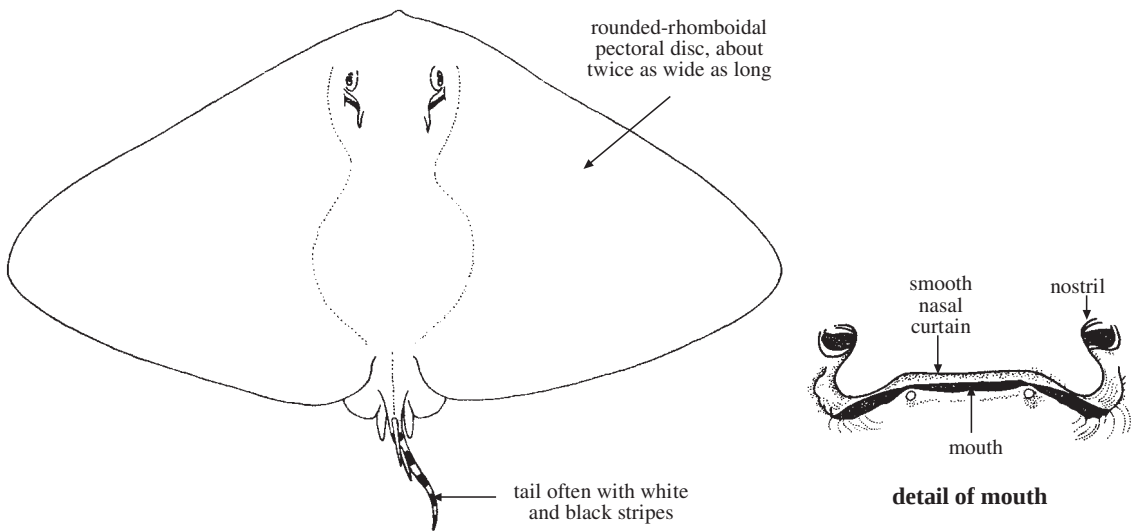


GYMNURIDAE

Butterfly rays

by L.J.V. Compagno and P.R. Last

Diagnostic characters: Small to moderately large batoids (adults between about 30 and 260 cm total length and a disc width up to 4 m, but commonly less than 1 m wide), **with large laterally expanded, transversely elliptical discs and slender, short whip-like tails** about 0.5 to 0.9 times disc length. Body entirely naked above and below in most species but with fine denticles (but no thorns) on the dorsal surface of a few large species. **Trunk depressed and flattened, not shark-like.** Precaudal tail moderately depressed or cylindrical, with or without lateral folds on sides, tail abruptly narrower than trunk, **a small barbed sting (stinger or stinging spine) on dorsal surface of tail just behind pelvic fins in some species but absent in others;** no electric organs in tail. Head broad and depressed; **snout short (less than 6 times orbit diameter), obtusely rounded-angular,** without a rostral cartilage and supported entirely by pectoral-fin skeleton, not formed into a rostral saw and without lateral saw teeth. **Five small gill openings** on underside of front half of pectoral disc, not visible in lateral view; **no gill sieves or rakers on internal gill slits.** Eyes dorsolateral on head and just anteromedial to spiracles, moderately large. Mouth transverse, broadly arched, and broad, with weak to prominent knobs on lower jaw but without labial folds; lobate oral papillae absent from floor of mouth. Nostrils just anterior to mouth and separated from it by much less than their own widths, connected by broad nasoral grooves with mouth; **anterior nasal flaps short and medially expanded and fused into a broad, but short nasal curtain that overlaps mouth.** Oral teeth small, yoke-shaped and with long slender cusps on their crowns, not laterally expanded and plate-like, similar in shape and in 52 to 130 or more rows in either jaw (rows increasing with growth). Pectoral fins very large and forming a laterally expanded, rounded rhomboidal or diamond shaped disc, originating at anterior tip of snout and ending posterior to pelvic-fin origins; **disc not subdivided by notch at eyes; disc width 1.6 to 2.2 times length.** No electric organs at bases of pectoral fins. Pelvic fins low, rounded or rounded-angular, and not divided into anterior and posterior lobes. **A single small dorsal fin on the tail in some species; reduced to a low keel or absent in others.** Where present, the dorsal fin is low, rounded-angular, and has anterior and posterior margins either distinct or confluent; the dorsal-fin base is behind anterior half of total length and just behind the pelvic-fin bases and well anterior to midlength of tail. **Caudal fin absent,** with only low dermal folds on dorsal and ventral midline of tail. **Colour:** dorsal surface of disc and pelvic fins brown, grey, or greenish above, generally whitish below; dorsal surface either unspotted or variegated with light or dark spots and reticulations, with a pair of large white spots on back in some species; tail often with conspicuous transverse white and black stripes.



Habitat, biology, and fisheries: Butterfly rays are a small, relatively undiverse group of inshore batoids with a wide range in all warm-temperate and tropical continental seas. These often common batoids range from the intertidal to the offshore shelf on soft bottom down to a depth of 110 m. Several species occur in estuaries, in enclosed bays and lagoons, and off sandy beaches; butterfly rays have been reported from fresh water in the area, but their ability to tolerate it for extended periods is uncertain. They are slow-swimming bottom-dwellers, often found on soft mud or sand. All species are ovoviviparous (live-bearing); the developing embryos resorb their yolk sacks at an early stage and are fed by histotroph or "uterine milk" secreted by the uterine lining. Litters are of 2 to 6 young. Butterfly rays feed on bottom crustaceans

including crabs and shrimp, bivalves, and small bottom fishes. A few species have small or moderately large stings, but are apparently not a problem to bathers or fishermen and are generally inoffensive. Utilization of these rays varies in different areas and may be for human consumption or for fish meal. Utilization in the area is sketchily known, but their inshore habitats and available information on distribution and presence in fisheries suggest that they are a regular if small component of tropical fisheries throughout the area. They are marketed to a limited extent in Australia and Philippines, and are common in Thai markets. Commonly placed in 2 genera, *Aetoplatea* with a dorsal fin and *Gymnura* without one, but this may not be valid.

Similar families occurring in the area

None. No other batoids in the area combine large rounded-rhomboidal pectoral discs nearly or quite twice as wide as long and short slender whip-like tails without caudal fins.

Key to the species of Gymnuridae occurring in the area

- 1a. A small but noticable dorsal fin at base of tail; dorsal surface of disc brown with numerous dark spots or lines interspersed with large round yellowish spots or irregular blotches, sometimes forming lines or ocelli *Aetoplatea zonura*
- 1b. No dorsal fin, or a rudimentary dorsal fin; dorsal surface of disc uniform brown or yellowish-brown or with scattered dark and light spots → 2
- 2a. Tail from cloaca to tip nearly as long as snout-vent length; about 9 black bands on tail *Gymnura poecilura*
- 2b. Tail from cloaca to tip about half as long as snout-vent length or less; 6 or fewer black bands on tail → 3
- 3a. A small sting on tail base *Gymnura japonica*
- 3b. No sting → 4
- 4a. Tail less than 1/2 length of body; tail with 3 black bands *Gymnura* cf. *micrura*
- 4b. Tail about 1/2 length of body; tail with 6 black bands *Gymnura australis*

List of species occurring in the area

The symbol ♠ is given when species accounts are included.

- ♠ *Aetoplatea zonura* Bleeker, 1852
- ♠ *Gymnura australis* (Ramsay and Ogilby, 1885)
- ♠ *Gymnura japonica* (Schlegel, 1850)
- ♠ *Gymnura* sp. cf. *micrura* (Bloch and Schneider, 1801)
- ♠ *Gymnura poecilura* (Shaw, 1804)

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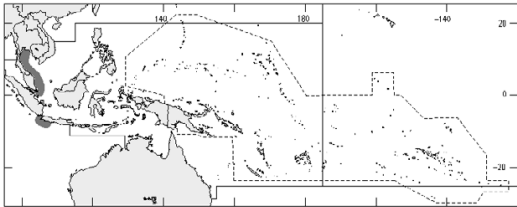
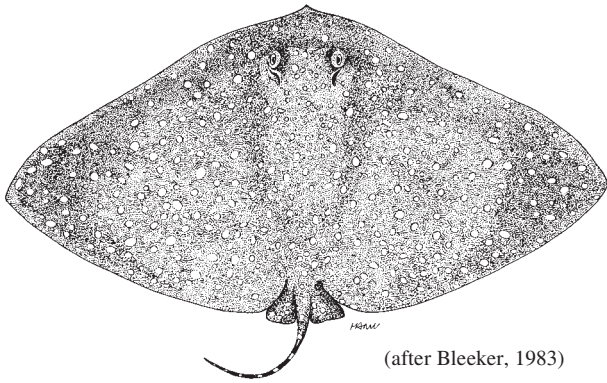
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Mohsin, A.K.M. and M.A. Ambak. 1996. *Marine fishes and fisheries of Malaysia and neighbouring countries.* Serdang, Universiti Pertanian Malaysia Press, 744 p.

***Aetoplatea zonura* Bleeker, 1852**

En - Zonetail butterfly ray.

Maximum total length at least 65 cm; maximum width at least 85 cm. A locally common inshore and offshore butterfly of the eastern Indian Ocean and western Central Pacific. Occurs in shallow inshore waters down to depths of 28 to 37 m. Utilized for human consumption in Thailand and probably elsewhere in the area. Occurs off India, Indonesia (Java), Singapore, and Thailand. Generic placement provisional.

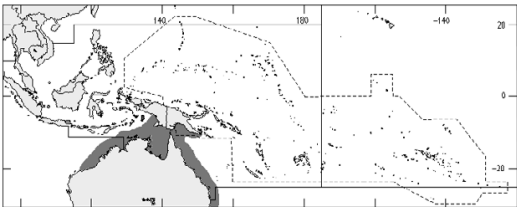
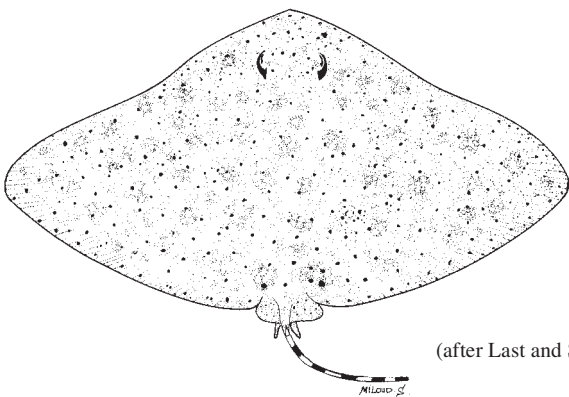


(after Bleeker, 1983)

***Gymnura australis* (Ramsay and Ogilby, 1885)**

En - Australian butterfly ray.

Maximum total length at least 56 cm; maximum width at least 73 cm, males maturing between 35 and 40 cm width. A locally common inshore and offshore butterfly ray endemic to tropical Australasia and possibly Indonesia. Occurs from the intertidal to a depth of at least 50 m. Caught in shrimp trawlers and utilized for human consumption to a limited extent. Occurs off Western Australia (Dampier), Northern Territory, Queensland, New South Wales (Broken Bay), and also the south coast, and possibly the north coast, of New Guinea.

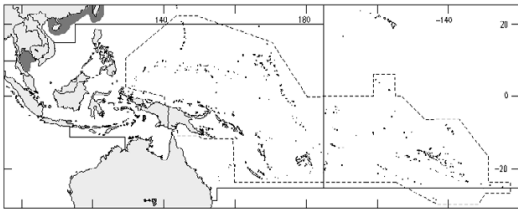
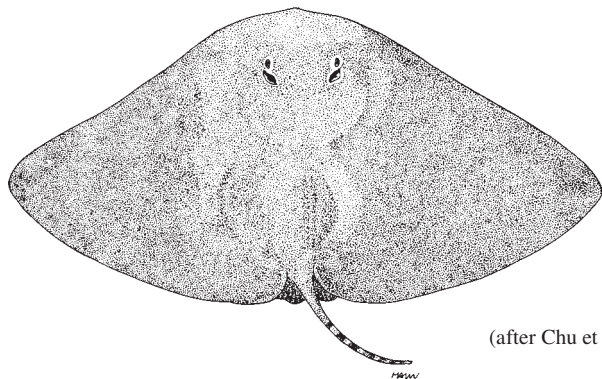


(after Last and Stevens, 1994)

Gymnura japonica (Schlegel, 1850)

En - Japanese butterfly ray.

Maximum total length about 1 m; maximum width about 1.6 m. A locally common inshore and offshore butterfly of the western North Pacific, extending southwards and nominally recorded from the area. Occurs in shallow inshore waters. Probably utilized for human consumption to a limited extent. Occurs off Japan, Korea, China, Cambodia, and possibly Thailand.

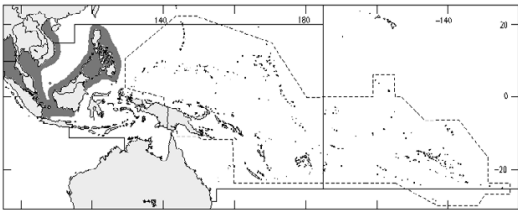
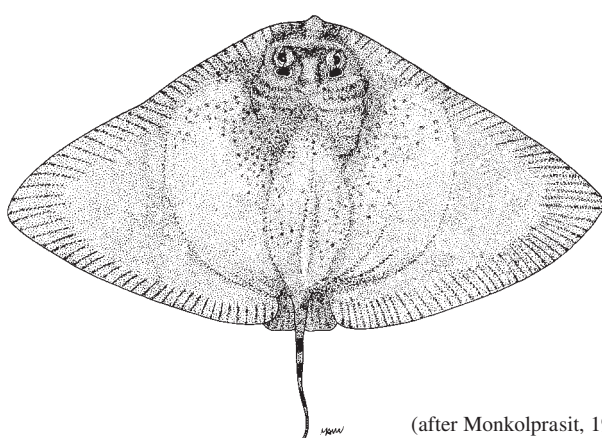


(after Chu et al., 1963)

Gymnura cf. micrura (Bloch and Schneider, 1801)

En - Smooth butterfly ray.

Maximum size uncertain, probably more than 30 cm in width. Probably utilized in the area. Status uncertain, this may not be the same as the narrower-disced Atlantic *Gymnura micrura* which ranges from southern New England to Brazil in the western Atlantic, and Senegal to Zaire in the eastern Atlantic; nominal records from off Sri Lanka, India, Malaysia, Singapore, Viet Nam, Indonesia (Borneo, Sumatra), and the Philippines.

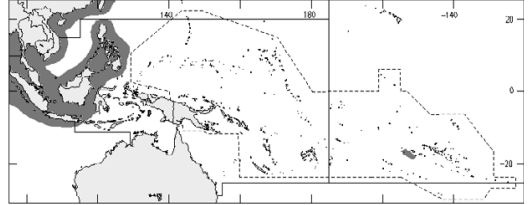
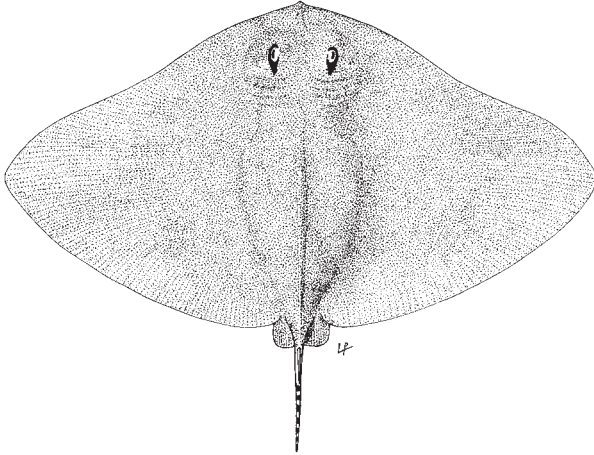


(after Monkolprasit, 1987)

Gymnura poecilura (Shaw, 1804)

En - Longtail butterfly ray.

Maximum total length at least 66 cm; maximum width at least 82 cm. A locally common wide-ranging butterfly ray of the Indo-West Pacific. Occurs in shallow inshore waters. Utilized for human consumption in Thailand and probably elsewhere in the area. Occurs in the Red Sea and off Pakistan, India, Sri Lanka, Indonesia (Java, Sumatra, Borneo), Philippines, Malaysia, Thailand, Society Islands, China, and southern Japan.

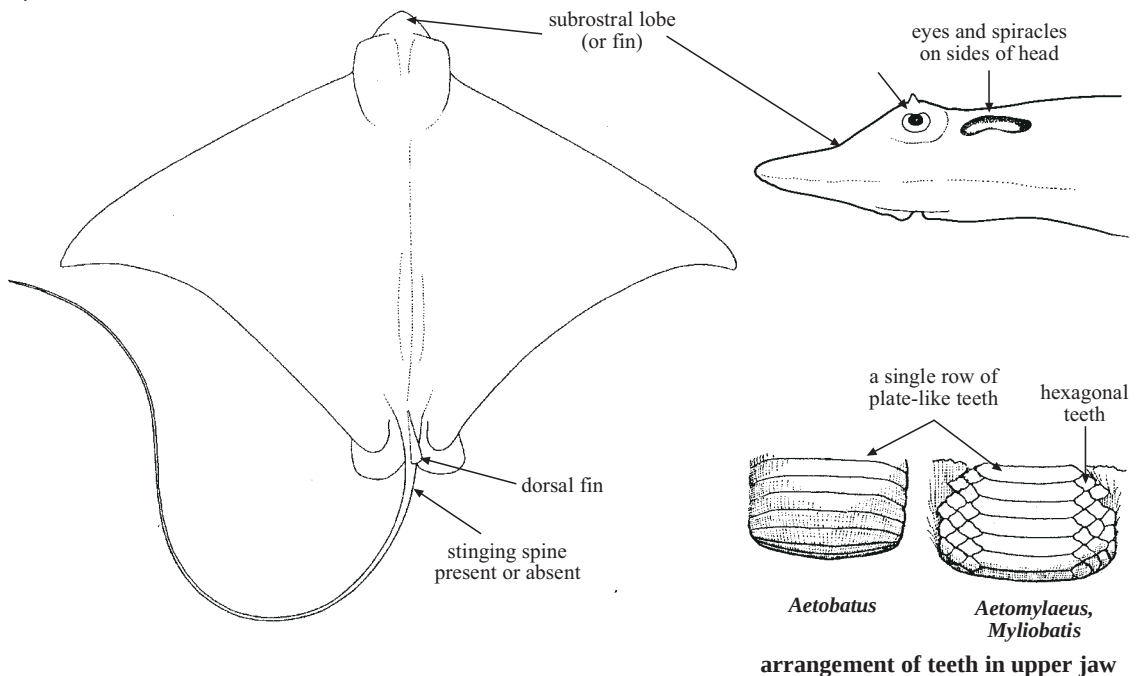


MYLIOBATIDAE

Eagle rays

by L.J.V. Compagno and P.R. Last

Diagnostic characters: Moderate-sized to large batoids (adults between 100 and 880 cm total length, with disc widths from 58 to possibly 330 cm, most species less than 200 cm wide), **with a large, rhomboidal wing-like pectoral disc; tail slender, whip-like** and 1.3 to 3 times disc length. Body either entirely naked above and below, with a few small thorns around eyes and on the midline of the disc, or with minute denticles covering the dorsal surface. **Trunk broad, depressed and thick, not shark-like.** Tail cylindrical, attenuated, without lateral folds on sides, abruptly narrower than trunk; **a prominent barbed sting (stinger or stinging spine) on dorsal surface close behind pelvic fins in most species** (except for members of the genus *Aetomylaeus* which lack a sting, and possibly in 1 species of *Aetobatus*); no electric organs in tail. Head narrow and elevated; snout short, narrowly rounded or rounded angular, without a rostral cartilage but entirely supported by pectoral-fin skeleton, not formed into a rostral saw and without lateral saw teeth. **Five small gill openings** on underside of front half of pectoral disc, not visible in lateral view; **no gill sieves on internal gill slits**, but with wide-spaced papillae on gill arches. Eyes lateral on head and just anteromedial to spiracles, moderately large. Mouth transverse, straight, and narrow, without prominent knobs, depressions or labial folds; lobate oral papillae present on floor of mouth. Nostrils just anterior to mouth and separated from it by much less than their own widths, connected by broad nasoral grooves with mouth; **anterior nasal flaps long and medially expanded and fused into a broad, elongated nasal curtain that overlaps mouth.** Oral teeth large, flattened, laterally expanded, plate-like, and hexagonal, typically with a medial row of broad teeth and 3 rows of narrower teeth on each side, without cusps or keels; lateral teeth lost in *Aetobatus* and possibly adults of *Aetomylaeus vespertilio*; **teeth normally in 1 to 7 rows in either jaw but abnormally with more rows.** Pectoral fins with angular falcate apices; pectoral fins originating at anterior tip of snout and ending posterior to pelvic-fin origins; **disc subdivided laterally by notch at eyes into an anterior unilobate rostral fin** that forms the snout and posterior pectoral disc proper; disc width 1.4 to 1.8 times length. No electric organs at bases of pectoral fins. Pelvic fins high, rounded-angular, and not divided into anterior and posterior lobes. **A single moderate-sized dorsal fin on tail base**, this relatively high, angular or rounded-angular, and with distinct anterior, posterior, and inner margins; dorsal-fin base in front of anterior half of total length, over or just behind pelvic-fin bases, and far anterior to midlength of tail. **Caudal fin absent**, vertebral axis of tail not raised above body axis. **Colour:** dorsal surface varies from uniform green, brown, grey, or yellowish to blackish, generally white below; dorsal surface either unspotted or variegated with light spots, light transverse stripes, dark stripes and reticulations, or small ocelli; no enlarged pair of ocelli on bases of pectoral fins.



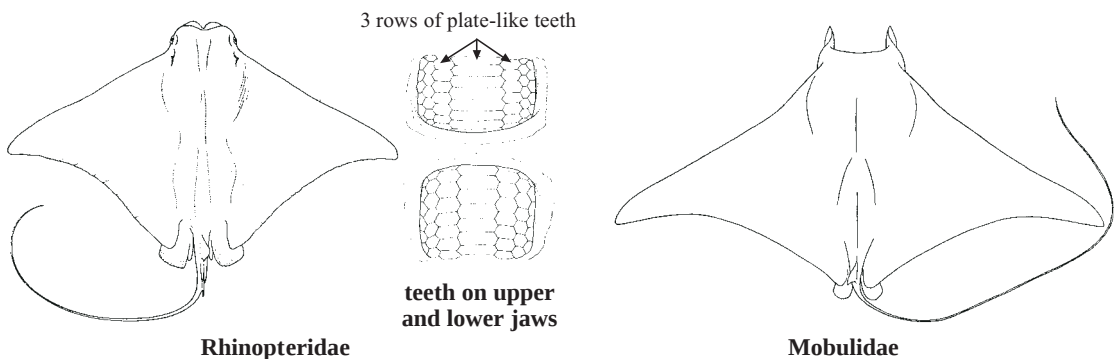
Habitat, biology, and fisheries: Eagle rays are a moderately large and diverse group of predominately inshore, semipelagic batoids with a circumglobal distribution in temperate and tropical continental and insular seas. These often common or abundant batoids range from the intertidal to the upper slope on soft and hard bottom down to 527 m. They occur around coral and rocky reefs, near kelp beds, and in estuaries, lagoons, and enclosed and open bays; they may occur in brackish water but are apparently unable to penetrate fresh water to any extent and are absent from rivers and lakes. Many species are primarily coastal and continental but a few species apparently penetrate the epipelagic zone, and have a wide range in the Western Central Pacific. These rays are strong and active, agile swimmers, often found near or on the bottom but readily swim well above it. All species are ovoviviparous (live bearing) as far as is known; the developing embryos resorb their yolk sacks at an early stage and are fed by histotroph or “uterine milk” secreted by the uterine wall. Some species breed in shallow bays and lagoons. Litters are of up to 4 young. The powerful jaws and plate-like teeth form a grinding mill that enable these rays to feed on hard-shelled mollusks including bivalves and large gastropods as well as crustaceans, but they also eat softer crustaceans, worms, and small bottom fishes. Although some species have relatively large stings they are usually not a problem to humans because the stings are close to the tail base making them less effective as defensive weapons; also they are more active and less likely to be stepped upon than bottom-dwelling stingrays. They are a problem to mariculture operations that grow shellfish, and fences and other measures (including culling) are used to prevent these rays from wiping out large portions of shellfish crops en masse. These rays are otherwise inoffensive to humans, and several species are attractive and desirable as captives in large aquaria and oceanaria. Utilization of these rays varies throughout the region; all have large, meaty pectoral fins that are suitable for human consumption, but in some places they may be discarded or made into fish meal. In Thailand and Malaysia all of the local species of eagle rays are marketed in considerable numbers, and some are utilized in Australia. They are apparently rare now in the Gulf of Thailand where they were once common. Overfishing and habitat degradation are the most likely causes for their demise. Available data on distribution and fisheries suggests that eagle rays are important components of the area’s batoid catch and are utilized for human consumption throughout the area. The extent of landings is likely to depend on fishing methods used rather than demand.

Similar families occurring in the area

Rhinopteridae: snout notched medially, formed as 2 rounded lobes; 3 rows of laterally expanded medial plate-like teeth (rather than 1 medial row) on jaws.

Mobulidae: snout formed into paired elongated cephalic fins or “horns”; teeth very small, not plate-like; jaws weak, not forming a grinding mill; internal gill arches with large and complex filter plates.

No other batoids in the area have elevated heads and a angular rhomboidal disc subdivided into rostral and pectoral parts, a single angular dorsal fin, and a whip-like tail without a caudal fin.



Key to the species of Myliobatidae occurring in the area

- 1a. Nasal curtain deeply notched; rear tips of pelvic fins broadly rounded (Fig. 1a); teeth in a single row in upper and lower jaws at all postnatal stages (Fig. 2a); median tooth row of lower jaw with chevron-shaped teeth (Fig. 2a) (*Aetobatus*) → 2
- 1b. Nasal curtain straight to undulated (Fig. 1b); rear tips of pelvic fins angular; teeth usually in 7 rows in upper and lower jaws (Fig. 2b); all lateral rows of teeth may be reduced or lost in adults of some *Aetomylaeus* species but are present in young, while some *Myliobatis* may abnormally have more than 7 rows of teeth; median tooth row of lower jaw with transverse teeth (Fig. 2b) → 4

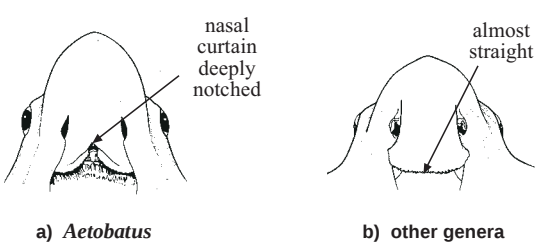


Fig. 1 ventral view of head (after Last and Stevens, 1994)

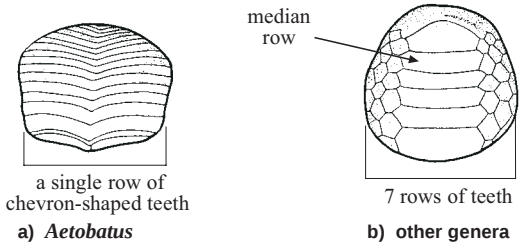


Fig. 2 median tooth row of lower jaw

- 2a. Snout very long, narrowly tapering, acute; lower tooth plate broad, about 2/3 mouth width; dorsal surface of disc unspotted. *Aetobatus flagellum*
- 2b. Snout short and tapering or very long and bluntly rounded in adults; lower tooth plate narrow, about 1/2 mouth width; dorsal surface of disc marked with small white spots → 3
- 3a. White spots present over most of upper disc; preoral distance much shorter than cranial width across interorbit; anterior margin of disc diagonal to longitudinal body axis; pectoral-fin base broad *Aetobatus narinari*
- 3b. White spots confined to rear half of upper disc; preoral distance much greater than cranial width across interorbit; anterior margin of disc almost perpendicular to longitudinal body axis; pectoral-fin base narrow *Aetobatus guttatus*

- 4a. Rostral part of pectoral fins (snout) connected to pectoral disc by subocular ridges below eyes that are supported by pectoral radials (Fig. 3a); sting present (*Myliobatis*) → 5
- 4b. Rostral part of pectoral fins (snout) without subocular ridges connecting them to pectoral disc, no radials below eyes (Fig. 3b); sting absent . . . (*Aetomylaeus*) → 7

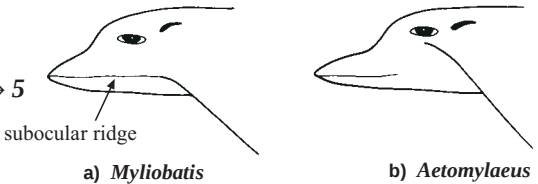


Fig. 3 lateral view of head

- 5a. Dorsal-fin origin near rear tips of pelvic fins; yellowish brown above, with blue or grey transverse bars on head and across disc. *Myliobatis australis*
- 5b. Dorsal-fin origin well posterior to rear tips of pelvic fins; purplish or brown above, without blue transverse bars on dorsal surface → 6
- 6a. Snout more elongated; disc brown above; anterior edge of pectoral fin not undulated *Myliobatis tobijei*
- 6b. Snout relatively short; disc purple above; anterior edge of pectoral fin undulated *Myliobatis hamlyni*

- 7a. Dorsal-fin origin slightly forward or opposite pelvic-fin insertions → 8
- 7b. Dorsal-fin origin behind pelvic-fin insertions (rarely almost opposite) → 9
- 8a. Dorsal disc yellowish or brownish with 5 pale blue cross bands, inconspicuous or absent in larger animals *Aetomylaeus nichofii*
- 8b. Dorsal disc brownish with greenish, brown-edged ocelli along posterior margins *Aetomylaeus milvus*
- 9a. Dorsal disc light brown to grey with a reticulating network of black lines, anteriorly forming transverse bands; large species exceeding 1.5 m disc width *Aetomylaeus vespertilio*
- 9b. Dorsal disc brown with whitish spots or weak ocelli on hind half of disc; intermediate species smaller than 1 m disc width *Aetomylaeus maculatus*

List of species occurring in the area

The symbol ♦ is given when species accounts are included.

- ♦ *Aetobatus flagellum* (Bloch and Schneider, 1801)
- ♦ *Aetobatus narinari* (Euphrasen, 1790)^{1/}
- ♦ *Aetobatus guttatus* (Shaw, 1804)^{1/}
- ♦ *Aetomylaeus maculatus* (Gray, 1832)
- ♦ *Aetomylaeus milvus* (Valenciennes in Müller and Henle, 1841)
- ♦ *Aetomylaeus nichofii* (Bloch and Schneider, 1801)
- ♦ *Aetomylaeus vespertilio* (Bleeker, 1852)
- ♦ *Myliobatis australis* Macleay, 1881
- ♦ *Myliobatis hamlyni* Ogilby, 1911
- ♦ *Myliobatis tobijei* Bleeker, 1854

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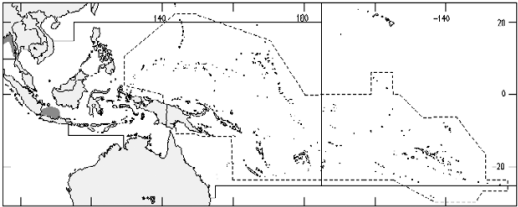
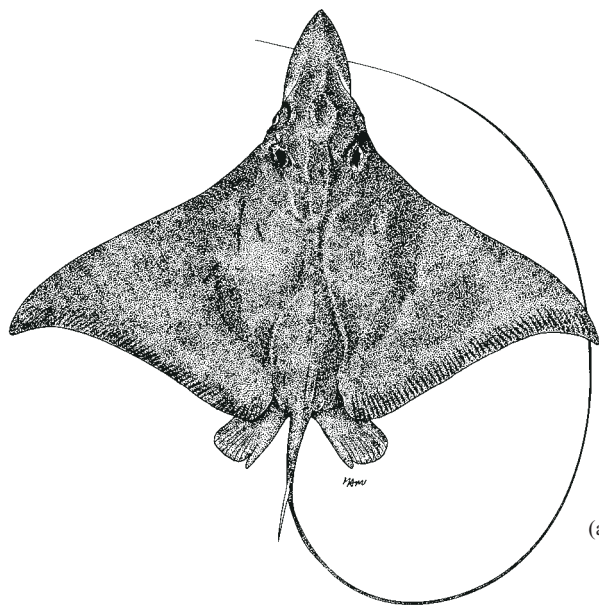
Mohsin, A.K.M. and Ambak, M.A. 1996. *Marine fishes and fisheries of Malaysia and neighbouring countries.* Serdang, Universiti Pertanian Malaysia Press, 744 p.

^{1/} *Aetobatus ocellatus* (Kuhl, 1823) was described from Java and has been distinguished from *A. narinari* by having ocellate spots, a more conical snout, and possibly no tail spine. Status of this species is uncertain. *Pteromylaeus punctatus* (MacLay and Macleay, 1885) was described from the Admiralty and Hermit Islands north of Papua-New Guinea, but unfortunately there were no type specimens. Its original account suggests that it is an *Aetobatus* on the morphology of its head, pelvic fins, deeply notched nasal curtain, and general disc shape and coloration, and that it may have been abnormal in having many rows of teeth in its upper jaw. Its snout was elongated and conical as in *A. guttatus* but its colour pattern is closer to *A. narinari*.

Aetobatus flagellum (Bloch and Schneider, 1801)

En - Longheaded eagle ray.

Maximum length at least 126 cm, width to 47 cm. A little-known but distinctive inshore eagle ray. Biology not well known, probably similar to that of *Aetobatus narinari*. Details of utilization in the area unknown, but it is regularly landed in the fish markets of Jakarta. Occurs in the Indo-West Pacific from the Red Sea, India, Indonesia, and southern China; records from the eastern Atlantic and Hawaii require validation.

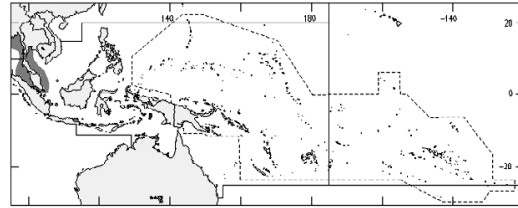
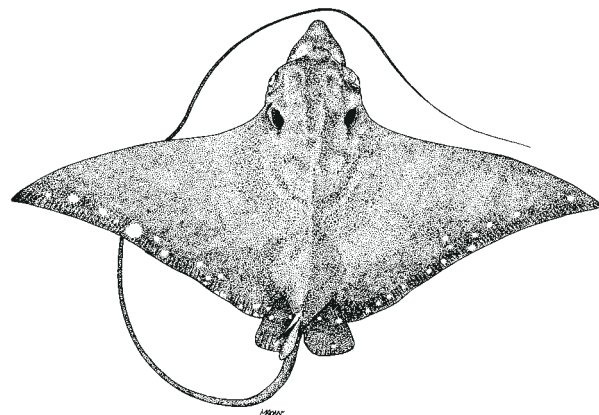


(after Annadale, 1909)

Aetobatus guttatus (Shaw, 1804)

En - Sharpwing eagle ray.

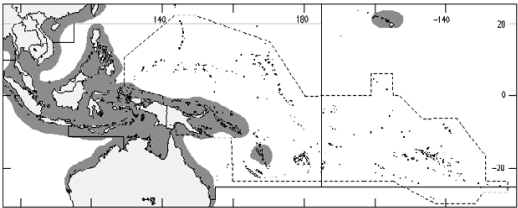
Maximum length to possibly 400 cm or more, width to at least 125 cm. A little-known eagle ray with biology poorly known, probably similar to that of *Aetobatus narinari*. Infrequently found in markets in the area. Probably common in parts of its range which to date remains poorly defined. Likely to be widespread in the Indo-Malay Archipelago. Occurs off India, Sri Lanka, Thailand, Malaysia, and possibly Indonesia. Nomenclature of this species is provisional.



***Aetobatus narinari* (Euphrasen, 1790)**

En - Spotted eagle ray.

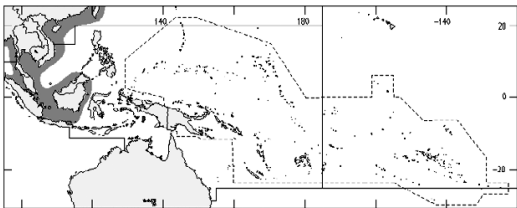
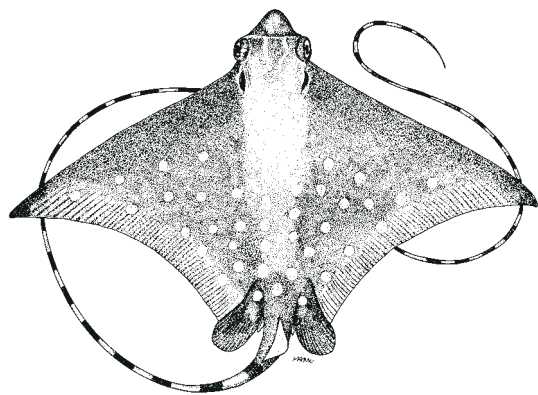
Maximum length at least 880 cm, disc width possibly to 330 cm, but most less than 200 cm wide; females mature at 214 cm wide. A common, wide-ranging inshore and semipelagic eagle ray, found around coral reefs, off beaches, in estuaries and in enclosed bays. Its wide distribution among oceanic islands in the Central Pacific and elsewhere suggest that it can cross oceanic basins although usually recorded close inshore. A powerful, active, agile swimmer, often seen near the surface and leaping completely out of the water, and found singly, in pairs, or in small groups or large schools. Size at birth between 17 and 36 cm wide, litter size commonly 4. Feeds on bottom-dwelling invertebrates: primarily on bivalve molluscs, including clams and oysters, but also gastropods (whelks), worms, small fish, shrimp, and octopods. Uses snout and the projecting lower tooth plate for rooting out benthic food on soft bottoms. Used for human consumption in Thailand, rarely in Australia, but is probably utilized throughout the area; probably caught in seines, gill nets, and fish traps, and on line gear. Gives a strong battle when inadvertently hooked by sports anglers. An attractive and active species, making it ideal for large aquaria and oceanaria. Occurs essentially circumglobally in tropical and subtropical waters. In the Indo-West Pacific, it ranges from South Africa and the Red Sea to Japan, Australia, and Hawaii; it is reported from most of the present area including northern Australia, New Guinea, Indonesia, Thailand to Viet Nam, the Philippines, and many island groups. Atlantic *Aetobatus narinari* need to be critically compared with nominal Indo-Pacific *A. narinari* to determine if they are conspecific.



***Aetomylaeus maculatus* (Gray, 1832)**

En - Mottled eagle ray.

Maximum width at least 78 cm. A little-known inshore eagle ray, with biology poorly known. Details of utilization in the area sketchy; utilized for human consumption in Thailand, eastern Malaysia and presumably elsewhere in the area. Occurs in the Indo-West Pacific from India, Sri Lanka, Malaysia, Singapore, Thailand, Indonesia (Java, Borneo), Taiwan Province of China, and southern China.

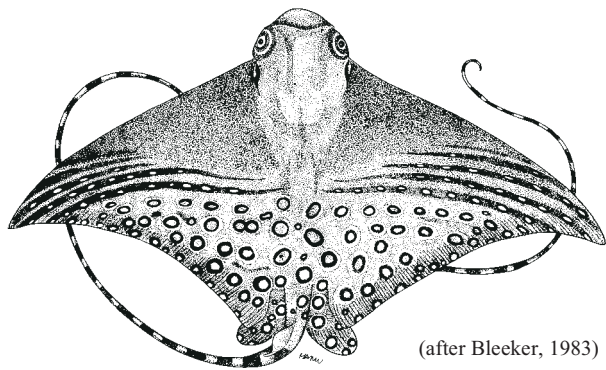


(after Bleeker, 1983)

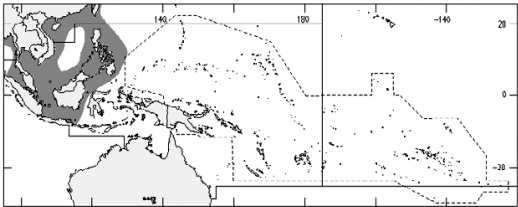
Aetomylaeus milvus (Valenciennes in Müller and Henle, 1841)

En - Ocellate eagle ray.

Maximum width at least 37 cm. A little-known inshore eagle ray, with biology poorly known. Details of utilization in the area sketchy; utilized for human consumption in Thailand and presumably elsewhere in the area. Thought to occur in the Indo-West Pacific from the Red Sea, Pakistan, India, Malaysia, Indonesia (Java, Borneo), Thailand, Philippines, and China. May be the juvenile of either *Aetomylaeus maculatus* or *A. vespertilio*.



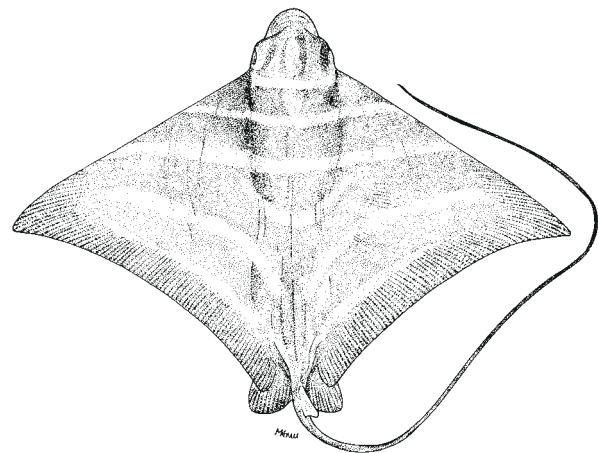
(after Bleeker, 1983)



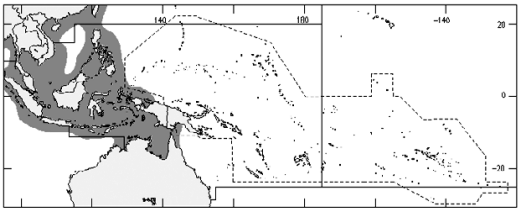
Aetomylaeus nichofii (Bloch and Schneider, 1801)

En - Banded eagle ray.

Maximum length at least 100 cm, width at least 64 cm. A wide-ranging inshore and offshore eagle ray, ranging from the intertidal to a depth of at least 70 m. Biology little known, litter size of up to 4 young, size at birth about 17 cm wide. Major commercial eagle ray of the region and marketed throughout, except northern Australia. Recorded in the Indo-West Pacific from the Persian Gulf, Pakistan, India, Sri Lanka, Myanmar, Malaysia, Singapore, Indonesia (Java, Borneo, Moluccas), Thailand, Viet Nam, China, Taiwan Province of China, southern Japan, Korea, Philippines, New Guinea, and northern Australia; possibly off southern Africa, East Africa, and the Red Sea.



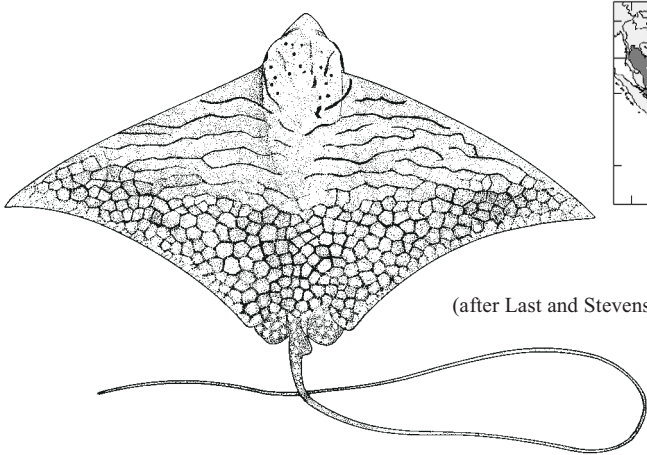
(after Last and Stevens, 1994)



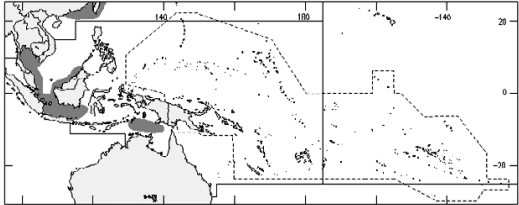
***Aetomylaeus vespertilio* (Bleeker, 1852)**

En - Ornate eagle ray.

Maximum length at least 385 cm, width 160 cm. A little-known but spectacular, large inshore and offshore eagle ray, found in muddy bays and banks and on coral reefs from close inshore to a depth of 110 m. A strong and agile swimmer, with biology poorly known. Details of utilization in the area sketchy; utilized for human consumption in Thailand and presumably elsewhere in the area. Probably caught in bottom trawls and possibly gill nets, seines, and fish traps. Occurs in the Indo-West Pacific in scattered localities from southern Mozambique, Maldives, Malaysia (Pinang) Thailand (Gulf of Thailand), Indonesia (Java, Borneo), northern Australia (Arafura Sea), the South China Sea (off China), and Taiwan Province of China; probably wider-ranging in the area and elsewhere.



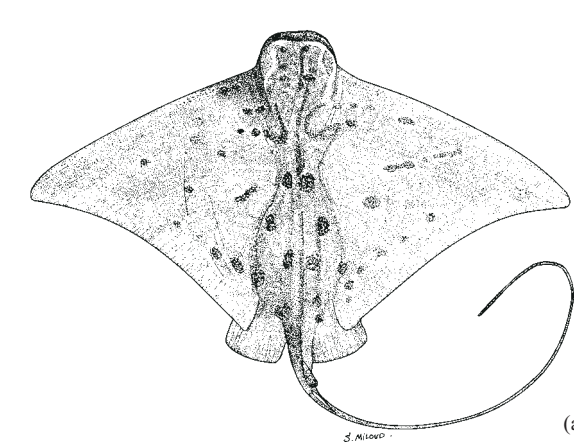
(after Last and Stevens, 1994)



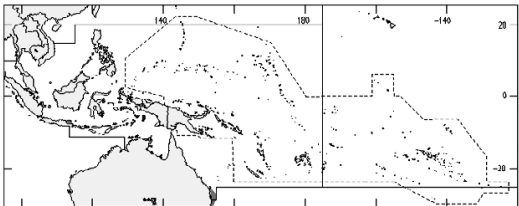
***Myliobatis australis* Macleay, 1881**

En - Southern eagle ray.

Maximum length at least 190 cm, width 120 cm. An inshore and offshore eagle ray of southern Australasian waters, found commonly off beaches and on sandflats in shallow bays in the intertidal but also offshore down to 85 m. Born at about 32 cm wide, feeds on crabs and molluscs. Utilized in small quantities in southern Australia and possibly New Zealand. Occurs in the temperate eastern Indian and western Pacific Oceans from Western Australia (Jurien Bay) to Queensland (Moreton Bay), including Tasmania, barely entering FAO area 71; also New Zealand if this species proves to be conspecific with the very similar New Zealand eagle ray, *Myliobatis tenuicaudatus* Hector, 1877.



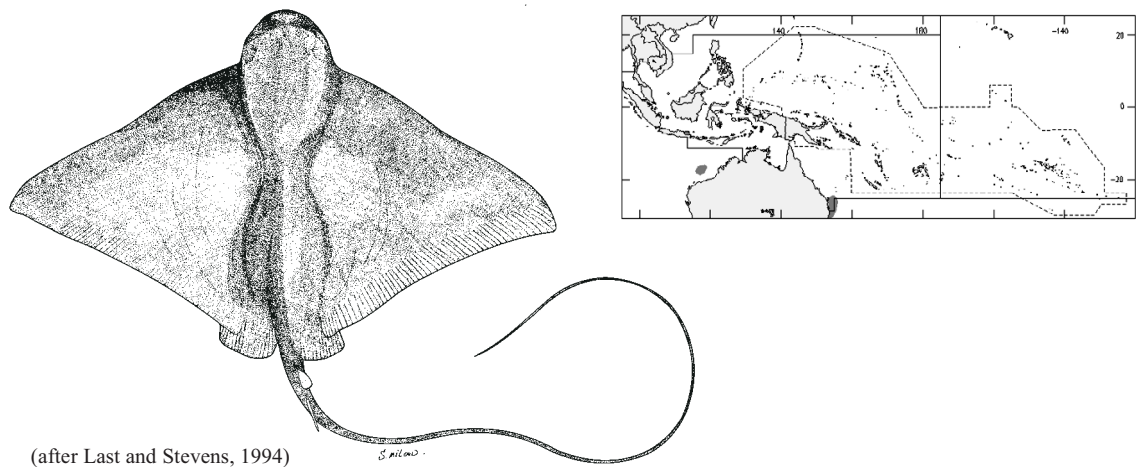
(after Last and Stevens, 1994)



***Myliobatis hamlyni* Ogilby, 1911**

En - Purple eagle ray.

Maximum length at least 90 cm, width at least 48 cm. A rare offshore eagle ray of tropical Australia found at a depth of 200 m, with biology poorly known and species status uncertain. Not utilized in the area as far as known. Occurs off Western Australia (Forestier Island) and off Queensland (Cape Moreton). Close to and possibly not distinct from the western Pacific *Myliobatis tobijei* or the eastern Atlantic and Western Indian Ocean *M. aquila* (Linnaeus, 1758); all 3 species need to be critically compared to determine if they can be separated.



***Myliobatis tobijei* Bleeker, 1854**

En - Kite ray.

Maximum length at least 150 cm, width at least 56 cm. A common inshore and offshore eagle ray, best known from the western North Pacific, found from the intertidal to a depth of 220 m on the uppermost continental slope. Western Pacific from Japan, Korea, the Okinawa Trough, China, and the South China Sea, marginal to the area with status uncertain.

