter out of Port Merizo and Agana. Skiffs can be rented at Port Merizo, and there are boat launching facilities at the Apra Harbor seaplane ramp and at the Agana boat basin.

FACILITY NUMBER  
SPORT BOAT OPERATION  
PIER FISHING  
SKIFF RENTALS  
LAUNCHING  
JETTY FISHING  
LOCATION

- |   |       |                         |
|---|-------|-------------------------|
| 1 | ●     | Apra Hbr. seaplane ramp |
| 2 | ● ●   | Agana Boat Basin        |
| 3 | ● ● ● | Port Merizo             |

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## MARINE GAME FISHES

*The following pages list some of the more common marine game fishes caught within the geographical areas covered in this Guide. Major species are illustrated. Fishes taken along the west coast of the continental United States are described first; those taken around the tropical Pacific islands of Hawaii, American Samoa, and Guam are covered on succeeding pages. The list is separated in this way to assist the reader in finding the fishes familiar to his general geographic area. To help avoid confusion with common fish names an index to common names referred to in this list is provided in the back of the guide. All-tackle records are those recognized by the International Game Fish Association as of 1974. Fish illustrations by Susan E. Smith.*

# Marine Game Fishes of the United States West Coast

This list describes those marine and anadromous species commonly taken by anglers along and off the coasts of California, Oregon, Washington, and Alaska.

Off southern California most pelagic species taken by the marine angler are subtropical, and common only from Point Conception south to off Baja California, Mexico. Point Conception, 40 miles west of Santa Barbara, Calif., is generally agreed to be the major ecological and faunal dividing point for many pelagic species. However, Pacific bonito, Pacific mackerel, and bluefin tuna, which are common in the south, occur at times north of Point Conception, and conversely, northern species such as coho salmon sometimes range south of Point Conception. In the deeper cooler water over the continental shelf are also found many species that range north of the Point.

From Point Conception north to south central Alaska one encounters a fairly constant species composition

throughout this temperate environment. North of Point Conception, extending to at least Cape Blanco, Oreg., there exists a major coastal "upwelling" area which results in cool water nearshore much of the year. Another environmental change from temperate to subarctic occurs from about the Aleutian chain in Alaska north beyond the Bering Sea.

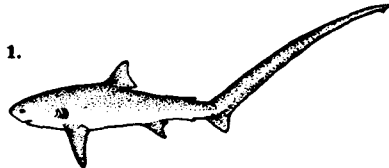
For the most part, this list uses common and scientific names as defined in the American Fisheries Society checklist [Bailey et al. 1970], except for the use of "surfperch" for all members of the family Embiotocidae. Some species descriptions will have more than one common name; however, the common name approved by the American Fisheries Society is capitalized. The authorized scientific name and the name of the individual credited with describing the species for the scientific record are given last.

For those anglers wishing to ensure correct identification of their west coast catch, we suggest the

following publications. Much of the information in this list was derived from identification lists prepared by the following authors:

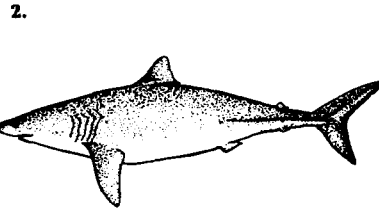
- Hart, J. L.  
1973. Pacific fishes of Canada. Fish. Res. Board Can., Bull. 180, 740 p.
- Miller, D. J., and R. N. Lea.  
1972. Guide to the coastal marine fishes of California. Calif. Dep. Fish Game, Fish Bull. 157, 235 p.
- Phillips, J. B.  
1957. A review of the rockfishes of California (Family Scorpaenidae). Calif. Dep. Fish Game, Fish Bull. 104, 158 p.
- Tarp, F. H.  
1952. Revision of the Family Embiotocidae (the surfperches). Calif. Dep. Fish Game, Fish Bull. 88, 99 p.

## ALOPHIIDAE: THRESHER SHARKS



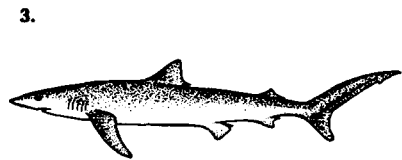
1. THRESHER SHARK, fox shark swiveltail, *Alopias vulpinus* (Bonnaterre). DISTRIBUTION: Temperate and tropical waters of the Pacific, Indian, and Atlantic oceans and the Mediterranean Sea. SIZE: Reported to reach 20 to 25 feet (610-762 cm) long and weigh up to 1,000 pounds (453.6 kg) or more. However, the usual catch is less than 30 pounds (13.6 kg). All-tackle record for the Pacific (Mayor Island, New Zealand) is 729 pounds (330.7 kg) and 101 inches (256.6 cm) long. COLOR: Gray to black above, fading to white below. □ A pelagic shark common to the offshore waters of the eastern Pacific south of Cape Flattery, Wash. Caught during summer in central and southern California; best fishing is in the Los Angeles outer harbor. One of the most desirable species of shark for table food, also excellent when smoked.

## LAMNIDAE: MACKEREL SHARKS

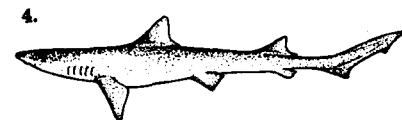


2. SHORTFIN MAKU, bonito shark, *Isurus paucus* Rafinesque. DISTRIBUTION: Temperate and tropical waters of the Pacific Ocean to Hawaii and Japan. Known in the eastern Pacific from the Columbia River to Chile. SIZE: Reported to reach 12 feet (366 cm) long and weigh up to 1,000 pounds (453.6 kg). However, the size usually ranges from 4 to 8 feet (122-244 cm) long. All-tackle record in the Pacific (Mayor Island, New Zealand) is 1,061 pounds (481.3 kg) and 12 feet 2 inches (370.9 cm) long. COLOR: Dark gray above, white below. □ Appears off the southern California coast in summer, and is the subject of a growing sport fishery. A pelagic shark, may be dangerous to humans, but regarded as a good food species.

## CARCHARHINIDAE: REQUIEM SHARKS



3. BLUE SHARK, *Prionace glauca* (Linnaeus). DISTRIBUTION: Tropical and temperate seas of the world; in eastern Pacific Ocean from Chile to the Gulf of Alaska. SIZE: Length is reported to 15 feet (457 cm), but most caught off southern California are less than 8 feet (244 cm) and weigh less than 50 pounds (22.7 kg). All-tackle record in the Atlantic (Rockport, Mass.) is 410 pounds (186.0 kg) and 11½ feet (350.6 cm) long. COLOR: Dark blue above, white below. □ One of the more important pelagic sharks in catches of the southern California sport fishery during summer and fall. Good fighter on light tackle, but not a particularly good food species. Common to offshore waters, but also occurs inshore off southern and central California during summer and fall.



4. BROWN SMOOTHHOUND, *Mustelus henlei* (Gill). DISTRIBUTION: Gulf of California, Mexico, to Humboldt Bay,

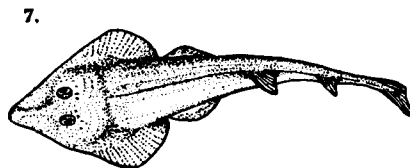
Calif. SIZE: Reaches about 3 feet (91 cm) long. COLOR: Reddish brown fading to white on belly. □ Common in bays from San Francisco south and is one of the most abundant sharks entering the sport fishery catch. It is a good sport species on light tackle and frequently taken by anglers along sandy shores, from piers, and in harbors.

5. GRAY SMOOTHHOUND, *Mustelus californicus* Gill. DISTRIBUTION: Mazatlán, Mexico, to Cape Mendocino, Calif. SIZE: Length recorded to about 5 feet (152 cm). COLOR: Dark gray to brown above, white below. □ Of minor importance to sport anglers; commonly taken in the surf zone, however.



6. LEOPARD SHARK, cat shark, *Triakis semifasciata* Girard. DISTRIBUTION: Mazatlán, Mexico, to Oregon. SIZE: reported to attain 6½ feet (198 cm) in length. COLOR: Gray with black spots and crossbars; belly lighter. □ Abundant in central and southern California and caught largely in bays, off jetties, and along sandy beaches most of the year. Caught in large numbers during the fall in San Francisco Bay. A desirable food species.

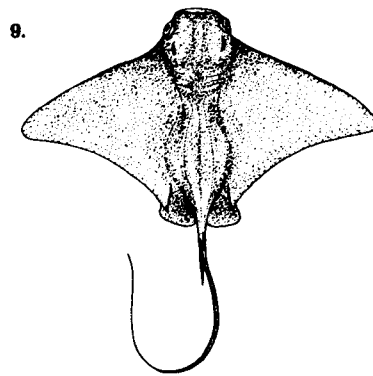
#### RHINOBATIDAE: GUITARFISHES



7. SHOVELNOSE GUITARFISH, shovelnose shark, *Rhinobatos productus* (Ayres). DISTRIBUTION: Gulf of California, Mexico, to Monterey Bay, Calif. SIZE: Reaches a length of about 5 feet (152 cm) and a weight of up to 40 pounds (18.1 kg). COLOR: Brownish gray, white underside. □ Often caught by pier, bay, and surf anglers, and common over sand and mud bottom in shallow bays and estuaries in southern California. Not a desirable food species, although the dorsal meat is reported to be palatable. Provides considerable recreation and taken all year throughout most of its range.

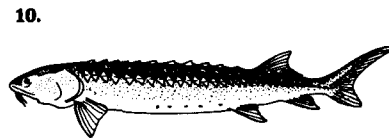
8. THORNBACK, *Platyrrhinoidis triseriata* (Jordan and Gilbert). DISTRIBUTION: Turtle Bay, Baja California, Mexico, to central California. Rare north of Point Conception. SIZE: Length to about 2½ feet (76 cm). COLOR: Brown on back, white or cream colored below. □ Although taken in fair numbers, they are not the major objective of most anglers. Common in depths less than 150 feet (45.7 m).

#### MYLIOBATIDAE: EAGLE RAYS



9. BAT RAY, *Myliobatis californica* Gill. DISTRIBUTION: Gulf of California, Mexico, to Oregon. SIZE: Maximum known weight is about 210 pounds (95.3 kg) with a spread of 4 feet (122 cm). COLOR: Dark brown to black above, white below. □ Only member of the eagle ray family caught in California, where it occurs along the outer coast and is commonly taken in bays such as San Diego Bay, Newport Bay, Los Angeles Harbor, Morro Bay, San Francisco Bay, and Tomales Bay. The bay ray is an active fighter and is classed as a good game species. It has a venomous spine on dorsal side at base of tail that can cause painful wounds. General treatment is to cleanse the wound thoroughly and immerse in warm to hot water with baking soda. Consult doctor for relief from pain and possible secondary infection.

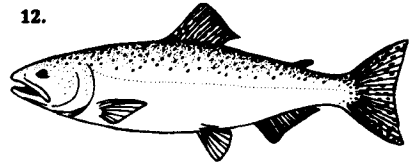
#### ACIPENSERIDAE: STURGEON



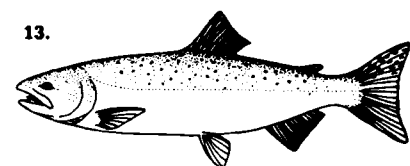
10. WHITE STURGEON, Pacific sturgeon, *Acipenser transmontanus* Richardson. DISTRIBUTION: Ensenada, Baja California, Mexico, to Gulf of Alaska. SIZE: Largest white sturgeon taken along the Pacific was reported to be about 20 feet (610 cm) long weighing 1,800 pounds (816.5 kg). However, today it would be uncommon to catch one over 500 pounds (226.8 kg). COLOR: Uniform gray. □ An important species taken in Suisun, San Pablo, San Francisco, and Coos bays, the Columbia River estuary, upper Willapa Bay, and upper Grays Harbor. Heavy fishing in the late 1800's for caviar and smoked sturgeon reduced the population drastically. Today the lower Columbia River appears to be the center of distribution; in the San Francisco area the numbers of sturgeon appear to be increasing and the fishery is becoming more popular. Several species of sturgeons exist in North America. Some are found only in fresh water, and some, like the white sturgeon, are anadromous.

11. GREEN STURGEON, *Acipenser medirostris* Ayres. DISTRIBUTION: Ensenada, Baja California, Mexico, to Alaska, Bering Sea, and Japan. SIZE: Length to 7 feet (213 cm), weight to 350 pounds (158.8 kg); most caught are much smaller than this. COLOR: Olive green with three longitudinal olive stripes on body. □ Similar in habits to the white sturgeon, although less is known of its life history.

#### SALMONIDAE: TROUT AND SALMON

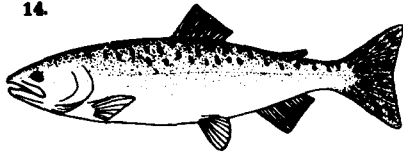


12. CHINOOK SALMON, king, spring, tyee, Quinnet, *Oncorhynchus tshawytscha* (Walbaum). Young juveniles or "feeders" are sometimes called "blackmouth." DISTRIBUTION: Southern California to Alaska and south on the Asiatic side to the Amur River, USSR, also to northern Japan. SIZE: Record weight reported to 126½ pounds (57.4 kg); however, few are caught over 50 pounds (22.7 kg), and most average 18 to 25 pounds (8.2-11.3 kg) when mature. COLOR: At sea, dark gray above with silver sides and belly; black spots on back and both lobes of tail; gums at base of teeth black. □ Most desirable of marine game fish in northern waters and subject of an extensive ocean troll fishery. Principal fishing areas begin in the south off Pismo Beach and Avila, Calif., and extend into southern Alaska. Fished primarily by trolling with dead bait or lures, and drift fishing with live or frozen bait. Offshore fishing depth for this species is usually greater than for other salmon species.



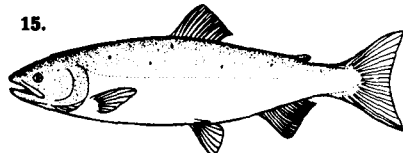
13. COHO SALMON, silver salmon, silversides, salmon trout, *Oncorhynchus kisutch* (Walbaum). DISTRIBUTION: Coronado Islands, Mexico, to Alaska, and south on the Asiatic side to Japan. SIZE: Coho grow to a length of 3 feet (91 cm) and a weight of 30 pounds (13.6 kg) or possibly more; most in the sport catch average less than 10 pounds (4.5 kg). COLOR: At sea, metallic blue green above; silver sides and belly; small black spots on back, dorsal fin, and upper lobe of tail fin; gums at base of teeth white. □ Ocean trolling for coho ("silvers") is most successful from near Fort Bragg, Calif., northward, although some are caught in the San Francisco area and a few are taken as far south as Point Mugu, Calif., area every year. Principal fisheries for this species are along the coasts of Oregon, Washington, and Alaska. Fishing technique used in the ocean is much the same as for other salmon.

14.



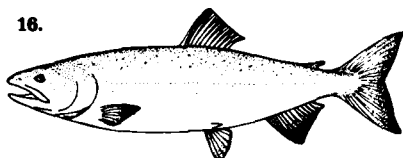
14. PINK SALMON, humpback salmon, *Oncorhynchus gorbuscha* (Walbaum). DISTRIBUTION: Southern California to northwestern Alaska and along the Asian coast. SIZE: Reported to reach 2½ feet (76 cm) long and a maximum weight of about 12 pounds (5.4 kg). Averages about 6 pounds (2.7 kg) when mature. COLOR: Metallic blue above; silvery on sides; oval spots on tail and back with many as large or larger than eye diameter. □ Smallest of the five species of salmon. Common to the west coast, but usually not common south of Oregon. Major fisheries for this species are in the Strait of Juan de Fuca, in Puget Sound, and to the north. Pink salmon usually do not run very far upstream; most spawn in the lower parts of rivers. They are unique among Pacific salmon in that all fish mature at the end of their second year. Larger runs are reported in odd-numbered years in Puget Sound area; in Alaska, runs occur in both odd- and even-numbered years, depending on specific area fished.

15.



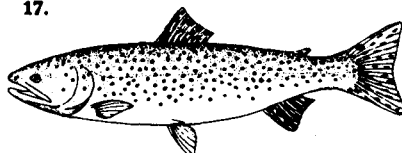
15. SOCKEYE SALMON, red salmon, blueback salmon, *Oncorhynchus nerka* (Walbaum). DISTRIBUTION: Southern Oregon to northwestern Alaska and Asia. SIZE: Length reported up to 2½ feet (76 cm); weight up to about 5 to 7 pounds (2.3-3.2 kg). COLOR: Greenish blue above, with greenish head; silvery on sides. □ Best fishing is from northern Oregon to northwestern Alaska and Asia. Spawning season lasts from March to August; major season is from June to August. Usually enters rivers that are fed by lakes. The sockeye salmon rarely takes a hook so is not a major contributor to the sport catch.

16.



16. CHUM SALMON, dog salmon, fall salmon, *Oncorhynchus keta* (Walbaum). DISTRIBUTION: Southern California to northwestern Alaska and Asia. SIZE: Length up to 3½ feet (107 cm); average weight of 10 to 12 pounds (4.5-5.4 kg) when mature. COLOR: In brackish or salt water, fish are metallic blue above, sometimes with faint black specks; dark tips on pectoral, anal, and caudal fins. □ Best areas of fishing are from Washington north to off British Columbia, near the inshore areas along the Strait of Georgia. The chum salmon appears in late summer and fall in spawning schools, after spending usually about 3 to 5 years at sea.

17.



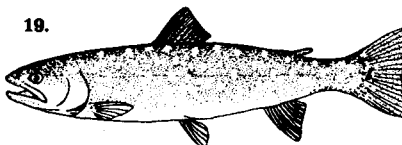
17. CUTTHROAT TROUT (sea-run), blueback, Columbia River trout, seatrout, *Salmo clarki* Richardson. DISTRIBUTION: Eel River, Calif., to southeastern Alaska, with some running into brackish and salt waters from coastal streams; rarely in the ocean off California. SIZE: Length reported up to 2½ feet (76 cm); weights usually run from 1 to 3 pounds (0.5-1.4 kg). COLOR: Greenish blue above; silvery on sides. Identified by a red slash under lower jaw; however, this may not be present in fish migrating from salt water. □ Best fishing found north of the Columbia River in brackish-water areas. Spawns February to May in small coastal streams, young sometimes descend in second or third year and usually remain in estuaries for 1 or more years before returning to spawn. A predator on young salmon in the spring.

18.



18. RAINBOW TROUT, steelhead, sea-run rainbow trout, seatrout, salmon trout, silversides, *Salmo gairdneri* Richardson. DISTRIBUTION: Northern Baja California, Mexico, to Alaska, Bering Sea, and Japan, with some running into salt water, though not now common south of Point Conception. SIZE: Reported to reach 3½ feet (107 cm) long and 36 pounds (16.3 kg) in weight; the usual catch is much smaller, averaging under 10 pounds (4.5 kg). COLOR: At sea, steel blue above, with silvery sides. □ Taken in the estuarine areas of both large and small streams, and also off river mouths. Season for fishing most coastal streams is December through March, usually best after winter rains result in a breakthrough of the "bar" at the mouth of the stream. In larger and cooler rivers, spawning run may start earlier in late summer or early fall. Some steelhead enter certain tributaries in spring or summer, and remain through the dry season until the following spring before spawning. This species spawns more than once; some may return to spawn for a second or third time.

19.



19. DOLLY VARDEN, Dolly, Oregon char, redspotted trout, salmon trout, malma trout, bull trout, seatrout, *Salvelinus malma* (Walbaum). DISTRIBUTION: Northern California to northwestern Alaska, running into saltwater estuarine areas. SIZE: Length reported to 3 feet (91 cm) and

maximum weight of 20 pounds (9.1 kg); usual catch is 1 to 3 pounds (0.5-1.4 kg) in weight and 15 to 20 inches (38-51 cm) long. COLOR: Olive green to brown above with pale-yellow spots; orange-red spots on sides. Sea-run fish are silvery. □ Common to Puget Sound and southeastern Alaska. In some streams there is a seaward migration in spring and an upstream spawning migration in fall.

#### OSMERIDAE: SMELTS

20.



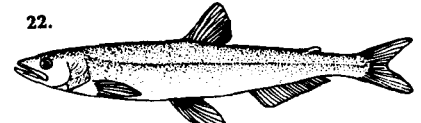
20. SURF SMELT, day smelt, silver smelt, surfish, *Hypomesus pretiosus* (Girard). DISTRIBUTION: Long Beach, Calif., to Prince William Sound, Alaska. SIZE: Maximum length is about 10 inches (25 cm); average catch is about 8 inches (20 cm) or less. COLOR: Light olive green; sides silver with purple hue. □ Distinguished from the night smelt by its small mouth, which does not extend beyond a line drawn vertically from the middle of the eye. Best areas for fishing are north of Monterey Bay, Calif. Surf smelt does not spawn south of Scott Creek, Santa Cruz County, Calif. Shore spawning runs occur from March to September during daylight along sandy shores near river mouths. Surf smelt runs are correlated with the tides, and fish are usually caught with "A"-frame nets. In the north they are taken by jigging from piers in late winter.

21.



21. NIGHT SMELT, surfish, *Spirinchus starksi* (Fisk). DISTRIBUTION: Point Arguello, Calif., to Shelikof Bay, Alaska. SIZE: Length reported to about 9 inches (23 cm); usual length of catch is about 5 to 6 inches (13-15 cm). COLOR: Sides silver; olive green on back. □ Similar in many respects to surf smelt, but the mouth is larger and extends to below the posterior edge of the eye. Common to sandy shores (coarse sand) from central California to coastal Washington. Night smelt does not spawn south of Moss Landing, Calif. It appears to concentrate in much the same areas as the surf or day smelt, but spawns during darkness, and runs are not adjusted to tides. Method of capture is similar to that used for the surf smelt.

22.



22. EULACHON, candlefish, hooligan, smelt, *Thaleichthys pacificus* (Richardson). DISTRIBUTION: Bodega Bay, Calif., to Bering Sea, Alaska. SIZE: Reported to attain a length of 12 inches (30 cm). COLOR: Uniform light bluish, brown

above; silvery on sides and belly. □ Common to the coasts of Oregon, Washington, and Alaska. Fished with nets about mouths of rivers and inlets as the fish migrate inshore to spawn in rivers from Mad River, Calif., northward to Alaska (March, April, and May). It is a very oily fish, and called candlefish because when dried and threaded with a wick it may be used as a candle.

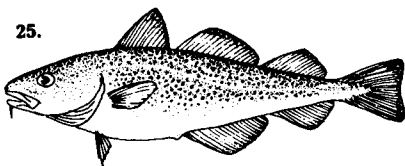
#### SMELTS OF LESS IMPORTANCE TO THE MARINE ANGLER:

23. LONGFIN SMELT, *Spirinchus thaleichthys* (Ayres). DISTRIBUTION: San Francisco Bay, Calif., to Prince William Sound, Alaska. SIZE: To about 6 inches (15 cm). COLOR: Sides silver with brownish dorsal areas. □ Spawns in coastal rivers and composes a minor portion of the sport smelt catch.

24. WHITEBAIT SMELT, *Allosmerus elongatus* (Ayres). DISTRIBUTION: San Pedro, Calif., to Strait of Juan de Fuca. COLOR: Sides silver; back greenish. □ Similar in appearance to the night smelt, but like the longfin, it composes a minor portion of the total sport catch of smelt. Spawning behavior not known.

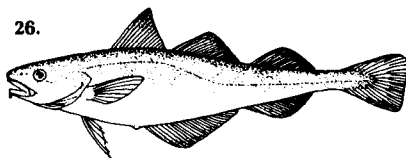
#### GADIDAE: CODFISHES

25.



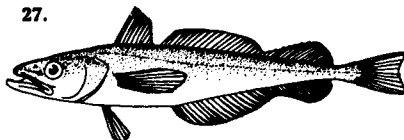
25. PACIFIC COD, true cod, *Gadus macrocephalus* Tilesius. DISTRIBUTION: Santa Monica, Calif., to northwestern Alaska and Asia (Yellow Sea). SIZE: Length recorded to at least 3¼ feet (114 cm) and weight up to 40 pounds (18.1 kg). COLOR: Brownish gray above fading to lighter below; brown spots on upper parts; edges of fins white. □ An excellent food species commonly available off the coast of northern Oregon, Washington, and Alaska. Migrates from deep to shallower water, though usually caught in water deeper than 60 feet (18.3 m). Reported to spawn in winter and in early spring and is abundant in coastal waters at that time.

26.



26. PACIFIC TOMCOD, *Microgadus proximus* (Girard). DISTRIBUTION: Point Sal, Calif., to Unalaska Island, Alaska. SIZE: Usually less than 12 inches (30 cm) long and 1 pound (0.5 kg) in weight; fish over 2 pounds (0.9 kg) are very rare. COLOR: Olive or brownish above; white on sides and belly. □ Abundant from San Francisco north and taken by pier, jetty, and skiff anglers. A good food species, but sometimes discarded because of its small size.

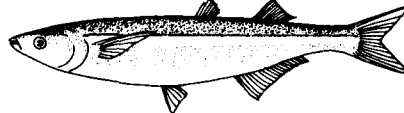
27.



27. PACIFIC HAKE, *Merluccius productus* (Ayres). DISTRIBUTION: Gulf of California, Mexico, to Alaska and Asiatic coast. SIZE: Record length to about 3 feet (91 cm); most are 1 to 1½ feet (30-46 cm) long. COLOR: Gray to dusky brown, with a brassy overtone. □ Sometimes taken off Oregon and Washington while salmon fishing in deep water. It is not a desirable sport species, though it is suitable for eating if prepared promptly.

#### ATHERINIDAE: SILVERSIDES

28.



28. JACKSMELT, smelt, *Atherinopsis californiensis* Girard. DISTRIBUTION: Santa Maria Bay, Baja California, Mexico, to Yaquina Bay, Oreg. SIZE: Reported to reach a length of 22 inches (56 cm); most fish caught weight about ½ pound (0.2 kg) or less. COLOR: Dusky green above, sides silvery; metallic band edged above with blue extends length of body. □ Commonly found year-round in bays and turbid-water areas. Usually caught in water of less than 100 feet (30.5 m). Known to spawn in bays during winter and spring, sometimes in sizable schools. One of the most abundant species in the catch of pier anglers in southern and central California.

29.



29. TOPSMELT, smelt, *Atherinops affinis* (Ayres). DISTRIBUTION: Gulf of California, Mexico, to Vancouver Island, British Columbia. SIZE: Length to about 14 inches (36 cm); average weight about ¼ pound (0.1 kg). COLOR: Bluish gray to bright green above, silvery below; metallic band edged above with blue or purple extends length of body. □ Frequents the same general areas and habitats as the jacksmelt. Fairly common in pier catches along the central California coast. Distinguished from the jacksmelt by placement of the first dorsal fin, which is located farther back, the last rays being opposite the origin of the anal fin.

30.

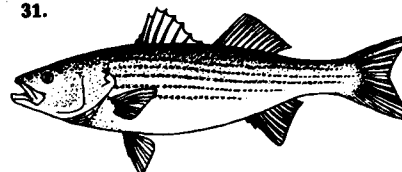


30. CALIFORNIA GRUNION, *Leuresthes tenuis* (Ayres). DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to San Francisco Bay, Calif. SIZE: Length to

about 7 inches (18 cm); average weight to about ¼ pound (0.1 kg) or less. COLOR: Bluish green above, silver below; a lateral metallic band tinged with blue and bordered above with violet extends length of body. □ A southern California fish, not common north of Point Conception. Tends to range along sandy shoreline, usually in water less than 50 feet (15.2 m) deep. Best beaches for catching grunion are from Los Angeles south to Mexico. Spawns from March through August. Beaches itself between waves to spawn at night during high tides following the first three to four nights after the full and the dark of the moon.

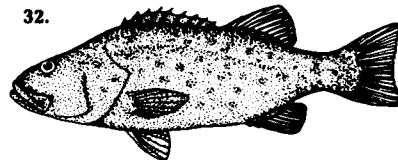
#### PERCICHTHYIDAE: TEMPERATE BASSES

31.



31. STRIPED BASS, striper, rock bass, *Morone saxatilis* (Walbaum). DISTRIBUTION: Descanso Point, Baja California, Mexico to Barkley Sound, British Columbia. SIZE: Reported up to 6 feet (183 cm) and 125 pounds (56.7 kg) in the Atlantic. All-tackle record (Cuttyhunk, Mass.) is 72 pounds (32.7 kg), with a length of 54½ inches (138 cm). In the Pacific, reported to reach about 4 feet (122 cm) and 90 pounds (40.8 kg); average catch is less than 10 pounds (4.5 kg). COLOR: Brownish green above; silvery on sides and belly; seven or eight lateral stripes. □ Best fishing areas are in San Francisco Bay and the Sacramento-San Joaquin River Delta area where it was introduced from the east coast in 1879. Other good fishing spots are found at Coos Bay, Oreg., where a separate population has established itself. This species sometimes ranges south and north along the coast from San Francisco in summer during years of high sea surface temperatures, and is taken by surf anglers as far south as Monterey Bay (occasionally Morro Bay) and north to the Russian River. Migrates from bays and upper tidal areas into river systems to spawn, usually in April and May.

32.

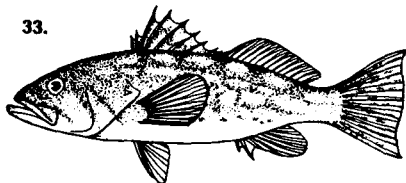


32. GIANT SEA BASS, black sea bass, *Stereolepis gigas* Ayres. DISTRIBUTION: Gulf of California, Mexico, to Humboldt Bay, Calif. SIZE: Recorded up to over 500 pounds (226.8 kg) and over 7 feet (213 cm) long. All-tackle record for the Pacific (Anacapa Island, Calif.) is 568¼ pounds (258.0 kg), with a length of 7 feet 5 inches (226.1 cm). Some live to a very old age; a 435-pound (197.3-kg) fish was determined to be between 72 and 75 years old. COLOR: Dark brown to gray with blackish

hue above becoming lighter below; juveniles have dark spots on sides. □ In recent years the population level of this species is much reduced in southern California. Best fishing is found about Anacapa Island and near kelp beds from La Jolla, Calif., south along Baja California, Mexico, and in the Gulf of California. Large fish prefer rocky bottom, just outside kelp beds and along drop offs in water 115 to 150 feet (35.1-45.7 m) deep. Small fish can be found over sandy areas around and in the kelp in shallower water of about 40 to 70 feet (12.2-21.3 m) deep.

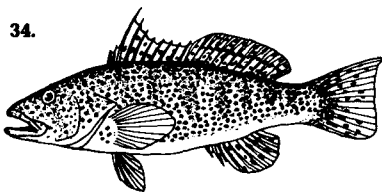
#### SERRANIDAE: SEA BASSES

33.



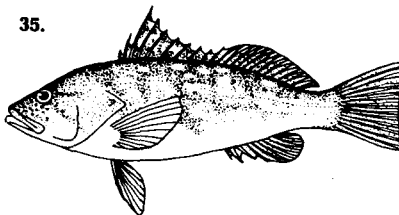
33. KELP BASS, calico bass, bull bass, *Paralabrax clathratus* (Girard). DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to Columbia River. SIZE: Greatest weight recorded is 14½ pounds (6.6 kg) and a length to 28 inches (71 cm). They are reported to attain an age of 20 years or more. COLOR: Olive or brownish above with sides mottled with angular lighter shaded areas, becoming silvery below; belly and fins tinged with yellow. □ Common from Point Conception, Calif., to Baja California, Mexico, in coastal kelp beds. A major game species about kelp beds in southern California and a good food fish. Nonmigratory, spawning April through the fall in and near kelp over rough bottom. Distinguished from the barred sand bass in that the third, fourth, and fifth dorsal spines are about the same length, whereas the third dorsal spine of the barred sand bass is much longer than the other spines.

34.



34. SPOTTED SAND BASS, *Paralabrax maculatofasciatus* (Steindachner). DISTRIBUTION: Gulf of California and Mazatlán, Mexico, to Monterey Bay, Calif. SIZE: Length to about 22 inches (56 cm). COLOR: Greenish to olive brown above, becoming white below, with black spots on body and fins. □ A sandy-shore and near-offshore species in southern California. Commonly caught in bays and around harbor entrances.

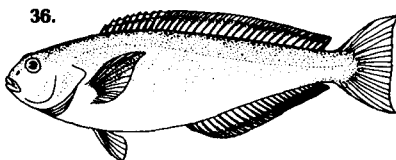
35.



35. BARRED SAND BASS, sand bass, sugar bass, ground bass, *Paralabrax nebulifer* (Girard). DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to Santa Cruz, Calif. SIZE: Length to about 25½ inches (65 cm). COLOR: Dark gray to greenish brown on back, with vertical irregular dusky bands; paler below; golden-brown spots on cheeks and snout. □ Distinguished from the kelp bass by the long third dorsal spine. Commonly caught over nearshore sandy bottom flats, in bays, and near kelp beds and rocky areas in southern California. Best catches are during summer.

#### BRANCHIOSTEGIDAE: TILEFISHES

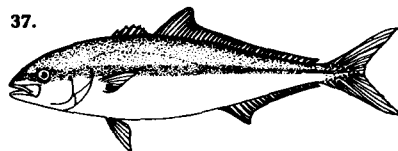
36.



36. OCEAN WHITEFISH, whiting, blanquillo, *Caulolatilus princeps* (Jenyns). DISTRIBUTION: Peru to Vancouver Island, British Columbia. SIZE: Weights recorded up to 12 pounds (5.4 kg); however, 3 to 5 pounds (1.4-2.3 kg) is normal. COLOR: Rich brown to yellowish on back becoming lighter below with light spots on sides; yellow edging on fins; dorsal and anal fins with blue stripe; pectoral bluish with yellow stripe. □ Frequently caught from Point Conception, Calif., south to off Mexico. Usual depths of fishing are from 30 to 300 feet (9.1-91.4 m) over rocky bottom. Good fishing around southern California islands and offshore banks such as Cortez and Tanner banks. Best fishing is spring through fall.

#### CARANGIDAE: JACKS AND POMPANOS

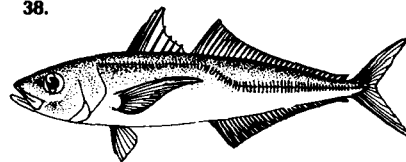
37.



37. YELLOWTAIL, juarel, white salmon, amberjack, *Seriola dorsalis* (Gill). DISTRIBUTION: Chile to southern Washington. SIZE: Usual weight about 10 to 20 pounds (4.5-9.1 kg); record fish in the California-Mexico area reported to about 5 feet (152 cm) long weighing 80 pounds (36.3 kg). All-tackle record for the Pacific (Bay of Islands, New Zealand) is 111 pounds (50.3 kg) and 62 inches (157.5 cm) long. COLOR: Bright metallic blue to brownish green above, yellow lateral stripe from eye to

yellow tail; white below. □ A major sport species in southern California, frequently taken at the Coronado Islands and off Baja California, Mexico, as well as around Catalina Island and around kelp beds off San Diego north along the coast to the Santa Barbara Channel Islands. It is a migratory pelagic species, occurring during summer and early fall in southern California.

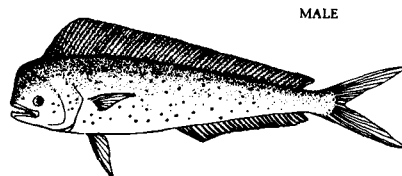
38.



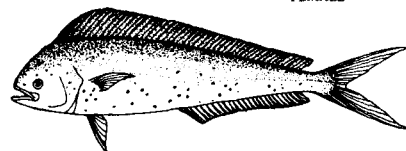
38. JACK MACKEREL, Spanish mackerel, horse mackerel, saurel, *Trachurus symmetricus* (Ayres). DISTRIBUTION: Baja California, Mexico, to southeastern Alaska, and offshore out to 500 miles. SIZE: Length usually to about 1 foot (30 cm); reported to 32 inches (81 cm). COLOR: Iridescent bluish green, mottled on back becoming lighter on sides and fading to silvery below. □ A major commercial species and an important sport fish in southern California. Frequently taken from sport boats and sometimes from jetties and piers in southern California. In its northern range it is sometimes taken from piers. Best fishing is July through September.

#### CORYPHAENIDAE: DOLPHINS

39.



MALE

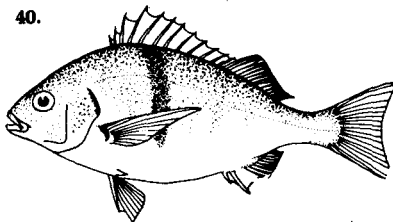


FEMALE

39. DOLPHIN, mahimahi, dorado, *Coryphaena hippurus* Linnaeus. DISTRIBUTION: Tropical and temperate seas. Recorded off the west coast from Chile north to off Grays Harbor, Wash. SIZE: All-tackle record for the Atlantic (Spanish Wells, Bahama Islands) is 85 pounds (38.6 kg) and 69 inches long (175.3 cm). In the Pacific, weight reported to 45 pounds (20.4 kg) and length to 6 feet (183 cm). COLOR: Brilliant blue or blue green above; sides bright golden yellow spotted with bright blue and white-green spots; white below. When dying, this fish will flash many rapidly changing colors. □ During some years having warmer water they are taken in fair numbers while surface trolling for striped marlin off San Diego, Calif. A brilliantly colored fish and an excellent fighter.

## POMADASYIDAE: GRUNTS

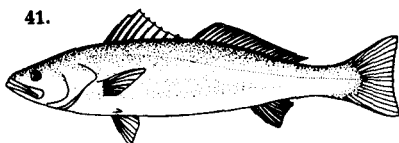
40.



40. SARGO, china croaker, *Anisotremus davidsoni* (Steindachner). **DISTRIBUTION:** Gulf of California, Mexico, to Santa Cruz, Calif., rare north of Point Conception, Calif. **SIZE:** Reported to attain 23 inches (58 cm) and 4 pounds (1.8 kg); however, most angler-caught sargo are much smaller than this. **COLOR:** Silver with grayish tinge on back; edge of gill cover black; dark spot on base of fin; vertical bar extending down from middorsal fin area. ☐ Found nearshore and in bays, common to shallow waters with rocky bottom, or about piers. Best fishing during summer.

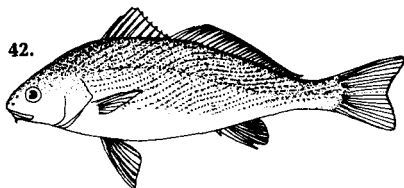
## SCIAENIDAE: DRUMS

41.



41. WHITE SEABASS, Catalina salmon, seatrout, croaker, *Cynoscion nobilis* (Ayres). **DISTRIBUTION:** Magdalena Bay, Baja California, Mexico, to Juneau, Alaska. **SIZE:** Length to 5 feet 5½ inches (166.4 cm) and weight of 83¼ pounds (38.0 kg)—an all-tackle record for a fish caught near San Felipe, Mexico. Average catch is 5 to 25 pounds (2.3-11.3 kg). **COLOR:** Steel blue to gray above with gold highlights, silvery below. Young have several dark vertical bars. ☐ A prized game fish and excellent food species. Caught along the coast northward from Baja California, Mexico, to central California. Most are caught near the mainland shore over sandy bottom or around the edges of kelp beds; also near the kelp beds about Catalina and San Clemente islands. Young white seabass are commonly taken close to shore in southern California.

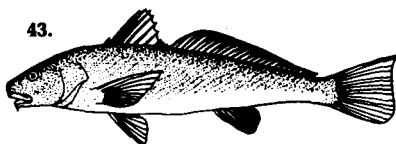
42.



42. YELLOWFIN CROAKER, Catalina croaker, *Umbrina roncadore* Jordan and Gilbert. **DISTRIBUTION:** Gulf of California, Mexico, to Point Conception, Calif. **SIZE:** Length recorded to about 18 inches (46 cm) and up to 3 pounds (1.4 kg). **COLOR:** Gray to iridescent blue, sometimes metallic green with a brassy luster above, shading to silvery white below; wavy lines on sides

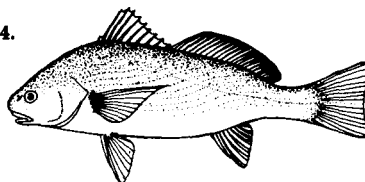
deep olive; fins mostly yellow. ☐ Usually caught in shallow water over sandy bottom in the surf zone, and in bays and sloughs. It is a migratory species, and best fishing is in late summer, especially at Newport Beach and San Onofre, Calif.

43.



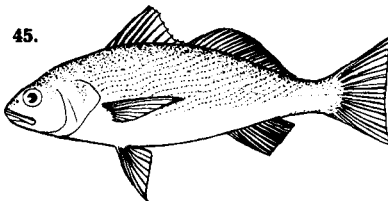
43. CALIFORNIA CORBINA, corvina, California whiting, surfhake, *Menticirrhus undulatus* (Girard). **DISTRIBUTION:** Gulf of California, Mexico, to Point Conception, Calif. **SIZE:** Reaches a length of about 2½ feet (76 cm) or more and is reported to reach a weight of 8 pounds (3.6 kg). **COLOR:** Gray to steel blue with silvery luster on back, paling to white below; sometimes has a wavy diagonal line on sides. ☐ The corbina is a surf-zone species common from Point Conception south along sandy shores. The area from Long Beach (Belmont Shores) to San Diego is reported to have the best fishing. Corbina are found inshore during summer and are believed to range into deeper water during winter. Best fishing is July to October. An excellent food species.

44.



44. SPOTFIN CROAKER, golden croaker, *Roncadore stearnsi* (Steindachner). **DISTRIBUTION:** Mazatlan, Mexico, to Point Conception, Calif. **SIZE:** Reported to reach a length of at least 27 inches (69 cm) and a weight of 10½ pounds (4.8 kg). **COLOR:** Silver gray with bluish luster above, becoming white below; dark spot at base of pectoral fin. ☐ This species is common south of the San Pedro-Long Beach, Calif., area and is fished along sandy beaches and in bays. Known to congregate in "holes" outside the surf zone. Spawns offshore in summer and tends to be a coastal migratory species. Late summer is best time for fishing.

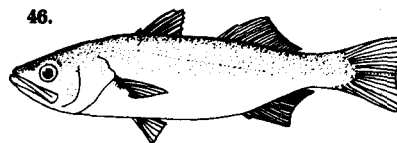
45.



45. WHITE CROAKER, kingfish, tomcod, roncky, *Genyonemus lineatus* (Ayres). **DISTRIBUTION:** Magdalena Bay, Baja California, Mexico, to Vancouver Island, British Columbia. **SIZE:** Average weight of angler catch is usually less than 1 pound (0.5 kg). Largest recorded size was 15½ inches (39 cm) and about 1½ pounds (0.7

kg). **COLOR:** Silver with a brownish brassy luster above, becoming lighter below; fins yellowish (except pelvics). ☐ Abundant in shallow bays and lagoons from San Francisco, Calif., south. Also taken in and just outside the surf zone over sandy bottom, usually at depths of 10 to 60 feet (3.0-18.3 m); seldom caught at depths over 200 feet (61.0 m). Good food fish though small in size.

46.

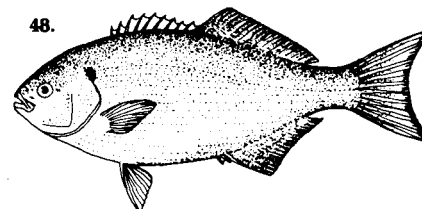


46. QUEENFISH, herring, *Seriphus politus* Ayres. **DISTRIBUTION:** Off Magdalena Bay, Baja California, Mexico, to Yaquina Bay, Oreg. Rare north of Monterey, Calif. **SIZE:** Reaches a length of 1 foot (30 cm). **COLOR:** Bluish above, silvery below; fins yellowish. ☐ Known to occur in schools in shallow-water areas over sandy bottom. Common in bays and sloughs. Not a particularly desirable sport species; however, it provides considerable recreation to the southern California angler.

47. BLACK CROAKER, black bass, blue bass, china croaker, *Cheilotrema saturnum* (Girard). **DISTRIBUTION:** Magdalena Bay, Baja California, Mexico, to Point Conception, Calif. **SIZE:** Length to about 15 inches (38 cm). **COLOR:** Adults are bluish or dusky black with a coppery sheen above; silver below with dark specks; gill cover edged with black; pelvic fins black. ☐ Somewhat rare and taken only irregularly by southern California anglers.

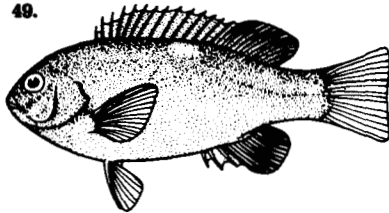
## KYPHOSIDAE: SEA CHUBS

48.



48. HALFMOON, Catalina perch, blue perch, *Medialuna californiensis* (Steindachner). **DISTRIBUTION:** Gulf of California, Mexico to Klamath River, Calif. **SIZE:** Maximum recorded length is 19 inches (48 cm) with a weight to near 5 pounds (2.3 kg), although the usual catch is much smaller in size. **COLOR:** Slate colored to dark blue above, becoming paler blue and mottled on sides and below. ☐ A popular fish with the rocky shore angler. Best fishing is along the coast of southern California and about its offshore islands. Common to rocky shores and kelp beds. Best depths for fishing are from near the surface to 100 feet (30.5 m).

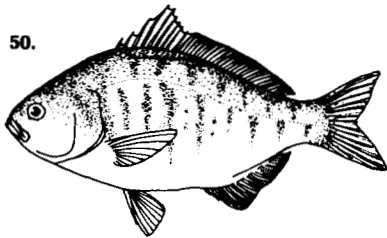
49.



49. OPALEYE, blue-eye perch, black perch, button perch, Catalina perch, blue bass, blacksmith, *Girella nigricans* (Ayres). DISTRIBUTION: Cape San Lucas, Baja California, Mexico, to San Francisco, Calif. SIZE: Record size reported to be about 25¼ inches (64 cm) and weight to 13½ pounds (6.1 kg); average size is less than 4 pounds (1.8 kg). COLOR: Greenish blue to olive above, becoming paler below; eye opalescent blue green; young with one or two white spots on back at base of dorsal fin. □ Best fishing areas are south of Point Conception, Calif., near rocky areas located near kelp beds. Common from the surface to about 60 to 100 feet (18.3-30.5 m) below the surface. Spawns during April, May, and June.

#### EMBIOTOCIDAE: SURFPERCHES

50.



50. REDTAIL SURFPERCH, porgy, *Amphistichus rhodotus* (Agassiz). DISTRIBUTION: Monterey Bay, Calif., to Vancouver Island, British Columbia. SIZE: Length reported up to 16 inches (41 cm). COLOR: Light olive green above, silver sides and belly; orange to brassy bars alternating across lateral line; light red to purple caudal, anal, and pelvic fins. □ Primarily a sandy-shore species, abundant in the surf zone from northern California northward. Best catches around the mouths of streams and during spring. Sometimes taken from piers and jetties near inlets.

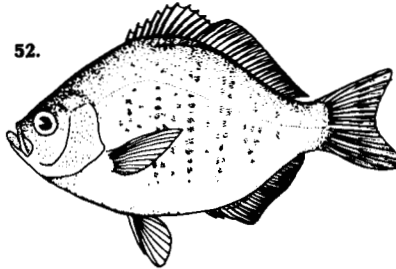
51.



51. BARRED SURFPERCH, *Amphistichus argenteus* Agassiz. DISTRIBUTION: Playa Maria Bay, Baja California, Mexico, to Bodega Bay, Calif. SIZE: Usual size caught by the angler is 1 to 2 pounds (0.5-0.9 kg) with a record catch of 17 inches (43 cm) and 4¼ pounds (2.0 kg). COLOR: Olive green to yellow green on back, silvery below; vertical bars on sides with intermittent spots. □ The major surf species

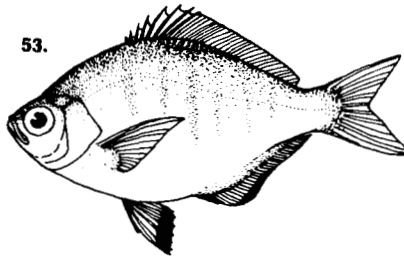
in southern California; most abundant along the coast from Morro Bay, Calif., south into Mexico. A very important game fish in the sandy surf zone where it congregates in bottom depressions. Shore fishing is best from December to March.

52.



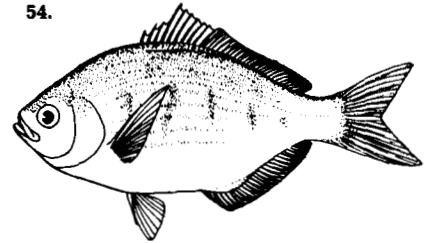
52. CALICO SURFPERCH, *Amphistichus koelzi* (Hubbs). DISTRIBUTION: Northern Baja California, Mexico, to Shi Shi Beach, Wash. SIZE: Average weight is near 1 pound (0.5 kg); maximum recorded length is over 11 inches (28 cm). COLOR: Light olive above, fading to silver below; brownish specks forming irregular crossbars; sometimes brassy luster on head and belly. □ Common in central California from Morro Bay to the San Francisco area. Beaches in the Monterey Bay area are reported to offer excellent fishing for this species. Caught in the sandy surf zone and frequently appears in the pier catch.

53.



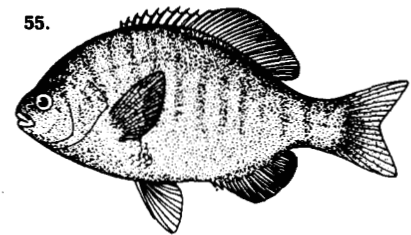
53. WALLEYE SURFPERCH, *Hyperprosopon argenteum* Gibbons. DISTRIBUTION: Point San Rosarito, Baja California, Mexico, to Vancouver Island, British Columbia. SIZE: Usual length is from 4 to 6 inches (10-15 cm) with a record length of about 12 inches (30 cm). Average weight is a little over ¼ pound (0.1 kg). COLOR: Metallic gray above fading to silver on sides and belly; dusky bars sometimes present on sides; usually identified by its large eyes and black-tipped pelvic fins. □ Found mostly over sandy bottom near rocky areas. Probably the most abundant surfperch common to the open rocky coast and in bays. A shallow-water species and a dominant one in pier catches.

54.



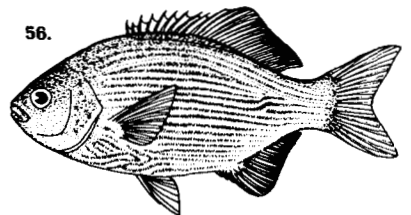
54. SILVER SURFPERCH, silver perch, *Hyperprosopon ellipticum* (Gibbons). DISTRIBUTION: Rio San Vicente, Baja California, Mexico, to Vancouver Island, British Columbia. SIZE: Reaches a maximum length of about 10¼ inches (27 cm). Most catches are much smaller and average weight is about one-tenth of 1 pound (0.05 kg). COLOR: Metallic dark gray above, silver on sides and belly; dusky bars on sides; tail usually pink. □ This small surfperch is another sandy-shore species taken by surf anglers. Similar in appearance to the walleye surfperch; however, it does not have black-tipped pelvic fins.

55.



55. BLACK SURFPERCH, black perch, bay perch, *Embiotoca jacksoni* Agassiz. DISTRIBUTION: Point Abreojos, Baja California, Mexico, to Fort Bragg, Calif. SIZE: Usual weight about ¼ pound (0.3 kg); known to reach a length of 15¼ inches (39 cm). COLOR: Variable, dark olive green to light reddish brown sometimes tinged with red or yellow; occasionally with blue stripes formed by small blue crescents in the middle of each scale; anal and pelvic fins often reddish orange. □ Common to rocky coasts near kelp areas; also found around piers, pilings, and in coastal bays. A shallow-water species, only rarely taken in sandy surf.

56.

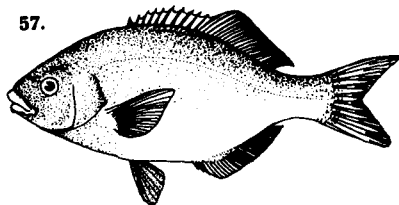


56. STRIPED SURFPERCH, *Embiotoca lateralis* Agassiz. DISTRIBUTION: Point Cabras, Baja California, Mexico, to Port Wrangel, Alaska. SIZE: Average weight little over 1 pound (0.5 kg); maximum length recorded 15 inches (38 cm). COLOR: Red, blue, and yellow stripes along scale rows over coppery background on body; head with blue spots and stripes; pelvic fins dusky. □ This colorful surfperch is commonly caught around rocky shores, near pilings, or bulkheads in bays; frequently



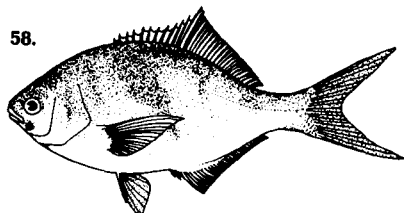
found in kelp bed areas. An important sport species along the northern California, Oregon, Washington, and British Columbia coasts.

57.



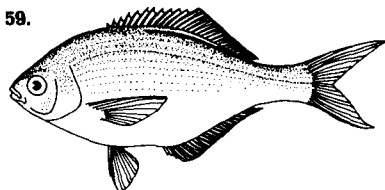
57. RUBBERLIP SURFPERCH, *Rhacochilus toxotes* Agassiz. DISTRIBUTION: Turtle Bay, Baja California, Mexico, to Russian Gulch, Calif. SIZE: Length recorded to 18½ inches (47 cm). COLOR: Variable, often brown to dusky blue above, shading to tanish silver on belly, fins dark except for pectorals, which are often pale orange or yellow; lips are a distinctive light pink. □ An excellent food species, and one of the more desirable of the surfperches. Central and southern California are the best fishing areas. Found near rocky areas and in bays around pilings or other underwater structures.

58.



58. PILE SURFPERCH, *Damalichthys vocca* (Girard). DISTRIBUTION: Guadalupe Island, Baja California, Mexico, to Port Wrangel, Alaska. SIZE: Average weight is about 1¼ pounds (0.6 kg); maximum recorded length is slightly over 17 inches (43 cm). COLOR: Variable, from brown to gray black above, silvery to dusky on sides; dark vertical bar on midbody; fins dusky tipped. □ This species is common, as its name indicates, to pilings, piers, and other shallow-water obstructions in coastal bays. Sometimes it is taken from kelp areas and near rocky shores. Best fishing areas are found north of Point Conception to Vancouver Island, British Columbia.

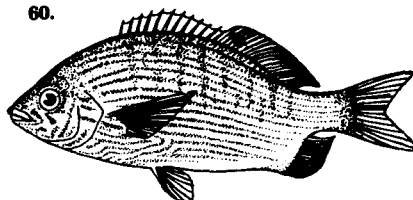
59.



59. WHITE SURFPERCH, *Phanerodon furcatus* Girard. DISTRIBUTION: Point Cabras, Baja California, Mexico, to Vancouver Island, British Columbia. SIZE: Length up to 1 foot (30 cm); average weight about ¼ pound (0.2 kg). COLOR: Silvery with dusky speckling on back, sometimes with a rosy-orange luster; fins yellowish white with dusky edge on tail fin; black line along base of soft dorsal fin. □ Common to

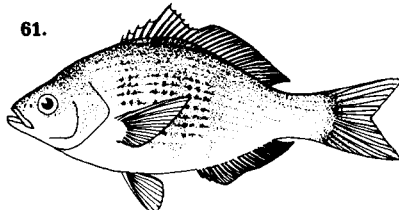
central and southern California and is usually caught from piers in bays, or off jetties at harbor entrances, generally over sandy bottom.

60.



60. RAINBOW SURFPERCH, *Hypsurus caryi* (Agassiz). DISTRIBUTION: Santo Tomas, Baja California, Mexico, to Cape Mendocino, Calif. SIZE: Average weight about ½ pound (0.2 kg); known to reach a length of 16 inches (41 cm). COLOR: Vivid horizontal stripes of red, orange, and blue on sides; irregular streaks of sky blue and orange on head; pelvic fins bright blue and red orange. □ Found in rocky areas along the open coast and in bays in California. Few are caught south of the Los Angeles area. Similar to black perch in that they are rarely caught in sandy surf areas.

61.



61. SHINER SURFPERCH, yellow shiner, *Cymatogaster aggregata* Gibbons. DISTRIBUTION: San Quintin Bay, Baja California, Mexico to Port Wrangel, Alaska. SIZE: Usually less than 4 inches (10 cm) long. Maximum weight about ½ pound (0.2 kg); length about 8 inches (20 cm). COLOR: Dusky back with sides and belly silver; three vertical yellow bars below lateral line. □ Abundant and one of the most easily caught surfperch. Ranges from nearshore to depths of over 200 feet (61 m); more common to shallow inshore areas around piers and pilings and near eel grass sloughs.

#### SURFPERCHES OF LESS IMPORTANCE TO THE MARINE ANGLER:

62. KELP SURFPERCH, *Brachyistius frenatus* Gill. DISTRIBUTION: Turtle Bay, Baja California, Mexico, to Vancouver Island, British Columbia. SIZE: Length about 8½ inches (22 cm). COLOR: Golden brown to reddish brown on back, becoming copper red below; fins light red. □ A minor game species, found off rocky coasts in kelp beds.

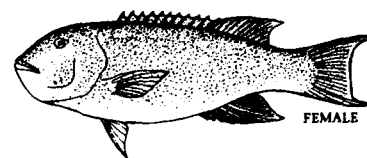
63. SPOTFIN SURFPERCH, *Hyperprosopon anale* Agassiz. DISTRIBUTION: Blanca Bay, Baja California, Mexico, to Seal Rock, Oreg. SIZE: Length to 6 inches (15 cm). COLOR: Body silver with dusky color on back; two large black spots on dorsal and anal fins. □ Taken occasionally by anglers, but generally of minor importance.

64. SHARPNOSE SURFPERCH, *Phanerodon atripes* (Jordan and Gilbert). DISTRIBUTION: San Benito Island, Baja California, Mexico, to Bodega Bay, Calif. SIZE: Length to 12¼ inches (32 cm). COLOR: Silvery with dusky speckling on back; thin black line at base of soft dorsal fin; pelvic fins white. □ Similar in appearance to the white surfperch.

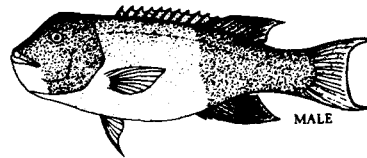
65. PINK SURFPERCH, *Zalemmbius rosaceus* (Jordan and Gilbert). DISTRIBUTION: San Cristobal Bay, Baja California, Mexico, to central California. SIZE: Length is reported to be to 8 inches (20 cm). COLOR: Distinguished by its rosy-red coloration; pink brown on upper body; two brown spots under the dorsal fin. □ A deepwater species (30-300 feet or 9.1-91.4 m).

#### LABRIDAE: WRASSES

66.



FEMALE



MALE

66. CALIFORNIA SHEEPHEAD, redfish, humpy, fathead, *Pimelometopon pulchrum* (Ayres). DISTRIBUTION: Gulf of California, Mexico, to Monterey Bay, Calif.; uncommon north of Point Conception, Calif. SIZE: Length to about 3 feet (91 cm) and weight up to 36¼ pounds (16.4 kg). COLOR: Adult males have a black head and tail and a red band on the midsection; chin is white on both sexes. Adult females are dull red or brownish red. □ Best fishing is in coastal kelp beds and about the offshore islands south of Point Conception at depths of 50 to 100 feet (15.2-30.5 m). A fatty hump develops on the male's forehead during breeding season.

#### WRASSES OF LESS IMPORTANCE TO THE MARINE ANGLER:

67. ROCK WRASSE, *Halichoeres semicinctus* (Ayres). DISTRIBUTION: Gulf of California, Mexico, to Point Conception, Calif. SIZE: Length reported up to 5 inches (13 cm). COLOR: Greenish brown; dusky vertical bars; male with dark-blue bar under pectoral fin. □ Found over rocky bottom, but is of minor importance to sport anglers, if not undesirable, due to its habit of snatching bait from the hook.

68. SEÑORITA, *Oxyjulis californica* (Günther). DISTRIBUTION: Central Baja California, Mexico, to central California. SIZE: Length to 10 inches (25 cm). COLOR: Reddish orange above, yellow below; black area on caudal fin base. □ A long slender wrasse, very

abundant within its range, but like the rock wrasse, is considered a pest because it often steals bait intended for more desirable species.

#### SPHYRAENIDAE: BARRACUDAS

69.



69. PACIFIC BARRACUDA, California barracuda, scooter, barry, *Sphyræna argentea* Girard. DISTRIBUTION: Cape San Lucas, Baja California, Mexico, to Kodiak Island, Alaska; however, it is not common north of Point Conception, Calif. SIZE: Record weight is reported to be about 18 pounds (8.2 kg), and a length of about 4 feet (122 cm). COLOR: Grayish black with a blue tinge on back, and silvery or white on sides and belly; tail yellowish. □ A major game species in southern California, and sometimes caught farther north off Avila, Calif., in summer. Usually caught by trolling or casting live bait near the mainland coast or about the southern California islands. Summer is the best fishing season. Young fish are usually found closer to shore than the adults.

#### STICHAEIDAE: PRICKLEBACKS

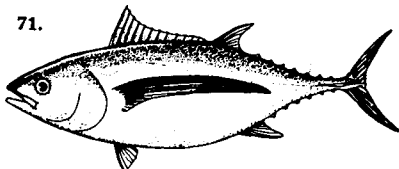
70.



70. MONKEYFACE PRICKLEBACK, monkeyface eel, blenny eel, *Cebidichthys violaceus* (Girard). DISTRIBUTION: San Quintin Bay, Baja California, Mexico, to Crescent City, Calif. SIZE: Length to 30 inches (76 cm). COLOR: Uniform dull black, sometimes with reddish spots on sides; two dark bars below eye. □ Common in rocky intertidal areas out to 80 feet (24.4 m), inhabiting deep rocky pools between the tide lines in crevices or holes in the rocks. Algae seems to be its primary food, although it also will take shrimp and other marine invertebrates. Most are caught by poke-polers—anglers who poke a baited hook into tide-pool crevices during low tide.

#### SCOMBRIDAE: MACKERELS AND TUNAS

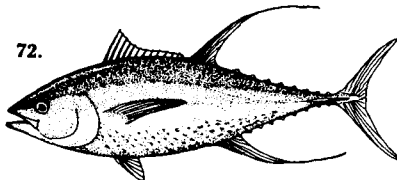
71.



71. ALBACORE, longfin tuna, *Thunnus alalunga* (Bonnaterre). DISTRIBUTION: Temperate waters of the Atlantic Ocean; in the Pacific Ocean, from Gualalupe Island, Baja California, Mexico, to southeast

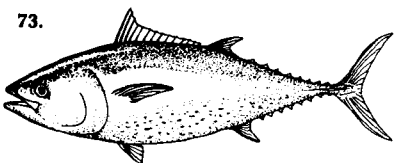
Alaska. SIZE: Reported to reach a length of 5 feet (152 cm) and a weight of 93 pounds (42.2 kg). A record sport-caught fish off California coast was reported to weigh 66¼ pounds (30.0 kg). All-tackle record for a fish caught off Cape Point, South Africa, weighed 70 pounds (31.8 kg) with a length of 50½ inches (128.3 cm). COLOR: Dark steel blue or gray blue on back becoming silver gray on sides and belly; narrow-white border on caudal fin. □ Best sport fishing is July through September (August best) offshore in southern California. Some sport anglers fish for albacore off central and northern California and Oregon in August and September. Albacore is a migratory pelagic species that tends to inhabit the clearer offshore California Current waters that lie outside the greenish-colored nearshore coastal waters.

72.



72. YELLOWFIN TUNA, Allison tuna, *Thunnus albacares* (Bonnaterre). DISTRIBUTION: Cosmopolitan in tropical and subtropical seas, Hawaiian Islands, eastern Pacific from Chile to Point Buchon, Calif. SIZE: Reported to 450 pounds (204.1 kg); however, catches are rarely over 125 pounds (56.7 kg). All-tackle record in the Pacific (San Benedicto Island, Mexico) is 308 pounds (139.7 kg), with a length of 84 inches (213.4 cm). COLOR: Dark metallic blue above, fading into silver gray below; iridescent yellow band running from head to tail. Fins lengthen with age and are tinged with yellow. Irregular white dots form bars on belly of younger fish. □ This species rarely enters the sport fishery off southern California in the summer, and then only during years having very high sea surface temperatures. Although not often caught off southern California, it is much sought after by U.S. anglers off the coast of Mexico.

73.



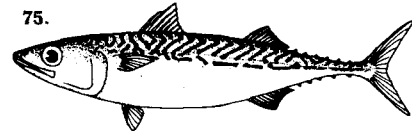
73. BLUEFIN TUNA, *Thunnus thynnus orientalis* (Temminck and Schlegel). DISTRIBUTION: In the eastern Pacific from Peru to Shelikof Straits, Alaska, and west to Asia (Kuril Islands). SIZE: Recorded weight to 297 pounds (134.7 kg) in Pacific; however, most angler-caught bluefin are in the range of 10 to 40 pounds (4.5-18.1 kg). COLOR: Deep blue above, silvery on sides and white below; irregular white spots on belly. □ Excellent game species, sometimes taken off southern California in summer, though not in great numbers. A pelagic schooling species, with popular fishing areas off Santa Monica Bay and Oceanside, Calif., and about Catalina, San Clemente, and the Coronado islands.

74.



74. PACIFIC BONITO, bonehead, *Sarda chiliensis lineolata* (Girard). DISTRIBUTION: Baja California to Gulf of Alaska. SIZE: Reported to reach a weight of 25 pounds (11.3 kg) and a length of 40 inches (102 cm); however, the usual weight of sport-caught bonito is 1 to 4 pounds (1.8 kg and under). COLOR: Metallic blue green to violet on back, fading to silver on sides and below; dark oblique stripes on back. □ A pelagic migratory schooling species commonly caught by trolling and live bait casting off southern California during summer and fall. Trolling is best off kelp beds and along the coast from Point Dume to La Jolla, Calif., and about Catalina, San Clemente, and the Coronado islands. Successful fishing depends on higher sea temperatures off southern California.

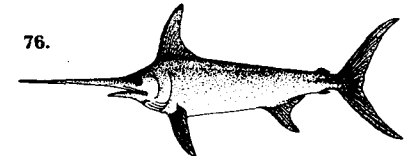
75.



75. CHUB MACKEREL, Pacific mackerel, zebra, greenback, striped mackerel, *Scomber japonicus* Houttuyn. DISTRIBUTION: Chile to the Gulf of Alaska and transpacific. SIZE: Average size of fish caught by anglers is about 1 pound (0.5 kg). The record length is reported to be 25 inches (64 cm) and a weight of near 6½ pounds (2.9 kg). COLOR: Dark green to blue above with dark wavy bars on back, shading into iridescent silvery on sides. □ A pelagic schooling species commonly caught near the coast off southern California. Fishing is good all year when abundant; however, the Pacific mackerel resource is now at a low level and catches are reduced. Best fishing is in summer and fall.

#### XIPHIIDAE: SWORDFISHES

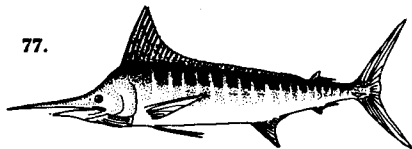
76.



76. SWORDFISH, broadbill, *Xiphias gladius* Linnaeus. DISTRIBUTION: Worldwide in warm seas; from Chile to Oregon in the eastern Pacific. SIZE: The weight of most swordfish caught off southern California by anglers is within the range of 150 to 300 pounds (68.1-136.1 kg). All-tackle record in the Pacific (Iquique, Chile) is 1,182 pounds (536.2 kg) with a length of 14 feet 11 inches (454.8 cm). COLOR: Dark gray above, fading to silver gray or gray yellow on belly. □ In southern California, this excellent food fish is harpooned commercially and taken by

sport anglers during summer into fall by hook and line. It is usually associated with islands and banks, mouths of undersea canyons, and steep submarine ridges. Swordfishing is becoming a popular sport off southern California.

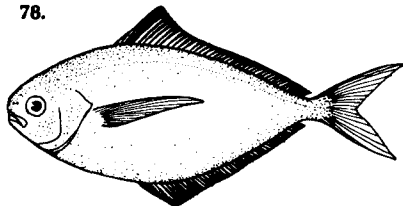
#### ISTIOPHORIDAE: BILLFISHES



77. **STRIPED MARLIN**, *Tetrapturus audax* (Philippi). **DISTRIBUTION**: Throughout the warmer waters of the Indian and Pacific oceans. In the eastern Pacific from Chile to Point Conception, Calif. **SIZE**: Known to reach a weight of 350 pounds (158.8 kg) and a length of 12 feet (366 cm). Average weight of fish caught off San Diego is 110 to 140 pounds (49.9-63.5 kg). All-tackle record in the Pacific (Cape Brett, New Zealand) is 394 pounds (178.7 kg) with a length of 134 inches (340.4 cm). **COLOR**: Dark purplish blue above, fading to silvery below; dorsal and anal fin cobalt blue; sides with light-blue stripes. □ This species is pelagic in habitat and is found throughout the tropical and subtropical Pacific. This is the major billfish species caught off southern California during summer and fall (mid-August to mid-September usually best). Caught by trolling baits or lures.

#### STROMATEIDAE: BUTTERFISHES

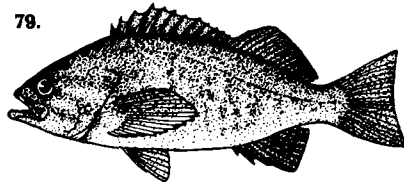
78.



78. **PACIFIC POMPAÑO**, butterfish, *Peprilus simillimus* (Ayres). **DISTRIBUTION**: Magdalena Bay, Baja California, Mexico, to the mouth of Fraser River, British Columbia. **SIZE**: Length to about 11 inches (28 cm). **COLOR**: Iridescent silver green on back, becoming silvery on sides and belly. □ Commonly caught off southern and central California throughout the year. Usually found over sandy bottom. Frequently caught in bays during late summer and fall, offshore in deeper water for the rest of the year. An excellent food species.

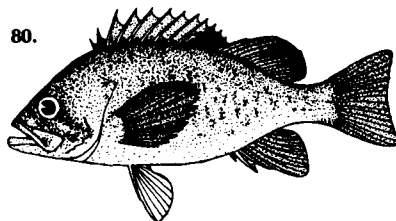
#### SCORPAENIDAE: SCORPIONFISHES

79.



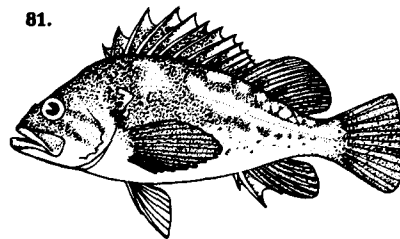
79. **BLUE ROCKFISH**, priestfish, bluefish, blue perch, *Sebastes mystinus* (Jordan and Gilbert). **DISTRIBUTION**: Point Santo Tomas, Baja California, Mexico, to Bering Sea, Alaska. **SIZE**: Record length is near 21 inches (53 cm); most catches are less than 15 inches (38 cm). **COLOR**: Dark blue above, shading to lighter below with light-blue mottling; fins uniformly blackish. Young are reddish up to 2½ inches (6 cm) long. □ Often confused with black rockfish, but distinguished by the slanted or straight anal fin, and absence of spots on dorsal fin. A shallow-water species usually found around rocky or kelp areas; however, they do range in depth to 200 or 300 feet (61.0-91.4 m). Best fishing from central California ports such as Morro Bay and Monterey Bay and north to off Oregon and Washington.

80.



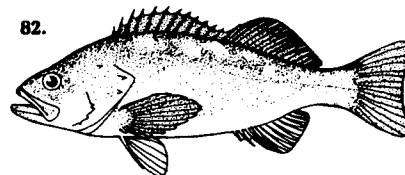
80. **BLACK ROCKFISH**, black snapper, black bass, bass rockfish, nero, cherna, *Sebastes melanops* Girard. **DISTRIBUTION**: Paradise Cove, Calif., to Amchitka Island, Alaska. **SIZE**: Usual weight of adults ranges to about 3 pounds (1.4 kg) and length is reported up to 23¾ inches (60 cm). **COLOR**: Black with gray mottling on sides shading to a white belly; black spots above the base of the spiny dorsal fin; fins dark gray. □ Often confused with the blue rockfish, but distinguished from it by the large mouth, rounded anal fin, and spots on dorsal fin. This species is abundant off northern California and Oregon, frequenting shallow-water reefs and commonly caught around kelp beds. It is sometimes taken by salmon trolling over deep offshore rocky areas.

81.



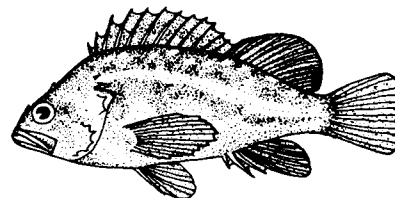
81. **COPPER ROCKFISH**, *Sebastes caurinus* Richardson. **DISTRIBUTION**: Monterey, Calif., to Kenai Peninsula, Alaska. **SIZE**: Record length reported to be about 22½ inches (57 cm). Average weight is about 2½ pounds (1.1 kg). **COLOR**: Dark olive or brown back with darker mottlings, all over a coppery-brown tinge with a pale stripe along lateral line of rear two-thirds of body. Very similar to the whitebelly rockfish, *Sebastes vexillaris*, which differs slightly in coloration and has a more southerly range (San Benito Islands, Baja California, north to Crescent City, Calif.). □ Young inhabit shallow water, adults deeper water. Common off the coast of northern California, Oregon, and Washington to the Strait of Georgia, British Columbia.

82.



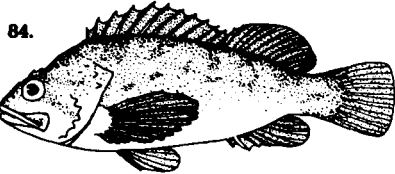
82. **OLIVE ROCKFISH**, kelp yellowtail, kelp salmon, bass rockfish, sugar bass, *Sebastes serranoides* (Eigenmann and Eigenmann). **DISTRIBUTION**: San Benito Islands, Baja California, Mexico, to Redding Rock, Calif. **SIZE**: Reported to reach a length of 24 inches (61 cm); usual length is 6 to 12 inches (15-30 cm) and weight is usually less than 2 pounds (0.9 kg). **COLOR**: Olive brown above, fading to lighter on belly; whitish blotches on back under dorsal fin. □ Common to shallow water (50-100 feet or 15.2-30.5 m) around kelp beds and rocky bottom areas. Good fishing from central California south. Best fishing is along the southern California coast and about the offshore islands. Often confused with the yellowtail rockfish and kelp bass; however, if the number of soft rays in the anal fin is nine (instead of six to eight) it is very probably an olive rockfish. See also kelp bass for differences in dorsal fin shape.

83.

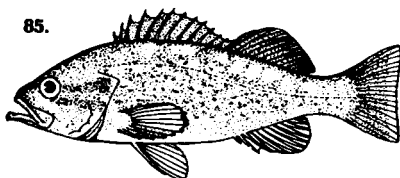


83. **KELP ROCKFISH**, gopher rockfish, garrupa, *Sebastes atrovirens* (Jordan and Gilbert). **DISTRIBUTION**: Point San Pablo, Baja California, Mexico, to Timber Cove, Calif. **SIZE**: Usual weight is about 1 pound

(0.5 kg); maximum length is reported to be near 17 inches (43 cm). COLOR: Mottled olive brown over lighter shades; throat yellow; head and body covered with dark speckles. □ As its name implies, this species is common around kelp beds and also found around rocky reefs. Younger fish are usually caught farther inshore in shallower water than the adults. Distinguished from the grass rockfish by the long gill rakers which are long and slender, not short and stubby as those of the grass rockfish.

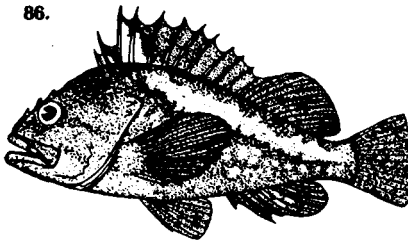


84. GRASS ROCKFISH, kelp rockfish, scomoda, *Sebastes rastrelliger* (Jordan and Gilbert). DISTRIBUTION: Playa Maria Bay, Baja California, Mexico, to Yaquina Bay, Oreg. SIZE: Weight is usually less than 2 pounds (0.9 kg), with a record length reported to be about 22 inches (56 cm). COLOR: Dark green with light-green mottling above with lighter green or brown below; fins olive green with pelvic and pectoral fins tipped with red. □ Sometimes confused with the kelp rockfish. (See kelp rockfish for distinguishing characters.) This species is taken along the coast in shallow waters with best fishing off central California southward along the coast. Commonly caught in waters of 100 feet (30.5 m) or less, over or near kelp beds or rocky areas. The young are frequently caught from piers.



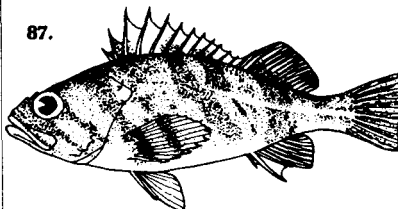
85. YELLOWTAIL ROCKFISH, green snapper, giolo, gialoto, cherne, yellowtail, *Sebastes flavidus* (Ayres). DISTRIBUTION: San Diego, Calif., to Kodiak Island, Alaska. SIZE: Average weight about 1½ to 2 pounds (0.7-0.9 kg); length reported to 26 inches (66 cm). COLOR: Mottled grayish brown above shading to white on belly; fins dusky yellow with tail fin tipped with bright yellow; tips of lower pectoral fin tinged with pink. □ Distinguished from olive rockfish by the eight soft rays in anal fin, and by presence of fine reddish-brown speckling on scales—olive rockfish almost always have nine soft anal rays and no speckling on sides. An important game fish species off the central California coast and to the north. Inhabits predominantly deepwater reefs.

86.



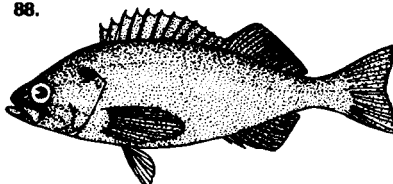
86. CHINA ROCKFISH, cefalutano, gopher, *Sebastes nebulosus* Ayres. DISTRIBUTION: San Miguel Island, Calif., north to southeastern Alaska. SIZE: Average weight about 2 pounds (0.9 kg); record length to 17 inches (43 cm). COLOR: Broad, bright yellowish stripe from dorsal fin area along lateral line on each side of blue-black body, with white spotting. □ Occurs nearshore and in water depths of 120 feet (36.6 m) or less. Caught over rocky bottom, sometimes in association with gopher, kelp, and grass rockfishes.

87.



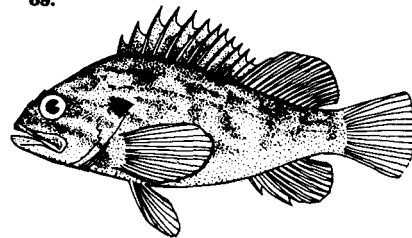
87. CALICO ROCKFISH, *Sebastes dalli* (Eigenmann and Beeson). DISTRIBUTION: Viscaño Bay, Baja California, Mexico, to San Francisco, Calif. SIZE: Usually small. Average weight 1¼ pounds (0.6 kg); maximum length 8 to 10 inches (20-25 cm). COLOR: Greenish yellow with irregular brown bars and blotches on sides forming oblique bars; brown spots and streaks on tail fin. □ Common to southern California, with some taken off central California. Occurs in water 60 to 840 feet (18.3-256.0 m) deep. This species, however, does not appear to be greatly abundant in any one area.

88.



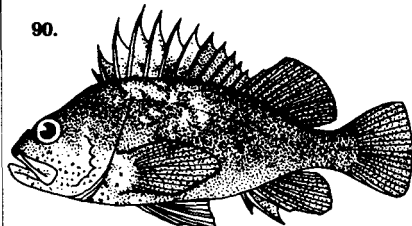
88. WIDOW ROCKFISH, viuva, *Sebastes entomelas* (Jordan and Gilbert). DISTRIBUTION: Todos Santos Bay, Baja California, Mexico, to Kodiak Island, Alaska. SIZE: Average weight is about 1½ pounds (0.7 kg), and record length is 21 inches (53 cm). COLOR: Uniform dusky brown with a yellow or brassy tinge on sides and sometimes reddish on belly. Young specimens have vague orange streaks. □ Usually taken from below 100 feet (30.5 m) over rocky or rough bottom; however, young are caught near surface. This is an important species in the Monterey Bay area.

89.



89. BROWN ROCKFISH, bolina, *Sebastes auriculatus* Girard. DISTRIBUTION: Central Baja California, Mexico, to southeastern Alaska. SIZE: Length to 21 inches (53 cm). COLOR: Brown with light-brown mottling; dusky pink on fins and lower part of head; dark brown blotch on gill cover. □ Common around wharf pilings and rocky areas in shallow water out to about 180 feet (54.9 m) from central California north, and fairly abundant in San Francisco Bay and Puget Sound.

90.



90. QUILLBACK ROCKFISH, orange-spotted rockfish, yellow-backed rockfish, brown rockfish, speckled rockfish, *Sebastes maliger* (Jordan and Gilbert). DISTRIBUTION: Point Sur, Calif., to Gulf of Alaska. SIZE: Length to 24 inches (61 cm). COLOR: Slate brown with yellow mottling on back and on dorsal fin; orange spotting on ventral surface. □ Common in the northern part of its range where it tends to frequent inlets and shallow-water rockpiles. Fairly abundant in Puget Sound.

#### BROWN ROCKFISHES OF LESS IMPORTANCE TO THE MARINE ANGLER:

91. SILVERGRAY ROCKFISH, *Sebastes brevispinis* (Bean). DISTRIBUTION: Santa Barbara, Calif., to Bering Sea. SIZE: Length to 28 inches (71 cm). COLOR: Dark gray above, silver gray on sides and white below; fins pinkish.

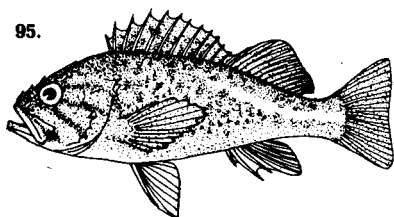
92. DUSKY ROCKFISH, *Sebastes ciliatus* (Tilesius). DISTRIBUTION: Gualalupe Island, Baja California, Mexico, to Point Conception, Calif. SIZE: Length to 16 inches (41 cm). COLOR: Gray brown with brown spots on dorsal area, becoming light gray below; brown streaks radiating from eye; fins pinkish.

93. GOPHER ROCKFISH, flesh-colored rockfish, *Sebastes carnatus* (Jordan and Gilbert). DISTRIBUTION: San Roque, Baja California, Mexico to Eureka, Calif. SIZE: Length to about 15½ inches (39 cm). COLOR: Olive brown with flesh-colored or whitish spotting and blotches.

94. SQUARESPOT ROCKFISH, smallmouth rockfish. *Sebastes hopkinsi* (Cramer). DISTRIBUTION: Guadalupe Island, Baja California, Mexico, to Farallon Islands, Calif. SIZE: Length to 11¼ inches (29 cm). COLOR: Yellow brown with dark brown blotches.

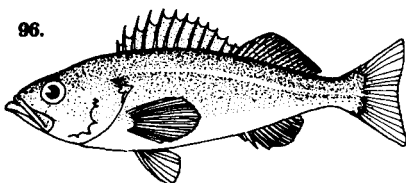
# RED ROCKFISHES:

95.



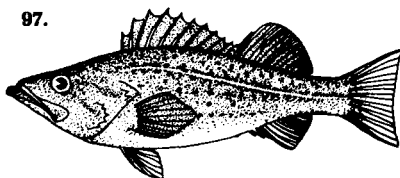
95. VERMILION ROCKFISH, red snapper, rasher, borracho, barrachon, red rock cod, genuine red. *Sebastes miniatus* (Jordan and Gilbert). DISTRIBUTION: San Benito Island, Baja California, Mexico, to Vancouver Island, British Columbia. SIZE: Record length to 30 inches (76 cm); weight reported to 15 pounds (6.8 kg). COLOR: Deep vermilion on back mottled with gray or blackish blotches on sides; orange stripes radiating from eye; fins deep red and on small specimens often faintly edged with black; mouth red. □ Sometimes confused with the canary rockfish; however, the underside of jaw is rough, not smooth, and there is no large black area on spinous dorsal fin as on smaller specimens of the canary rockfish. One of the larger rockfish species, common to depths of 200 to 600 feet (61.0-182.9 m). The young fish are frequently found near shore. An important contributor to the "rock cod" catch in southern California.

96.



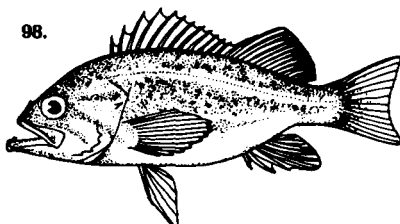
96. CHILIPEPPER, johnnies, johnny cod, *Sebastes goodei* (Eigenmann and Eigenmann). DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to Vancouver Island, British Columbia. SIZE: Average weight is about 2½ pounds (1.1 kg); maximum length is 22 inches (56 cm). COLOR: Reddish brown to copper above, shading to pink or white below with a distinct red stripe along the lateral line; fins pink. □ Fishing for this species is best off central and southern California. A deepwater species, it prefers rocky or mud bottom.

97.



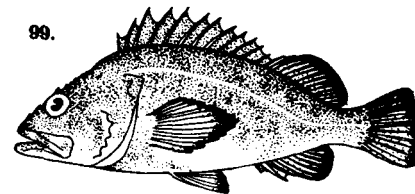
97. BOCACCIO, salmon grouper, young are sometimes called "tomcod," *Sebastes pinnispinis* Ayres. DISTRIBUTION: Point Blanca, Baja California, Mexico, to Kodiak Island, Alaska. SIZE: Average weight is 3¼ pounds (1.5 kg); the record size reported to be about 3 feet (91 cm) and 21 pounds (9.5 kg). COLOR: Brownish to dusky red above, shading into dull orange red on sides, light pink on belly. Reddish tinge overall; sometimes mottled with brown or black. □ Usually distinguished from other rockfishes by its greatly projecting lower jaw. A very important commercial and sport species off California. Adults are fished in deep water (to 125 fathoms or 228.6 m), and young bocaccio are frequently found in schools nearshore and are commonly caught by pier anglers.

98.



98. CANARY ROCKFISH, orange rockfish, codalargo, yellow snapper, filione, fantail, red rock cod, red snapper, *Sebastes pinniger* (Gill). DISTRIBUTION: Cape Colnett, Baja California, Mexico, to southeastern Alaska. SIZE: Average weight about 1½ pounds (0.7 kg) and a record length to about 30 inches (76 cm). COLOR: Grayish, mottled with orange; fins orange. Sometimes confused with vermilion rockfish. (See description of that species for differences.) □ Young canary rockfish are sometimes found in shallow water; adults found over banks in deep water. An important contributor to the central and northern California party boat catch.

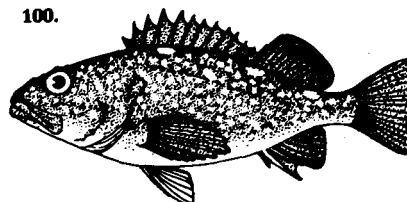
99.



99. YELLOWEYE ROCKFISH, turkey-red rockfish, rasphead rockfish, red snapper, red rockfish, tambor, turkey rock, potbelly, *Sebastes ruberrimus* (Cramer). DISTRIBUTION: Ensenada, Baja California, Mexico, north to Gulf of Alaska. SIZE: Average weight about 5½ pounds (2.5 kg); known to reach a length of 36 inches (91 cm). COLOR: Bright vermilion above, sometimes blotched with black, fading to

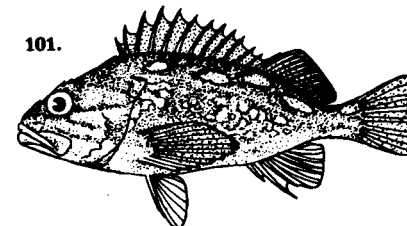
light below; smaller specimens often have a whitish streak along lateral line. All fins except spinous dorsal are usually edged with black; eye bright yellow. □ One of the larger and more colorful of the rockfish species. Found over shallow and deep reef areas in water 150 to 1,200 feet (45.7-365.8 m) deep. Excellent food species.

100.



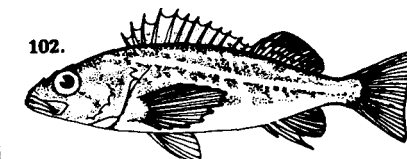
100. STARRY ROCKFISH, spotted rockfish, chinafish, *Sebastes constellatus* (Jordan and Gilbert). DISTRIBUTION: Near Cedros Island, Baja California, Mexico, to San Francisco, Calif. SIZE: Reported to attain a length of 18 inches (46 cm); average weight is about 1½ pounds (0.7 kg). COLOR: Orange red above, shading to yellow on sides and below; profusely covered with small bright-green spots; three to five white blotches on back. □ A brightly colored species common off southern California, where it is usually taken over deep reefs.

101.



101. ROSY ROCKFISH, corsair, dude, scacciatole, scratch-tail, *Sebastes rosaceus* Girard. DISTRIBUTION: Turtle Bay, Baja California, Mexico, to Puget Sound, Wash. SIZE: A small species, averaging about ½ pound (0.2 kg). Maximum length reported to 12¼ inches (32 cm). COLOR: Yellow, blotched with dark red on back and sides, fading to whitish below; white blotches bordered with purple above lateral line; pinkish fins. □ Taken in deep water (90 fathoms or 164.6 m); sometimes in shallower water over reefs or rocky areas. A good food species, although small in size.

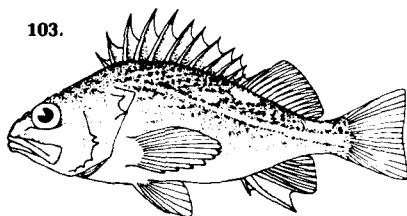
102.



102. GREENSTRIPED ROCKFISH, strawberry rock cod, reina, serena, *Sebastes elongatus* Ayres. DISTRIBUTION: Cedros Island, Baja California, Mexico, north to Green Island, Alaska. SIZE: Small; average weight about ¾ pound (0.3 kg); length recorded to 15 inches (38 cm). COLOR: Pale red above, white on belly with olive-green irregular stripes on sides joining near tail; black on tip of chin;

pinkish fins; pink lateral line. □ A deep-water species (200-1,300 feet or 61.0-396.2 m) usually caught from sport boats fishing over rough bottom.

103.



103. GREENSPOTTED ROCKFISH, chucklehead, Santa Maria, *Sebastes chlorostictus* (Jordan and Gilbert). DISTRIBUTION: Cedros Island, Baja California, Mexico, to Copalis Head, Wash. SIZE: Average weight 1½ pounds (0.6 kg); record length reported to be near 20 inches (51 cm). COLOR: Pinkish yellow with irregular green spots; three to five whitish blotches on back bordered with purple red; purple bar across head behind eyes. □ Adults and young both found over deepwater reef areas.

#### RED ROCKFISHES OF LESS IMPORTANCE TO THE MARINE ANGLER:

104. COW ROCKFISH, cowcod, roosterfish, gallo, chefra, cowfish, *Sebastes levis* (Eigenmann and Eigenmann). DISTRIBUTION: Central Baja California, Mexico, to near Eureka, Calif. SIZE: One of the largest of the rockfishes, reaching 37 inches (94 cm) long and a weight of 28½ pounds (12.9 kg). COLOR: Yellowish red with faint vertical bars on adults.

105. STRIPETAILED ROCKFISH, popeye rockfish, bigeye rockfish, oliveback rockfish, *Sebastes saxicola* (Gilbert). DISTRIBUTION: Viscaino Bay, Baja California, Mexico, to southeastern Alaska. SIZE: Length to 15¼ inches (39 cm). COLOR: Tail has green stripes in membranes.

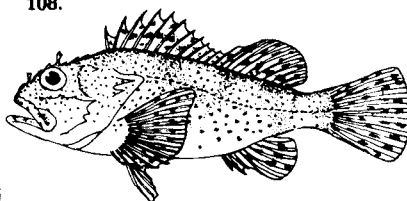
#### STRIPED ROCKFISHES:

106. TREEFISH, convictfish, barberpole, *Sebastes serriceps* (Jordan and Gilbert). DISTRIBUTION: Central Baja California, Mexico, to San Francisco, Calif. SIZE: Length reported to 16 inches (41 cm). COLOR: Olive brown above to yellowish below, with five to six vertical black bars on sides reaching to belly. □ This colorful rockfish, although minor in the sport catch, is common off southern California in relatively shallow water out to about 150 feet (45.7 m) deep.

107. FLAG ROCKFISH, Spanish flag, barberpole, hollyhock, convictfish, shoffies, tiger, *Sebastes rubrivinctus* (Jordan and Gilbert). DISTRIBUTION: Cape Colnett, Baja California, Mexico, to San Francisco; records north of San Francisco may be the redbanded rockfish, *Sebastes babcocki*. SIZE: Length to 25 inches (64 cm). COLOR: As name indicates, has four vertical red stripes on cream-white background.

#### SCORPIONFISHES:

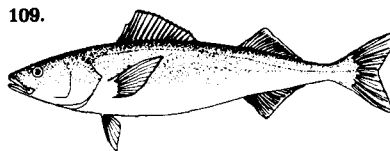
108.



108. CALIFORNIA SCORPIONFISH, sculpin (not related to the sculpin family, Cottidae), *Scorpaena guttata* Girard. DISTRIBUTION: Near Magdalena Bay, Baja California, Mexico, to Santa Cruz, Calif. SIZE: Length recorded to about 17 inches (43 cm). COLOR: Brick red to brown; numerous dark spots and blotches on body, head, and fins. □ An inshore fish common in bays and along shores throughout the year in southern California; however, spring and summer appear to be best fishing season. Although it sometimes occurs over sandy or sandy-mud bottom, this species seems to prefer rocky surroundings and water shallower than 100 feet (<30.5 m). Fish should be handled with care; spines (dorsal, anal, and pelvic) are venomous and can inflict very painful wounds. Experienced anglers handle by inserting thumb in fish's mouth and holding by lower jaw. An excellent food fish.

#### ANOPILOMATIDAE: SABLEFISHES

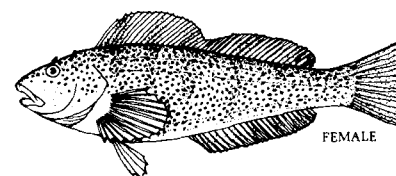
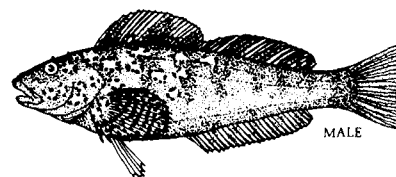
109.



109. SABLEFISH, black cod, mackerel, coal cod, butterfish, blue cod, skil, *Anoplopoma fimbria* (Pallas). DISTRIBUTION: Cedros Island, Baja California, Mexico, to northwestern Alaska, Bering Sea, and Japan. SIZE: Catches of young fish average ¼ to ½ pound (0.1-0.2 kg), while adults may weigh up to 30 pounds (13.6 kg); a record length is reported to 40 inches (102 cm). COLOR: Adults are blackish gray above, shading to lighter gray or white below. Coloration in young is more defined with dark blue or green above, white on belly. □ Young fish are sometimes found nearshore; however, adults live in deep water up to 400 feet (122 m) or more. They appear to migrate into shallower water during summer. An important species in northern California and off Oregon and Washington, although a small restricted fishery does exist off Newport Bay in southern California. This species is frequently caught in the same area as the Pacific halibut, and is an excellent food fish.

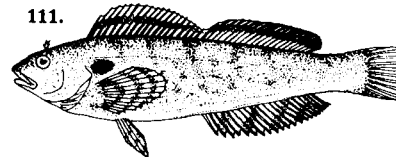
#### HEXAGRAMMIDAE: GREENLINGS

110.



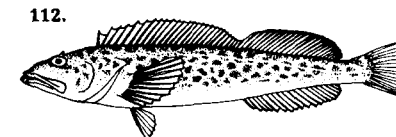
110. KELP GREENLING, greenling sea-trout, kelpfish, rock trout, *Hexagrammos decagrammus* (Pallas). DISTRIBUTION: La Jolla, Calif., to Aleutian Islands, Alaska. SIZE: Length up to 21 inches (53 cm); however, usual catch is about 12 inches (30 cm) long. COLOR: Males are dark gray with sky-blue spots on head and fore part of body. Females are gray brown with uniform reddish or golden-brown spots on head and body. □ This species is found around rocky shores, reefs, and kelp bed areas. Common along jetties and most abundant off northern California, Oregon, Washington, and Alaska. Excellent food fish.

111.



111. ROCK GREENLING, red greenling, fringed greenling, *Hexagrammos lagocephalus* (Pallas). DISTRIBUTION: Point Conception, Calif., to Alaska and Bering Sea. Abundant off Oregon northward to Alaska. SIZE: Length recorded up to 24 inches (61 cm). Weight of the average catch is about ¾ pound (0.3 kg). COLOR: Highly variable, usually reddish brown with darker mottling, sometimes large red blotches on sides; tail fin tipped with red; dark round spot above pectoral fin; inside of mouth bluish. □ A shallow-water species, inhabiting much the same areas as the kelp greenling (rocky shores, jetties, etc.).

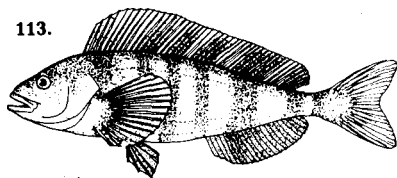
112.



112. LINGCOD, cultus cod, buffalo cod, green cod, ling, bocacao, *Ophiodon elongatus* Girard. DISTRIBUTION: Point San Carlos, Baja California, Mexico, to Kodiak Island, Alaska. SIZE: Average weight is about 8 pounds (3.6 kg); however, they are reported to attain at least 50 inches (127 cm) in length and a weight of

50 pounds (22.7 kg). COLOR: Extremely variable with habitat. Ground color may be gray brown, blue to green, or black. Mottlings, spots, and other markings are not specific. ☐ Common to central California northward, off Oregon, Washington, and southeastern Alaska coasts. A desirable food species. Young lingcod are caught near rocky or kelp bed areas. Adults tend to frequent deeper water up to 350 feet (106.7 m) in areas of rough bottom.

113.



113. ATKA MACKEREL, *Pleurogrammus monopterygius* (Pallas). DISTRIBUTION: Monterey Bay, Calif., to northwestern Alaska, Bering Sea, and Sea of Japan. SIZE: Attains a length of up to 2 feet (61 cm), although the average length is about 12 inches (30 cm). COLOR: Dusky yellow with five blackish vertical bars crossing sides; ventral and anal fins dark. ☐ An important game species in Alaska, commonly taken near the surf zone, around rocky and kelp bed areas, and in semisheltered water. Often found in large schools.

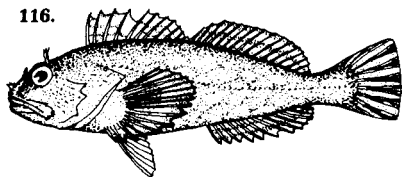
#### GREENLINGS OF LESS IMPORTANCE TO THE MARINE ANGLER:

114. WHITESPOTTED GREENLING, *Hexagrammos stelleri* Tilesius. DISTRIBUTION: Puget Sound, Wash., to Japan. SIZE: Length to at least 19 inches (48 cm). COLOR: Light brown to greenish, often with reddish tinge; conspicuous white spots on body.

115. PAINTED GREENLING, *Oxylebius pictus* Gill. DISTRIBUTION: Point San Carlos, Baja California, Mexico, to Strait of Georgia, British Columbia. SIZE: Length to at least 10 inches (25 cm). COLOR: Brown and dark-red bars and mottling over grayish-brown body; flaps on head are red. Rarely taken.

#### COTTIDAE: SCULPINS

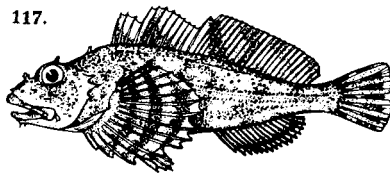
116.



116. CABEZON, bullfish, bullhead, blue cod, bull cod, marbled sculpin, *Scorpaenichthys marmoratus* (Ayres). DISTRIBUTION: Point Abreojos, Baja California, Mexico, to Sitka, Alaska. SIZE: Average weight is about 2 pounds (0.9 kg). Largest fish reported was 39 inches (99 cm) long and weighed slightly over 15 pounds (6.8 kg). COLOR: Highly variable from

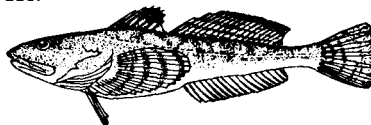
brown to red, greenish or gray, usually with extensive mottling or blotching. Mouth lining in females usually green, males red. ☐ The flesh of the cabezon has an excellent flavor, but the roe is reported to be poisonous. This fish is found over many types of bottom, usually rock and sand, in shallow water out to depths of about 250 feet (76.2 m).

117.



117. RED IRISH LORD, *Hemilepidotus hemilepidotus* (Tilesius). DISTRIBUTION: Monterey Bay, Calif., to Sea of Okhotsk. SIZE: Average weight about ½ pound (0.2 kg); greatest reported length is 20 inches (51 cm), but is not common over 12 inches (30 cm). COLOR: Dusky to bright red above, becoming lighter below; mottled with brownish red and profusely covered with brownish to black spots. ☐ Fleishy flaps on snout and just above eyes. A rocky-shore species common to Oregon, Washington, and Alaska. Ranges from shallow intertidal areas out to 156 feet (47.5 m). Feeds on crabs, barnacles, and mussels.

118.



118. PACIFIC STAGHORN SCULPIN, bullhead, smooth sculpin, *Leptocottus armatus* Girard. DISTRIBUTION: San Quintin Bay, Baja California, Mexico, to Chignik, Alaska. SIZE: Length to 12 inches (30 cm). COLOR: Greenish brown or gray above, white to yellow below. ☐ This abundant inshore sculpin, although sometimes considered a nuisance to fishermen, is an important baitfish in California. Common in bays and brackish-water areas.

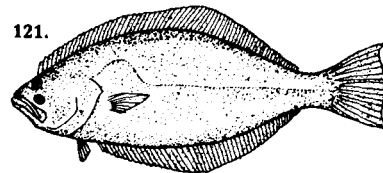
#### SCULPINS OF LESS IMPORTANCE TO THE MARINE ANGLER:

119. BROWN IRISH LORD, *Hemilepidotus spinosus* (Ayres). DISTRIBUTION: Southern California to Puffin Bay, Alaska. SIZE: Length to 10 inches (25 cm). COLOR: Light to dark brown with dark mottling.

120. BUFFALO SCULPIN, *Enophrys bison* (Girard). DISTRIBUTION: Monterey Bay, Calif., to Kodiak Island, Alaska. SIZE: Length to 12 inches (30 cm). COLOR: Dark gray green or brown above; purplish bony plates on head and on lateral line.

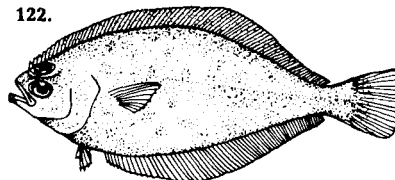
#### BOTHIDAE: LEFTYE FLOUNDERS

121.



121. CALIFORNIA HALIBUT, southern halibut, *Paralichthys californicus* (Ayres). DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to British Columbia. SIZE: Record size is about 5 feet (152 cm) and 72 pounds (32.7 kg). Average size 6 to 7 pounds (2.7-3.2 kg); however, pier-caught fish are usually much smaller (called "fly-swatters"). COLOR: Olivaceous black to brown, sometimes with lighter or darker mottling; young often with whitish spots. Blind side is unpigmented. ☐ Common along sandy shores and nearshore shelves in southern California; some also are taken in the Morro Bay, Monterey Bay, and in the San Francisco area. An important species to pier anglers in southern California. Good fishing is sometimes found near live-bait receiver locations. Rarely taken in water over 10 to 15 fathoms (18.3-27.4 m) deep. In southern California common along shore in the spring, frequenting channels leading into larger bays and just outside the surf zone. From Morro Bay north to San Francisco and Tomales bays, fishing is best in summer and early fall.

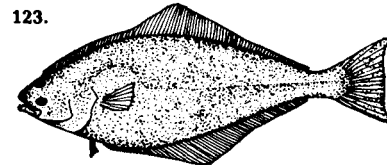
122.



122. PACIFIC SANDDAB, mottled sanddab, *Citharichthys sordidus* (Girard). DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to northwestern Alaska and Sea of Japan. SIZE: To 16 inches (41 cm) long; most weigh less than ½ pound (0.2 kg). COLOR: Various shades of light brown, sometimes mottled with dull orange, yellow, or black. Blind side is unpigmented. ☐ Common over sandy or muddy-sand bottoms at depths of 20 to 50 fathoms (36.6-91.4 m). An excellent food fish.

#### PLEURONECTIDAE: RIGHTEYED FLOUNDERS

123.

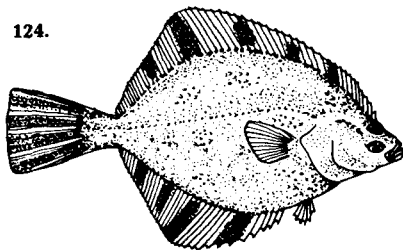


123. PACIFIC HALIBUT, northern halibut, *Hippoglossus stenolepis* Schmidt. DISTRIBUTION: Santa Rosa Island, Calif., to the Bering Sea and Sea of Japan. SIZE:



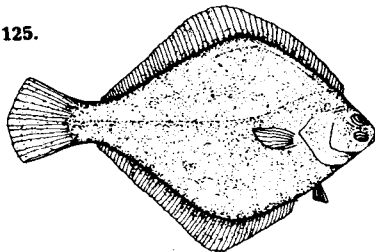
Average weight of the sport catch off the Washington, Oregon, and northern California coasts is 5 pounds (2.3 kg), but larger fish are common in Alaska. Females recorded to 495 pounds (224.5 kg), males to 123 pounds (55.8 kg). Length up to 8½ feet (259 cm). COLOR: Uniform dark brown to black, sometimes with paler blotches and fine mottling. Blind side is unpigmented. □ Commonly caught off Oregon, Washington, and Alaska; not usually taken south of extreme northern California. Fished in moderately deep water, 20 to 100 fathoms (36.6-182.9 m). Sometimes appears in relatively shallow water during summer. An excellent food species.

124.



124. STARRY FLOUNDER, diamondback, *Platichthys stellatus* (Pallas). DISTRIBUTION: Santa Barbara, Calif., to Arctic Alaska and Sea of Japan. An abundant species from central California north to Alaska. SIZE: Weight recorded up to 20 pounds (9.1 kg) and a length of 3 feet (91 cm). However, the average sport-caught fish is about 1¼ pounds (0.6 kg). COLOR: Mottled dark brown with alternating white to light orange and black bands on dorsal and anal fins. Blind side is unpigmented. □ One of the few flounder species that may ordinarily have the eyes and color on either side. One of the most important sport-caught flatfishes along the entire Pacific coast. Lives in shallow water over sandy or mud bottom. Sometimes caught at depths of up to 70 fathoms (128.0 m). It is common in bays, and frequently migrates into tidewater areas and up rivers. Has a very rough (grindstone) skin.

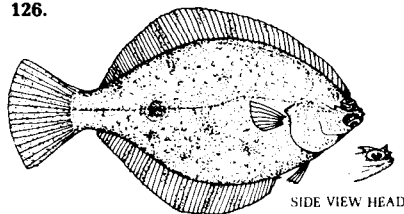
125.



125. DIAMOND TURBOT, *Hypsopsetta guttulata* (Girard). DISTRIBUTION: Gulf of California and Magdalena Bay, Baja California, Mexico, to Cape Mendocino, Calif. SIZE: Record length is about 18 inches (46 cm); average weight of the sport catch is about 1¼ pounds (0.6 kg). COLOR: Gray to brown, mottled with blue spots. Blind side is unpigmented. □ Commonly found in bays and sloughs over mud and sand bottom. Usually caught in water less than 500 feet (152.4 m) deep. Best fishing is in southern California in such locations as Newport and Mission bays, where it is caught year-round.

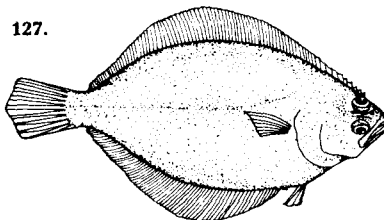
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126.



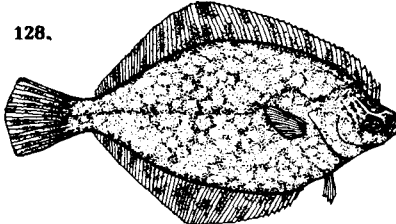
126. HORNYHEAD TURBOT, *Pleuronichthys verticalis* Jordan and Gilbert. DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to Point Reyes, Calif. SIZE: Length recorded to 14½ inches (37 cm), average weight about ¾ to 1 pound (0.3-0.5 kg). COLOR: Brown with darker mottlings and scattered pale blotches. □ Common to southern California in bays, sloughs, and other nearshore areas. Similar in habitat preference to the diamond turbot.

127.



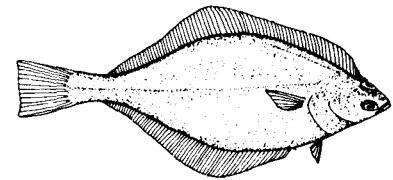
127. PETRALE SOLE, roundnose flounder, *Eopsetta jordani* (Lockington). DISTRIBUTION: Coronado Islands, Baja California, Mexico, to northern Gulf of Alaska. SIZE: Average weight is about 1¼ pounds (0.8 kg); maximum recorded length is 27½ inches (70 cm). COLOR: Uniform dark to light brown, sometimes with paler blotches. Blind side is unpigmented. □ An important and desirable food fish caught off central California, Oregon, and Washington coasts. It is commonly found on sand and mud bottoms, usually in depths of 60 feet (18.3 m) or more during the summer, migrating to deeper water (up to 1,200 feet or 365.8 m) during the winter.

128.



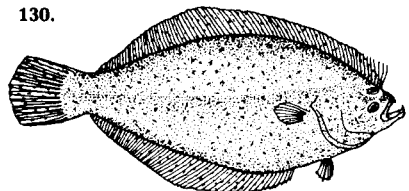
128. ROCK SOLE, broadfin flounder, *Lepidopsetta bilineata* (Ayres). DISTRIBUTION: Southern California to the Bering Sea and Sea of Japan. SIZE: Record length is about 22½ inches (57 cm); average weight is about 1½ pounds (0.6 kg). COLOR: Dark to light brown with lighter or darker yellow or red mottlings and spots; fins with dark blotches or bars. Blind side is unpigmented. □ Known to range to a depth of about 70 fathoms (128 m), but is frequently caught in shallow water over sandy or gravelly bottom, and sometimes near eel grass beds. Most abundant from central California north into Puget Sound.

129.



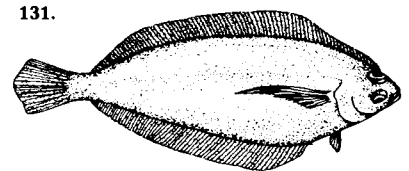
129. ENGLISH SOLE, lemon sole, pointed-nose flounder, *Parophrys vetulus* Girard. DISTRIBUTION: Central Baja California, Mexico, to northwestern Alaska. SIZE: Average weight about 1 pound (0.5 kg); record length is reported to be 24 inches (61 cm). COLOR: Brown, with fins edged with darker brown to black. Blind side is unpigmented. □ An important species from central California north. Migratory, found in bays and estuaries out to about 200 fathoms (365.8 m). Caught nearshore during the summer, and, although sometimes taken from piers and off jetties at this season of the year, more are landed by skiff and party boat anglers than by any other method. A good food fish; however, the flesh of inshore specimens sometimes has an iodine flavor.

130.



130. SAND SOLE, fringe flounder, *Psetichthys melanostictus* Girard. DISTRIBUTION: Point Mugu, Calif., to northwestern Gulf of Alaska. SIZE: Average weight ½ pound (0.2 kg); record length reported to be 21 inches (53 cm). COLOR: Dark gray to brown, speckled with dark brown or black spots. □ This inshore species is usually caught along sandy shores, around jetties, and in estuaries. The young are sometimes caught around rocky areas in summer. Migrates to deep water in the winter. Common north of Point Conception, Calif.

131.



131. REX SOLE, longfin sole, *Glyptocephalus zachirus* Lockington. DISTRIBUTION: San Diego, Calif., to the Bering Sea. SIZE: Average weight is about ½ pound (0.2 kg); maximum length is reported to be about 23¼ inches (59 cm). COLOR: Uniform light brown on eyed side; fins darker, pectoral fins black. Blind side is unpigmented. □ A deepwater species, usually caught over sand and sand-mud bottom. Similar in habitat requirements to the petrale sole and Pacific sanddab. A highly desirable food species.



**FLATFISHES OF LESS IMPORTANCE  
TO THE MARINE ANGLER:**

132. CURLFIN SOLE, *Pleuronichthys decurrens* Jordan and Gilbert. DISTRIBUTION: San Quintin Bay, Baja California, Mexico, to northwestern Alaska. SIZE: Length to 14½ inches (37 cm). COLOR: Reddish brown with darker brown or gray mottling above.

133. SPOTTED TURBOT, *Pleuronichthys ritteri* Starks and Morris. DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to Point Conception, Calif. SIZE: Length to 11½ inches (29 cm). COLOR: Brown to gray with light speckling; usually with three dark spots.

134. C-O SOLE, *Pleuronichthys coenosus* Girard. DISTRIBUTION: Cape Colnett, Baja California, Mexico, to southeastern Alaska. SIZE: Length to about 14 inches (36 cm). COLOR: Dark brown above mottled with light brown.

135. BUTTER SOLE, *Isopsetta isolepis* (Lockington). DISTRIBUTION: Southern California to Alaska and Bering Sea, rare south of Point Conception, Calif. SIZE: Length to 21¾ inches (55 cm). COLOR: Dark to light brown or gray with light mottling, sometimes with yellow or green spots; fins edged with yellow.

136. SLENDER SOLE, *Lyopsetta exilis* (Jordan and Gilbert). DISTRIBUTION: Cedros Islands, Baja California, Mexico, to Alek Canyon, Alaska. SIZE: Length to 13 inches (33 cm). COLOR: Uniform light olive brown.

137. DOVER SOLE, *Microstomus pacificus* (Lockington). DISTRIBUTION: San Cristobal Bay, Baja California, Mexico, to Bering Sea. SIZE: Length to 30 inches (76 cm). COLOR: Uniform gray brown; fins black.

**OTHER MINOR MARINE GAME FISHES:**

A brief listing is given below of some additional families and species of fishes which now do not contribute significantly to the sport catch, but sometimes are taken by Pacific coast anglers. This listing is not complete since marine anglers capture many species during the course of the year that are not listed here, but it reviews some of the more commonly caught minor species.

**SCYLORHINIDAE: CAT SHARKS**

138. SWELL SHARK, *Cephaloscyllium ventriosum* (Garman). DISTRIBUTION: Chile to Monterey, Calif. Not common north of Point Conception, Calif.

**SQUALIDAE: DOGFISH SHARKS**

139. SPINY DOGFISH, *Squalus acanthias* Linnaeus. DISTRIBUTION: Temperate and subtropical Atlantic and Pacific oceans; in the eastern Pacific, in Chile, southern California to Alaska, and to Japan.

**RAJIDAE: SKATES**

140. BIG SKATE, *Raja binoculata* Girard. DISTRIBUTION: San Quintin Bay, Baja California, Mexico, to northwestern Alaska and Bering Sea. Not common south of Point Conception; Calif.

141. CALIFORNIA SKATE, *Raja inornata* Jordan and Gilbert. DISTRIBUTION: Turtle Bay, Baja California, Mexico, to the Strait of Juan de Fuca.

142. LONGNOSE SKATE, *Raja rhina* Jordan and Gilbert. DISTRIBUTION: Point Loma, Calif., to Southern Alaska.

**DASYATIDAE: STINGRAYS**

143. ROUND STINGRAY, *Urolophus halleri* Cooper. DISTRIBUTION: Panama Bay, Panama, to Humboldt Bay, Calif. Rare north of Point Conception, Calif.

**MURAENIDAE: MORAYS**

144. CALIFORNIA MORAY, *Gymnothorax mordax* (Ayres). DISTRIBUTION: Magdalena Bay, Baja California, Mexico, to Point Conception, Calif.

**CLUPEIDAE: HERRINGS**

145. PACIFIC HERRING, *Clupea harengus pallasii* Valenciennes. DISTRIBUTION: Northern Baja California, Mexico, to northern Eurasia, Bering Sea, and Japan.

146. PACIFIC SARDINE, *Sardinops sagax caeruleus* (Jenyns). DISTRIBUTION: Guaymas, Gulf of California, Mexico, to Kamchatka Peninsula, USSR.

**ENGRAULIDAE: ANCHOVIES**

147. NORTHERN ANCHOVY, *Engraulis mordax* Girard. DISTRIBUTION: La Paz, Baja California, Mexico, to Queen Charlotte Island, British Columbia.

**SYNODONTIDAE: LIZARDFISHES**

148. CALIFORNIA LIZARDFISH, *Synodus luciocephalus* (Ayres). DISTRIBUTION: Guaymas, Gulf of California, Mexico, to San Francisco, Calif. Uncommon north of Point Conception, Calif.

**BATRACHOIDIDAE: TOADFISHES**

149. PLAINFIN MIDSHIPMAN, northern midshipman, *Porichthys notatus* Girard. DISTRIBUTION: Gorda Bank, Gulf of California, Mexico, to Sitka, Alaska.

**POMADASYIDAE: GRUNTS**

150. SALEMA, bigeye bass, *Xenistius californiensis* (Steindachner). DISTRIBUTION: Peru north to Monterey Bay, Calif. Rare north of Point Conception, Calif.

**POMACENTRIDAE: DAMSELFISHES**

151. BLACKSMITH, *Chromis punctipinnis* (Cooper). DISTRIBUTION: Point San Pablo, Baja California, Mexico, to Monterey, Calif.

**CLINIDAE: CLINIDS**

152. GIANT KELPFISH, *Heterostichus rostratus* Girard. DISTRIBUTION: Cape San Lucas, Baja California, Mexico, to British Columbia.

153. ONESpot FRINGEHEAD, *Neoclinus uninotatus* Hubbs. DISTRIBUTION: San Diego Bay to Bodega Bay, Calif.

# Marine Game Fishes of the Pacific Islands

The following pages describe some of the major game fishes taken in marine and brackish waters of Hawaii, American Samoa, and Guam. It is indeed unfortunate that these tropical fishes could not be reproduced in color, for they are among the most beautiful in the world.

The local fish names are given first, since it is by these names that they are known in the tropical Pacific. Usually the Hawaiian name is given first, identified by the symbol (H), followed by its equivalent in Samoan (S) or Guamanian (G), and then by its English equivalent if one exists. The authorized scientific name and the name of the person who originally

described the species are given last.

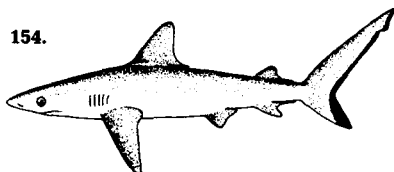
For those who wish to pronounce the Hawaiian names correctly, it is relatively simple. There are only 12 letters in the alphabet and the five vowels, A, E, I, O, U, are pronounced: a as in father, e as in vein, i as in peep, o as in own, and u as in book. Each vowel is pronounced. For instance, aholehole is pronounced ah-ho-leh-ho-leh, with the accent on the second and fourth syllable. The consonants are pronounced as in English, except that W, especially when after the first syllable, has the sound of V as in valuable. For example 'aweoweo is pronounced ah-veh-oh-veh-oh. The apostrophe or hamza, as

in 'aweoweo and in other Hawaiian fish names, indicates elision of one or more letters. It does not indicate accent, but a break in sound between the letters it separates. In writing Hawaiian names it is important that these marks be used, since they are an essential part of the word.

Marine anglers wishing to make a closer species identification of their catch should read Handbook of Hawaiian Fishes by Gosline and Brock (1960, University Press, Honolulu). This reference is the best available covering most of the species. Other references for specific families and genera will be found in the section on Reference.

## CARCHARINIDAE: REQUIEM SHARKS

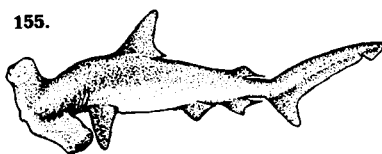
154.



154. MANO (H), malie (S), tanifa (S), gray shark, sand shark, whaler, *Carcharhinus* spp. DISTRIBUTION: Members of this genus are widely distributed in tropical and temperate seas worldwide. SIZE: The species above, the gray reef shark, *C. amblyrhynchos* (Bleeker), reaches a length of about 8 feet (244 cm); other Pacific members of this genus are reported to reach up to 16 feet (488 cm). COLOR: Differs with species; generally grayish to brownish, fading to lighter below. □ Most "typical" sharks belong to this group; many are inshore or reef-inhabiting species; others also occur far out at sea. A few are considered potentially dangerous to humans and attain considerable size. Although sometimes considered a nuisance to anglers, sharks are rapidly growing in popularity as game fishes. The gray reef shark is especially abundant around American Samoa. It also occurs around Hawaii and Guam, but is not sought by anglers. Sharks are usually caught by handlining at anchor or adrift and by trolling over channel areas between reefs and over offshore ledges.

## SPHYRNIIDAE: HAMMERHEAD SHARKS

155.



155. MANO KIHIKIHI (H), kiluus (G), mata-i-taliga (S), scalloped hammerhead (shark), *Sphyrna lewini* (Griffith and Smith). DISTRIBUTION: Tropical and temperate Atlantic, Pacific, and Indian oceans. SIZE: Reaches a length of over 10 feet (305 cm). COLOR: Light gray above and white below; black on the ventral surfaces of the pectoral fins. □ This shark occurs inshore as well as offshore, and although sometimes found in large aggregations, it is usually solitary. Taken by anglers in Hawaii and American Samoa; only rarely taken in Guam. Caught by trolling or drifting with whole or cut baits. Rarely eaten, sometimes used as bait.

## ELOPIDAE: TARPONS, LADYFISHES

156.

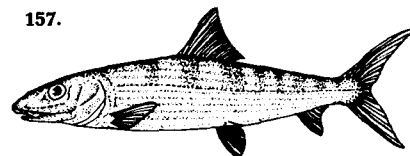


156. AWAAWA (H), awa'aua (H), pake 'awa (H), ladyfish, tenpounder, *Elops hawaiiensis* Regan. DISTRIBUTION: Tropical Pacific. SIZE: Up to about 24 inches (61 cm), usually about 12 to 15 inches (30-38 cm). COLOR: Bright silvery, with a blue-green hue on the dorsal area. □ The awaawa is primarily an inshore fish, often found in bays and harbors and along sandy shores. In Hawaii it is

known to enter streams and rivers and is commonly reared in fish ponds. This species rarely occurs in American Samoa and Guam. Taken by hook and line and by gill net throughout the Hawaiian Islands. Excellent light-tackle quarry that fights gamely and leaps repeatedly when hooked. The awaawa is edible, but the flesh contains many fine bones. Widely used by the Chinese in making fish cakes.

## ALBULIDAE: BONEFISHES

157.

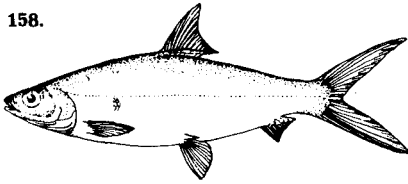


157. 'O'IO (H), bonefish, *Albula vulpes* (Linnaeus). DISTRIBUTION: Worldwide in tropical and subtropical oceans. SIZE: All-tackle record (Zululand, South Africa) is 19 pounds (8.6 kg) and 39 5/8 inches (100.7 cm) long. In the Pacific Ocean (Kauai, Hawaii) the record is 18 pounds 2 ounces (8.2 kg), and a length of 3 feet 5 1/2 inches (105.4 cm). Hawaiian bonefish are usually about 15 to 18 inches (38-46 cm) long. COLOR: Bright iridescent silver. □ The 'o'io is a schooling fish that feeds along sandy bottom, usually over sand patches or channels between coral formations in the reef. Sometimes enters the surge zone along beaches. Although caught throughout the year in Hawaii, the season usually begins in December when the fish come fairly close to shore to spawn, and fishing is usually good through April. Exceptionally large fish have been taken from waters off Kauai, Oahu, and Maui. This species is uncommon in American Samoa and does not occur in Guam. Caught surf casting and bottomfishing with cut bait; some are taken with gill nets. Like the awaawa, the flesh of the bonefish is

palatable, but contains numerous fine bones. It is, however, a Hawaiian favorite for making fish cakes and poki (raw, spiced).

#### CHANIDAE: MILKFISHES

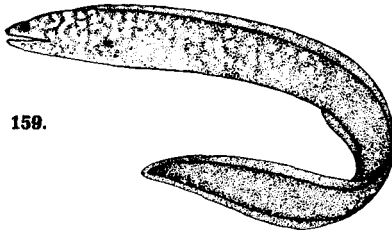
158.



158. AWA (H), agua (G), milkfish, *Chanos chanos* (Forskål). DISTRIBUTION: Throughout the tropical Indo-Pacific. SIZE: Up to 3 feet (91 cm) long; most caught are around 18 to 24 inches (46-61 cm). COLOR: Silvery. □ The awa is a schooling surface-feeding fish, common to brackish-water areas, bays, and inlets in the Hawaiian Islands. Common in American Samoa, but very rarely fished for; uncommon in Guam. Hawaiian anglers catch awa with hook and line using bread or algae for bait. Like the awaawa and the 'o'io, this fish is a scrappy fighter, often leaping from the water when hooked. Also taken with gill nets; young fish are sometimes taken with cast nets. Considered a fine food fish; some are raised commercially in fish ponds in Hawaii.

#### MURAENIDAE: MORAY EELS

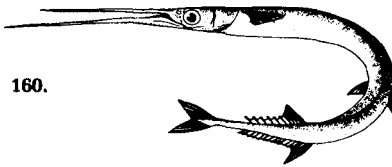
159.



159. PUHĪ (H), puhī-paka (H), pusi (S), titugi (G), moray, *Gymnothorax* spp. DISTRIBUTION: Tropical Pacific Ocean. SIZE: Hawaiian morays range up to 5 or 6 feet (152-183 cm) long but most are under 2 feet (61 cm). □ This group contains all puhī or morays most commonly seen in Hawaiian waters and in the market. The fish illustrated above, *G. flavimarginatus* (Rüppell), the puhī-paka, is one of Hawaii's larger eels and relatively common. Morays are pugnacious predators and have large fanglike teeth. Some are known to bite viciously—but usually only when provoked. Most of the time they remain deep in crevices and holes in reefs and rocky areas where they lie in wait for passing or injured prey. Most are speared, some are taken incidentally by hook and line and in traps. Commonly caught for food in American Samoa, but not sought after in Guam where the flesh is reported to be occasionally poisonous. Sometimes used as bait in Hawaii.

#### BELONIDAE: NEEDLEFISHES

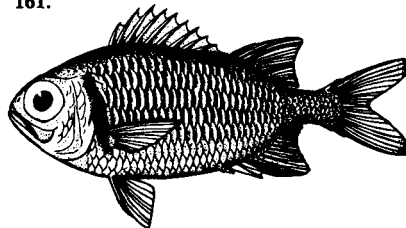
160.



160. 'AHA'AHA (H), ise (S), keeltail needlefish, needlefish, *Platybelone argalus* (Lesueur). DISTRIBUTION: Worldwide. SIZE: Attains a length of about 15 inches (38 cm). COLOR: Blue green on back, fading to silvery below. □ A near- and offshore schooling species, often seen skittering or gliding over the water's surface. Common in Hawaii and American Samoa, although not sought after by Samoan fishermen. In Guam, a much larger species of needlefish called "pulus" or houndfish, *Tylosurus crocodilus* (Peron and Lesueur), is one of the more common fishes taken with spinning gear. In general, needlefish are taken by pole and line using artificial lures or live bait. The greenish flesh of the 'aha'aha is reported to have a very good flavor.

#### HOLOCENTRIDAE: SQUIRRELFISHES

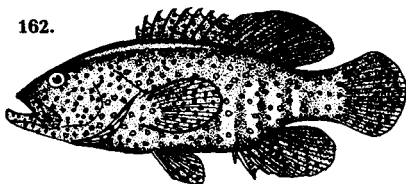
161.



161. MENPACHI (H), 'u'u (H), malau (S), sasag (G), squirrelfish, *Myripristis berndti* Jordan and Evermann and *M. amaenus* (Castelnau). DISTRIBUTION: Tropical Pacific Ocean. SIZE: Up to 14 inches (36 cm); averages 7 to 9 inches (18-23 cm). COLOR: Bright red. □ These two species of menpachi are common inshore reef fishes in Hawaii. Both are nocturnal and congregate in caves and deep crevices during the day, venturing out over the reef at night to feed. Usually taken with spears; also with gill nets and hooks and lines and in traps. Fished for mostly at night. Menpachi are highly esteemed as food fish and subsequently bring a high price at Hawaiian markets.

#### SERRANIDAE: SEA BASSES

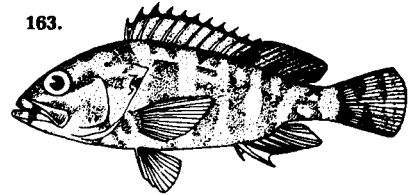
162.



162. ROI (H), gatala moana (S), gadao (G), blue spotted grouper, *Cephalopholis argus* Bloch and Schneider. DISTRIBUTION: Tropical Indo-Pacific. SIZE: Reaches about

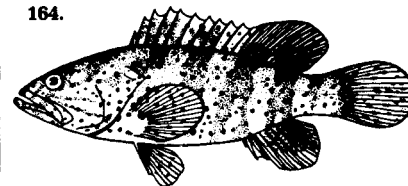
20 inches (51 cm) long. COLOR: Purple brown with light-blue spots. Pale bars evident towards tail region as indicated. □ A very common bottomfish in American Samoa, found over reefs and rocky areas at about 10 to 40 fathoms (18.3-73.2 m). Roi also occurs in Guam and in 1956 was introduced to the Hawaiian Islands where it has now become established around most of the larger islands. Caught handlining on the bottom or spearing. Like most groupers, when hooked this fish usually attempts to get into holes or crevices, so it is wise to keep the fish's head up and the line taut.

163.



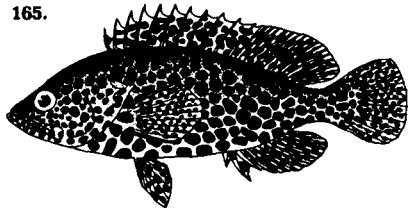
163. GADAO (G), gatala (S), *Epinephelus fasciatus* (Forskål). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Reported to reach about 14 inches (36 cm). COLOR: Red with dusky crossbars which tend to fade with age. Distinguished by the black margin on the spiny dorsal fin. □ A common grouper caught by spinning gear and spears around Guam and American Samoa. Introduced to Hawaii in 1958 from the Marquesas Islands, but did not become established. A good food fish.

164.



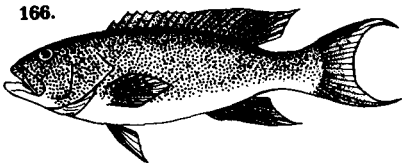
164. 'ATA'ATA (S), *Epinephelus tauvina* (Forskål). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 500 pounds (226.8 kg) in weight and averages anywhere from 100 to 400 pounds (45.4-181.4 kg). COLOR: Young fish are tan with irregular brown bars and red mottling and spotting; large specimens are uniform dark brown. □ This large Samoan grouper is common over rocky areas in water from 50 to 500 feet (15.2 to 152.4 m) deep, and is taken by handline. A large unidentified grouper caught by Guam handliners might be closely related to the Samoan species, although its positive identification has yet to be determined. This Guam grouper is reported to reach over 80 pounds (36.3 kg) and is excellent eating. When fresh, it has several broad faint vertical bars on the body which fade soon after death to a uniform dark brown.

165.



165. GATALA (S), gadao (G), grouper, *Epinephelus merra* Bloch. DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 18 inches (46 cm). COLOR: Yellowish white with dark orange-brown spots; more yellow in the dorsal region. □ A very abundant inshore reef-inhabiting grouper in American Samoa and Guam, and one of the two most common groupers taken spearing and with spinning gear over Guam's shallow reefs. Once introduced to Hawaii from Tahiti, but did not become successfully established. Food value considered good.

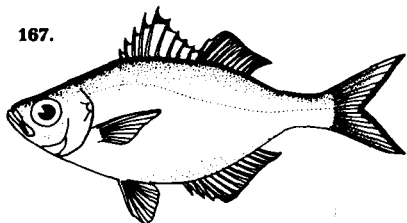
166.



166. GATALA (S), i'a manaia (S), gadao (G), grouper, *Variola louti* (Forsk.). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Reported to reach 3 feet (91 cm) long. COLOR: Yellowish brown or orange, everywhere spotted with small reddish or pinkish spots with those toward the back margined with a purple or blue line. Pectoral and tail fins bright yellow; eye red; underside of head and body red. □ This brilliantly colored grouper occurs both in American Samoa and Guam, and is very common around American Samoa over reef and ledge areas at about 10 to 40 fathoms (18.3-73.2 m). Young fish frequent shallow-water reefs and sometimes enter deep tide pools in American Samoa; in Guam the young of this species appear to prefer deeper water. In Samoa they are caught handlining and sometimes trolling; in Guam most are taken by spear fishermen. Considered a fine food fish.

#### KUHLIIDAE: AHOLEHOLES

167.



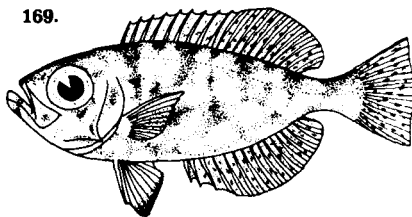
167. AHOLEHOLE (H), mountain bass, silver perch, *Kuhlia sandvicensis* (Steindachner). DISTRIBUTION: Hawaiian Islands. SIZE: Up to 12 inches (30 cm); usually from 4 to 6 inches (10-15 cm). COLOR: Silvery; fins often dusky tipped. □ An abundant inshore fish found in streams, along the shoreline, around pilings

in harbors and bays, or in large schools over reefs. The young are numerous in tide pools while adults inhabit deeper water, but generally no deeper than 20 feet (6.1 m). Aholehole is usually nocturnal and hides in crevices during the day and emerges at night to feed. Taken with cast nets, by hook and line, and by spearing in crevices and holes in the reef. Lights are sometimes used to attract them at night. An excellent food fish.

168. UMATAN (G), sasele (S), *Kuhlia rupestris* (Cuvier and Valenciennes). DISTRIBUTION: Widespread in tropical central Indo-Pacific. SIZE: In Guam this fish may reach 14 to 16 inches (36-41 cm) and up to 1 1/4 to 2 pounds (0.7-0.9 kg); usually runs about 8 to 9 inches (20-23 cm) and about 1/4 or 1/2 pound (<0.3 kg). □ This close relative of the aholehole occurs in American Samoa and is very common to most streams and rivers of Guam. Similar in habits and appearance to *K. sandvicensis*, but seems to have a greater affinity to fresh water. Young umatan are found close to mouths of tributaries while large adults are usually found farther upstream in fresh water. Taken with nets and spears and with light spinning tackle using live bait, artificial flies, and small poppers. An excellent food fish.

#### PRIACANTHIDAE: BIGEYES

169.

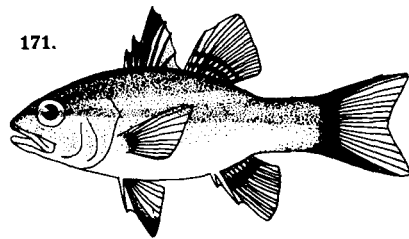


169. 'AWEOWEO (H), mamagas (G), matapula (S), red bigeye, *Priacanthus cruentatus* (Lacepède). DISTRIBUTION: Circumtropical. SIZE: Up to about 12 inches (30 cm); averages about 6 to 8 inches (15-20 cm). COLOR: Variable; known to change its coloration rapidly from deep red to silvery, or to a mottled silvery pink and red; fins are often speckled with black. □ In Hawaii and American Samoa this nocturnal reef fish is found in shallow reefs and in bays and harbors where it feeds primarily on free-swimming invertebrates and small fishes. It is uncommon in Guam. In Hawaii the 'aweoweo is usually taken during the evening and moonlit nights are considered best. Occasionally great schools of juvenile fish appear nearshore at night, and it was once thought by early Hawaiian islanders that the appearance of these immense schools signified the imminent death of royalty. Taken pole fishing, handlining, and spearing. Opinions about the food value of this fish vary from fair to excellent.

170. 'ALALAU (H), *Priacanthus alalaua* Jordan and Evermann. □ This is another member of the bigeye family taken by Hawaiian fishermen. It does not occur as close to shore as the 'aweoweo, usually found in water deeper than 50 feet (over 15.2 m). SIZE: Reaches up to 14 inches (36 cm) long.

#### APOGONIDAE: CARDINALFISHES

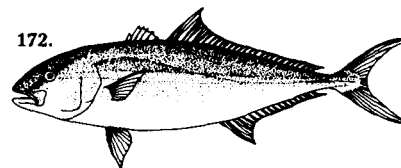
171.



171. 'UPAPALU (H), lansi (G), fo (S), moonlight fish, moonlight Annie, *Apogon menesemus* Jenkins and *A. kallopterus* Bleeker. DISTRIBUTION: Tropical Pacific Ocean. SIZE: Up to 9 inches (23 cm). COLOR: Both purplish with black markings. □ The fish pictured is *A. menesemus*. These two small inshore reef fishes are very common in the Pacific Islands. 'Upapalu are nocturnal and feed on small crustaceans. Males carry eggs in their mouths for incubation. In Hawaii these two cardinalfishes are often taken pole fishing on moonlit nights over the reefs. Food value is considered good.

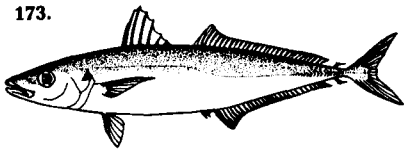
#### CARANGIDAE: JACKS AND POMPANOS

172.



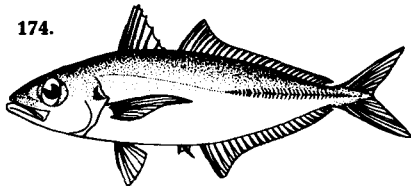
172. KAHALA (H), greater amberjack, *Seriola dumerili* (Risso). Two other amberjacks, *Seriola rivoliana* and *S. quinqueradiata*, also occur in Hawaiian waters and may enter the sport catch. DISTRIBUTION: Circumtropical. SIZE: All-tackle record (Bermuda) is 149 pounds (67.6 kg) with a length of 71 inches (180.4 cm). Most caught in Hawaii are around 2 feet (61 cm) long and about 8 to 10 pounds (3.6-4.5 kg). COLOR: Light metallic brown with a purplish tinge. When alive, a faint lemon-yellow band extends from the head to the base of tail. □ The kahala inhabits Hawaii's deeper coastal waters between 40 to 100 fathoms (73.2-182.9 m), living near the bottom. The most productive fishing areas seem to be over deep-sea ledges or drop offs. This fish also occurs in Samoa, and similar species, if not the same, occur in Guam. Usually caught handlining off-shore, although on rare occasions this fish may come close to shore within casting reach of shore anglers. Small fish are considered good eating, large fish only fair.

173.



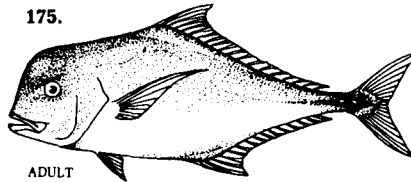
173. 'OPELU (H), 'opelu-mama (H), achuman (G), mackerel scad, *Decapterus pinnulatus* (Eydoux and Souleyet). This fish is very similar to the Atlantic mackerel scad, *Decapturus macarellus* (Cuvier). DISTRIBUTION: Tropical Pacific Ocean. SIZE: Up to 20 inches (51 cm) in length; usually less than 10 inches (25 cm). COLOR: Bluish or greenish yellow above, silvery below. □ Found in schools near the surface and in mid-water and common to the coastal waters of Hawaii and Samoa; rarely taken in Guam. In Hawaii, the young under 5 inches (<13 cm) long school far out at sea where they often become the prey of aku or skipjack tuna. Caught by hook and line at night and with a special 'opelu lift net during the day. An excellent food fish; also used as bait and live chum for large tuna and marlin.

174.

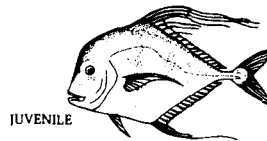


174. AKULE (H), aji (H), atule (S), atulai (G), hitting (G), mackerel bigeye scad, *Scomberomorus opalescens* (Bloch). In Hawaii, fish up to 5 inches (13 cm) are called "hahalalu" or "halalu"; those about 5 to 7 inches (13-18 cm) called "ma'au"; and those over 7 inches called akule. DISTRIBUTION: Tropical Pacific. SIZE: Up to 15 inches (38 cm); average caught by anglers is under 8 inches (20 cm). COLOR: Olive green on dorsal area, golden or silvery on sides and head; tail fin yellow and a faint spot on gill cover. □ The akule is a schooling fish inhabiting the mid- or surface waters along the coasts of all the islands, the young often coming close to shore into protected bays and harbors. In Hawaii, young fish or "halalu" offer great sport to shore anglers fishing with light spinning tackle and most are caught from about July to December. Adult fish are found offshore where they are netted or handlined in season by commercial fishermen. In American Samoa, this fish occurs throughout most of the year and is caught in lagoons and bays around Tutuila, usually pole fishing from shore and piers and handlining from boats. In Guam, large schools of juveniles occasionally enter bays and are taken with surround nets and sometimes with spinning gear, usually from April to August; larger fish are taken handlining offshore at night during dark moon phases. An excellent food fish.

175.



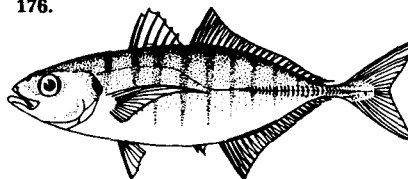
ADULT



JUVENILE

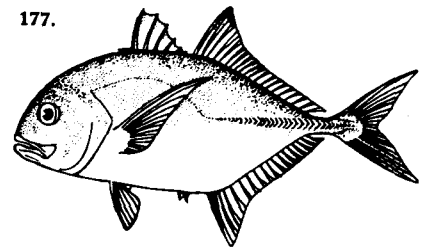
175. WHITE ULUA (H), ulua kihikihi, kagami ulua (H), thread crevally, *Alectis ciliaris* (Bloch). Previously known as *Carangoides ajax*. A similar species, *Alectis indica* (Rüppell), also occurs in Hawaii and may enter the sport catch. DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 3½ feet (107 cm) long; usually about 10 to 15 pounds (4.5-6.8 kg). COLOR: Adult fish are dusky white, often darker along the dorsal area; young are silvery. □ The juvenile form, called ulua kihikihi, is one of the most beautiful fish in Hawaiian waters, with the first four or five spiny rays of the dorsal and anal fins produced into long trailing streamers. As the fish matures, these spines grow shorter, and in some adults they disappear completely. The young are often found in harbors and other sheltered waters, but upon reaching maturity this once delicate creature assumes a more jacklike appearance, moves to deeper and more open water. Taken from rocky shores with heavy bait-casting gear. Offshore they are frequently caught deepwater trolling or handlining at depths of about 10 to 30 fathoms (18.3-54.9 m). An excellent food fish, served raw or cooked.

176.



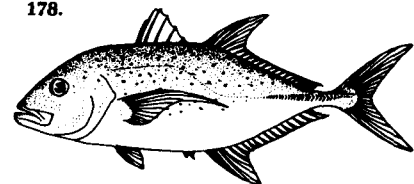
176. 'OMAKA (H), Atule mate (Cuvier and Valenciennes). DISTRIBUTION: Tropical Pacific. SIZE: Up to 12 inches (30 cm); averages about 8 to 10 inches (20-25 cm). COLOR: Greenish yellow often with a brassy tinge over silvery sides. □ This jack is found in protected bays and estuaries in Hawaii, and juveniles are very abundant in fall around floating objects. Most 'omaka are caught with light spinning tackle from shore and piers, and handlining from boats from March to October. Fresh and salted anchovy (nehu) is used for bait. Occasionally taken with throw nets and gill nets. Considered an excellent food fish.

177.



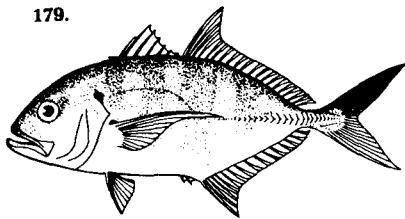
177. PA'U'U (H), tarakito (G) (young called "papio" (H), "lupo" (S), or "tarakitiyos" (G), as are the young of other jacks), crevalle, jack crevalle, *Caranx ignobilis* (Forskål). DISTRIBUTION: Tropical Indo-Pacific and Red Sea. SIZE: Up to about 3 feet (91 cm). COLOR: Pale olive above with a greenish tinge around the head; sides white; yellow anal fin. □ One of the more common jacks found around the Pacific Islands. The young are caught by shore anglers with pole and line in brackish-water bays and harbors throughout the islands. In Hawaii live shrimp, or "opae," is used almost exclusively as bait for small fish under 2 pounds (0.9 kg). Adult fish are found over nearshore reefs and are caught casting from rocky shores and ledges and sometimes by spearing. An excellent food fish.

178.



178. 'OMILU (H), hoshi ulua (H), oshi (H), illioli (H), omilumilu (H), malauli (S), tarakito (G), star jack, spotted jack, blue ulua, blue crevally, *Caranx melampygus* Cuvier and Valenciennes. DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 3 feet (91 cm); most fish taken are about 1 to 2 pounds (0.5-0.9 kg). COLOR: Rather variable, usually brownish blue above and silver tan on sides and belly. Fish between 10 and 24 inches (25-61 cm) have many small blackish spots on body; larger fish tend to lose spotting and become more of a uniform dark metallic blue. □ The 'omilu is another very common jack found throughout the Pacific Islands. This fish often moves in close to shore following channels in coral reefs and is taken by shore anglers with surf-casting gear. It is probably the most common ulua caught from shore in Hawaii, especially on the island of Hawaii where it is known locally as illioli. Generally, young fish are found in shallow bays and estuaries while medium-sized fish from 6 to 20 inches (15-51 cm) are taken over reefs. The largest fish are taken with trolling gear just outside the reefs. Also taken spearing, gill netting, and handlining. An excellent food fish.

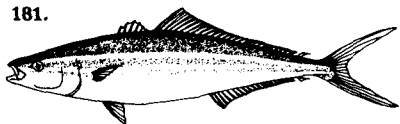
179.



179. **PAKE ULUA** (H), *mempachi ulua* (H), young called *papio* (H), *tarakito* (G), or *lupo* (S), *Caranx sexfasciatus* Quoy and Gaimard. **DISTRIBUTION:** Tropical Indo-Pacific. **SIZE:** Up to 5 feet (152 cm) or more long; most caught weigh about 2 pounds (0.9 kg). **COLOR:** Dark blue green to gold above; yellow green to silver below. The upper lobe of the caudal fin is black. Juveniles have four to seven dark vertical bars. □ Young fish are found in tide pools and brackish-water areas out to deeper coastal waters; adult fish live along rocky shores in turbulent water and over reefs. In Hawaii, the pake ulua is one of the largest of the jacks taken by anglers but this fish appears to be less common now than in previous years. Caught by hook and line from shore and from boats; adult fish are often taken along with 'opelu and akule while handlining at night. Some are taken by spears. An excellent food fish.

180. **BLACK ULUA** (H), *tarakito* (G), jack, *Caranx lugubris* Poey. **DISTRIBUTION:** Circumtropical. **SIZE:** Up to 3 or 4 feet (91-122 cm) long; average weight about 4½ pounds (2.0 kg). This fish frequents outer reef channels and is similar in appearance to *C. sexfasciatus*, but has a darker body color and an almost black head. □ Caught by anglers in Hawaii and particularly abundant around Guam where they are taken with handlines over bottomfishing areas around the island. Although there are reports of the flesh of this species being poisonous in certain parts of the Atlantic, it is commonly eaten in the tropical Pacific.

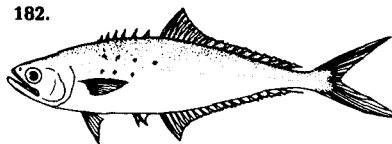
181.



181. **KAMANU** (H), Hawaiian salmon, rainbow runner, *Elegatis bipinnulatus* (Quoy and Gaimard). **DISTRIBUTION:** Circumtropical. **SIZE:** The all-tackle record—a fish taken off Kauai—measured 3 feet 11 inches (119.4 cm) and weighed 30 pounds 15 ounces (14.0 kg). Most kamanu caught in the Pacific Islands weigh around 12 to 15 pounds (5.4-6.8 kg). This fish is reported to reach 70 pounds (31.8 kg), although this seems doubtful. **COLOR:** Dark blue above followed in succession down the sides by a light-blue stripe, then a yellow stripe, then another light-blue stripe. Yellowish silver below, fins yellow. □ This sleek and colorful member of the jack family is an open-ocean species, usually seen and caught near the water's surface. Exceptionally large fish are taken in Hawaii, especially off Kauai and Oahu. Also caught off American Samoa and Guam. Caught by trolling with small lures or baits, also with handlines. Excellent eating, cooked or raw.

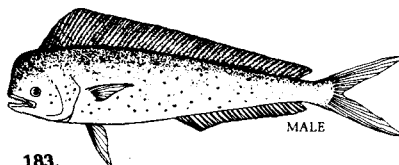
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182.

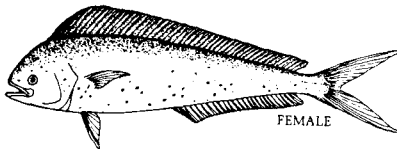


182. **LAE** (H), *lai* (S), *hagi* (G), leather-jacket, runner, leatherback, *Scomberoides lysan* (Forskål). **DISTRIBUTION:** Tropical Indo-Pacific and Red Sea. **SIZE:** Up to 25 inches (64 cm); usually 12 to 15 inches (30-38 cm). **COLOR:** Dusky above, fading to silver on sides and belly. □ The swift-swimming lae is an inshore coastal fish that frequents sheltered bays and harbors and brackish-water areas near the mouths of streams. It feeds at the surface or in mid-water, mostly on smaller schooling fishes. Seldom found very far from shore. In Hawaii, caught with hook and line during the day, often by shore anglers casting bait or lures for young jacks. This fish should be handled carefully because of its sharp venomous anal spines. A good fighter on light tackle. Not widely sought after for food. In Hawaii the tough, leathery skin of the lae is valued for making trolling lures.

#### CORYPHAENIDAE: DOLPHINS



183.

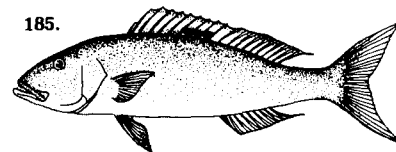


183. **MAHIMAH** (H. G), *masimasi* (S), dolphin, *Coryphaena hippurus* Linnaeus. **DISTRIBUTION:** Circumtropical. **SIZE:** All-tackle record (Spanish Wells, Bahamas) is 85 pounds (38.6 kg) with a length of 69 inches (175.3 cm). Hawaiian fish range up to 72½ pounds (32.9 kg), average about 25 pounds (11.3 kg). **COLOR:** When alive the body is brilliant yellow and green dotted with phosphorescent blue, the dorsal fin is purplish blue. This beautiful fish flashes a rainbow of colors when caught, and also just before dying. □ Perhaps this is the best known and most colorful of game fishes and one of the most abundant species caught deep-sea trolling in the Pacific Islands. Mahimahi inhabit the open sea, sometimes swimming in large schools. Commonly seen swimming close to the surface near schools of flying fish on which they feed, or around floating objects. Small fish up to 5 pounds (2.3 kg) are plentiful around the Hawaiian Islands in summer; large fish 30 to 40 pounds (13.6-18.1 kg) are taken February to April. Common off American Samoa and Guam year-round, with best fishing off the western coast of Guam usually from January to April (larger fish are caught later in the season). Males have an almost vertical head profile and grow to larger sizes than the females. Taken trolling and handlining and is as delicious to eat as it is beautiful.

184. **LITTLE MAHIMAH** (H), pompano dolphin, *Coryphaena equisetis* Linnaeus. **DISTRIBUTION:** Circumtropical. □ This fish is similar in appearance and habits to the mahimahi, but is known to reach a length of only about 30 inches (76 cm). Occasionally taken by Hawaiian anglers

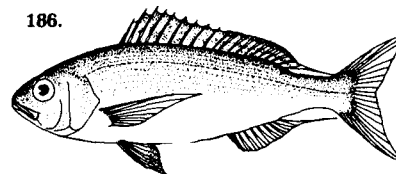
#### LUTJANIDAE: SNAPPERS

185.



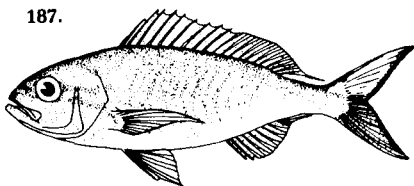
185. **UKU** (H), *aso'ama* (S), gray snapper, *Aprion virescens* Cuvier and Valenciennes. **DISTRIBUTION:** Tropical Pacific. **SIZE:** Up to 2 feet (61 cm) long; usually about 8 pounds (3.6 kg). **COLOR:** Uniform grayish blue, with the dorsal area more bluish than below. Dark blue towards head; three dark spots near base of dorsal fin. □ Of the large deepwater snappers discussed here, the uku occurs the nearest to shore and in relatively shallow water, usually less than 60 fathoms (109.7 m) deep. It is the most cylindrical of the snappers, having a long head and snout with a rather prominent groove on either side. Taken by hook and line over deep-sea ledges or banks, usually on or near rocky or hard bottom. Some are taken by trolling. An excellent food fish.

186.



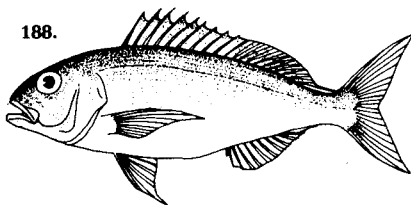
186. **'OPAKAPAKA** (H), pink paka (G), pink snapper, *Pristipomoides filamentosus* (Bleeker). **DISTRIBUTION:** Tropical Indo-Pacific. **SIZE:** Up to 3 feet (91 cm) long and about 18 pounds (8.2 kg); usually 5 to 6 pounds (2.3-2.7 kg). **COLOR:** Light violet brown dorsally, fading to dusky white below; pectoral fin yellowish. Last rays of dorsal and anal fins produced into filaments that reach base of tail fin. □ Like the uku, the 'opakapaka is a deepwater fish most abundant over rocky bottom drop offs. One of the more common snappers caught over Guam's banks, with most taken at depths of 100 to 150 fathoms (182.9-274.3 m). This fish is also reported to be abundant over the offshore ledges of American Samoa at about 200 to 300 fathoms (365.8-548.6 m), but these bottomfishing areas are seldom fished. In Hawaii, it is generally found in shallower water at around 40 to 100 fathoms (73.2-182.9 m) and young fish are sometimes taken in 20 fathoms (36.6 m). Taken handlining; in Hawaii, most are caught during the winter months. An excellent food fish.

187.



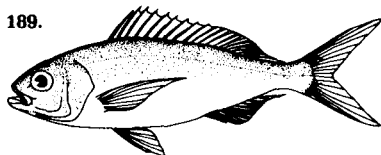
187. YELLOWTAIL KALIKALI (G). *Pristipomoides auricilla* (Jordan, Evermann, and Tanaka). DISTRIBUTION: Tropical Pacific. SIZE: Up to about 18 inches (46 cm) long. COLOR: Body purplish with 17 to 18 narrow, irregular chevron-shaped yellow bands; iris yellow; edge of upper lip yellow; fins yellowish, upper lobe of tail fin with a purple margin. Large males over about 10½ inches (27 cm) have a rather distinct yellow blotch on upper lobe of tail fin. □ A very common deepwater snapper in Guam, caught handlining over offshore ledges and banks at similar depths as *P. filamentosus*. An excellent food fish.

188.



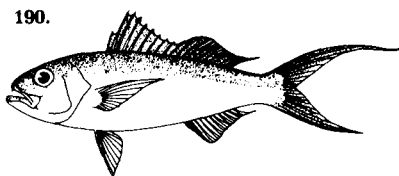
188. YELLOWEYE OPAKAPAKA (G). *Pristipomoides flavipinnus* Shinohara. DISTRIBUTION: Ryukyus and Guam. SIZE: Up to at least 17 inches (43 cm) or more long; fish over 16 inches (41 cm) occur frequently in catch. COLOR: Body lavender brown becoming pale towards belly; eye yellow; snout and head mottled with narrow, irregular, light-yellow streaks. Scales have yellow spots which form thin horizontal stripes above lateral line; fins yellowish. □ This is another common Guam snapper taken at about the same depths as *P. filamentosus* and *P. auricilla*. An excellent food fish.

189.



189. KALIKALI (H), pink kalikali (G). *Pristipomoides sieboldii* (Bleeker). DISTRIBUTION: Tropical Pacific and Indian oceans. SIZE: Up to at least 18 inches (46 cm). COLOR: Light lavender above becoming paler below. Scales above the lateral line have pale-blue spots in the center, forming lengthwise lines that become indistinct toward the belly. Margin of dorsal fin orange with light lavender; tail fin dark lavender with a light margin. □ This offshore snapper is commonly taken around Guam handlining over offshore banks and ledges at depths from 100 to 150 fathoms (182.9-274.3 m); none have been reported from depths less than 100 fathoms (182.9 m). In Hawaii, the kalikali is relatively minor in the sport catch, where it is taken from depths of 60 to 200 fathoms (109.7-365.8 m) with most caught in water 80 to 120 fathoms (146.3-219.5 m). Considered an excellent food fish.

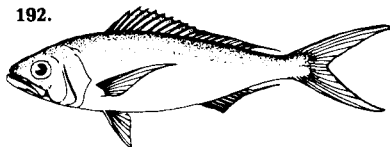
190.



190. ONAGA (H, G), 'ula'ula koae (H), palu (S), red snapper, *Etelis carbunculus* Cuvier. DISTRIBUTION: Tropical Pacific and Indian oceans. SIZE: Up to 36 pounds (16.3 kg); most run about 4 to 5 pounds (1.8-2.3 kg). COLOR: Red above; silvery pink below; eye red and mouth red or pink; dorsal and tail fin red. □ In Hawaii caught over offshore drop offs, usually in water deeper than the uku or 'opakapaka at depths of 80 to 130 fathoms (146.3-237.7 m) but not more than 160 fathoms (292.6 m). This is also a common snapper taken over ledge areas and banks off Guam and Samoa, usually at depths of 100 fathoms (182.9 m) or more. Caught handlining year-round, mostly during daylight. Onaga is a very important market fish in Hawaii. The meat has a delicate sweet flavor and is usually served raw, "sashimi" style. It brings a high price at the market especially during the New Year's season when the demand for traditional "onaga-sashimi" is at its peak. Also prepared as a special dish for weddings.

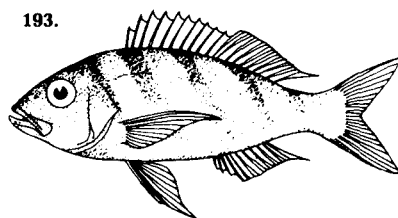
191. 'ULA'ULA (H), ehū (G), *Etelis marshi* (Jenkins). DISTRIBUTION: Tropical Indo-Pacific. SIZE: In Hawaii up to 2 feet (61 cm) long. In Guam this fish is known to reach 40 pounds (18.1 kg) in weight, but most caught are about 2 pounds (0.9 kg). COLOR: The 'ula'ula is similar in appearance and habits to the onaga, but lacks the red coloration on the inside of the mouth and usually has a yellowish band along the middle of the sides. □ Taken handlining along with onaga in Hawaiian waters, and one of the more common snappers found in Guam and American Samoa over offshore ledges and banks. An excellent food fish.

192.



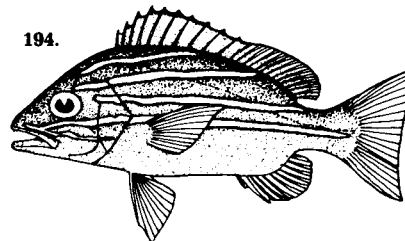
192. LEHI (G), *Aphareus rutilans* Cuvier and Valenciennes. DISTRIBUTION: Tropical Pacific. SIZE: Up to at least 3 feet (91 cm) long. COLOR: Brick red. □ A common Guam snapper taken handlining on the bottom over the Galvez Bank and off much of the leeward and windward coasts. This species also occurs in American Samoa and Hawaii, but is not important in the sport catch.

193.



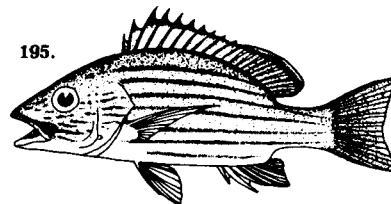
193. GINDAI (G), *Rooseveltilia brighami* (Seale). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 20 inches (51 cm). COLOR: Alternating red and yellow vertical bars; dorsal, pectoral, and caudal fins yellow. □ This colorful Guam snapper is commonly taken over 100-fathom (182.9-m) drop offs around the island. It also occurs in American Samoa and occasionally appears in Hawaiian markets. A good food fish.

194.



194. TA'APE (H), savani (S), funai (G), bluelined snapper, yellow-and-blue seaperch, *Lutjanus kasmira* (Forskål). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Reported to reach 15 inches (38 cm) long. COLOR: Bright lemon yellow with pale-blue stripes edged with lavender or deep purple. □ This distinctively colored fish is probably the most abundant inshore snapper taken in American Samoa, where it is commonly found in water 20 to 100 fathoms (36.6-182.9 m) deep. Relatively common around Guam at depths of 35 to 40 fathoms (64.0-73.2 m), though generally incidental in the sport catch. Introduced to Hawaii from the Marquesas in 1958 and 1969, where it now has entered the sport and commercial catch in significant numbers. In the Hawaiian Islands ta'ape are found in large schools over hard bottom in water 40 to 100 feet (12.2-30.5 m) deep, with adults sometimes in water up to 240 feet (73.2 m) deep. Caught handlining at night; some are taken in traps in Hawaii. A very good food fish.

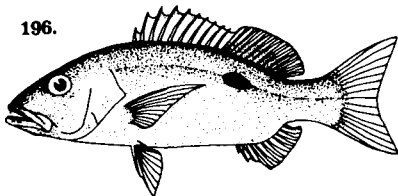
195.



195. TOAU (H), bua (G), red-margined seaperch, *Lutjanus fulvus* (Bloch and Schneider). DISTRIBUTION: Tropical Pacific. SIZE: Reaches a length of about 13 inches (33 cm). COLOR: Dusky yellow above fading to pale yellow or white below, with thin longitudinal yellow stripes along

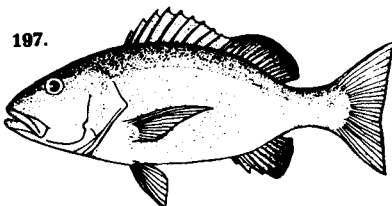
the scale rows. Dorsal and tail fins dusky red; anal and pelvic fins yellow; pectoral fin yellow on upper edge; small gold flecks and broken lines on head and cheek area. □ An inshore fish found in brackish water and around stream mouths out to about 40 or 50 feet (12.2-15.2 m) of water, sometimes entering deep tide pools. Feeds on small fishes and invertebrates and often seen in small aggregations. Successfully introduced to Hawaiian waters in 1956 and 1958. Taken by hook and line from shore and from boats; taken also with gill nets, surround nets, and spears. Considered a very good food fish.

196.



196. KAKAKA (G), vava sui (S), feloitega (S), taiva uli'uli (S), *Lutjanus monostigmus* (Cuvier and Valenciennes). DISTRIBUTION: Tropical Pacific. SIZE: Up to 18 inches (46 cm); most caught are about 10-12 inches (25-30 cm). COLOR: Olive-green body (sometimes coppery red, particularly in Samoan waters); scales on side brassy; belly yellowish white or light coppery red; lips bright red; fins all bright orange yellow. In general, this fish usually is distinguished by the small but prominent black spot on its side. □ One of the larger nearshore snappers commonly taken from shore over reef areas around the island of Guam and American Samoa. Like some other members of the snapper family it has been linked with cases of ciguatera, or fish poisoning; but in Guam it is commonly eaten and is also sold in the markets of American Samoa despite reports of it sometimes being toxic there.

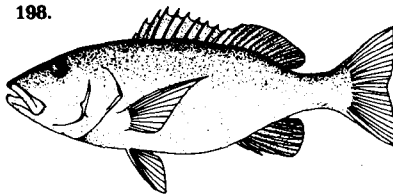
197.



197. MU (S), tagafi (G), *Lutjanus bohar* (Forskål). DISTRIBUTION: Widespread throughout the Tropical Pacific. SIZE: Attains 30 inches (76 cm). COLOR: Adult fish are uniformly red with a light greenish tinge around the head area; yellow eyes. Sometimes bronzy above, lighter below with two oval light spots on side. Base of pectoral and pelvic fins rosy; otherwise fins dusky. □ This snapper is commonly caught by handliners in American Samoa and Guam, usually in water 100 fathoms (182.9 m) or less, but does not occur in Hawaii. The flesh is reported to be poisonous and should not be eaten, even though in Guam many large fish (17-25 pounds or 7.7-11.3 kg), which are usually the most toxic, were taken by the Guam Division of Fish and Game in relatively deep water (35 fathoms or 64.0 m), and none proved to be poisonous.

40

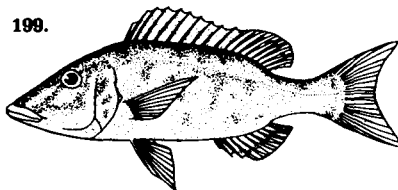
198.



198. MALA'I (S), fafaet (G), red snapper, *Lutjanus gibbus* (Forskål). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 24 inches (61 cm). COLOR: Body uniform red with red eyes. Large adults often are slightly dusky above and reddish below. □ A common snapper taken about reefs in American Samoa and Guam, occurring in moderately deep water. Usually taken handlining over the deeper parts of the reef; in Guam, some are taken spearing. Reportedly the flesh of this species causes severe poisoning in other parts of its range; however, fish taken from American Samoa and Guam waters are said to be not toxic and are commonly eaten.

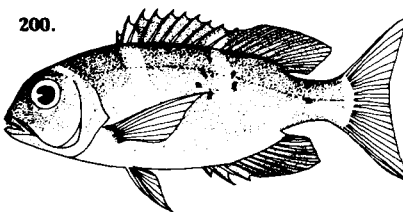
#### LETHRINIDAE: EMPERORS

199.



199. FILOA (S), lililok (G), green snapper, *Lethrinus miniatus* (Forster). DISTRIBUTION: Tropical Indo-Pacific and Red Sea. SIZE: Up to about 36 inches (91 cm). COLOR: Body dark brown to grayish, sometimes with dark mottling on sides; dorsal, anal, and tail fins pinkish; pectoral fin yellow. □ This long-snouted species is a common inshore reef fish in American Samoa and Guam, and is taken with a baited hook in water up to 100 feet (30.4 m) deep in American Samoa and up to 300 feet (91.4 m) in Guam. Large specimens are known to be slightly toxic in Samoa and other parts of this fish's range; however, it is said to be not toxic in Guam where it is highly prized as a food fish.

200.

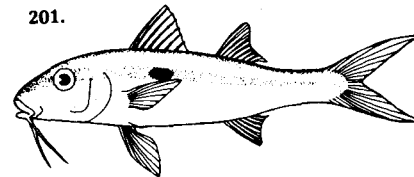


200. MU (H), mamamu (H), mumu moaga (S), loalia (S), matanhagon (G), *Monotaxis grandoculis* (Forskål). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 2 feet (61 cm). COLOR: Dusky to olive green with two whitish crossbars (sometimes three and four bars); black crescent at base of pectoral. Dorsal fin brownish and reddish at tip; caudal and anal fins orange and yellow at base; anal, pectoral, and ventral fins reddish; inside of mouth red. □ This species occurs over reefs in Hawaii and is

common in Samoan waters. It is considered a good eating fish and is usually caught by handline. Some are taken with spears and nets.

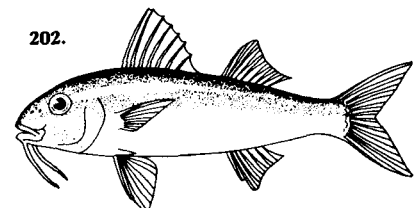
#### MULLIDAE: GOATFISHES

201.



201. WEKE-A'A (H), i'a sina (S), afolu (S), salmonete (G), spot weke, spot goatfish—youth called "oama" in Hawaii and "teau" in Guam, *Mulloidichthys flavolineatus* (Lacépède). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 18 inches (46 cm); "oama" average about 5 inches (13 cm) or less. COLOR: Silvery white with a yellow horizontal band extending from eye to tail; spot as indicated. This fish can change its markings rather rapidly, with additional spots or blotches appearing along the lateral yellow band which becomes paler and edged with blue. □ A very common inshore goatfish throughout the Pacific Islands, occurring on or near the bottom in schools or small aggregations over sandy patches that intersperse reef areas. When feeding, it rummages in the sand for food with its fingerlike chin barbels, leaving puffs of sand clouds in its wake. In Hawaii during late summer the young or "oama" swarm in shallow sandy areas and are caught from shore with poles and lines. Adult fish are mostly speared or netted; some are caught in fish traps and handlining from boats. In Guam, juveniles (teau) are much sought after by cast netters and surround netters and are quite common in the lagoon habitat. Considered a good food fish.

202.



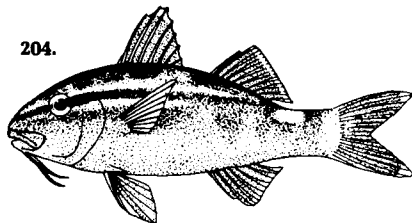
202. WEKE-ULA (H), salmonete maning (G), vete (S), ula oa (S), red weke, red goatfish, *Mulloidichthys vanicolensis* (Cuvier and Valenciennes). DISTRIBUTION: Tropical Indo-Pacific and Red Sea. SIZE: Up to 16 inches (41 cm) long; usually about 8 to 10 inches (20-25 cm). COLOR: Rosy red on the dorsal region, fading to whitish pink below. There is a prominent light-yellow band along the sides, extending from the eye and fading out towards the tail region. Ventral and pectoral fins are pale rosy; caudal fin has a yellowish tinge. □ The weke-ula is nocturnal, occurring in shallow-reef areas over sandy bottom, seeming to prefer more rocky surroundings than other goatfishes and deeper water of about 5 to 15 fathoms (9.1-27.4 m); probably deeper off the Kona coast of Hawaii. In Hawaii the weke-ula is



usually netted, although sometimes taken by hook and line from shore and from boats or by "torch fishing" with spears or hand nets. A good food fish.

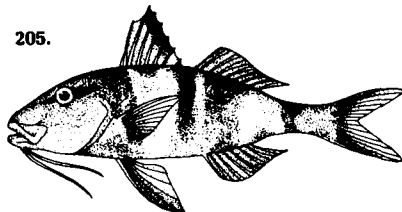
203. MALU (H), salmonete acho (G), goatfish, *Parupeneus pleurostigma* (Bennett). DISTRIBUTION: Widespread in the central Indo-Pacific. SIZE: Reaches a length of about 16 inches (41 cm). □ This is another relatively common goatfish similar to the weke-a'a in habits and appearance, except the malu is stockier, the base of the soft-rayed dorsal fin is very dark, and the blotch on the side is more deep than long. Taken by spearing and with nets.

204.



204. KUMU (H), red goatfish, *Parupeneus porphyreus* (Jenkins). DISTRIBUTION: Tropical Pacific. SIZE: Up to 8 or 9 pounds (3.6-4.1 kg); usually 1 to 3 pounds (0.5-1.4 kg). COLOR: Usually reddish with a rather prominent stripe through the eye, although young specimens occasionally have a greenish-color phase. Distinguished by the white saddle behind the soft dorsal fin. □ A fairly common Hawaiian goatfish found at various depths throughout reef areas especially under coral heads, often coming very close to shore. Caught mostly by spearing and in traps during the day; some are taken at night by spears of divers or waders on the reef with lights. The kumu is an extremely prized food fish in Hawaii. The flesh is considered a delicacy.

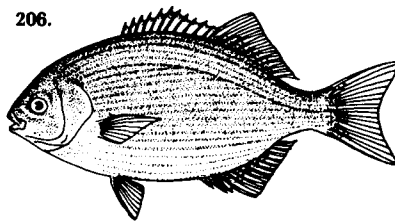
205.



205. MOANO (H), *Parupeneus multifasciatus* (Quoy and Gaimard). DISTRIBUTION: Hawaiian Islands. SIZE: Up to 12 inches (30 cm) or so; averages about one-third of a pound (less than 0.2 kg). COLOR: Dark red with alternating bands of pale rosy red and darker red. Usually distinguished by the dark-red-to-black bar that extends down between the two dorsal fins. □ This small goatfish is found over sand bottom from the shore to depths of about 40 fathoms (73.2 m), and like the other goatfishes mentioned it is usually found where patches of sand intersperse rock or coral. An abundant in-shore reef fish, taken in traps and by shore anglers with spinning and bait-casting gear, often along with papio and other small goatfishes. On the big island of Hawaii most are speared, though some are taken handlining (drifting and at anchor). Although small, the moano is considered by some to be among the tastiest of Hawaiian food fishes.

## KYPHOSIDAE: RUDDERFISHES, SEA CHUBS

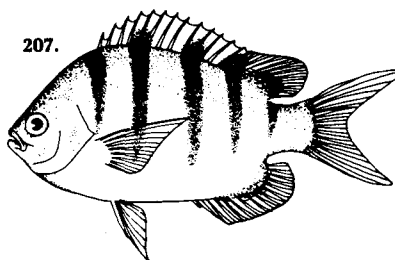
206.



206. NENUE (H), manaloa (H), nenu parii (H), guili (C), sea chub, rudderfish, *Kypphosus cinerascens* Forskål. DISTRIBUTION: Tropical Indo-Pacific and Red Sea. SIZE: Up to 10 or 12 pounds (4.5-5.4 kg); averages about 4 to 6 pounds (1.8-2.7 kg). COLOR: Gray brown with blue reflections, lighter below. Narrow dark bands on sides between scale rows. Some fish have irregular blotches of yellow on sides, and on rare occasions a specimen may be entirely yellow. □ In Hawaii, the nenu is partial to rough and turbulent waters along rocky coasts where it is often found in large schools. In Guam, it seems to prefer the edges of channels and reef margins. This species feeds mostly on algae. Large fish are generally taken by spear, cast nets, and gill nets; the young are sometimes caught during the day by hook and line. Nenu is rather difficult to hook because of its small mouth, but when hooked it fights vigorously. Generally not esteemed as a food fish in Hawaii, but some consider it a delicacy—it is much sought after by Guamanians. The flesh has a strong flavor, probably due to the fish's algal diet.

## POMACENTRIDAE: DAMSELFISHES

207.

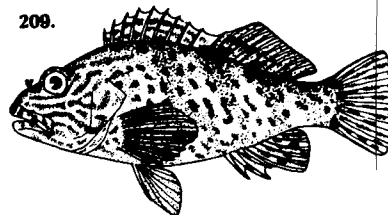


207. MAOMAO or "mamo" (H), *Abudefduf abdominalis* (Quoy and Gaimard). DISTRIBUTION: Hawaiian Islands. SIZE: Up to 9 inches (23 cm); most taken are about 5 inches (13 cm) long. COLOR: Pale brassy or green with four or five black vertical bars as indicated. Belly white with yellow tinge near the anal fin. □ This delicious little pan fish abounds in shallow-water reefs, harbors, and bays throughout the islands. It feeds on small crustaceans in the water and is often found in loose aggregations hovering over the reef or darting around pilings and other underwater structures. Maomao are the prime quarry of Hawaii's children who catch them from shore with pole and line using a very small hook. Also caught by spearing, in traps, and with cast nets.

208. KUPIPI (H), dodo (G), sergeant major, *Abudefduf sordidus* (Forskål). □ This fish is similar in appearance and habits to maomao, but is readily distinguished from it by a prominent black spot near the tail immediately behind the soft dorsal fin. The body color is also more grayish than that of maomao.

## CIRRHITIDAE: HAWKFISHES

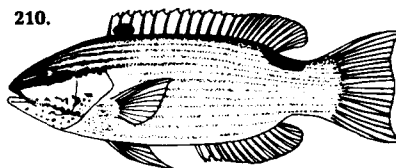
209.



209. PO'O-PA'A (H), 'o'opu-kai (H), spotted hawkfish, *Cirrhitis pinnulatus* (Bloch and Schneider). DISTRIBUTION: Tropical Pacific. SIZE: Up to about 10 inches (25 cm); most caught are about 5 inches (13 cm) long. COLOR: Red, brown, and white spottings and mottlings. □ Like the rest of the hawkfish family this fish is characterized by a fleshy fringe on the snout. This nocturnal predator prefers the turbulent water of the surge zone where it lies in wait for passing prey, sometimes on large rocks or coral heads. Occasionally it darts out to snatch its prey, then returns to its original post or swims to another vantage point to begin another vigil. During the day, the po'o-pa'a hides in crevices in the reef. Taken by hook and line and spearing. Considered only fair as a food fish, and is used mainly in making soup. The meat tends to fall apart when fried.

## LABRIDAE: WRASSES

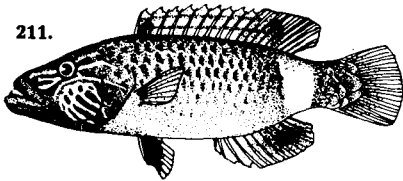
210.



210. 'A'AWA (H), hinalea (H), spot wrasse, blackspot wrasse, *Bodianus bilunulatus* (Lacépède). DISTRIBUTION: Tropical Pacific. SIZE: Up to about 24 inches (61 cm) or about 8 or 9 pounds (3.6-4.1 kg); most caught are about 5 pounds (2.3 kg) or under. COLOR: Highly variable with age and sex as is the case with many members of the wrasse family. Females go through three color phases with growth: fish 4 to 12 inches (10-30 cm) long are nearly all red with a black spot under the soft dorsal fin; those over 12 inches (30 cm) are usually plain bluish black. Males are marked as illustrated; dark reddish brown or purplish bands on head area thinning to narrower and somewhat redder stripes on sides and belly, which is white or pale yellow; eye red; pronounced white band on head area; dorsal, caudal, and anal fins yellow. □ The 'a'awa is one of the larger Hawaiian wrasses and is fairly abundant throughout the coral reef habitat. It is

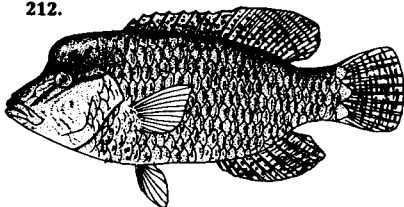
taken on the bottom in shallow water out to depths of about 100 feet (30.5 m) or more, with bigger fish occurring in deeper water. The 'a'awa, like other members of the wrasse family, is active during the day and hides among coral or under sand at night. Caught handlining from boats, usually while fishing for other species and often considered a nuisance. Sometimes taken by spear. Opinions on the food value of this fish vary from poor to good.

211.



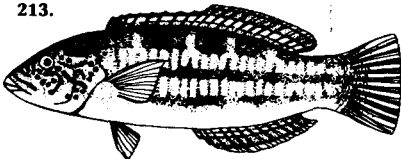
211. PO'OU (H), *Cheilinus rhodochrous* Günther. DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to 2 feet (61 cm); most are about 10 inches (25 cm) or about ¾ pound (0.3 kg). COLOR: Highly variable with growth. At 10 inches (25 cm), plain olive drab with a white saddle near the tail (see illustration). Fish 20 inches (51 cm) and over have no white saddle, but have large black spots at base of the dorsal and anal fins, and the ventral fin is dark. □ The po'ou is commonly found in reef areas around the islands of Molokai, Lanai, Maui, and Hawaii, at depths up to 40 or 50 feet (12.2-15.2 m). In the Hawaiian Islands it is often caught along with 'a'awa while handlining and spearing. Taken by spear in Guam. A good food fish.

212.



212. TANGISUN (G), *Cheilinus undulatus* Rüppell. DISTRIBUTION: Tropical Indo-Pacific. SIZE: Known to reach 5 to 6 feet (152-183 cm) or more in length, and over 100 pounds (45.4 kg). COLOR: Mostly a dull, mottled olive green, each scale with a vertical purplish line; red and green bars and spots on dorsal and anal fins; tail fin edged with yellow; pelvic fins yellow. □ This exceptionally large wrasse is caught in Guam; however, large specimens frequently taken by local anglers before the advent of scuba are now much less common. This humpheaded wrasse is much prized and an excellent food fish. Taken spearing and sometimes bait casting.

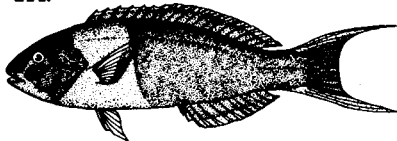
213.



213. HINALEA (H), aaga (G), *Thalassoma fuscum* (Lacepede). DISTRIBUTION: Tropical Pacific. SIZE: Up to 11 inches (28

cm); usually about 6 inches (15 cm). COLOR: Pale greenish with two or three irregular, broad, horizontal rosy stripes, which intermingle with greenish stripes, brown blotches, and purplish bars. Dark-brown-to-black spots and reticulations on head. □ This colorful wrasse is common to open rocky surge areas and shallow-water coral reefs, and is sometimes found in deepwater tide pools. Although principally a daytime feeder, the hinalea is often taken at night and is caught by hook and line from shore as well as from boats in the Hawaiian Islands. It is taken occasionally by spear in Guam. The very slimy skin makes it difficult to hold. Opinions vary on its food value; generally not sought after.

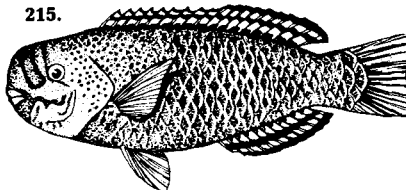
214.



214. HINALEA LAUWILI (H), 'a'ala'ihī (H), saddle wrasse, *Thalassoma duperreyi* (Quoy and Gaimard). DISTRIBUTION: Hawaiian Islands. SIZE: Up to about 12 inches (30 cm); most caught are under 6 inches (15 cm). COLOR: Adults are green with a striking orange-brown shoulder bar. □ A very abundant Hawaiian wrasse found throughout the islands along shallow rocky shorelines as well as in pure reef areas. This fish has an annoying habit of robbing a baited hook meant for more desirable species and is often considered a pest by anglers seeking bigger and tastier game; its food value is considered poor.

#### SCARIDAE: PARROTFISHES

215.



215. UHU (H), green parrotfish, *Scarus perspicillatus* Steindachner. DISTRIBUTION: Hawaiian Islands. SIZE: Up to 2 feet (61 cm) or more; most caught are around 14 inches (36 cm) long. COLOR: Males and females differ markedly and were once thought to be two separate species. Large males have a distinctive dark band that extends down below the eye across a humplike snout. The body is olive colored, with each large scale edged with yellow. The dorsal fin is pea green with black stripes and peacock blue at the base. Chin area, edge of tail, ventral fin, are also a vivid peacock blue. Females are reddish brown with red fins, and the head profile is gently sloping, not vertical as in the adult male. □ Found in rocky areas and coral reefs, usually more abundant at the reef's outer edges in water 2 to 4 fathoms (3.7-7.3 m) and deeper. Like other members of the parrotfish family, it scrapes algae off the surfaces of rocks and dead coral with its beaklike jaw teeth during the day, resting

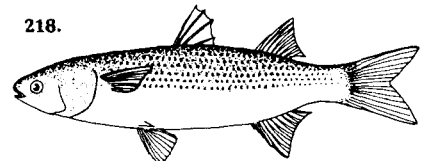
amid rock and coral at night. Young fish sometimes secrete a mucous envelope about themselves during the night which presumably serves as protection against predators. It is the largest and most commonly speared parrotfish in Hawaiian waters—and the most prized. An excellent food fish.

216. UHU (H), parrotfish, *Scarus dubius* Bennett. □ Another common parrotfish taken by spear in Hawaii. Primarily bright orange with blue markings. Attains a length of about 14 inches (36 cm).

217. HUMPBAC PARROTFISH, *Scarus gibbus* Rüppell and *Cetoscarus bicolor* (Rüppell). □ These two parrotfishes are highly sought by Guam anglers. Not as common as they once were, especially the large specimens; both are hunted with spears. *S. gibbus*, larger of the two, is known to reach 30 to 40 pounds (13.6-18.1 kg). Food value is excellent.

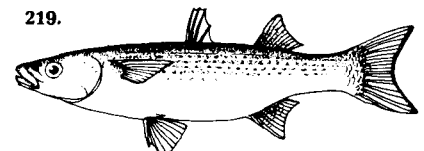
#### MUGILIDAE: MULLET

218.



218. 'AMA'AMA (H), aguas (< 8 in., G), liguan (> 8 in., G), striped mullet, mullet, *Mugil cephalus* Linnaeus. DISTRIBUTION: Tropical and temperate seas, worldwide. SIZE: Up to about 18 inches (46 cm); most caught are around 12 inches (30 cm) long. COLOR: Silvery gray. □ Although schools of 'ama'ama are found along the open coast, they seem to prefer calm waters close to shore, around mouths of streams and inlets and in brackish-water bays and harbors. Just about the most difficult fish to catch by pole and line, but this does not seem to discourage a select breed of Hawaiian islanders who patiently wait for this finicky fish to take a tiny hook baited with bread or limu (seaweed). For those with less patience, the 'ama'ama can be taken by a variety of other fishing gear such as cast nets, gill nets, and surround net (hukilau) and at nighttime torchlight fishing with hand nets or cast nets. In Hawaii the fishing season is closed December through February. On American Samoa this fish is taken mostly with cast nets, and in Guam most are taken with cast nets and surround nets, although light spinning tackle is sometimes used near sand beaches. An important food fish. In Hawaii a small number are raised commercially in fish ponds.

219.



219. UOUOA (H), false mullet, *Neomys leuciscus* (Günther). DISTRIBUTION: Tropical Pacific. SIZE: Up to 18 inches (46

cm); usually 6 inches (15 cm). COLOR: Silvery with a yellow mark on the upper part of the pectoral fin. □ The uouoa (often pronounced wo-wo) occurs along sandy shores and in tide pools as well as in rocky surge areas. Common throughout the Hawaiian Islands, where most are taken with cast nets, some by hook and line using bread for bait. This species also occurs in Guam, but is not common. A good food fish.

#### SPHYRAENIDAE: BARRACUDAS

220.

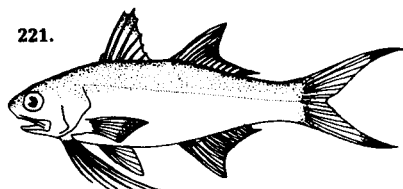


220. KAKU (H), alu (G), great barracuda, *Sphyræna barracuda* (Walbaum). DISTRIBUTION: Tropical seas and Atlantic and Pacific oceans. SIZE: All-tackle record (Lagos, Nigeria) is 83 pounds (37.6 kg) with a length of 6 feet ¼ inch (183.6 cm). Most caught by anglers are under 50 pounds (22.7 kg), average is 5 to 10 pounds (2.3-4.5 kg). COLOR: Slate colored dorsally turning silvery on sides and belly. Black flecks on sides. □ The kaku occurs inshore as well as offshore and in a variety of habitats. Young fish frequent brackish-water areas and sometimes enter drainage ditches and fish ponds in the Hawaiian Islands. When close to shore in bays or around stream mouths barracuda are usually solitary, but offshore this species tends to travel in schools or small aggregations. Caught casting from shore and trolling lures and baits and handlining from boats. A wire leader is essential. This aggressive and toothsome predator should be regarded with caution, in and out of the water. Considered only fair as a food fish.

The kawalea, or Japanese barracuda (*Sphyræna helleri* Jenkins), is another species of barracuda taken by anglers and is usually caught handlining. It is a much smaller fish than the kaku, and reaches a length of about 2 feet (61.0 cm). A similar species, *Sphyræna forsteri*, occurs in Samoan and Guam waters, known locally as "sapatu" and "alu," respectively.

#### POLYNEMIDAE: THREADFINS

221.

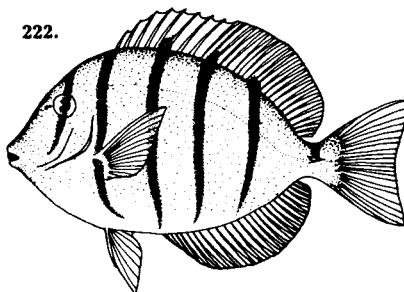


221. MOI (H), young called "moi-li'i" (H), boca dulce (G), Pacific threadfin, *Polydactylus sexfilis* (Cuvier and Valenciennes). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Reportedly reaches about 24 inches (61 cm) long and about 10 pounds (4.5 kg); most caught are about 12 to 14 inches (30-36 cm). COLOR: Dusky above, silvery on sides and belly; fins black-tipped. □ The moi is a highly sought-after food and game fish in Hawaii, where it is found in sandy holes (called "moi holes") along rocky shores, and along sandy

beaches in surge areas. From August through December small moi or "moi-li'i" occur in large schools along beaches and in sheltered coves with some venturing into tide pools. Primarily taken casting with baits, plugs, and spoons; also taken with cast nets, gill nets, and spears. Moonlit nights are considered best for catching moi by casting, although this popular sport fish is caught both night and day.

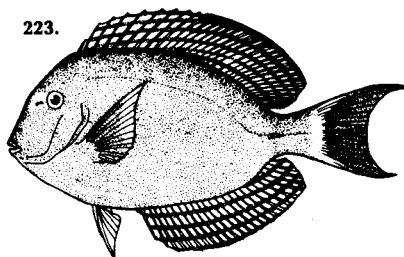
#### ACANTHURIDAE: SURGEONFISHES

222.



222. MANINI (H), kicho (G), convict tang, *Acanthurus sandvicensis* Streets. DISTRIBUTION: Widespread throughout the tropical Indo-Pacific. SIZE: Up to 9 inches (23 cm); averages about 6 inches (15 cm). COLOR: Silvery, sometimes with a yellowish tinge; black vertical bars. □ This is Hawaii's most abundant surgeonfish and can be found in almost any reef area throughout the islands in both calm and turbulent water. It is also common about Guam. The young inhabit tide pools, but with maturity work their way into deeper water. Primarily a schooling fish, but can also be seen singly or in small aggregations. In Hawaii the manini is usually taken by cast nets, but some are also taken with pole and line using shrimp or a special blend of octopus ink (each angler has his own recipe) as well as with gill nets, traps, and spears. In Guam, most are taken with nets and spears. An excellent food fish.

223.

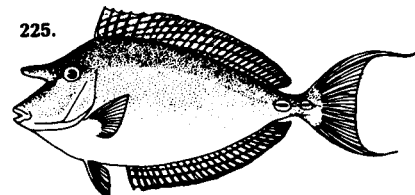


223. PUALU (H), ugupao (G), *Acanthurus xanthopterus* Cuvier and Valenciennes. DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to about 20 inches (51 cm); usually about 10 inches (25 cm) long. COLOR: Uniform purplish gray, sometimes with irregular dark stripes along sides; dorsal and anal fins with three or four longitudinal blue bands. □ The pualu is found in bays and harbors as well as in deep outer reefs where coral is interspersed with sand; usually at depths of 30 feet (9.1 m) or more. Taken with pole and line; also trapped, netted, and speared. Like most surgeonfish, the pualu should be

handled with respect. It carries formidable weapons at the base of the tail in the form of recurved spines which it can erect by bending its caudal peduncle, and it usually does so when threatened. These bladelike spines can inflict a nasty wound. Opinions on its food value vary from fair to good.

224. PALANI (H), ugupao (G), surgeonfish, *Acanthurus dussumieri* Cuvier and Valenciennes. DISTRIBUTION: Tropical Indo-Pacific. SIZE: Up to and exceeding 18 inches (46 cm). COLOR: Spotted with black; bright-blue tail fin; fine blue lines on body fading towards belly; caudal spine white and broadly edged with black; yellow dorsal and anal fin. □ The palani, a close relative of the pualu, is another surgeonfish that occasionally enters the sport catch in Hawaii and Guam. It occurs in bays and outer reef areas over sandy patches. Most are taken by traps; some are speared. Food value considered fair.

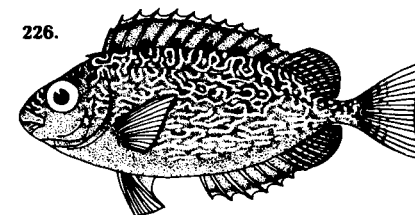
225.



225. KALA (H), tataga (G), ume (S), ili'ilia segi (S), unicornfish, *Naso unicornis* (Forskål). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Reaches a length of 24 inches (61 cm); averages about 16 inches (41 cm) long. COLOR: Dusky olive; fins light blue; also light blue around the double keel blades. Body color is sometimes very pale. □ The kala occurs in inshore reef areas and along rocky shores where it feeds on algae. It is a schooling fish; however, large individuals are sometimes seen singly on the outer edges of the reef. The young are found occasionally in tide pools. Characterized by the horn on its snout just about at eye level, which is hardly noticeable in young specimens, but lengthens with age. The skin is leathery and strong, and the two keel blades on each side of the tail are immovable and always in an open position. In Hawaii, kala are mostly speared, although some are taken with cast nets, gill nets, and hooks and lines. In Guam, this fish is taken spinfishing and with surround nets. Food value considered only fair.

#### SIGANIDAE: RABBITFISHES

226.

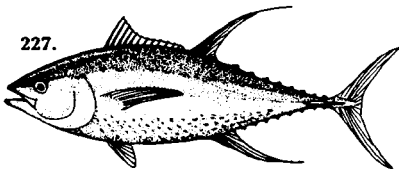


226. SESJUN (G), rabbitfish, *Siganus spinus* (Linnaeus). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Most caught in Guam are 8 or 9 inches (20-23 cm) in length. COLOR: Brown with narrow bluish lines forming a reticulated pattern along

the back; head plain gray or brownish; cheeks silvery; tail fin with three to four faint brown bars. Has slimy slippery skin with tiny concealed scales. □ Sesjun is a herbivorous species that browses across rock or reef areas, often in large schools. It is a very common shallow-water reef fish found around the island of Guam, where it is caught with cast nets, gill nets, and surround nets. This fish should be handled carefully—it can inflict venomous puncture wounds with its fin spines. An excellent food fish.

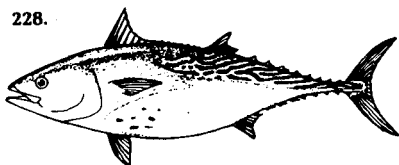
## SCOMBRIDAE: MACKERELS AND TUNAS

227.



227. 'AHI (H), asi (S), yellowfin tuna, *Thunnus albacares* (Bonnaterre). DISTRIBUTION: Cosmopolitan in tropical and subtropical seas. SIZE: All-tackle record (San Benedicto Island, Mexico) is 308 pounds (139.8 kg) with a length of 7 feet (213.4 cm). In Hawaii, fish are known to range up to 300 pounds (136.1 kg); average size varies with fishing area. In general, deepwater fish found at about 1,000 fathoms (1,828.8 m) averaged about 100 pounds (45.4 kg); those caught in 25 to 100 fathoms (45.7-182.9 m) averaged about 20 pounds (9.1 kg). COLOR: Blue green above, white below. A faint yellow stripe that fades after death, extends from eye to tail. Soft dorsal and anal fins and finlets bright yellow; the dorsal and anal fins lengthen with age. □ 'Ahi is a pelagic schooling fish found over deepwater banks and submarine ledge areas. The young often travel near the surface feeding on schools of bait fishes and squid. This popular game fish can be caught year-round throughout the Pacific Islands, trolling or handlining with feathered jigs, plugs, or spoons. In Hawaii, most fishing takes place July to November; in Guam, February to August; and in American Samoa, March to July. Excellent eating, cooked or raw (sashimi style).

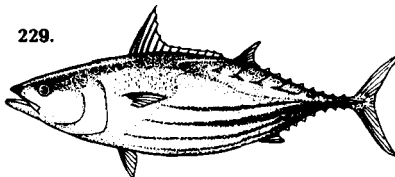
228.



228. KAWAKAWA (H), black skipjack tuna (G), little tunny, bonito, false albacore, *Euthynnus affinis* (Cantor). DISTRIBUTION: Indo-Pacific. SIZE: Up to about 20 pounds (9.1 kg); most caught are around 4 or 5 pounds (1.8-2.3 kg). COLOR: Dark green or blue above, silvery below; dark wavy marks on dorsal area as indicated; one to five dusky spots below pectoral fin are usually present. □ The kawakawa is a schooling pelagic species usually caught trolling over 100-fathom (182.8-m) drop offs, and often in association with aku.

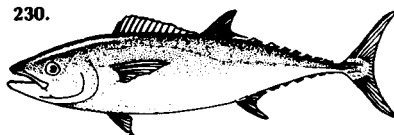
skipjack tuna. Present in Hawaiian waters throughout the year, but most abundant during summer when the fish come fairly close to shore in large schools. In Guam they appear to be most abundant in early spring. Anglers are guided by seabirds that follow the schools and feed on small fishes that the kawakawa flush to the surface. A hard-fighting game fish. Good eating, although not as much in demand as some of the other tuna species.

229.



229. AKU (H), atu (S), skipjack tuna, bonito, *Katsuwonus pelamis* (Linnaeus). DISTRIBUTION: Cosmopolitan in temperate and tropical seas. SIZE: All-tackle record in the Indian Ocean (Baie du Tambeau, Mauritius) is 40 pounds (18.1 kg) with a length of 38 3/4 inches (98.4 cm). In Hawaii, aku average about 18 to 22 pounds (8.2-10.0 kg) in summer; 5 to 12 pounds (2.3-5.4 kg) rest of year. In Guam, this fish usually runs 3 to 7 pounds (1.4-3.2 kg) most of the year; 10 to 12 pounds (4.5-5.4 kg) seasonally. COLOR: When alive, dark metallic blue above, light dusky blue below, dark stripes as indicated. Latter half of dorsal region bright blue with oblique purplish stripes which fade soon after death. When excited or feeding, broad dusky bars sometimes appear on sides. □ The aku is a schooling, pelagic species common throughout the Pacific Islands, its habits being generally the same as the kawakawa's. Sometimes in certain areas such as off southeastern Lanai, aku come relatively close to shore; more often they are found in water 100 fathoms (182.9 m) and deeper. Caught trolling year-round using feathered jigs and other small lures, and located by flocks of seabirds. Best fishing in Hawaii is in summer; in American Samoa from about October to March; and in Guam from February to August. The fish has excellent flavor; is popular for sashimi and dried. Also used as bait for marlin.

230.



230. TAGI (S), dogtooth tuna, scaleless tuna, white tuna, *Gymnosarda unicolor* (Rüppell). DISTRIBUTION: Tropical Indo-Pacific. SIZE: Reported to reach 250 pounds (113.4 kg), but averages about 20 pounds (9.1 kg). COLOR: Deep purple above, silvery below; finlets yellowish. □ Tagi is a migratory fish found along the edges of deepwater reefs and submarine ledges where the bottom abruptly drops off into deeper water. It either schools in small groups or is solitary. This fish is not as deep bodied as other members of the tuna family and is distinguished by its large "peglike" teeth and lack of body scales. A fine food and game fish that puts up a hard, jerky fight when hooked. Caught

trolling and also drifting with live, cut, or whole baits. In American Samoa the dogtooth tuna is commonly taken handlining at dusk and at night over 100-fathom (182.8-m) drop offs. Caught only incidentally around Guam and does not occur in Hawaii.

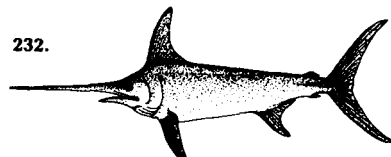
231.



231. ONO (H), tosun (G), wahoo, *Acanthocybium solandri* (Cuvier and Valenciennes). DISTRIBUTION: Tropical Atlantic and Pacific oceans. SIZE: All-tackle record (Cat Cay, Bahamas) is 149 pounds (67.6 kg) with a length of 6 feet 7 3/4 inches (202.6 cm). In Hawaiian and Samoan waters, ono average around 30 to 40 pounds (13.6-18.1 kg). In Guam, tosun average about 20 pounds (9.1 kg). COLOR: Generally dark blue above fading into silver below with about 30 purplish-gray bars on sides that flash bright blue when the fish is fighting a hook. □ Ordinarily a solitary fish that roams the surface waters of the open sea, usually over deep-sea ledges where the bottom drops off sharply. Often seen near floating logs and other debris that provide shelter to small fish upon which the ono feeds. In Hawaii ono are often caught along with 'ahi while trolling over submarine ledges in water 25 to 100 fathoms (45.7-182.9 m) deep. Taken intermittently throughout the year over the billfish grounds off Guam. In American Samoa caught trolling along nearshore 100-fathom (182.9-m) drop offs as well as offshore. The ono is a strong persistent fighter. Its pointed jaws studded with sharp teeth should be carefully avoided. An excellent food fish; aptly named "ono," Hawaiian word meaning "to have sweet taste."

## XIPHIIDAE: SWORDFISHES

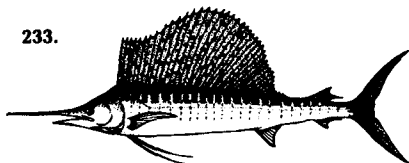
232.



232. A'U (H), mekajiki (H), swordfish, broadbill, *Xiphias gladius* Linnaeus. DISTRIBUTION: Cosmopolitan in tropical and temperate seas. SIZE: All-tackle record (Iquique, Chile) is 1,182 pounds (536.2 kg) with a length of 14 feet 11 1/4 inches (455.4 cm). Averages about 250 pounds (113.4 kg) in Hawaii's commercial catch. COLOR: Varies from metallic purplish to blackish brown to almost black; generally, dark brown. □ This solitary open-ocean fish is sought by big-game anglers throughout its range but few are ever taken by them in the tropical Pacific. Broadbill are hard to find, hard to hook, and even harder to land. In Hawaii, most are taken by commercial longliners. Sport-caught fish are usually taken slow-trolling or drifting live, whole, and cut baits. Distinguished from the marlins by a sword that is flattened rather than rounded in cross section, and by the rigid dorsal fin that is not retractable as in other billfishes. An excellent food fish.

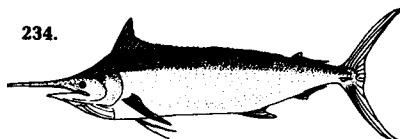
# ISTIOPHORIDAE: BILLFISHES

233.



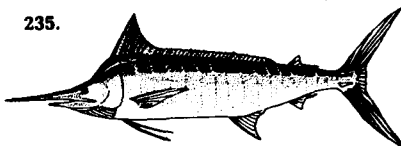
233. A'U'LEPE (H), bashokajiki (H), saula-lele (S), sailfish, *Istiophorus platypterus* (Shaw and Nodder). DISTRIBUTION: Cosmopolitan in tropical seas. SIZE: All-tackle record in the Pacific (Santa Cruz Island, Galapagos) is 221 pounds (100.2 kg) with a length of 129 inches (327.7 cm). In the Pacific Islands sailfish average about 50 pounds (22.7 kg) or less. COLOR: Sail cobalt blue to purple; body dark steely blue above and silvery white below; sides with pale-purple vertical bars. □ A pelagic open-ocean fish, often solitary, but known also to occur in small schools or groups, preferring warm-water temperatures between 74° to 88°F. One of the leading game fishes in American Samoa, where it is taken surface trolling with baits and lures year-round. Also taken by sportsmen over the billfish grounds off Guam. Relatively rare in Hawaiian waters, and only occasionally taken by anglers—most are caught by commercial longliners. When swimming, the huge saillike dorsal fin folds into a fleshy groove at its base, but often is raised when the fish is fighting a hook. Its food value is poor, although some fish are smoked.

234.



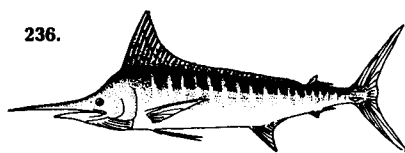
234. A'U (H), shirokajiki (H), black marlin, *Makaira indica* (Cuvier and Valenciennes). DISTRIBUTION: Tropical and temperate Pacific and Indian oceans. SIZE: All-tackle record (Cabo Blanco, Peru) is 1,560 pounds (707.6 kg) with a length of 14½ feet (442.1 cm). Known to reach 1,800 pounds (816.5 kg); averages about 200 pounds (90.7 kg). COLOR: Variable. Most are dark slate blue above, silvery below lateral line. Sometimes a fish may have pale-blue stripes or blue patches on sides that fade quickly after death. □ The black marlin is the largest of all game fishes and highly prized by blue-water anglers, although only occasionally taken around the Hawaiian Islands and off Guam and rarely taken in American Samoa. It is an open-ocean fish and usually solitary. Distinguished from all other billfishes by the rigid pectoral fin that cannot be folded against the body without breaking the joint. It is also wider and deeper around the head than all other billfishes. Caught slow trolling with baits, fast trolling with lures; also drifting and at anchor with fresh or live baits. In Hawaii, the chance of landing one is best while trolling off the Kona coast or off Kauai.

235.



235. A'U (H), kurokajiki (H), saula (S), blue marlin, *Makaira nigricans* Lacépède. DISTRIBUTION: Tropical and temperate waters of the Indo-Pacific and Atlantic oceans. SIZE: All-tackle record (Ritidian Point, Guam) is 1,153 pounds (523.0 kg) with a length of 14 feet 8 inches (447.1 cm); however, an unofficial catch was recorded at over 1,600 pounds (725.8 kg) from off Oahu. In the Pacific Islands, most run about 300 or 400 pounds (136.1-181.4 kg). COLOR: When alive, cobalt blue above and silver below; sometimes with pale-blue stripes on sides and blue patches on dorsal area and tail. Colors fade quickly after death and fish becomes a dark slate blue. □ Occasionally confused with the striped marlin, but distinguished by its more robust form and relatively low dorsal fin, of which the longest fin rays are shorter than the greatest depth of the body. Differs from the black marlin in that the pectoral fin can be folded flush to the sides of the body. The blue marlin is the most tropical of marlins, usually occurring in water 70° to 88°F. It is the leading big game fish in the central Pacific and the most abundant sport-caught marlin in Hawaii, American Samoa, and Guam. This extremely powerful and fast-swimming fish feeds mainly on members of the tuna family, particularly the skipjack tuna or aku. Occurs year-round throughout the islands covered here, and in Hawaii is most abundant during the summer. Sport fishing boats troll over bank areas looking for signs of schooling baitfish upon which marlin feed, or troll over offshore ledges where the bottom drops precipitously from 100 to 1,000 fathoms (182.9-1,828.8 m) or more. Trolling with large Hawaiian lures or "konaheads" is especially productive, although live, cut, and artificial baits also are used.

236.

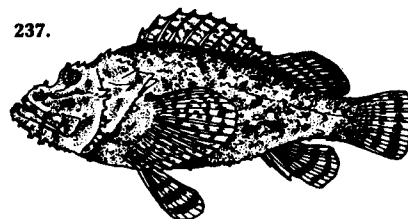


236. A'U (H), naraigi (H), makajiki (H), striped marlin, *Tetrapturus audax* (Philippi). DISTRIBUTION: Temperate and tropical waters of the Indo-Pacific. SIZE: All-tackle record (Cape Brett, New Zealand) is 415 pounds (188.2 kg) with a

length of 11 feet (335.4 cm). Hawaiian striped marlin may reach up to 150 pounds (68.0 kg), but rarely over 100 pounds (45.4 kg), usually about 80 to 90 pounds (36.3-40.8 kg). COLOR: Royal blue above, silvery below; lavender or pale-blue stripes; dorsal and anal fins cobalt blue. These colors are most vivid when the fish is striking or fighting the hook. □ Of the island groups discussed here, this species occurs only in Hawaii, where it is relatively common and the leading billfish taken commercially. It is not, however, caught by sport anglers in as many numbers as the blue marlin, probably because most recreational fishing for billfish in Hawaii occurs during the summer, a time of year when striped marlin are least abundant according to commercial catch records (striped marlin catches tend to peak in spring and fall with few taken during the summer; the largest fish are taken in the fall). It is a beautiful fish and the most acrobatic of the marlins, often making breathtaking leaps into the air in its struggle to free itself from the hook. Usually caught slow trolling with live baits. It is more slender than the blue or hefty black marlin and is distinguished by the high pointed dorsal fin, the first rays of which are higher than the greatest depth of the body, and a greater number of stripes on the body than the blue marlin. A high-priced food fish in Hawaii, popular for sashimi and smoked.

## SCORPAENIDAE: SCORPIONFISHES

237.



237. NOHU (H), nohu omakaha (H), scorpionfish, *Scorpaenopsis cacopsis* Jenkins. DISTRIBUTION: Hawaiian Islands. SIZE: Up to at least 20 inches (51 cm). COLOR: Mottled reddish. □ The nohu is usually found on the outer edges of reefs in water over 20 feet (6.1 m) deep. This fish lives on the bottom where it blends in remarkably well with its surroundings, often making short lunges to capture unsuspecting prey. Although it resembles the highly venomous stonefish of the tropical Pacific, there have been no reports of injuries from being spined by the nohu. Taken handlining and by spearing, also in traps. Highly regarded as a food fish.

## Glossary of Terms

- A-FRAME NET** A one-man net fitted on a 6-foot long 'A' frame, used to capture smelt (family Osmeridae) as the fish come inshore to spawn in the surf. The net is held near the pointed end of the "A" and planted down barrierlike in the surf, facing the beach. The fish are caught as they ride the backwash out to sea and are shoveled into the wide end of the net, then shaken back into a sack at the pointed end. (See also SURF NETTING.)
- ANADROMOUS** Refers to fishes that spend most of their lives in salt and brackish waters but ascend rivers to spawn in fresh or nearly fresh water.
- BOTTOMFISHING** Fishing a bait or lure on or near the bottom from an anchored or drifting vessel. The bait is usually weighted and allowed to remain stationary until a fish bites or the angler retrieves it.
- CASTING** Throwing forth a bait or lure, letting out line at each throw and then retrieving it. The bait also can be allowed to sink to the bottom or drift with the current.
- CAST NET** A one-man circular net weighted at the rim with small sinkers and designed to be flung over the water so that it falls face down or dishlike over schools of fishes, entrapping them as it sinks to the bottom. Also called throw net and hand casting net.
- CHARTER BOAT** A fishing boat hired for the exclusive use of one or more anglers, usually for a particular type of fishing. Tackle and bait usually are furnished.
- CHUMMING** A means of attracting fish to the hook by throwing whole or chopped fish or shellfish into the water. Oily fish usually make the best chum. In some areas bread crumbs and corn meal are also used as chum. Live bait chumming is allowed in some areas, prohibited in others.
- CIGUATERA** An illness with symptoms such as diarrhea and paralysis caused by eating certain fishes living in tropical and subtropical regions, usually where coral reefs are well developed. It is seldom fatal.
- COASTAL** Refers to marine fishes which spend much of their lives within a few miles of shore.
- CONTINENTAL SHELF** A submarine plain extending out from shore to a depth of 100 fathoms (183 meters), beyond which the ocean bottom begins a relatively rapid descent to the deep ocean floor.
- CRAB RING** A crab trap made of coarse mesh webbing attached to two iron hoops, designed to lie flat on the bottom but form a basket when raised. A bag of small mesh netting containing bait (scrap fish or shellfish) is secured to the center of the smaller inner ring to attract the crab and keep it occupied while the trap is pulled out of the water. Popularly used for market (Dungeness) and rock crab along the coast from central California north to Oregon and Washington.
- DIP NET** A conical small-mesh net attached to a rigid frame on a long handle and used to catch fish and other marine animals. Also called a hand net or scoop net.
- DRIFT FISHING** Trailing a weighted or unweighted line with live or dead baits behind a drifting boat. Artificial lures are sometimes used, particularly when "jigging."
- ESTUARY** A partially enclosed body of water having a free connection with the open sea; within it saltwater and freshwater mix.
- FEEDER SALMON** A term usually applied to smaller, sexually immature salmon that concentrate in an area to feed, opposed to large, mature salmon that move into an area prior to spawning.
- FISH TRAP** A portable trap for fish and shellfish usually made of wire mesh fitted over a rigid frame with an opening on one side. Like all traps it is designed so that entry is easier than exit. In the tropical islands fish traps are commonly used to capture a variety of reef animals.
- GILL NET** A curtainlike net suspended in the water with mesh openings large enough to permit only the heads of the fish to pass through, ensnaring them around the gills when they attempt to escape.
- GILL RAKERS** Bony, fingerlike projections on the gill arches, located underneath the gill cover or operculum of bony fishes.
- HANDLINING** Angling with a fishing line held in the hand, without using a rod or reel.
- INLET** A narrow passage of water connecting the open sea with protected coastal and inland water.
- JACK SALMON** A term applied to small, but sexually precocious male salmon (chinook or coho) capable of spawning at 2 years of age. Most male chinook and coho mature a year or more later.
- JETTY FISHING** Fishing from any man-made structure constructed of rock or stone or the like, which projects out into the sea or other body of water.
- JIG** An artificial lure made to simulate live bait. It is usually made with a lead head cast on a single hook and is heavier than most other lures.
- JIGGING** Manipulating a jig to imitate a live bait, thus attracting the fish to the hook. The jig can be lowered vertically or cast some distance away, then jerked upward a short distance. Immediately after this upward jerk the lure is allowed to sink back. This procedure is repeated until a fish is hooked, which is usually on the rise of the jig.
- LURE** An artificial bait.
- MOOCHING** A method of salmon fishing from a drifting or propelled boat. The bait is sunk deep with a heavy sinker then brought upward at an angle as the boat is maneuvered forward a few yards or the line retrieved. The bait is then allowed to sink once again to the bottom and the procedure repeated. Usually whole or cut herring is used and rigged so that it has a spinning action in the water.
- ORIGIN OF FIN** The anterior end of the base of a fin.
- PARTY BOAT** A fishing boat carrying large groups of anglers for a fee and operating on a scheduled basis. Space on the boat is sold to the general public until either the boat is filled to capacity or the scheduled sailing time is reached. The captain usually determines the type of fishing and area to be fished, and the fee usually includes bait but not tackle.
- PELAGIC** Spoken of fish and other sea animals that are more or less independent of the bottom. They are characteristically active swimmers, spending much of their time in mid-water or near the surface.
- PIER FISHING** Fishing from any private or public structure set on pilings that extends over a body of water.
- PLANKTON** A collective term applied chiefly to all those minute and extremely diverse forms of plants and animals that drift with the currents.
- PLUG** A nonspecific term for any artificial lure having a distinct "body" made of wood or plastic and having one or more sets of single, double, or treble hooks attached. Most plugs are designed to wobble or create a commotion in the water when retrieved.
- POKE-POLING** A unique method of rocky-shore fishing for blennies and other crevice-seeking animals that

inhabit deep tide pools along the Pacific coast mainland. The gear is essentially homemade. A long bamboo pole of about 9 to 12 feet is fitted with a semiflexible wire tip to which a nylon-cord leader and hook are attached. The bait, usually mussel or shrimp, is "poked" into crevices under and between large boulders in rocky-surge areas at low tide, then retrieved quickly after the first sharp tug of a fish.

**POPPER** A lightweight artificial lure made of cork or plastic having a concave face that produces a popping sound when twitched on the water's surface. Attracts fish by the commotion it causes in the water.

**SCUTE** A modified fish scale formed into an external bony or horny plate.

**SKIFF FISHING** Recreational fishing from a relatively small private or rented boat that does not carry any paying passengers.

**SPINNER** An artificial lure with metal or plastic blades that whirl on a shaft or a swivel as the lure is retrieved. Attracts fish by the commotion it causes as well as by its flash.

**SPINNING** A method of rod-and-reel fishing distinguished by the use of a fixed-spool reel or "spinning" reel. When casting, the line slips off the end of the reel spool, which does not revolve as does a conventional bait-casting reel spool. Spinning gear makes it easier to cast very light lures and

avoid backlashes in the line.

**SPOON** An artificial lure with a curved or dished out body that wobbles but does not revolve. Attracts fish by its movements as well as color.

**STILL FISHING** Fishing natural baits from shore, pier, or anchored boat. Usually the bait is fished on or near the bottom, although sometimes held off the bottom with a float.

**SQUIDDING** Casting metal lures called "squids" into the surf. This term is also used in Hawaii to describe fishing for octopus, called "squid" by islanders. When "squidding," one walks out across the reef armed with a spear, looking for octopus with the aid of a glass-bottomed box. Lights are used when fishing at night for "night squid."

**SURF FISHING** Casting a bait or lure along sandy beaches for fishes that frequent the surf zone. A long flexible rod is usually used to help hurl the bait a maximum distance and to hold the line high enough to clear the breakers. Also called surf casting.

**SURF NETTING** A unique type of Pacific coast fishing using special one- or two-man nets to catch smelt along sandy beaches. (See also A-FRAME NET.) Generally, there are two separate fisheries—one during the daylight hours for day or surf smelt, and the other at night (and often on the same beaches) for night smelt. The fish are strained from receding breakers as they come into shallow water to

spawn, usually a few hours just before and after high tide.

**SURROUND NET** A beach seine, typically a long net having floats along the upper edge and weights along the bottom, used to capture an assortment of fishes in shallow protected water. The net is held in place on the shore at one end while the other end is pulled out around the fish to another point farther down the shore line. The net is then pulled slowly to the beach enclosing the fish in a decreasing semicircle. In Hawaii, large-group surround net fishing is called "hukilau."

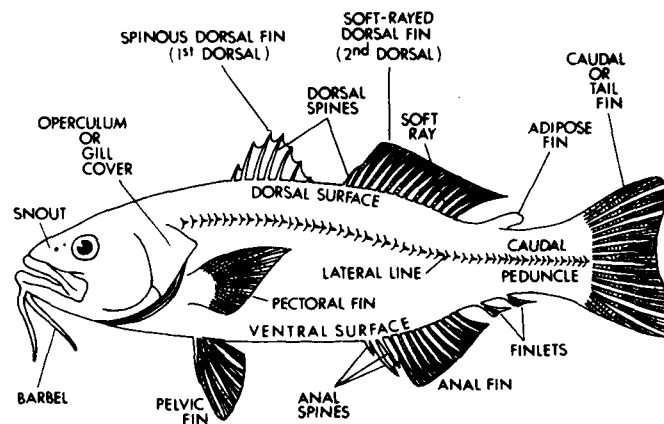
**SPEAR FISHING** Impaling fish with a spear from either above or below the water's surface.

**TORCH FISHING** Locating or attracting marine animals at night with a light held above the surface of the water. Torch fishing usually takes place on calm dark nights over shallow reefs at low tide, and when the animal is located, it is either speared or netted.

**TROLLING** Trailing artificial or natural baits behind a moving boat. The bait can be made to skip along the surface or trailed below at any depth to just above the bottom. A bait or lure trailed behind an angler walking along a pier, bridge, or breakwater is also called trolling.

**WATER COLUMN** Spoken of the water from the surface to the bottom at a given point.

HYPOTHETICAL FISH SHOWING ANATOMICAL TERMS



## Index to Common Names of Fishes

The following is an alphabetical listing of some of the common fish names used by marine anglers who fish along the Pacific coast and around the Pacific Islands. Many times confusion arises when one common fish name such as "snapper" or "bass" refers to more than one species, or when more than one name is used for the same species depending upon the geographical area fished and sometimes even the size of the fish itself. The purpose of this index is to help locate information on the fish described in the Marine Game Fish section. The numbers in this index are not page numbers; they refer to the paragraph numbers preceding each species description on the two fish lists.

A  
'a'ala'ihī 214  
aaga 213  
'a'awa 210  
achuman 173  
afolu 201  
agua 158  
aguas 218  
'aha'aha 160  
'ahi 227  
aholehole 167  
aji 174  
aku 229  
akule 174  
'alalaua 170  
albacore 71  
false 228  
Allison tuna 72  
alu 220  
'ama'ama 218  
amberjack  
for yellowtail 37  
greater 172  
anchovy, northern 147  
asi 227  
aso'ama 185  
ata'ata 164  
Atka mackerel 113  
atu 229  
atulai 174  
atule 174  
a'u 232, 234-236  
a'u-lepe 233  
awa 158  
awaawa 156  
awa'aua 156

48

aweoweo 169

B  
barberpole  
for flag rockfish 107  
for treefish 106  
barrachon 95  
barracuda  
California 69  
great 220  
Japanese 220  
Pacific 69  
barred surfperch 51  
barred sand bass 3  
barry 69  
bashokajiki 233  
bass  
barred sand 35  
bigeye 150  
black  
for black croaker 47  
for black rockfish 80  
black sea 32  
blue  
for black croaker 47  
for opaleye 49  
bull 33  
calico 33  
giant sea 32  
ground 35  
kelp 33  
mountain 167  
rock 31  
sand 35  
spotted sand 34  
striped 31  
sugar  
for barred sand bass 35  
for olive rockfish 82  
bass rockfish  
for black rockfish 80  
for olive rockfish 82  
bat ray 9  
bay perch 55  
bigeye bass 150  
bigeye, red 169  
bigeye rockfish 105  
bigeye scad 174  
big skate 140  
billfish  
see marlin, swordfish, sailfish  
black bass  
for black croaker 47  
for black rockfish 80  
blackcod 109  
black croaker 47  
black marlin 234  
blackmouth 12  
black perch  
for black surfperch 55  
for opaleye 49  
black rockfish 80  
black sea bass 32  
black skipjack tuna 228

blacksmith 151  
for opaleye 49  
black snapper 80  
blackspot wrasse 210  
black surfperch 55  
black ulua 180  
blanquillo 36  
blenny eel 70  
blueback  
for cutthroat trout 17  
for sockeye salmon 15  
blueback salmon 15  
blue bass  
for black croaker 47  
for opaleye 49  
blue cod  
for cabezon 116  
for sablefish 109  
blue crevally 178  
blue-eye perch 49  
bluefin tuna 73  
bluefish  
for blue rockfish 79  
bluelined snapper 194  
blue marlin 235  
blue perch  
for blue rockfish 79  
for halfmoon 48  
blue rockfish 79  
blue shark 3  
blue spotted grouper 162  
blue ulua 178  
bocaccio 97  
boca dulce 221  
bocalao 112  
bolina 89  
bonefish 157  
bonehead 74  
bonito, Pacific 74  
for aku 229  
for kawakawa 228  
bonito shark 2  
borracho 95  
broadbill 76, 232  
broadfin flounder 128  
brown Irish lord 119  
brown rockfish 89  
for quillback rockfish 90  
brown smoothhound 4  
bua 195  
buffalo cod 112  
buffalo sculpin 120  
bull bass 33  
bull cod 116  
bullfish 116  
bullhead  
for cabezon 116  
for Pacific staghorn sculpin 118  
bull trout 19  
butterfish  
for Pacific pompano 78  
for sablefish 109  
buttersole 135  
button perch 49



## C

cabezon 116  
 calico bass 33  
 calico rockfish 87  
 calico surfperch 52  
 California barracuda 69  
 California corbina 43  
 California grunion 30  
 California halibut 121  
 California lizardfish 148  
 California moray 144  
 California scorpionfish 108  
 California sheephead 66  
 California skate 141  
 California whiting 43  
 canary rockfish 98  
 candlefish 22  
 cardinalfishes 171  
 Catalina croaker 42  
 Catalina perch  
   for halfmoon 48  
   for opaleye 49  
 Catalina salmon 41  
 cat shark 6  
 cefalutano 86  
 char, Oregon 19  
 chefra 104  
 cherna 80  
 cherne 85  
 chilipepper 96  
 China croaker  
   for black croaker 47  
   for sargo 40  
 Chinafish 100  
 China rockfish 86  
 chinook salmon 12  
 chub mackerel 75  
 chub, sea 206  
 chucklehead 103  
 chum salmon 16  
 C-O sole 134  
 coal cod 109  
 codalargo 98  
 cod  
   black  
     for sablefish 109  
   blue  
     for cabezon 116  
     for sablefish 109  
   buffalo 112  
   bull 116  
   coal 109  
   cultus 112  
   green 112  
   johnny 96  
   Pacific 25  
   true 25  
 coho salmon 13  
 Columbia river trout 17  
 convictfish  
   for flag rockfish 107  
   for treefish 106  
 convict tang 222  
 copper rockfish 81  
 corbina, California 43  
 corsair 101  
 corvina 43  
 cowcod 104  
 cowfish 104  
 cow rockfish 104  
 crevalle 177  
 crevally, bue 178  
   jack 177  
   thread 175  
 croaker  
   black 47  
   Catalina 42  
   china  
     for black croaker 47  
     for sargo 40  
   golden 44  
   spotfin 44

white 45  
 yellowfin 42  
   for white seabass 41  
 cultus cod 112  
 curlfin sole 132  
 cutthroat trout (sea-run) 17

## D

day smelt 20  
 diamondback 124  
 diamond turbot 125  
 dodo 208  
 dogfish, spiny 139  
 dog salmon 16  
 dogtooth tuna 230  
 Dolly 19  
 Dolly Varden 19  
 dolphin 39, 183-184  
 dolphin, pompano 184  
 dorado 39  
 Dover sole 137  
 dude 101  
 dusky rockfish 92

## E

eagle rays 9  
 eel  
   blenny 70  
   California moray 144  
   monkeyface 70  
     for monkeyface prickleback 70  
     (Pacific Islands) 159  
 ehu 191  
 English sole 129  
 eulachon 22

## F

fafaet 198  
 fall salmon 16  
 false albacore 228  
 false mullet 219  
 fantail 98  
 fathead 66  
 feloitega 196  
 filione 98  
 filoa 199  
 flag rockfish 107  
 flesh-colored rockfish 93  
 flounders, lefteye 121, 122  
 flounders, righteye 123-137  
 flounder, broadfin 128  
   fringe 130  
   pointed-nose 129  
   roundnose 127  
   starry 124  
   see also sole, turbot, halibut, sanddab  
 fo 171  
 fox shark 1  
 fringed greenling 111  
 fringe flounder 130  
 fringehead, onepot 153  
 funai 194

## G

gadao 162, 163, 165, 166  
 gallo 104  
 garrupa 83  
 gatala 163, 165, 166  
 gatala moana 162  
 genuine red 95  
 gialoto 85  
 giant kelpfish 152  
 giant sea bass 32  
 gindai 193  
 giolo 85  
 goatfish(es) 201-205  
   red 202  
   spot 201  
 golden croaker 44  
 gopher 86  
 gopher rockfish 93  
   for kelp rockfish 83

grass rockfish 84  
 gray reef shark 154  
 gray shark 154  
 gray smoothhound 5  
 gray snapper 185  
 great barracuda 220  
 greater amberjack 172  
 greenback 75  
 green cod 112  
 greenling, fringed 111  
   kelp 110  
   painted 115  
   red 111  
   rock 111  
   whitespotted 114  
 greenling seatrout 110  
 green parrotfish 215  
 green snapper  
   for filoa 199  
   for yellowtail rockfish 85  
 greenspotted rockfish 103  
 greenstriped rockfish 102  
 green sturgeon 11  
 ground bass 35  
 grouper(s) 162-166  
   blue spotted 162  
   salmon 97  
 grunion, California 30  
 guili 206  
 guitarfish(es) 7, 8

## H

hagi 182  
 hahalalu 174  
 hake, Pacific 27  
 halalu 174  
 halfmoon 48  
 halibut, California 121  
   northern 123  
   Pacific 123  
   southern 121  
 hammerhead, scalloped 155  
 Hawaiian salmon 181  
 hawkfish, spotted 209  
 herring, Pacific 145  
   for queenfish 46  
 hinalea 213  
   for 'a'awa 210  
 hinalea lauuli 214  
 hiting 174  
 hollywood 107  
 hooligan 22  
 hornyhead turbot 126  
 horse mackerel 38  
 hoshi ulua 178  
 houndfish 160  
 humpback parrotfish 217  
 humpback salmon 14  
 humpy 66

## I

i'a manaia 166  
 i'a sina 201  
 ili'ilia segi 225  
 illioli 178  
 Irish lord, red 117  
   brown 119  
 ise 160

## J

jack(s) 37, 38, 173-182  
   spotted 178  
   star 178  
 jack crevally 177  
 jack mackerel 38  
 jacksmelt 28  
 Japanese barracuda 220  
 johnnies 96  
 johnny cod 96  
 juarel 37

K  
 kagami ulua 175  
 kahala 172  
 kakaka 196  
 kaku 220  
 kala 225  
 kalikali 189  
   pink 189  
   yellowtail 187  
 kamanu 181  
 kawalea 220  
 kawakawa 228  
 keeltail needlefish 160  
 kelp bass 33  
 kelpfish, giant 152  
   for kelp greenling 110  
 kelp greenling 110  
 kelp rockfish 83  
   for grass rockfish 84  
 kelp salmon 82  
 kelp surfperch 62  
 kelp yellowtail 82  
 kicho 222  
 kiluus 155  
 king 12  
 kingfish 45  
 king salmon 12  
 kumu 204  
 kupipi 208  
 kurokajiki 235

L  
 ladyfish 156  
 lae 182  
 lai 182  
 lansi 171  
 leatherback 182  
 leatherjacket 182  
 lehi 192  
 lemon sole 129  
 leopard shark 6  
 liguan 218  
 lililok 199  
 ling 112  
 lingcod 112  
 little mahimahi 184  
 little tunny 228  
 lizardfish, California 148  
 loalia 200  
 longfin smelt 23  
 longfin sole 131  
 longfin tuna 71  
 longnose skate 142  
 lupu. see jacks, 177-180

M  
 ma'au 174  
 mackerel  
   Atka 113  
   chub 75  
   horse 38  
   jack 38  
   Pacific 75  
   Spanish  
     for jack mackerel 38  
   striped 75  
     for akule 174  
     for sablefish 109  
 mackerel scad 173  
 mahimahi 39, 183  
   little 184  
 makajiki 236  
 mako, shortfin 2  
 mala'i 198  
 malau 161  
 malaui 178  
 malie 154  
 malma trout 19  
 malu 203  
 mamagas 169  
 mamamu 200  
 mamu 207

50

manaloa 206  
 manini 222  
 mano 154  
 mano kihikihi 155  
 maomao 207  
 marbled sculpin 116  
 marlin  
   black 234  
   blue 235  
   striped 77, 236  
 masimasi 183  
 mata-i-taliga 155  
 matanhagon 200  
 mata-pula 169  
 mekajiki 232  
 mempachi ulua 179  
 menpachi 161  
 midshipman  
   northern 149  
   plainfin 149  
 milkfish 158  
 moano 205  
 moi 221  
 moi-li'i 221  
 monkeyface eel 70  
 monkeyface prickleback 70  
 moonlight Annie 171  
 moonlight fish 171  
 moray  
   California 144  
   (Pacific Islands) 159  
 mottled sanddab 122  
 mountain bass 167  
 mu  
   for *Lutjanus bohar* 197  
   for *Monotaxis grandoculus* 200  
 mullet 218  
   false 219  
   striped 218  
 mumu moaga 200

N  
 naraigi 236  
 needlefish(es) 160  
   keeltail 160  
 nenue 206  
 nenue parii 206  
 nero 80  
 night smelt 21  
 nohu 237  
 nohu omakaha 237  
 northern anchovy 147  
 northern halibut 123  
 northern midshipman 149

O  
 oama 201  
 ocean whitefish 36  
 'o'io 157  
 oliveback rockfish 105  
 olive rockfish 82  
 'omaka 176  
 'omilu 178  
 'omilumilu 178  
 onaga 190  
 onespot fringehead 153  
 ono 231  
 'o'opu-kai 209  
 'opakapaka 186  
   yelloweye 188  
 opaleye 49  
 'opelu 173  
 'opelu-mama 173  
 orange rockfish 98  
 orange-spotted rockfish 90  
 Oregon char 19  
 oshi 178

P  
 Pacific barracuda 69  
 Pacific bonito 74  
 Pacific cod 25

Pacific hake 27  
 Pacific halibut 123  
 Pacific herring 145  
 Pacific mackerel 75  
 Pacific pompano 78  
 Pacific sanddab 122  
 Pacific sardine 146  
 Pacific staghorn sculpin 118  
 Pacific sturgeon 10  
 Pacific threadfin 221  
 Pacific tomcod 26  
 painted greenling 115  
 paka, pink 186  
 pake 'awa 156  
 pake ulua 179  
 palani 224  
 palu 190  
 papio. see jacks, 177-180  
 parrotfish, green 215  
   humpback 217  
 pa'u'u 177  
 perch  
   bay 55  
   black  
     for black surfperch 55  
     for opaleye 49  
   blue  
     for blue rockfish 79  
     for halfmoon 48  
   blue-eye 49  
   button 49  
   Catalina  
     for halfmoon 48  
     for opaleye 49  
   silver  
     for aholehole 167  
     for silver surfperch 54  
     see also surfperch(es)  
 petrale sole 127  
 pile surfperch 58  
 pink kalikali 189  
 pink paka 186  
 pink salmon 14  
 pink snapper 186  
 pink surfperch 65  
 plainfin midshipman 149  
 pointed-nose flounder 129  
 pompano dolfin 184  
 pompano, Pacific 78  
 po'o-pa'a 209  
 po'ou 211  
 popeye rockfish 105  
 porgy 50  
 potbelly 99  
 prickleback, monkeyface 70  
 priestfish 79  
 pualu 223  
 puhi 159  
 puhi-paka 159  
 pulus 160  
 pusi 159

Q  
 queenfish 46  
 quillback rockfish 90  
 Quinnot salmon 12

R  
 rabbitfish 226  
 rainbow runner 181  
 rainbow surfperch 60  
 rainbow trout (sea-run) 18  
 rasher 95  
 rasphead rockfish 99  
 ray, bat 9  
 redbanded rockfish 107  
 red bigeye 169  
 redfish 66  
 red goatfish  
   for kumu 204  
   for weke'ula 202

red greenling 111  
 red Irish lord 117  
 red-margined sea perch 195  
 red rock cod (see rockfishes, red) •  
 red salmon 15  
 red snapper  
   for mala'i 198  
   for onaga 190  
   for vermillion rockfish 95  
   for yelloweye rockfish 99  
   for canary rockfish 98  
 redtail surfperch 50  
 red-spotted trout 19  
 red weke 202  
 reina 102  
 rex sole 131  
 rock bass  
   for striped bass 31  
 rock cod (see rockfishes)  
 rockfish(es) 79-106  
   barberpole 107  
   for treefish 106  
   bass  
     for olive rockfish 82  
     for black rockfish 80  
   bigeye 105  
   black 80  
   blue 79  
   bocaccio 97  
   brown 89  
     for quillback rockfish 90  
   calico 87  
   canary 98  
   chilipepper 96  
   china 86  
   copper 81  
   cow 104  
   dusky 92  
   flag 107  
   flesh-colored 93  
   gopher 93  
     for kelp rockfish 83  
   grass 84  
   greenspotted 103  
   greenstriped 102  
   hollywood 107  
   kelp 83  
     for grass rockfish 84  
   olive 82  
   oliveback 105  
   orange 98  
   orange-spotted 90  
   popeye 105  
   quillback 90  
   raspshead 99  
   red  
     for canary rockfish 98  
     for vermillion rockfish 95  
     for yelloweye rockfish 99  
   redbanded 107  
   rosy 101  
   silvergray 91  
   smallmouth 94  
   Spanish flag 107  
   speckled 90  
   spotted 100  
   squarespot 94  
   starry 100  
   stripetail 105  
   turkey-red 99  
   vermillion 95  
   widow 88  
   whitebelly 81  
   yellow-backed 90  
   yelloweye 99  
   yellowtail 85  
 rock greenling 111  
 rock sole 128  
 rock trout 110  
 rock wrasse 67  
 roi 162  
 roncky 45

roosterfish  
   for cow rockfish 104  
 rosy rockfish 101  
 roundnose flounder 127  
 round stingray 143  
 rubberlip surfperch 57  
 rudderfish 206  
 runner, rainbow 181  
   for lae 182  
  
 S  
 sablefish 109  
 saddle wrasse 214  
 sailfish 233  
 salema 150  
 salmon, blackmouth 12  
   blueback 15  
   Catalina 41  
   chinook 12  
   chum 16  
   coho 13  
   dog 16  
   fall 16  
   Hawaiian 181  
   humpback 14  
   king 12  
   pink 14  
   Quinnat 12  
   red 15  
   silver 13  
   sockeye 15  
   spring 12  
   tyee 12  
   white 37  
 salmonete 201  
 salmonete acho 203  
 salmonete manining 202  
 salmon grouper 97  
 salmon trout  
   for coho salmon 13  
   for Dolly Varden 19  
   for steelhead (rainbow trout) 18  
 sand bass 35  
   spotted 34  
   barred 35  
 sanddab  
   mottled 122  
   Pacific 122  
 sand shark 154  
 sand sole 130  
 Santa Maria 103  
 sapatu 220  
 sardine, Pacific 146  
 sargo 40  
 sasag 161  
 sasele 168  
 saula 235  
 saula-lele 233  
 saurel 38  
 savani 194  
 scacciatale 101  
 scad  
   bigeye 174  
   mackerel 173  
 scaleless tuna 230  
 scalloped hammerhead 155  
 scomoda 84  
 scooter 69  
 scorpionfish 237  
   California 108  
 scratch-tail 101  
 sculpin  
   buffalo 120  
   marbled 116  
   Pacific staghorn 118  
   smooth 118  
   for California scorpionfish 108  
 seabass  
   white 41  
   see also bass  
 sea chub 48-49, 206

sea perch  
   red margined 195  
   yellow-and-blue 194  
   see also surfperch(es)  
 sea-run cutthroat trout 17  
 sea-run rainbow trout 18  
 seatrout  
   for cutthroat trout 17  
   for Dolly Varden 19  
   for greenling 110  
   for steelhead 18  
   for white seabass 41  
 señorita 68  
 serena 102  
 sergeant major 208  
 sesjun 226  
 shark  
   blue 3  
   bonito 2  
   brown smoothhound 4  
   cat 6, 138  
   fox 1  
   gray 154  
   gray reef 154  
   gray smoothhound 5  
   leopard 6  
   sand 154  
   scalloped hammerhead 155  
   shortfin mako 2  
   shovelnose 7  
   swell 138  
   swiveltail 1  
   thresher 1  
   whaler 154  
 sharpnose surfperch 64  
 sheephead, California 66  
 shiner surfperch 61  
 shiner, yellow 61  
 shirokajiki 234  
 shoflies 107  
 shortfin mako 2  
 shovelnose guitarfish 7  
 shovelnose shark 7  
 silvergray rockfish 91  
 silver perch  
   for wholehole 167  
   for silver surfperch 54  
 silver salmon 13  
 silversides  
   for coho salmon 13  
   for rainbow trout (steelhead) 18  
   see also smelt(s)  
 silver smelt 20  
 silver surfperch 54  
 skate  
   big 140  
   California 141  
   longnose 142  
 skil 109  
 skipjack tuna 229  
   black 228  
 slender sole 136  
 smallmouth rockfish 94  
 smelt(s) 20-24  
   day 20  
   longfin 23  
   night 21  
   silver 20  
   surf 20  
   whitebait 24  
   for eulachon 22  
   for jacksmelt 28  
   for topsmelt 29  
 smooth sculpin 118  
 snapper(s) 185-198  
   black  
     for black rockfish 80  
   blue-lined 194  
   gray 185  
   green  
     for filoa 199  
     for yellowtail rockfish 85

- pink 186  
 red  
   for canary rockfish 98  
   for mala'i 198  
   for onaga 190  
   for vermilion rockfish 95  
   for yelloweye rockfish 99  
 yellow  
   for canary rockfish 98  
   see also rockfish(es)  
 sockeye salmon 15  
 sole  
   butter 135  
   C-O 134  
   curlfin 132  
   Dover 137  
   English 129  
   lemon 129  
   longfin 131  
   petrale 127  
   rex 131  
   rock 128  
   sand 130  
   slender 136  
 southern halibut 121  
 Spanish flag 107  
 Spanish mackerel  
   for jack mackerel 38  
 speckled rockfish 90  
 spiny dogfish 139  
 spotfin croaker 44  
 spotfin surfperch 63  
 spot goatfish 201  
 spotted hawkfish 209  
 spotted jack 178  
 spotted rockfish 100  
 spotted sand bass 34  
 spotted turbot 133  
 spot weke 201  
 spot wrasse 210  
 spring salmon 12  
 squarespot rockfish 94  
 squirrellfish(es) 161  
 staghorn sculpin, Pacific 118  
 star jack 178  
 starry flounder 124  
 starry rockfish 100  
 steelhead 18  
 stingray, round 143  
 strawberry rock cod 102  
 striped bass 31  
 striped mackerel 75  
 striped marlin 77, 236  
 striped mullet 218  
 striped surfperch 56  
 striper 31  
 stripetail rockfish 105  
 sturgeon  
   green 11  
   Pacific 10  
   white 10  
 sugar bass  
   for barred sand bass 35  
   for olive rockfish 82  
 surffish  
   for California corbina 43  
   for smelt 20, 21  
 surfperch  
   barred 51  
   black 55  
   calico 52  
   kelp 62  
   pile 58  
   pink 65  
   rainbow 60  
   redtail 50  
   rubberlip 57  
   sharpnose 64  
   shiner 61  
   silver 54  
   spotfin 63  
   striped 56  
   walleye 53  
   white 59  
 surf smelt 20  
 surgeonfish(es) 222-225  
 swell shark 138  
 swiveltail 1  
 swordfish 76, 232  
  
 T  
 ta'ape 194  
 tagi 230  
 tagafi 197  
 taiva uli'uli 196  
 tambor 99  
 tang, convict 222  
 tangisun 212  
 tanifa 154  
 tarakitiyos 177, 178-180  
   see jacks  
 tarakito 177, 178-180  
   see jacks  
 tataga 225  
 teau 201  
 ten-pounder 156  
 thornback 8  
 thread crevally 175  
 threadfin, Pacific 221  
 thresher shark 1  
 tiger 107  
 titugi 159  
 toau 195  
 tomcod  
   Pacific 26  
   for young bocaccio 97  
   for white croaker 45  
 topsmelt 29  
 tosun 231  
 treefish 106  
 trout  
   blueback 17  
   bull 19  
   Columbia River 17  
   cutthroat (sea-run) 17  
   Dolly Varden 19  
   malma 19  
   rainbow (sea-run) 18  
   red-spotted 19  
   rock 110  
   salmon  
     for coho salmon 13  
     for Dolly Varden 19  
     for steelhead (rainbow trout) 18  
   steelhead 18  
 true cod 25  
 tuna  
   albacore 71  
   Allison 72  
   black skipjack 228  
   bluefin 73  
   dogtooth 230  
   longfin 78  
   scaleless 230  
   skipjack 229  
   white 230  
   yellowfin 72, 227  
 tunny, little 228  
 turbot  
   diamond 125  
   hornyhead 126  
   spotted 133  
 turkey-red rockfish 99  
 turkey rock 99  
 tyee 12  
  
 U  
 ugupao  
   for palani 224  
   for pualu 223  
  
 uhu  
   for *Scarus perspicillatus* 215  
   for *Scarus dubius* 216  
 uku 185  
 ula oa 202  
 'ula'ula 191  
 'ula'ula koae 190  
 ulua  
   black 180  
   blue 178  
   hoshi 178  
   kagami 175  
   mempachi 179  
   pake 179  
   white 175  
 ulua kihikihi 175  
 umatan 168  
 ume 225  
 unicornfish 225  
 uouoa 219  
 'upapalu 171  
 'u'u 161  
  
 V  
 vava sui 196  
 vermilion rockfish 95  
 vete 202  
 viuva 88  
  
 W  
 wahoo 231  
 walleye surfperch 53  
 weke  
   red 202  
   spot 201  
 weke-'a'a 201  
 weke-'ula 202  
 whaler 154  
 whitebait smelt 24  
 whitebelly rockfish 81  
 white croaker 45  
 whitefish, ocean 36  
 white salmon 37  
 white seabass 41  
 whitespotted greenling 114  
 whitesurfperch 59  
 white sturgeon 10  
 white tuna 230  
 white ulua 175  
 whiting  
   for ocean whitefish 36  
   for California corbina 43  
 widow rockfish 88  
 wrasse(s) 66-68, 210-214  
   blackspot 210  
   rock 67  
   saddle 214  
   spot 210  
  
 Y  
 yellow-and-blue seaperch 194  
 yellow-backed rockfish 90  
 yelloweye opakapaka 188  
 yelloweye rockfish 99  
 yellowfin croaker 42  
 yellowfin tuna 72, 227  
 yellow shiner 61  
 yellow snapper  
   for canary rockfish 98  
 yellowtail 37  
   kelp 85  
   for yellowtail rockfish 85  
 yellowtail rockfish 85  
 yellowtail kalikali 187  
  
 Z  
 zebra 75

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