

Ultimate Guide to Hawaiian Reef Fishes  
corrections appearing in 3rd printing, November, 2010

p. 61: HIGHFIN CHUB, 3rd line from bottom: To about ~~14~~ 20 in.

p. 91: HAWAIIAN CONGER, 2nd line from bottom: "To ~~about~~ almost 4 ft."

p. 109: YELLOWHEAD MORAY: *Gymnothorax rueppelliae* (McClelland, 1845) should be *Gymnothorax rueppellij* (McClelland, 1844)

p. 148, paragraph 2: beginning:

~~Twenty-nine species of marine gobies .... with fish poison.~~

replace with:

Twenty-nine species of marine gobies (at least ten endemic) are known in Hawai'i. Sixteen are included here. Omitted are the Noble Goby (*Priolepis eugenius*), the Petite Goby (*P. farcimen*), the Rimmed-Scale Goby (*P. limbatosquamis*)—all secretive relatives of the Golden Green Goby (p. 152)—the Red Earth Dwarf Goby (*Trimma milta*), the Onescale Dwarf Goby (*Trimma unisquamis*), Susan's Pygmy Goby (*Eviota susanae*)—all similar in size and habits to the Divine Pygmy Goby (p. 153)—the shallow-water, mud-dwelling Speartail Goby (*Oxyurichthys lonchotus*), the introduced Mangrove Goby (*Mugilibobius cavifrons*), which lives in brackish water, and various other small and cryptic species known primarily from scientific collections made with fish poison.

p. 149: BARRED TIDE POOL GOBY, last 2 lines: "To about 1 in. ~~Endemic to Hawai'i, Easter Island, Tonga.~~ Photos: Punalu'u (fix okina)

p. 150. WIRE CORAL GOBY:

1) line 5: "a pair of small shrimps, *Pontonides* ~~sp.~~ *ankeri*, may be present..."

2) 2nd line from bottom: "The species name honors pioneer ~~Australian~~ British zoologist Sir Charles..."

p. 150. GORGONIAN GOBY

Replace text with:

Outside Hawai'i, this goby generally lives on gorgonian sea whips. In the Islands, where suitable gorgonians do not occur, it lives on man-made objects, such as old tires or buoy lines, as well as on wire corals. It resembles the Wire Coral Goby (above) but grows to a larger size, is more orange in color, has a more pointed snout, and lives in groups as well as in pairs. Where wire corals are abundant, gobies often move from one coral to another, darting quickly across the intervening space. To about 2 in. Indo-Pacific. Photo: Mākua, O'ahu. 100 ft.

p. 164: GURNARDS, line 4: "~~never~~ rarely leave the bottom,"

\*p. 166: REDBARRED HAWKFISH, 8 lines from bottom:

A very similar hawkfish (*C. ~~cinetus~~ mascarensis*) occurs in the distant islands of Mauritius and Madagascar...

p. 177: BLUEFIN TREVALLY, last line:

Length is missing. Add To about 3 ft. after "Eastern Pacific."

p. 206, paragraph 2:

Small juvenile parrotfishes are often marked with dark longitudinal stripes. They can quickly change their patterns depending on their activity and surroundings, making them especially hard to identify. ~~Seven~~ **Eight** parrotfishes ~~species,~~ **including three** endemics, inhabit Hawaiian reefs. ~~Several are common only in the Northwestern Hawaiian Islands. All are illustrated here. Not shown is a small species of the genus *Calotomus* that inhabits *Halimeda* seaweed beds.~~

p. 218: ~~HAWAIIAN~~ SMOOTH SEAHORSE  
*Hippocampus* ~~e.f.~~ *kuda* Bleeker, 1852

This seahorse lacks spines, thus the common name. Most individuals are blackish or brownish, but ~~white ones have been seen and females are often~~ yellow ~~ones are sometimes seen~~. Typically occurring in shallow protected embayments, such as on reef flats in Kāne`ohe Bay, O`ahu, ~~it is these fish are~~ usually coated with filamentous algae and silt and thus easy to overlook. In most years ~~it is they are~~ very rare, but occasionally, such as in late 2005, ~~it the species~~ undergoes a small population boom, becoming only moderately rare. ~~The exact identity of this seahorse is in question. One specialist, Rudie Kuitert, states that it appears to be *Hippocampus taeniopterus* Bleeker, 1852, a species easily confused with *kuda*, while another, Sara Lourie, provisionally uses *kuda*, but adds a question mark. In both species, females are sometimes yellow. Indo-Pacific. The Hawaiian population is recognized as an endemic subspecies with the full name *Hippocampus kuda hilonis*. To about 8 in. with tail stretched out. Photos: Lagoon One, Ko Olina Resort, O`ahu. 5-8 ft.~~

THORNY SEAHORSE  
*Hippocampus histrix* Kaup, 1853

This seahorse has been recorded only ~~once~~ three times in Hawai`i, **most recently** off Maui in the 1920s. Someday, it could turn up again. The head and body ridges bear prominent spines and the long snout has a few white bars. ~~(On the other hand, it is possible that the specimen was actually the similar *H. fisheri*, previous page.)~~ (Fisher's Seahorse, p. 217, is similar, although smaller and primarily pelagic.) To 6 in. Indo-Pacific. Photo: Manado, Indonesia.

The Rays chapter has lots of changes.

p. 231: Replace photo with: **Manta\_alfredi\_OldAirport\_5.jpg**  
replace caption with: **Coastal Manta Ray · nāhālua · "Old Airport," Kona, Hawai`i. 30 ft. (p. 234)**

p. 232:

2nd paragraph, last line:

... the unusual sea-going Violet Stingray (*Pteroplatytrygon violacea*) occurs offshore.

BROAD STINGRAY: change ~~latus~~ to **lata**

*Dasyatis* ~~latus~~ (Garman, 1880)

p. 233: Move "Manta Rays and Devil Rays" text to top of page. Change as follows:

### **Manta Rays and Devil Rays (family Mobulidae)**

These are big free-swimming rays with pointed, triangular wings. Feeding on plankton and lacking a sting, they are considered harmless to humans. Mantas (genus *Manta*) are among the largest of fishes, **some** reportedly weighing ~~up to~~ **over** 3,000 lbs. with a wingspan of ~~over 20 ft~~ **23 ft. or more**. Unlike most rays, their mouth is at the front of the body rather than underneath. Devil rays (genus *Mobula*) have an underslung mouth and are somewhat smaller than mantas.

~~Devil ray sightings are e~~Extremely rare in Hawai'i, only one species, ~~t~~The Chilean Devil Ray (*Mobula tarapacana*) has ever been seen ~~by divers only a handful of times~~ in the Islands.

third paragraph:

~~—There are nine species of devil rays. Although many scientific names have been bestowed on manta rays over the years, often based on color pattern, recent DNA analysis of tissue samples from all over the world by Tim Clark of the University of Hawai'i indicates that there is only one species.~~

At least two species of mantas are known worldwide, and Hawai'i is one of the easiest places to see them. The Coastal Manta, described on p. 234, is encountered most frequently.

p. 233: Add text and photo for PELAGIC MANTA RAY *Manta birostris*\_Kane\_5.jpg

PELAGIC MANTA RAY · hāhālua · *Manta birostris* (Walbaum, 1792)

The largest known manta, this species is occasionally encountered in Hawaiian waters. It is more pelagic in its habits than the Coastal Manta, which always remains within a few miles of shore. One individual, for example, was photographed off Kona in 2006 and later off Maui in 2009. No one knows where it was between the two sightings. The Pelagic Manta's back is black, always with white or pale shoulder patches, and often with white wing tips and a white V near the tail. The underside is white with scattered dark spots, but never with dark spots or marks in the "chest" area between the two rows of gill slits. A wide gray margin extends along rear edge of the wings. (Compare with the photo of a Coastal Manta's underside at the top of p. 235.) Also, the mouth area is dark gray or black (best seen from below or when viewed head-on). A few individuals are all black except for a white blaze in center of the underside. Indo-Pacific, Eastern Pacific, and Atlantic. To at least 23 ft. wingtip to wingtip, with anecdotal reports of individuals up to 29 ft. Photo: Kona, Hawai'i. (Jerry Kane)

p. 234: COASTAL MANTA RAY · hāhālua · *Manta birostris* (Walbaum, 1792) *alfredi* (Kreff, 1868)

These huge animals fly continually through the water with graceful beats of their triangular wings, often near the surface. Smaller individuals may even leap free, sometimes cartwheeling, and landing with a great splash. ~~Although mostly black on the back, many mantas bear~~ Their back is black, often with white patches or streaks on the shoulders, wings, and tail area (p. 231). Their underside is ~~usually~~ white or cream with irregular scattered dark spots, each individual having a slightly different pattern. (Unlike the Pelagic Manta, dark spots are almost always present in the "chest" area between the two rows of gill slits on the underside.) The mouth area is whitish or grayish, best seen from below or when viewed head-on. An almost all-black color variation is rare in Hawai'i. Because of their size and swimming ability, it was long assumed that all mantas migrate long distances. However, Tim Clark of the University of Hawai'i studied Coastal Mmantas on the Kona Coast of the Big Island and determined that the Kona population is localized. ~~It's very rare~~ No Coastal Manta from Kona, for example, ~~for a Kona manta to be~~ has ever been recorded from Maui. Using acoustic tracking technology and visual recognition, he found that ~~Kona these~~ mantas typically ranged 10-20 miles up and down the coast over a 3- to 5-day period and tended to concentrate in several key feeding areas. They usually stayed within about half a mile of shore during the day, but at night migrated offshore as much as 3 miles. Clark hypothesizes that the offshore movement allows the rays to feed on plankton which is migrating upward and inshore during that time. Although generally solitary, mantas will regularly congregate in areas where food is plentiful, providing the basis for a lucrative "manta ray night dive" industry in Kona. ~~Seeing a manta is a sought-after experience; in some parts of the world they will approach snorkelers and divers, occasionally permitting them to stroke their undersides or ride~~

~~them for short distances. Hawaiian mantas, however, usually veer away from humans and bolt at the slightest touch. It's best to leave them alone.~~ *Manta* means "mantle" or "cloak." The species name ("two snouts") and the Hawaiian name ("two mouths") probably refer to the two cephalic flaps extended while feeding. The largest Coastal Manta on record was ~~23~~ 18 ft. from wingtip to wingtip ~~wing tip to wing tip and weighed 3,100 lbs.~~ Most Hawaiian mantas individuals are in the 8-12 ft. range. Coastal Mantas occur throughout the Indo-Pacific, but are not known from the Eastern Pacific. Photo: Hanauma Bay, O'ahu. 10 ft. (see also p. 231)

p. 238: SPOTTED EAGLE RAY · hailepo; hīhīmanu · *Aetobatus narinari* (Euphrasen, 1790) *ocellatus* (Kuhl, 1823)

These magnificent rays can attain ~~6 ft. or more~~ almost 10 ft. from wingtip to wingtip. Their back, light brown, gray or black, is beautifully spotted with white. The underside is mostly white, often with a faint mazelike pattern under the wings. The long slender tail can equal three times the width of the body (if not broken or bitten off), and bears 1-5 venomous spines at the base. Under the large protruding head is a wide fleshy lobe somewhat resembling a "duck bill" which helps the ray dig for molluscs and other organisms. When not foraging, Spotted Eagle Rays swim well off the bottom, sometimes in small groups. One of the most beautiful of all underwater sights is a formation of Spotted Eagle Rays flying together in synchrony. In some parts of the world schools of 50 or more have been reported, but such behavior is certainly not common in Hawaiian waters. Occasionally Spotted Eagle Rays will leap from the sea, either dolphin style or by cartwheeling with wings outspread. Leaping by pregnant females is said to facilitate the birth of young. ~~Spotted Eagle Rays much like this one occur in warm seas around the world, and have long been considered a single species. Recent research, however, reveals that the eastern Pacific and Indian ocean populations host different species of tape worms in their gut. Spot patterns and body proportions also differ between various geographic populations. All this suggests that what we now call *Aetobatus narinari* is actually a complex of at least four similar species, but the details have yet to be sorted out.~~ For many years all were lumped together as one species: *Aetobatus narinari*. However, the various populations host different parasites and their spot patterns and body proportions differ slightly. In 2009, a DNA study confirmed that "spotted eagle rays" in Hawai'i and the Indo-Pacific are distinct from those in the Atlantic and Eastern Pacific. The Hawaiian word hīhīmanu means "lavish," "magnificent," "elegant." In ancient times these powerful animals, which weigh up to 500 lbs., were forbidden to women as food. Photo: "Mahi" wreck, O'ahu. 60 ft. (see also p. 231)

p. 245: Wrong text is with wrong photo! Put the new HAWAIIAN SILVERSIDE text under top photo and new DELICATE ROUNDHERRING text under bottom photo.

HAWAIIAN SILVERSIDE · 'iao · *Atherinomorus insularum* (Jordan & Evermann, 1903)

These small fish aggregate loosely along rocky or sandy shorelines. At night they feed on plankton at the surface. A silvery stripe topped by a blue-green line runs the length of the body. In ancient times 'iao were said to glow in the dark and the face of a human sacrificial victim was sometimes rubbed with them "so that it shone like the eyes of the maneater shark of the deep." To about 3 ½ in., but usually much smaller. Endemic (with an Indo-Pacific sister species, *A. lacunosus*). Photo: Honolua Bay, Maui. 2 ft.

DELICATE ROUNDHERRING · piha · *Spratelloides delicatulus* (Bennett, 1831)  
[BLUEBACKED SPRAT]

These small fish live along shallow protected reef flats. Snorkelers sometimes see them streaming by in large, dense schools. Silvery with a bluish back, they have two dark streaks at the base of the tail, impossible to see underwater. To about 3 ½ in. Indo-Pacific. Photo: Moku o Loe (Coconut Island), O'ahu. 2 ft. (under pier)

p. 247: 22 lines from the bottom:  
~~Six~~Fifteen species are pictured here.

p. 251: CORAL SCORPIONFISH This photo is wrong and I can't find another, so delete the entire fish.

p. 251: CHEEKSPOT SCORPIONFISH *Scorpaenodes littoralis*  
The photo is wrong.

- 1) Replace photo with **Scorpaenodes\_littoralis\_Stender\_325.jpg**
- 2) Add photo credit under photo: [Keoki Stender](#)
- 3) Replace text with:

Rarely-seen, this scorpionfish occurs from the shoreline to 100 ft. or more and is most common in the Northwestern Hawaiian Islands. Most O'ahu specimens in the Bishop Museum came from depths of around 80 ft. It is mottled brown, often with a bright red iris. A prominent dark oval spot near the edge of the gill cover gives the fish its common name. Prefers cool subtropical waters. To 8 in. Indo-Pacific. Photo: Midway Atoll. 30 ft. (Keoki Stender)

p. 277: GRAY SNAPPER  
Change length from 3 ft. to 3 ½ ft.

p. 290, paragraph 4:  
Out of 80 acanthurid species worldwide, 23 occur regularly in Hawaiian waters, ~~one~~ two of them endemic.

\*p. 299, BLUELINE SURGEONFISH:

- 2) Correct the text as shown below

These common reef fish vary from light gray to almost black, always with fine, somewhat wavy blue lines running lengthwise along the body. They sometimes display a white ring around the tail. Like the smaller Brown Surgeonfish (previous page), they have two small dark spots, above and below the base of the tail. They often join mixed feeding schools of other surgeonfishes. Specimens from Hawai'i have higher fin ray and gill raker counts, and a more deeply indented tail fin than ~~specimens similar fish~~ from other parts of the Pacific, ~~thus the fish might some day be considered an endemic species.~~ and DNA studies have confirmed the Hawaiian population to be distinct. The species name means "blackness." To 10 in. ~~These fish occur only in the islands of the Pacific from Pitcairn to Micronesia and the Great Barrier Reef~~ Endemic to Hawai'i (with a similar species, *A. nigros*, elsewhere in the Pacific). Photos: (top) Hōnaunau, Hawai'i. 20 ft. (bottom) Hanauma Bay, O'ahu. 5 ft.

p. 337: BIRD WRASSE  
2<sup>nd</sup> to last line: To about ~~7~~ 12 in.