

Waterproof

University of Hawai'i Sea Grant College Program

SNORKELER'S GUIDE TO THE
FISHES OF HANAUMA BAY



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INTRODUCTION

The Hanauma Bay Nature Reserve was established by the State of Hawai'i as its first Marine Life Conservation District (MLCD) in 1967. Prior to this date, the population of the larger species of fishes in the bay was greatly reduced by angling and spearing, and the surviving fishes were wary. The effect of protection of the marine life in the bay has been astounding. Not only are the fishes more numerous, but they are more easily approached. The overgrowth of reefs by algae is not a problem in the bay, because it now has the normal complement of algal-feeding surgeonfishes, sea chubs, and parrotfishes. And most importantly, the fishes can now reach full reproductive capacity and provide many more young to recruit to the coasts that are exploited. More marine preserves are badly needed for the overfished inshore waters of Hawai'i.

Feeding the fishes of Hanauma Bay became increasingly popular for both residents and visitors. Over time, more of the larger surgeonfishes and sea chubs were drawn to the shallow water of the lagoon to be fed, creating an unnatural environment, and fingers were painfully nipped. Fish feeding was banned in the bay in 1999.

The purpose of this booklet is to provide for the identification of the 114 species of reef and shore fishes that a snorkeler is most apt to see in Hanauma Bay. A total of 1,250 species of fishes are known from the Hawaiian Islands and nearby Johnston Island, including pelagic species such as tunas, and those in the deep sea. Half of these are found on the insular shelf, i.e. less than 200 m (656 feet), and approximately another half might at some time be seen in Hanauma Bay.

Some species of fish in the bay are more common than those illustrated here. These include fishes such as squirrelfishes and cardinalfishes that are hidden in the reef by day but emerge at night for feeding; lizardfishes, flounders, and soles that are partially buried in sand; small species such as gobies (some mature at less than an inch in length), and the well-camouflaged frogfishes and scorpionfishes.

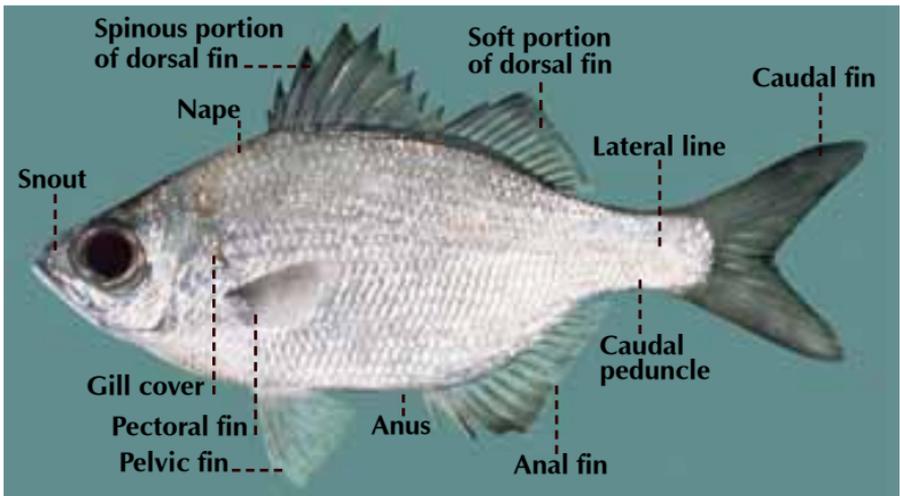
The text below each illustrated fish of this booklet is headed by three names: English common name, Hawaiian name, and the two-part scientific name (in italics). The names are followed by characteristics

by which the fish can be identified, its maximum length, notes on its habits, and its distribution.

Many Hawaiian fishes are wide-ranging south to the islands of French Polynesia and west through the western Pacific and Indian Ocean to East Africa). Such a broad distribution is termed Indo-Pacific.

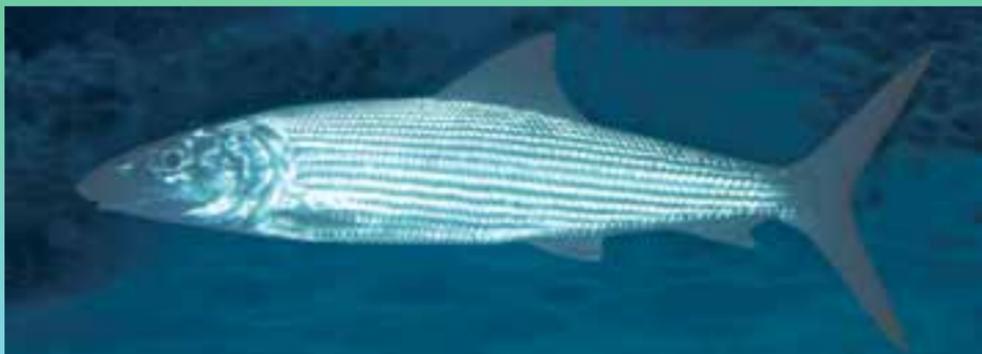
One-fourth of the species of shore fishes of the Hawaiian Islands are found only in the islands (many also to Johnston Island to the south). This is the highest percentage of endemic warm-water marine fishes in the world, a result of the great distance separating the Hawaiian Islands from other shallow-water localities of the Pacific, as well as the pattern of ocean currents.

Many of the wrasses and their close relatives, the parrotfishes, change sex from female to male, often with a dramatic change in color pattern. Some species of these two families have a first mature color form, called the initial phase, that is either male or female, but identically colored; these species often spawn in aggregations. The second color form, termed the terminal phase, is only male. It may be the result of a female changing sex to male, or a male of the initial phase changing to the terminal color pattern. Then the spawning is by pairs, typically with the terminal male maintaining a harem. Two illustrations are needed for these bicolored species. Juveniles of some are very different in color from adults.





HAWAIIAN TENPOUNDER, awa'awa, *Elops hawaiiensis*. Occurs along sheltered shores, including brackish areas; Hawaiian angling record, 22 lbs, 3 oz. Feeds on fishes and crustaceans. Eastern Indian Ocean to islands of Oceania. One of the most primitive of living fishes.



LONGJAW BONEFISH, 'o'io, *Albula virgata*. Has a yellow spot behind base of pectoral fins. Found on shallow sand flats, sometimes in small schools. Conical snout used to root into sand for worms, clams, and crustaceans. Found only in Hawai'i; angling record, 18 lbs, 2 oz.



MILKFISH, awa, *Chanos chanos*. Small mouth with no teeth in jaws. Feeds mainly on algae and zooplankton. Ranges from the Red Sea and east coast of Africa to the tropical eastern Pacific. Raised in ponds in Asia and by the ancient Hawaiians. Reaches nearly 5 feet in length. The only member of the family Chanidae.



YELLOWMARGIN MORAY, uhi paka, *Gymnothorax flavimarginatus*. Yellowish, mottled with dark brown, with a black spot on gill opening; yellow-green margin posteriorly on fins; reaches at least 4 feet. Found from the tropical eastern Pacific to the Red Sea. Strong jaws and long canine teeth command respect.



WHITEMOUTH MORAY, puhi 'ōni'ō, *Gymnothorax meleagris*. Brown to orangish brown with many small white spots; tip of tail and inside of mouth white; reaches 40 inches. Most common moray seen in Hawai'i. Known from the eastern Pacific to East Africa. Shown here with the Hawaiian Cleaner Wrasse that removes crustacean parasites from fishes.



BRICK SOLDIERFISH, 'ū'ū, *Myripristis amaena*. Red with no white leading edge on median fins; attains a maximum length of 10.5 inches. Feeds at night on zooplankton; hides in caves by day, generally in less than 30 feet. Known only from the islands of Oceania. Hawaiian name means to stutter, probably derived from the sound the fish makes when alarmed.



BIGSCALE SOLDIERFISH, 'ū'ū, *Myripristis berndti*. Red with white leading edges of fins, except orange-yellow outer part of spinous dorsal fin; reaches 11 inches. Occurs in aggregations in caves by day, usually deeper than 30 feet, emerging at night to feed on zooplankton. Wide-ranging from islands of the eastern Pacific to the western Indian Ocean.



CHINESE TRUMPETFISH, nūnū, *Aulostomus chinensis*. Body narrower than deep; mouth small with a barbel on chin; usually gray-brown to orangish brown with faint whitish stripes and two black spots in the caudal fin; an occasional color form is nearly all yellow; attains at least 30 inches. Preys mainly on small fishes that it sucks in by expanding the snout. Ranges from the east coast of Africa to the Hawaiian Islands and Easter Island.



SMOOTH CORNETFISH, nūnū peke, *Fistularia commersonii*. Body wider than deep; snout long and slender, and mouth small; gray, white below, with two longitudinal blue lines; gets dark bars on body when at rest on bottom; reported to reach 5 feet, including the long caudal filament. Feeds by sucking in its prey of small fishes and crustaceans. Occurs throughout the tropical Pacific and Indian Oceans. One other cornetfish in Hawai'i is found only deeper than 250 feet.



DEVIL SCORPIONFISH, 'omakaha, *Scorpaenopsis diabolus*. A hump on the back behind the head; color usually matches surroundings; moves pectoral fins forward when alarmed to show its warning coloration of yellow and red with black spots. Attains 12 inches. One of 25 Hawaiian scorpionfishes. Pain from wounds from the spines of these fishes can be severe and last for hours. Placing the injured member in hot water greatly alleviates the pain.



PEACOCK GROUPEr, roi, *Cephalopholis argus*. Bright blue spots overall; reaches 2 feet. Introduced from French Polynesia in 1956; most common at the island of Hawai'i; population largely unchecked because can cause ciguatera fish poisoning when eaten. More than 75% of its diet consists of reef fishes. A very unfortunate addition to the Hawaiian Islands.



HAWAIIAN FLAGTAIL, aholehole, *Kuhlia xenura*. Silvery with a large eye and forked tail; attains at most one foot in length. Usually seen in small schools by day over shallow inshore reefs, the young common in tidepools. Disperses at night to feed on zooplankton. A second similar species has a slightly smaller eye and a dark reticular pattern on the top of the head.



HAWAIIAN BIGEYE, 'āweoweo, *Priacanthus meeki*. Red, but can change to silvery pink with large red blotches; tail slightly concave (slightly rounded in a similar species). Feeds at night, as the huge eye might suggest. Largest reported, 16 inches. Endemic to the Hawaiian Islands. In rare years, the young settle onto reefs in vast numbers.



REDBARRED HAWKFISH, piliko'a, *Cirrhites fasciatus*. Body with alternating narrow white and broad reddish to bright red bars; a black spot on gill cover; largest, 4.5 inches. Sedentary, often on coral; feeds mainly on a variety of small crustaceans. Found only in the Hawaiian Islands, its closest relative in Mauritius, Réunion, and Madagascar. Once there was a continuous population of an ancestral species from Madagascar to Hawai'i. Now only the two relic species survive at the ends of the Indo-Pacific region.



STOCKY HAWKFISH, po'opa'a, *Cirrhites pinnulatus*. Gray-brown to olive with white blotches and small orange-red spots. Lives on reef or rocky bottom in the surge zone; its thickened lower pectoral rays help wedge it in place; reaches one foot. Feeds mainly on crabs. Often caught by fishermen from shore. Ranges from the central Pacific to the western Indian Ocean.



BLACKSIDE HAWKFISH, hilu piliko'a, *Paracirrhites forsteri*. A black stripe on upper side, broadly bordered in white or light yellow; head and anterior body with small dark red spots; attains 8.8 inches. Often seen at rest on coral; its Hawaiian name means "coral clinging." Feeds on small fishes and crustaceans. Occurs from the Central-Pacific to the Indian Ocean.



ARC-EYE HAWKFISH, piliko'a, *Paracirrhites arcatus*. An oblique U-shaped mark of orange, black, and blue behind eye; two color phases, one with, and the other without a broad white stripe on back; reaches 5.5 inches. Feeds on shrimps, crabs, and small fishes. The most common hawkfish in the Hawaiian Islands; ranges to the east coast of Africa.



BARRED JACK, ulua, *Carangoides ferdau*. Silvery blue-green on back, silvery below, with 7-10 gray bars on body. World angling record, 21 inches, 5 lbs, from Midway. Often seen in small schools over sand near reefs, where it feeds mainly on bottom-dwelling crustaceans and small fishes. First described from the Red Sea; ranges east to islands of Oceania.



ISLAND JACK, ulua, *Carangoides orthogrammus*. Silvery blue-green dorsally, shading to silver ventrally, usually with several small elliptical yellow spots on side. World angling record, 31 inches, 18 lbs 7 oz, from Lana'i. Solitary or in small schools; feeds mainly on sand-dwelling crustaceans. First described from islands off Mexico; ranges to East Africa.



GIANT TREVALLY, ulua aukea, *Caranx ignobilis*. Silvery gray, with numerous very small black spots on back; attains at least 65 inches; world angling record, 191 lbs, from Maui. More common in the Northwestern Hawaiian Islands than the main islands, no doubt due to less fishing. Feeds mainly on fishes. Islands of Oceania to the Red Sea (where first named in 1775).



BLUEFIN TREVALLY, 'ōmilu, *Caranx melampygus*. Brassy to silvery dorsally with small blue blotches and black dots, silvery with iridescence below; fins bright blue; attains 39 inches. World angling record, 26 lbs, 7 oz, from Clipperton Island off Mexico; ranges to the Red Sea. Feeds mainly on fishes. The most common jack in the islands of Oceania. Juveniles of this and similar jacks in Hawai'i are called pāpio.



BIGEYE TREVALLY, pake ulua, *Caranx sexfasciatus*. Silvery gray with blackish scutes (row of enlarged scales on rear side of body); tips of second dorsal and anal fins white; eye large; reaches 85 cm. World angling record, 31 lbs, 8 oz, from the Seychelles. When abundant, forms dense schools by day; disperses at night for feeding. Occurs throughout the tropical Indo-Pacific region.



DOUBLESPOTTED QUEENFISH, lai, *Scomberoides lysan*. Body slender and thin; silvery with 2 series of small blackish spots and a large black spot at front of second dorsal fin. Attains 27 inches. World angling record, 5 lbs, 12 oz, from O'ahu. Usually solitary or seen in small groups. Tropical central Pacific to the Indian Ocean. Spines slightly venomous.



BLUESTRIPED SNAPPER, ta'ape, *Lutjanus kasmira*. Yellow with four narrow dark-edged blue stripes. Introduced to the Hawaiian Islands in 1958 from French Polynesia; its population has increased enormously. Although very good-eating, there is little fishing effort because of its small size (12.5 inches). Tends to form semistationary school by day and disperses at night for feeding, mainly on crustaceans. Indo-Pacific, from 6–870 feet.



BLACKTAIL SNAPPER, to'au, *Lutjanus fulvus*. Yellowish gray with a reddish black caudal fin. Reaches 15.7 inches. Introduced to the Hawaiian Islands from French Polynesia in 1956 and 1958. Unlike the ta'ape, it has not become abundant in Hawai'i. Feeds mainly on crustaceans, especially crabs, and small fishes. Widely distributed in the Indo-Pacific region, from the shallows to at least 130 feet; the young are often found in brackish areas.



GREEN JOBFISH, uku, *Aprion virescens*. Greenish gray with a low continuous dorsal fin and forked tail; reaches 43 inches; world angling record 44.5 lbs. Indo-Pacific, from near shore to at least 300 feet; a roving predator that feeds mainly on fishes, occasionally on crabs and octopuses. Difficult to approach underwater. A highly prized food fish, but large ones have caused ciguatera poisoning when eaten. The Hawaiian name also means flea.



BIGEYE EMPEROR, mū, *Monotaxis grandoculis*. Greenish gray, shading to silvery on side; can quickly assume 4 blackish bars on body; reaches 24 inches. Young with a more pointed head, a black bar through eye, and three broad black bars on back. Nocturnal, as the large eye would suggest; molariform teeth on side of jaws crush the prey of crabs, hermit crabs, gastropod and bivalve mollusks, and sea urchins. Indo-Pacific, from near shore to at least 300 feet.



STRIPED MULLET, 'ama'ama, *Mugil cephalus*. Iridescent silvery with about seven faint dark stripes following scale rows on upper side; two separate dorsal fins, and a slightly forked caudal fin; scales in longitudinal series 38–42; largest, 27.5 inches. Found inshore in protected waters; worldwide in subtropical to warm temperate seas. Ancient Hawaiians seined the young along calm shores and raised them in ponds.



SHARPNOSE MULLET, uouoa, *Neomyxus leuciscus*. Silvery with a small yellow spot at upper base of pectoral fins; two separate dorsal fins; caudal fin slightly forked; snout pointed, longer than eye; scales in longitudinal series 43-49. Attains 14 inches. Occurs inshore in small schools at islands of Oceania. The introduced Kanda has a short snout and 32-36 scales in longitudinal series.



YELLOWSTRIPE GOATFISH, weke'ā, *Mulloidichthys flavolineatus*. Silvery white with a yellow stripe on side, often containing a squarish dark spot below first dorsal fin; fins whitish to pale yellowish; pair of barbels in chin long. Largest reported, 14.4 inches. Barbels used to probe in sand for crustaceans, worms, small bivalve mollusks, etc. Small groups sometimes seen at rest on bottom during the day. Indo-Pacific, from near shore to 250 feet.



YELLOWFIN GOATFISH, weke 'ula, *Mulloidichthys vanicolensis*. Pale yellowish to greenish dorsally, grading to pink or white below, with a blue-edged yellow stripe extending along body from behind eye; no dark spot in stripe; fins yellow. Reaches 15 inches. Feeds at night, chiefly on crabs, gastropod mollusks, and worms. Forms slow-moving aggregations during day; usually found deeper than 20 feet; reported to 370 feet. Indo-Pacific.



GOLDSADDLE GOATFISH, moāna hulu, *Parupeneus cyclostomus*. Bluish to yellowish gray, the edges of scales bright blue; blue lines radiating from eye; a large hemispherical yellow spot dorsally on caudal peduncle; snout long; barbels very long. Reaches 20 inches. Unusual for a goatfish in feeding mainly on fishes (70% of its diet); uses its barbels to frighten small fishes from hiding in reef. Indo-Pacific; reported from 5 to nearly 400 feet. Also known as the Blue Goatfish. A smaller yellow adult form rare in Hawai'i, common elsewhere.



ISLAND GOATFISH, munu, *Parupeneus insularis*. Purplish gray to brownish red with a broad dark bar below each dorsal fin; space between bars and caudal peduncle may be nearly white; body stocky; snout short, with slightly concave profile. Hawai'i State record, 16 inches. Feeds on crabs (44%), other crustaceans, octopuses, and fishes. Known from the islands of Polynesia and Micronesia, from 3–360 feet. Formerly identified as *Parupeneus bifasciatus*, now an invalid name.



MANYBAR GOATFISH, moãno, *Parupeneus multifasciatus*. Purplish gray to brownish red, with alternating dark and light bars of unequal width; a wide pale to white bar below first dorsal fin, and one on caudal peduncle, followed by a dark bar; an oblique dark stripe through eye. Attains 10 inches. Feeds mainly on crabs (45%), shrimps, and fishes. Tropical and subtropical Pacific and eastern Indian Oceans from 10–450 feet.



SIDESPOT GOATFISH, malu, *Parupeneus pleurostigma*. Pinkish to bluish gray, the scale edges darker; a large diffuse blackish spot on lateral line below rear of first dorsal fin, followed by a pale pink to whitish spot; a blackish spot in and below base of second dorsal fin. Reported to 11 inches. Feeds on a variety of benthic invertebrates, chiefly crustaceans. Indo-Pacific from 4–250 feet.



WHITESADDLE GOATFISH, kūmū, *Parupeneus porphyreus*. Red to reddish brown, with a white saddle-like spot on caudal peduncle, followed by a dark spot of similar size; a pale-edged dark stripe from snout, through eye, onto upper body; body robust. Reaches 20 inches. Feeds mainly on crabs, shrimps, and polychaete worms. Endemic to the Hawaiian Islands. Reported from depths of 6 to 460 feet. Highly esteemed food fish; often reserved for ceremonial occasions in old Hawai'i. Closely related to *Parupeneus ischyurus* from Japan and Taiwan.



BANDTAIL GOATFISH, weke pueo, *Upeneus arge*. Silvery green dorsally, silvery on side and ventrally, with two orange-yellow stripes along side; lobes of caudal fin crossed by dark brown to black bars, broader on lower lobe. Largest reported, 12 inches. Often seen in small aggregations over sand. Wide-ranging in the Indo-Pacific region.



HIGHFIN CHUB, nenu, *Kyphosus cinerascens*. Soft portion of dorsal fin distinctly higher than anterior spinous portion; gray-brown with faint stripes along scale rows; mouth small, the teeth incisiform; reported to 20 inches. Feeds mainly on benthic algae. Usually seen in small aggregations. Indo-Pacific; first discovered in the Red Sea in 1775.



PACIFIC CHUB, nenu, *Kyphosus sandwicensis*. Spinous and soft portions of dorsal fin nearly uniform in height; gray, becoming silvery gray below, with a longitudinal linear pattern following scale rows; occasional individuals all yellow. Distribution uncertain; ongoing study may show occurrence only in Hawai'i. Two other low-fin chubs, *Kyphosus hawaiiensis* and *K. vaigiensis*, occur in Hawai'i; they are difficult to distinguish without specimens in hand.



THREADFIN BUTTERFLYFISH, kikākapu, *Chaetodon auriga*. Body white with two series of parallel dark bands set at angles, yellow posteriorly; a broad black bar below eye; a trailing filament from upper part of dorsal fin; to 8 inches. Feeds on coral polyps, anemones, small crustaceans, polychaete worms, fish eggs, and algae. Indo-Pacific.



SADDLED BUTTERFLYFISH, kikākapu, *Chaetodon ephippium*. Yellowish gray with a large black area on back and dorsal fin, broadly bordered below by white; lower part of head and chest orange-yellow; a filament from dorsal fin; to 9 inches. Feeds on coral polyps, sponges, other benthic invertebrates, and algae. Often in pairs. Polynesia to India.



BLUESTRIPED BUTTERFLYFISH, kīkākapu, *Chaetodon fremblii*. Yellow with seven blue stripes ending in a large hemispherical black spot; largest, 5.9 inches. Feeds on tentacles of tubeworms, other benthic invertebrates, and algae; does not do well in aquaria. Males maintain a harem up to four females. Hawaiian endemic, with no known close relative.



LINED BUTTERFLYFISH, kīkākapu, *Chaetodon lineolatus*. White with vertical black lines, a broad black arc posteriorly on body, and a broad black bar through eye; median fins yellow. Largest of the butterflyfishes; reaches 12 inches. Feeds mainly on coral polyps and anemones. Difficult to approach. Indo-Pacific except the Arabian Sea.



RACCOON BUTTERFLYFISH, kīkākapu, *Chaetodon lunula*. Broad black bar through eye, followed by wide white bar; body with broad yellow-edged black bands and oblique dark reddish stripes; to 8 inches. Diet includes coral polyps, nudibranchs, tubeworm tentacles, and zooplankton. Sometimes forms aggregations. Indo-Pacific, except seas of Arabia.



OVAL BUTTERFLYFISH, kīkākapu, *Chaetodon lunulatus*. Body oval with short snout; yellow with narrow purplish stripes on body; head with alternating black and yellow bars; rarely exceeds 5 inches. Obligate coral polyp feeder. Often seen in pairs. Central and western Pacific; replaced by a similar sister species in Indian Ocean



MILLETSEED BUTTERFLYFISH, lau wiliwili, *Chaetodon miliaris*. Light yellow with vertical rows of small blackish spots on body, a black bar through eye, and one across caudal peduncle. Feeds mainly on zooplankton. Often occurs in aggregations which can mob nest-guarding male damselfish and feed on the eggs. Hawaiian Islands from near shore to over 800 feet.



MULTIBAND BUTTERFLYFISH, kikākapu, *Chaetodon multicinctus*. White with 6 brown bars and many small light brown spots; a narrow dark ocular bar, interrupted above eye; a narrow black bar across caudal peduncle. Feeds primarily on coral polyps. Forms monogamous pairs that defend a territory of live coral. Hawaiian Islands and Johnston Island.



ORNATE BUTTERFLYFISH, kīkākapu, *Chaetodon ornatissimus*. White with oblique orange bands on body and narrow black bars on head; attains 7 inches. Feeds almost entirely on coral polyps; defends its home range from other coral-feeding fishes. Usually seen in pairs. Found from the islands of Polynesia west to Sri Lanka and the Maldive Islands.



FOURSPOT BUTTERFLYFISH, lauhau, *Chaetodon quadrimaculatus*. Black dorsally with 2 white spots, yellow ventrally, dotted with brown; dark ocular bar followed by a white bar. Occurs on exposed seaward reefs, generally in 5–50 feet. Feeds on polychaete worms, other benthic invertebrates, and algae. Polynesia to northern Philippines and southern Japan.



TEARDROP BUTTERFLYFISH, kikākapu, *Chaetodon unimaculatus*. White with near-vertical yellow lines and a large black spot dorsally on body, often with a narrowing black streak below; a broad black ocular bar, and a narrow one on caudal peduncle and adjacent fins; attains 6.7 inches. Feeds on coral polyps (strong jaws often take skeletal material), soft corals, worms, sponges, and algae. Polynesia to eastern Indian Ocean.



FORCEPSFISH, lau wiliwili nukunuku 'oi 'oi, *Forcipiger flavissimus*. Very long narrow snout, the mouth with a distinct gape; body yellow; head above lower edge of eye black, abruptly white below; attains 7.2 inches. Feeds on polychaete worms, tubefeet of sea urchins, mysid shrimps, amphipods, and other small crustaceans, and fish eggs. Indo-Pacific. The similar *F. longirostris* has an even longer, more tubular snout; it is not recorded in Hanauma Bay.



PYRAMID BUTTERFLYFISH, *Hemitaurichthys polylepis*. Body mostly white, narrowing dorsally, where flanked by yellow; head and chest abruptly dark brown; dorsal and anal fins yellow; caudal fin white; attains 7 inches. Feeds on zooplankton, often in aggregations well above bottom; occurs on outer-reef slopes. Central and western Pacific.



POTTER'S ANGELFISH, *Centropyge potteri*. Head, upper anterior body, and chest with alternating irregular lines of orange and grayish blue; rest of body and adjacent fins dark blue with irregular black lines; attains at most 5 inches. Found only in the Hawaiian Islands, where the most common of angelfishes. Important in the aquarium fish trade.



HAWAIIAN SERGEANT, mamo, *Abudefduf abdominalis*. Light blue-green, grading to white ventrally, with 5 blackish bars on body that become narrow and faint below; largest, 9.8 inches. Feeds mainly on zooplankton. Males guard nest (eggs form purple patch on reef). Hawaiian endemic; hybridizes with recently established Indo-Pacific Sergeant (*A. vaigiensis*).



BLACKSPOT SERGEANT, kūpīpī, *Abudefduf sordidus*. Body yellowish gray with 7 broad dark brown bars and a black spot dorsally on caudal peduncle; attains 9.3 inches. Occurs inshore on rocky bottom, often where surgy. Bars of courting males become white and black. Feeds on algae, crustaceans, worms, and sponges. Indo-Pacific.



AGILE CHROMIS, *Chromis agilis*. Orangish brown with purplish scale centers, abruptly whitish on caudal peduncle and fin; a large black spot at base of pectoral fins; attains 4.3 inches. Feeds on zooplankton; quickly hides in reef when threatened; reported from depths of 20–213 feet. Ranges from Polynesia to east coast of Africa.



CHOCOLATE-DIP CHROMIS, *Chromis hanui*. Very dark orangish brown, the caudal peduncle and fin abruptly pure white.; a black spot at base of pectoral fins; largest, 3.5 inches. Feeds on zooplankton, chiefly copepods and larval crustaceans, but rarely more than 3 feet from the reef where it can dart to shelter. Often seen in small aggregations, sometimes mixed with the Agile Chromis. Known only from the Hawaiian Islands from the depth range of 6–165 feet.



HAWAIIAN DASCYLLUS, 'alo'ilo'i, *Dascyllus albisella*. Orbicular; snout very short; white with black-edged scales, the head, chest, and fins dark gray to black; juveniles with large white spot on side; reaches 5 inches. Feeds on zooplankton; depth range 3–276 feet, only in protected waters when shallow. Hawaiian Islands and Johnston Island.



BRIGHTEYE DAMSELFISH, *Plectroglyphidodon imparipennis*. Yellowish gray, white ventrally, and yellow posteriorly; maximum length, 2.5 inches. Inshore on exposed reefs or rocky bottom, usually in less than 12 feet. Feeds on a wide variety of invertebrates, especially crustaceans, and a little algae. Stays very close to shelter in the reef. Indo-Pacific.



BLUE-EYE DAMSELFISH, *Plectroglyphidodon johnstonianus*. Yellowish gray with a large blackish area posteriorly, blue margin on dorsal and anal fins, and blue eye; reaches 4.7 inches. Feeds on coral polyps; aggressively defends its small territory of live coral. Ranges from islands of Polynesia to east coast of Africa.



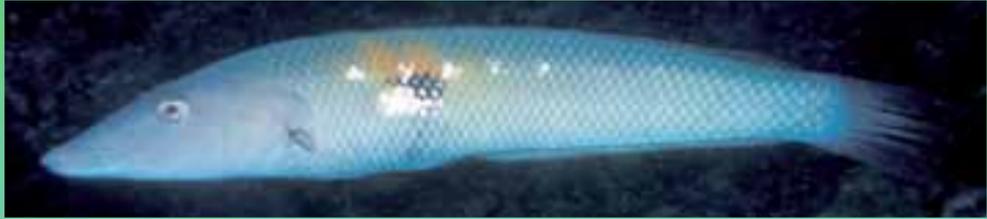
HAWAIIAN GREGORY, *Stegastes marginatus*. Greenish to brownish gray, the scale edges dark; juveniles bright yellow posteriorly; attains 6.3 inches. Feeds on algae and detritus. Fiercely defends its small territory from herbivorous fishes. Reported from 13-138 feet, but not zones of strong surge. Found only in the Hawaiian Islands.



PEARL WRASSE, 'opule (female), 'opule lauli (male), *Anampses cuvier*. Females (upper figure) dark brown, grading to red ventrally, with a white spot on each scale; dorsal half of head dark brown with white dots, the ventral half and chest white with small red spots. Males (lower figure) yellowish green with irregular vertical blue lines on scales; a reticular pattern of blue lines on head except for a green area enclosing eye; often with a pink to yellow bar across body below end of pectoral fin. Males from sex change; largest, 14 inches. Feeds by forcefully striking the bottom with forward-projecting pair of teeth in each jaw, and sucking in tiny crustaceans, worms, mollusks, etc. Known only from the Hawaiian Islands.



HAWAIIAN HOGFISH, 'a'awa, *Bodianus albolineatus*. Females (upper figure) pale yellowish with brown lines following scale rows, the head with dark brown stripes and a broad white stripe; an elongate black spot below rear of dorsal fin. Males (lower figure) mottled dark purplish brown and white. Juveniles with top of head and upper anterior body bright yellow. Females change sex to males that grow to a maximum of 20 inches. Feed mainly on hard-shelled invertebrates, especially mollusks. Juveniles often pick parasites from fishes. Hawaiian Islands.



CIGAR WRASSE, kupou, kupoupou, *Cheilio inermis*. Color variable, mainly greenish or orangish brown, the young often with a narrow black midlateral stripe; one color phase all yellow; males with a patch in the pectoral region containing blotches of black, white, yellow, and orange; body very elongate; snout long and pointed; reaches 19 inches. Feeds on mollusks, crabs, hermit crabs, shrimps, and sea urchins. Indo-Pacific.



YELLOWTAIL CORIS, hinālea 'aki-lolo, *Coris gaimard*. Orangish brown, blackish posteriorly with many small blue spots; caudal fin yellow; males larger (to 12.4 inches), with a green bar on side; juveniles (inset) orange with 5 black-edged white spots, Feeds on mollusks and crabs. Polynesia to eastern Indian Ocean.



ELEGANT CORIS, *Coris venusta*. Females with a broad pink-edged brown stripe that breaks into blotches posteriorly; males complexly colored, yellow with pink bands on head and anterior body, grading to blue-green with pink chevron markings; largest, 7.6 inches. Feeds on a variety of benthic invertebrates. Found only in the Hawaiian Islands.



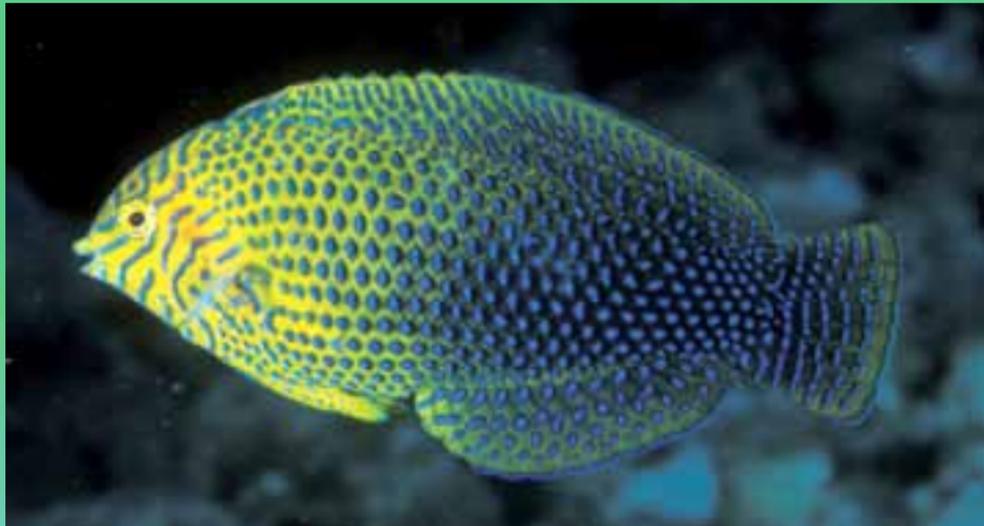
BIRD WRASSE, hinālea i'iwi, *Coris venusta*. Snout of adults very long and slender; body of initial-phase adults (male or female) white with a black spot on each scale, grading to black posteriorly; terminal males dark green with pink line on each scale; head deep blue, followed by a yellow bar; to 12.5 inches. Feeds mainly on small crustaceans. Central and western Pacific.



ORNATE WRASSE, 'ōhua, *Halichoeres ornatissimus*. Deep pink to red, with green stripes on head, and a green spot on each scale of body (round in females, rectangular in males); three black spots in dorsal fin of juveniles (inset) and females, lost in male phase. Reaches 6 inches. Usually found in shallow outer-reef areas on sand and rubble bottoms, but has been recorded to nearly 100 feet. Feeds mainly on small benthic mollusks and crustaceans. Formerly believed to be wide-ranging from the islands of Oceania to the eastern Indian Ocean, but now known to be endemic to the Hawaiian Islands and Johnston Island.



HAWAIIAN CLEANER WRASSE, *Labroides phthiropagus*. Yellow with a black stripe that broadens posteriorly, where edged above and below by magenta; juveniles blackish with a broad purple stripe on back; largest 3.9 inches. Establishes cleaning stations on reef to which fishes come for removal of parasites; also ingests mucus for which the bilobed lower lip may serve as a scoop. Hawaiian Islands.



SHORTNOSE WRASSE, *Macropharyngodon geoffroy*. Head small; snout short; orange-yellow, shading to blackish posteriorly, with a blue spot on each scale and irregular blue lines on head; males with a red spot distally at front of dorsal fin; maximum length 6.3 inches. Feeds mainly on mollusks, which it crushes with its strong pharyngeal teeth. Hawaiian Islands.



RINGTAIL WRASSE, **po'ou**, *Oxycheilinus unifasciatus*. Snout pointed, the lower jaw projecting; olive-green to reddish brown with a vertical red or brown line on each scale, and pink lines on head; usually a white bar across posterior part of body; reaches 18 inches. Capable of rapid color change. Feeds on fishes (65%), crabs, brittle stars, and sea urchins. Has caused ciguatera fish poisoning. Central and western Pacific from 6–525 feet.



BELTED WRASSE, 'ōmaka, *Stethojulis balteata*. Females and initial-phase males (upper figure) drab gray-brown, except for a bright yellow spot above pectoral-fin base and 2 small pale-edged black spots at midbase of caudal fin. Terminal males (lower figure) green with a broad, blue-edged, orange-yellow stripe on side of body, and blue lines on head; largest, 5.9 inches. Swims rapidly with pectoral fins; feeds by taking a quick bite of sandy or algal rock bottom. Stomach-content material proved to be very small mollusks, polychaete worms, sipunculids, ostracods, amphipods, crabs, shrimps, and other small crustaceans, mixed with sand and detritus. Known only from the Hawaiian Islands, from near shore to 72 feet.



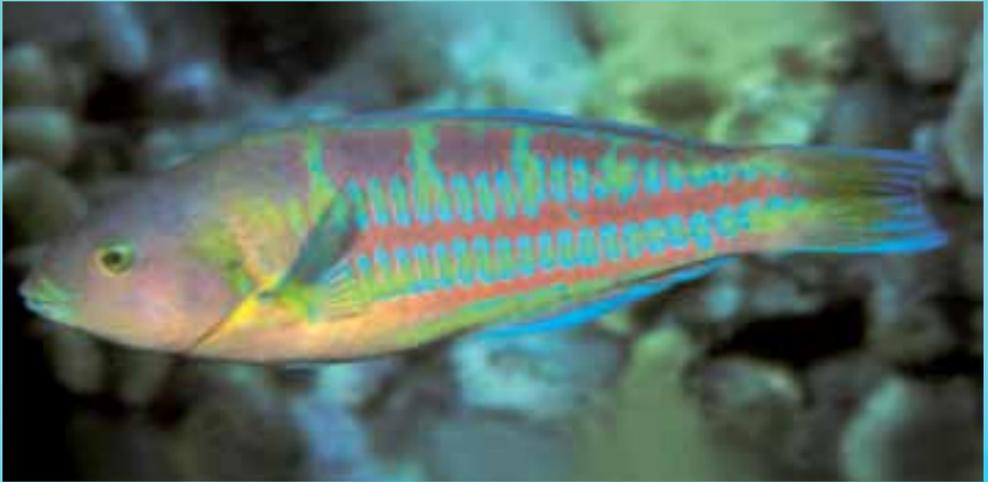
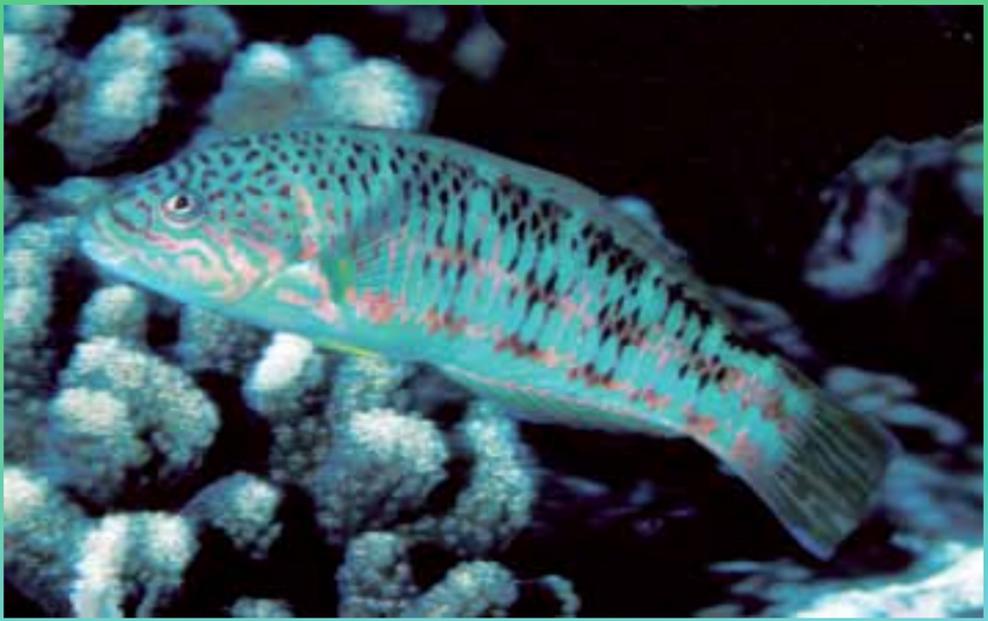
BLACKTAIL WRASSE, hinālea luahine, *Thalassoma ballieui*. Females and initial-phase males light gray-brown with a dark reddish brown vertical line on each scale. Terminal male pale yellowish with a pink line on each scale, the head unmarked gray-brown; caudal fin black; juveniles green with a red line on scales; reaches 16 inches. Preys mainly on sea urchins, crabs, and fishes. Hawaiian Islands. Hawaiian name means old woman.



SADDLE WRASSE, hinālea lau-wili, *Thalassoma duperrey*. Head of adults blue-green, followed by a broad orange bar; rest of body greenish with magenta vertical lines, except terminal males with a whitish bar behind the orange; juveniles with a lateral dark stripe; attains 10 inches. Feeds on a wide variety of invertebrates, some as plankton. Initial phase spawns in aggregations; a terminal male pair-spawns with females in his territory. Hawaiian Islands.



SURGE WRASSE, hou, *Thalassoma purpurum*. Body of initial phase adults (upper figure) of both sexes with 2 longitudinal series of vertically elongate green spots separated by reddish stripes; head green with irregular pink bands, one on snout forming a Y or V mark; terminal males (lower figure) with same basic pattern but markings broader and blue, blue-green, and pink; reaches 17 inches. Typically found inshore on hard bottom subject to wave action. Preys on crabs, fishes, sea urchins, mollusks, worms, and brittlestars. Ranges throughout the Indo-Pacific region from the Red Sea to the Hawaiian Islands and Easter Island.



CHRISTMAS WRASSE, 'āwela, *Thalassoma trilobatum*. Initial phase adults (upper figure) colored very much like the Surge Wrasse, but the pink to maroon marking on the side of the snout is usually shaped like a C instead of a Y or V. Head of terminal males (lower figure) orangish brown without bands radiating from eye; body pink to red with 2 rows of vertically elongate, rectangular, blue-green spots, 4 of which extend across upper red part of body; largest 11.8 inches. Usually found inshore along exposed rocky shores. Preys chiefly on crustaceans (especially crabs), mollusks, and brittle stars. Indo-Pacific.



STAREYE PARROTFISH, pōnuhunuhu, *Calotomus carolinus*. Teeth incompletely fused to form beak-like dental plates; initial-phase adults (upper figure) orangish to grayish brown, mottled with white, shading to dull orange ventrally; body of terminal males (lower figure) green to blue-green with a narrow pink bar on each scale, and many pink bands radiating from eye; reaches 20 inches. Usually found inshore in areas of heavy algal growth; feeds by scraping algae from rocky surfaces. Indo-Pacific, also ranges to the tropical eastern Pacific.



SPECTACLED PARROTFISH, uhu 'ahu'ula, uhu uliuli, *Chlorurus perspicillatus*. Teeth fully fused to form strong white dental plates; initial phase adults (upper figure) of both sexes dark gray-brown, abruptly white posteriorly; fins red; terminal males (lower figure) blue-green with pink-rimmed scales, the somewhat protuberant snout with a broad, blue-edged, greenish bar, and a narrower one through eye; a bright yellow-green spot on gill cover; largest, 26 inches (14 lbs. 9 oz.). Scrapes algae from rocky surfaces, often leaving scrape mark on limestone. Endemic to Hawai'i and Johnston I. Population declining from being speared while sleeping at night. Scientific name in Latin means spectacled.



BULLETHEAD PARROTFISH, uhu, *Chlorurus spilurus*. Snout obtuse; caudal fin truncate; initial-phase adults (upper figure, both sexes) dark reddish brown, pale posteriorly, often with a large dark spot at base of caudal fin; able to turn on two rows of white spots on body; dental plates white; body of terminal males (lower figure) green with a narrow pink bar on each scale; a broad zone on side often suffused with orange or yellow; upper part of head lavender-gray with green bands; dental plates blue-green; reaches 16 inches. Central and western Pacific (replaced by *C. sordidus* in Indian Ocean). Has hybridized with *C. perspicillatus*.



PALENOSE PARROTFISH, uhu, *Scarus psittacus*. Initial phase (both sexes, upper figure) reddish brown to gray, the snout often pale; caudal fin slightly concave; a dark spot at base of first dorsal fin membrane, and one at upper base of pectoral fins; terminal males (lower figure) green with a lavender-pink bar on each scale; top of head purplish blue; caudal fin deeply concave; both phases with faint pale stripes on abdomen; length to 12 inches. Initial-phase fish often form feeding aggregations to invade algal territory of resident herbivores. Distributed from the Red Sea to the Hawaiian Islands and the islands of French Polynesia.



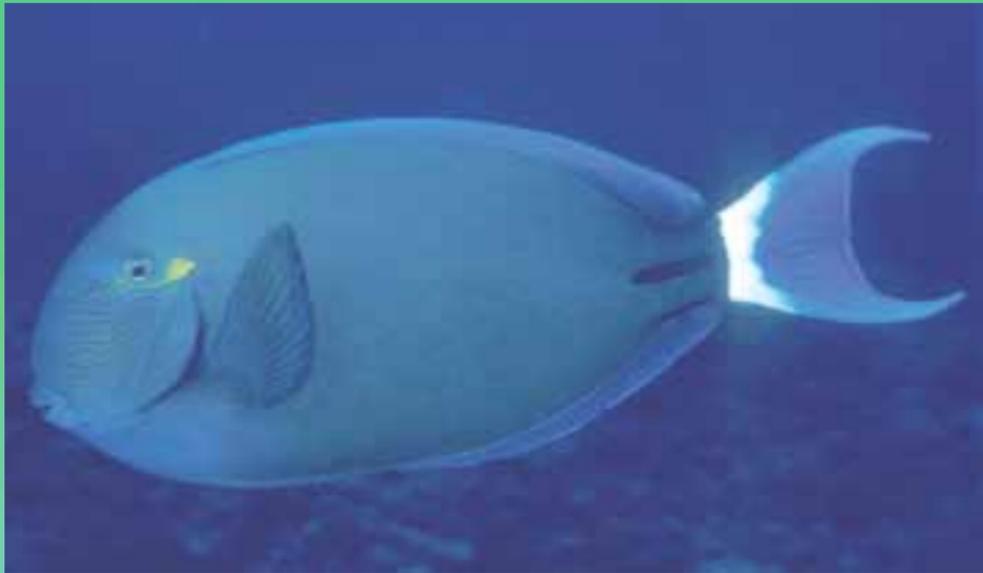
EMBER PARROTFISH, uhu pālupaluka, uhu ele'ele, *Scarus rubroviolaceus*. Front of snout very steep; caudal fin concave, especially so in terminal-phase males; initial phase (both sexes, upper figure) reddish to yellowish gray, the scales rimmed and spotted with black; head reddish brown, unmarked; terminal males (lower figure) blue-green with lavender-pink on scales, paler posteriorly; front of snout and chin with dark blue-green and pink bands; largest, 28 inches (12.6 lbs.). Usually on seaward reefs; found throughout most of Indo-Pacific and the tropical eastern Pacific. This and the Spectacled Parrotfish should be fully protected in Hawai'i.



MOORISH IDOL, kihikihi, *Zanclus cornutus*. Body very deep and compressed, the snout narrow and pointed; adults with a small bony projection before each eye; dorsal fin narrowing to a long filament; pale yellow with black bars; reaches 8.7 inches. Omnivorous. Indo-Pacific except Red Sea, from near shore to 600 feet.



ACHILLES TANG, pāku'iku'i, *Acanthurus achilles*. Black with a large elliptical orange area posteriorly on body enclosing a sharp, folding caudal spine; caudal fin white with a large black-edged orange central area; reaches 10 inches. Occurs inshore on seaward reefs or rocky bottom; aggressively guards its algal territory. Islands of Micronesia, Polynesia, and the tropical eastern Pacific.



RINGTAIL SURGEONFISH, pualu, *Acanthurus blochii*. Yellowish gray with blue lines on head and chest, and blue dots on body; a yellow spot nearly as large as eye behind eye; a white bar at base of caudal fin; pectoral fins without a broad yellow border; reaches 16.5 inches. Grazes on benthic algae. Indo-Pacific.



EYESTRIPE SURGEONFISH, palani, *Acanthurus dussumieri*. Yellowish brown with fine longitudinal blue lines; a yellow band connecting eyes, and a yellow spot behind; caudal spine socket edged in black; caudal fin deep purple, dotted with black, pale yellow above and below at base; attains 21 inches. May form small schools. Indo-Pacific except Red Sea.



WHITESPOTTED SURGEONFISH, 'api, *Acanthurus guttatus*. Very deep body; gray-brown with two white bars anteriorly, the posterior half and adjacent fins with small white spots; caudal fin yellow and black; pelvic fins yellow; length to 11 inches. Lives in surge zone on rocky shore; usually in small schools. East Africa to Hawai'i and the Pitcairn Islands.



WHITEBAR SURGEONFISH, māikoiko, *Acanthurus leucopareius*. Gray-brown with a white and dark brown bar behind eye; body with very small blue spots that coalesce into irregular lines posteriorly; a white bar at base of caudal fin; reaches 10 inches. When common, may form feeding aggregations. Central and western Pacific, except equatorial zone. Common at Easter Island.



BROWN SURGEONFISH, mā'ī'ī, *Acanthurus nigrofuscus*. Brown, often suffused with lavender; head and chest with orange yellow dots; a black spot at rear of dorsal and anal fins; caudal fin very concave; reaches only 8.3 inches, but very aggressive in defense of its algal territory. Spawns in large aggregations. Occurs throughout the Indo-Pacific region.



BLUELINED SURGEONFISH, maiko, *Acanthurus nigroris*. Gray-brown with irregular longitudinal blue lines on body; a small black spot at rear base of dorsal and anal fins; caudal fin usually with a whitish bar at base, the posterior margin slightly concave; attains 10 inches. Islands of Oceania, but the Hawaiian population may prove to be a separate species.



ORANGEBAND SURGEONFISH, na'ena'e, *Acanthurus olivaceus*. Grayish brown with a broad orange band, broadly bordered by deep blue extending behind upper end of gill opening; able to show posterior half of body abruptly darker; caudal fin lunate with a rear white bar; juveniles all yellow; attains 12 inches. Central and western Pacific, except the Marquesas Islands.



CONVICT SURGEONFISH, manini, *Acanthurus triostegus*. Pale greenish gray with 6 narrow black bars; largest, 10.3 inches. Feeds on benthic algae, often in aggregations to overcome territorial algal feeding fishes. Indo-Pacific, and tropical eastern Pacific; common inshore in the Hawaiian Islands where considered a subspecies, *Acanthurus triostegus sandvicensis*.



YELLOWFIN SURGEONFISH, pualu, *Acanthurus xanthopterus*. Purplish gray, but can quickly put on an irregular yellowish linear pattern; dorsal and anal fins yellowish with blue bands; outer third of pectoral fins yellow; caudal spine small, the socket edged in pale blue; largest, 24.5 inches. Feeds mainly on algal film on compact sand. East Africa to islands of the tropical eastern Pacific.



GOLDRING SURGEONFISH, kole, *Ctenochaetus strigosus*. Brown with blue longitudinal lines that curve into soft portions of dorsal and anal fins; head with blue dots, the eye rimmed in bright yellow; reported to 9.5 inches. Fine bristlelike teeth used to feed on detritus. Hawaiian Islands.



ORANGESPINE UNICORNFISH, umaumalei, *Naso lituratus*. Gray-brown with a curved yellow band from corner of mouth to eye; snout in front of band black; lips orange; a bright orange area around each of the pair of sharp, forward-curving spines on caudal peduncle; adult males with two trailing filaments on caudal fin; to 18 inches. Browses on leavy algae. Indo-Pacific.



BLUESPINE UNICORNFISH, kala, *Naso unicornis*. Light olive to yellowish gray; deep-bodied; adults with a tapering, horn-like, process before eye; males with a trailing filament from each corner of caudal fin; reported to 27.5 inches; ventures into shallow water in quest of leafy algae such as *Sargassum*. Indo-Pacific.



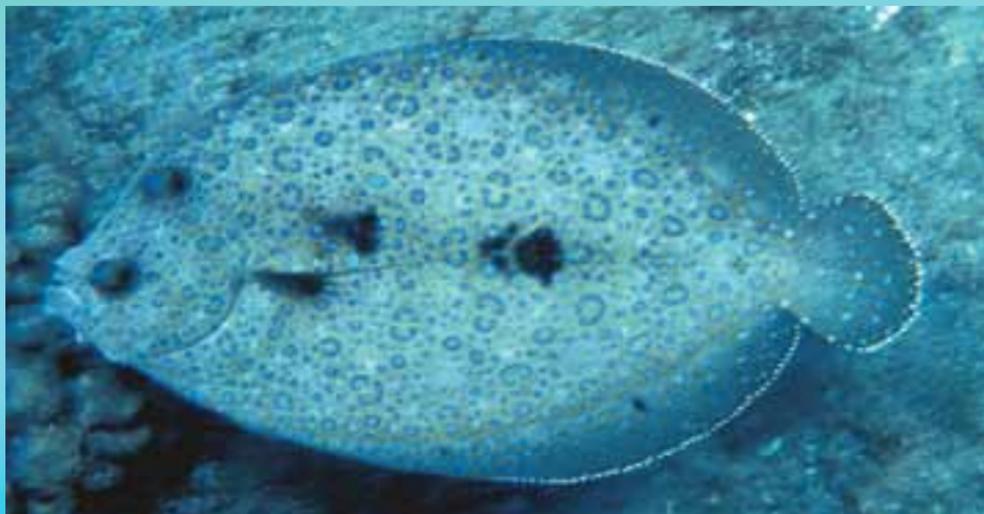
YELLOW TANG, lau'i pala, *Zebrasoma flavescens*. Bright yellow except for white sheath of caudal spine; snout prominently pointed; dorsal and anal fins high, especially in juveniles; attains 20 inches. Adults graze on algae close to short in calm areas. Ranges across the North Pacific from Hawai'i to Japan. The number 1 fish of Hawai'i's aquarium fish trade.



SAILFIN TANG, māne'one'o, *Zebrasoma veliferum*. Body brown with orange vertical lines, crossed by 5 narrow pale yellow bars; head with a brown bar through eye, the snout gray with yellow dots; deep-bodied, with large dorsal and anal fins that can be greatly elevated when alarmed; largest, 15.6 inches. Pairs defend their algal territory. Central and western Pacific. A sister species, *Zebrasoma desjardini*, in the Indian Ocean.



GREAT BARRACUDA, kākū, *Sphyrna barracuda*. Dark gray, silvery below, with a few posterior black spots in adults; body very elongate with projecting lower jaw and awesome dentition; two well separated dorsal fins; reported to 5.6 feet (84.9 lbs). A roving predator of fishes. Has caused ciguatera poisoning. Rare attacks on humans mainly in turbid water where a limb may be mistaken for prey. Circumglobal in warm seas; subspecifically different in the Indo-Pacific.



FLOWERY FLOUNDER, pāki'i, *Bothus mancus*. Yellowish gray with scattered blackish spots, including two very large ones on lateral line; many small blue spots and larger blue circles or broken circles; eyes of adult males far apart and pectoral rays very long; attains 20 inches. Often seen in coral reefs; feed on fishes (88%) and crustaceans. Indo-Pacific and tropical eastern Pacific (where called Tropical Flounder). The similar Panther Flounder lacks blue markings.



BLACK DURGON, humuhumu 'ele'ele, *Melichthys niger*. Black to dark greenish gray with black lines; a broad zone of blue lines connecting eyes, and a pale blue line at base of dorsal and anal fins; largest examined, 12.6 inches. Feeds on algae (70% by volume) and zooplankton. Usually well above bottom, but quickly retreats to shelter in reef. Circumtropical.



PINKTAIL DURGON, humuhumu hi'ukole *Melichthys vidua*. Dark brown; second dorsal and anal fins whitish with black border; caudal fin white, the outer half pink; reaches 13.4 inches. Usually on seaward reefs; depth range 13–476 feet. Feeds mainly on benthic algae, crustaceans, and mollusks. Ranges from the east coast of Africa to the tropical eastern Pacific.



LAGOON TRIGGERFISH, humuhumu nukunuku ā pua'a, *Rhinecanthus aculeatus*. White, complexly banded from a black midlateral zone on body; blue and black lines connecting eyes; a yellow stripe extending back from mouth; rows of small black spines posteriorly; reaches 12 inches. Inshore in protected areas. Feeds on algae and a wide variety of invertebrates. Indo-Pacific.



WEDGE TRIGGERFISH, humuhumu nukunuku ā pua'a, *Rhinecanthus rectangulus*. Brown dorsally, white below on head and abdomen; blue and black lines across interorbital; a black bar below eye, broadening to an oblique band to base of anal fin; a gold-edged black wedge posteriorly; reaches 10 inches. Inshore on exposed reefs. Feeds on algae and invertebrates. Indo-Pacific.



LEI TRIGGERFISH, humuhumu lei, *Sufflamen bursa*. Grayish brown with a white line from mouth to anus, light gray below; a scimitar-shaped dark brown to yellow bar through eye, with a second one behind; a white line from corner of mouth to front of anal fin; attains 9.8 inches. Feeds mainly on mollusks (22%), algae, crabs, and sea urchins. Reported from 10–300 feet. Indo-Pacific.



SCRAWLED FILEFISH, loulu, *Aluterus scriptus*. Light bluish gray to olive-brown with scattered small black spots, blue spots, and irregular blue lines; very thin body; caudal fin large, about one-third of body length; first dorsal spine long and slender, over eye; reaches 30 inches. Feeds on algae and benthic invertebrates, including stinging coral and sponges. Cosmopolitan in all warm seas.



BARRED FILEFISH, 'ō'ili, *Cantherhines dumerilii*. Two pairs of antrorse spines on side of caudal peduncle; grayish brown with indistinct dark brown bars posteriorly; a pink to white band at base of lips; caudal fin of males orange; largest 14.8 inches. Feeds mainly on branching coral; often seen in pairs. Indo-Pacific.



SQUARETAIL FILEFISH, 'ō'ili lepa, *Cantherhines sandwichiensis*. Gray to brown with a white spot at rear base of dorsal fin, and a smaller spot at rear of anal fin; caudal fin truncate to slightly rounded; attains 7.6 inches. Feeds mainly on benthic algae. Antitropical in distribution (Hawai'i in the north and Cook Islands, Pitcairn, and Rapa in the south). Indo-Pacific.



FANTAIL FILEFISH, 'ō'ili 'uwi'uwi, *Pervagor spilosoma*. Yellowish brown with numerous small dark spots on body and oblique lines on head; caudal fin orange with a broad black submarginal band; reaches 7.1 inches. Feeds mainly on algae and a variety of benthic invertebrates. Endemic to the Hawaiian Islands and Johnston Island; occurs in enormous numbers in some years.



THORNBACK COWFISH, makukana, *Lactoria fornasini*. Body encased in a hard, nearly quadrangular carapace, with 2 horn-like spines at the front, 2 posteriorly, and a large curved spine in middle of ridge on back; greenish with dusky patches, small pale blue spots, and dark edges to polygonal plates forming carapace. Indo-Pacific. *Lactoria diaphana* has blackish blotches and small black spots.



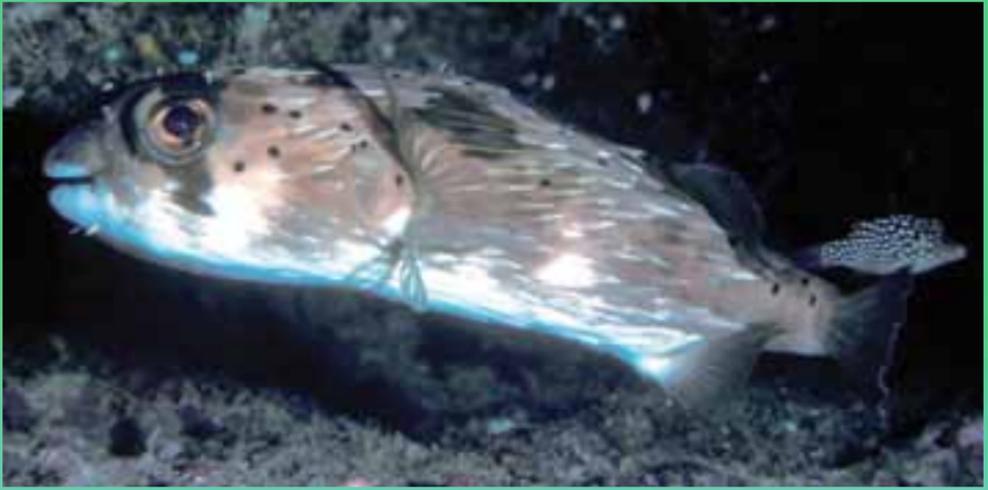
SPOTTED BOXFISH, moa, *Ostracion melagtris*. Body encased in a quadrangular bony carapace, broader at bottom; no middle ridge on back, and no horn-like spines; females (upper figure) brown with small white spots; males (lower figure) brown on back with fewer and larger white spots; blue on side with numerous small black spots; irregular yellow spots between eyes and on caudal peduncle. Attains 6 inches. The diet consists primarily of tunicates, algae, and sponges. Wide-ranging in the Indo-Pacific region and the tropical eastern Pacific. Hawaiian population a little different in color, but a DNA study found no genetic basis for calling it a different species or subspecies.



SPOTTED PUFFER, 'o'opu hue, *Arothron meleagris*. Dark brown to black dorsally with numerous small white spots on head, body, and fins; rarely an all-yellow individual. Attains 12.6 inches. Feeds mainly on live coral, but also on sponges, mollusks, and algae. Able to inflate body by drawing water into a diverticulum of the stomach. Indo-Pacific and tropical eastern Pacific.



WHITESPOTTED TOBY, *Canthigaster jactator*. Yellowish to dark brown, with numerous, close-set, white to pale blue spots; fins unspotted; reaches 3.5 inches. Feeds mainly on sponges, algae, and tunicates. Hawaiian Islands. The most common of seven tobies in the islands. Like others of the genus, largely protected from predation by a skin toxin.



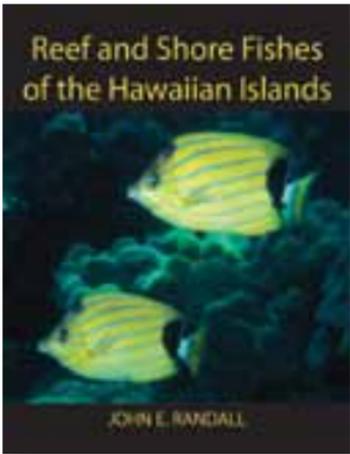
LONGSPINE PORCUPINEFISH, kōkala, *Diodon holocanthus*. Light brown to olive with large dark brown blotches dorsally, white ventrally; scattered small black spots, none on fins; a pair of small barbels on chin; large white spines on body become erect when body inflated; teeth fused to dental plates; attains 15 inches. Feeds by crushing hard-shelled invertebrates, mainly at night. Circumglobal, primarily in subtropical seas.



PORCUPINEFISH, kōkala, *Diodon hystrix*. Blotchy olivaceous with numerous small black spots on head, body, and fins; spines posterior to pectoral fins longer than those on head (the reverse in *D. holocanthus*); no small barbels on chin; reaches 28 inches. Nocturnal; feeds on mollusks, crabs, hermit crabs, and sea urchins; cosmopolitan in warm seas.



Frank Schneidwind



About the Author

Dr. John E. Randall sailed his 37-foot ketch from California to Hawai'i to enter graduate school at the University of Hawai'i in 1950. After faculty positions at the University of Miami and the University of Puerto Rico, he served as the ichthyologist with the Bishop Museum for 40 years. His 745 publications in marine biology include 10 guidebooks on fishes. He has described 686 new species of fishes, including 47 from the Hawaiian Islands. The 560-page volume (shown to left) is available from the publisher of this guidebook, the University of Hawai'i Sea Grant College Program (www.soest.hawaii.edu/SEAGRANT).

