

## = Mangrove whipray =

The mangrove whipray or whitetail stingray ( *Himantura granulata* ) is a species of stingray in the family Dasyatidae . It is widely distributed in the Indo @-@ Pacific region from the Red Sea to northern Australia and Micronesia . A benthic inhabitant of shallow inshore waters , juvenile mangrove whiprays favor mangrove and estuarine habitats , while adults favor sandy to rocky areas in lagoons and coral reefs . This species can be identified by its thick , oval pectoral fin disc that is dark gray above with numerous white flecks , and by its relatively short , whip @-@ like tail that is white past the stinging spine . It grows up to 1 @.@ 4 m ( 4 @.@ 6 ft ) across .

Solitary in nature , the mangrove whipray preys mainly on small , bottom @-@ dwelling bony fishes and invertebrates . It is , like other stingrays , aplacental viviparous , with the females nourishing their unborn young via histotroph ( " uterine milk " ) . The mangrove whipray is caught for its meat , skin , and cartilage across much of its range . The International Union for Conservation of Nature ( IUCN ) has assessed it as Near Threatened globally and as Endangered in Southeast Asia , where its population has declined substantially due to intensive artisanal and commercial fisheries as well as widespread habitat degradation . In particular , juvenile rays have been disproportionately targeted by fishers and affected by the large @-@ scale destruction of mangrove forests .

## = = Taxonomy = =

Australian zoologist William John Macleay published the first scientific account of the mangrove whipray , a brief description of an immature female 86 cm ( 34 in ) long caught off Port Moresby , Papua New Guinea , in an 1883 volume of Proceedings of the Linnean Society of New South Wales . He named it *Trygon granulata* , as he noted that the specimen 's head and back were " covered with small granules " . In 1928 , Gilbert Percy Whitley moved this species to the genus *Himantura* . It belongs to the uarnacoides species complex , along with *H. chaophraya* , *H. hortlei* , *H. lobistoma* , *H. pastinacoides* , and *H. uarnacoides* . Other common names for this ray include mangrove ray , whitetail whipray , and Macleay 's coachwhip ray .

## = = Description = =

The pectoral fin disc of the mangrove whipray is very thick and oval in shape , measuring 0 @.@ 9 ? 1 @.@ 0 times as wide as long . The anterior margins of the disc are nearly straight and converge at a broad angle on the snout tip . The medium @-@ sized , widely spaced eyes are immediately followed by the spiracles . Between the long , thin nostrils is a short , broad curtain of skin with a finely fringed posterior margin . The lower jaw is bow @-@ shaped , and there are 0 ? 5 papillae across the floor of the mouth . The teeth are arranged in a quincunx pattern and number 40 ? 50 rows in the upper jaw and 38 ? 50 rows in the lower jaw . There are five pairs of gill slits beneath the disc . The pelvic fins are small and narrow .

The tail is thick at the base and measures 1 @.@ 5 ? 2 times longer than the disc width . One or two dorsally positioned serrated stinging spines are located in the first third of the tail . Past the sting , the tail becomes thin and whip @-@ like , without fin folds . The upper surface of the body and tail are roughened by tiny dermal denticles , which become larger towards the midline of the back and tail . In addition , one or two irregular rows of thorns are present along the dorsal midline from the head to the sting . The mangrove whipray is dark brown to gray above with many white dots and flecks , which become denser with increasing size . The dark coloration is due to a layer of mucus , without which the body is light orange @-@ gray . The underside is white with small dark spots towards the disc margin . The tail abruptly becomes white past the sting . This species grows to 1 @.@ 4 m ( 4 @.@ 6 ft ) across and over 3 @.@ 5 m ( 11 ft ) long .

## = = Distribution and habitat = =

Although uncommon , the mangrove whipray seems to be widely distributed in the Indo @-@

Pacific ; it has been reported from the Red Sea , South Asia including the Maldives and the Andaman Islands , the Gulf of Thailand , the Malay Archipelago ( except Sumatra ) , New Guinea and northern Australia , and various islands including Guam , Fiji , the Solomon Islands , and Micronesia . This bottom @-@ dwelling species typically inhabits shallow water close to shore , though adults have also been recorded offshore to at least a depth of 85 m ( 279 ft ) . Juvenile rays frequent brackish habitats such as mangroves and estuaries . By contrast , adults prefer areas of sand , sand and rock rubble , or hard bottom , and are often found in lagoons or on coral reefs .

#### = = Biology and ecology = =

Unlike many of its relatives , the mangrove whipray is reportedly solitary in nature . It is relatively inactive during the day , often resting half @-@ buried in sand or atop coral heads , and actively forages for food at night . The electroreceptive ampullae of Lorenzini of this species have a sensitivity of 4 nV / cm and an effective range of 25 cm ( 10 in ) , enabling it to locate buried prey . Juveniles feed mainly on small crustaceans , including prawns and crabs . Adults prey on small benthic bony fishes , including rabbitfishes , gobies , blennies , wrasses , and damselfishes , as well as invertebrates , including peanut worms , crabs , octopuses , and bivalves . As in all stingrays , the mangrove whipray is aplacental viviparous , with the developing embryos being sustained by nutrient @-@ rich histotroph ( " uterine milk " ) produced by the mother . The newborns measure 14 ? 28 cm ( 5 @.@ 5 ? 11 @.@ 0 in ) across , and males reach sexual maturity at 55 ? 65 cm ( 22 ? 26 in ) across . Known parasites of this species include the tapeworm *Rhinebothrium himanturi* , and another undescribed species in the same genus .

#### = = Human interactions = =

The mangrove whipray is capable of injuring a human with its venomous sting . It is occasionally caught in tangle nets and bottom trawls , and to a lesser extent on longlines ; it is marketed for its meat , skin , and cartilage . Because of its inshore habitat preferences , this naturally uncommon species is highly susceptible to intensive artisanal and commercial fishing occurring across much of its range . In Southeast Asia , immature rays have been particularly affected by local fishing , as well as by habitat degradation from the widespread loss of mangrove forests . Additionally , the numbers of this species in the Arafura Sea have dropped significantly due to an Indonesian gillnet fishery targeting wedgefishes ( *Rhynchobatus* ) , which involves over 600 vessels and has been increasingly operating illegally in Australian waters . These factors have led to an inferred decline of the Southeast Asian population by over 50 % , leading the International Union for Conservation of Nature ( IUCN ) to give it a regional assessment of Endangered . The mangrove whipray is minimally threatened off northern Australia , where it is caught incidentally by the Northern Prawn Fishery ( NPF ) but only in small numbers following the mandatory adoption of Turtle Exclusion Devices ( TEDs ) . As a result , the IUCN assessment for the Australian population is Least Concern . Globally , the IUCN has listed this species as Near Threatened .