



A smooth stingray glides over the kelp at the Poor Knights Islands, New Zealand.

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Photos by Nigel Marsh  
and Andy Murch

**Gliding slowly over the rocky reef, I was mesmerised, watching all the colourful reef fishes going about their daily activities. I was so entranced that I was startled to look up and find I was on a collision course with a massive stingray. This was the first stingray I had ever seen, and the giant creature terrified me. In the second it took my panicking brain to work out what to do, the stingray suddenly saw me and also got a shock. A mad splash of fins saw us both turn tail and flee in opposite directions!**

I can still clearly remember that first stingray encounter, even though I was only nine years old, snorkelling in a bay north

of Sydney, Australia. Once my courage returned, I jumped back into the water, and this time, got a closer look at this magnificent animal—a smooth stingray, the largest stingray species in the world. This graceful ray was

almost 2m wide and did not seem to be too bothered by an annoying little kid swimming alongside. However, I was still very wary, staying well away from the tail, where I could see a large and lethal spine.

I think my love of stingrays started that day, and almost 50 years later, I still get a thrill whenever I encounter a member of this diverse and interesting group of animals—not because they are potentially dangerous

with their dagger-like tail spines, but because they are fascinating to watch as they go about their daily lives; be it digging in the sand for food, gliding gracefully around the reef or simply lazing on the bottom.

### **Habitat**

Stingrays are mainly found in tropical and subtropical waters, but a few venture into temperate zones. And as most stingrays inhabit shallow water, they can be found at many



## *Sorting Out the* **Stingrays**



A view of the underside of a smooth stingray shows off its mouth and gills (left).

## Stingrays

Blotched fantail rays are often seen cruising or hovering in midwater when a current is running (left). This one was photographed off Tweed Heads, Australia; The bluespotted ribbontail ray is easy to distinguish from other small rays with blue spots by its oval shape (below). This one was found sheltering under a wreck in the Red Sea.

popular dive sites around the planet. At some dive sites, the stingrays are the main attraction. Accustomed to divers, they are easy to approach, study and photograph. There are also a number of popular stingray feeds, like the famous Stingray City in the Cayman Islands, where divers can literally get mugged by dozens of hungry rays.

### Family shakeup

While many stingrays look the same, there are actually close to one hundred species that vary greatly in size, shape, colouration and tail length. In recent years, the stingray family has had a major shake-up, with many new species described and many species rearranged within the family, which can make sorting out the stingrays very tricky.

Stingrays are a member of the large and diverse ray family, *Batoidea*, which contains over 600 species in 26 family groups. Stingrays (the family is also known as whiptail stingrays) are placed in the order *Myliobatiformes*, along with

the devil rays, eagle rays, stingarees and several lesser known family groups. Stingrays are further placed in the super family *Dasyatidae* which contains four sub-families: *Dasyatinae*, *Hypolophinae*, *Neotrygoninae* and *Urogymininae*.

Until recently, there was thought to be around 60 stingray species contained within five genera groups. However, a major review of the family in 2016 by researchers Peter Last, Gavin Naylor and Mabel Manjaji-Matsumoto, looking at morphological and molecular differences, has drastically changed the family, with 95 species now recognised within 19 genera. This is such a drastic change that most guidebooks and websites used to identify stingrays are completely out of date.

To help divers sort through the changes within the stingray family, this article will look at many common stingrays found around the world and where they fit within the stingray family tree. I will look at these stingrays, genus-by-genus, as each genus contains stingrays with similar features.

The genus names are quite complex, like *Bathytoshia*, so I have included a common group name for each genus. Some of these are in general usage, but I have also had to create a few names based on a common feature.

### Bathytoshia – Roughtail Rays

This genus of stingrays contains three species that all have a rough tail, covered in dermal denticles.

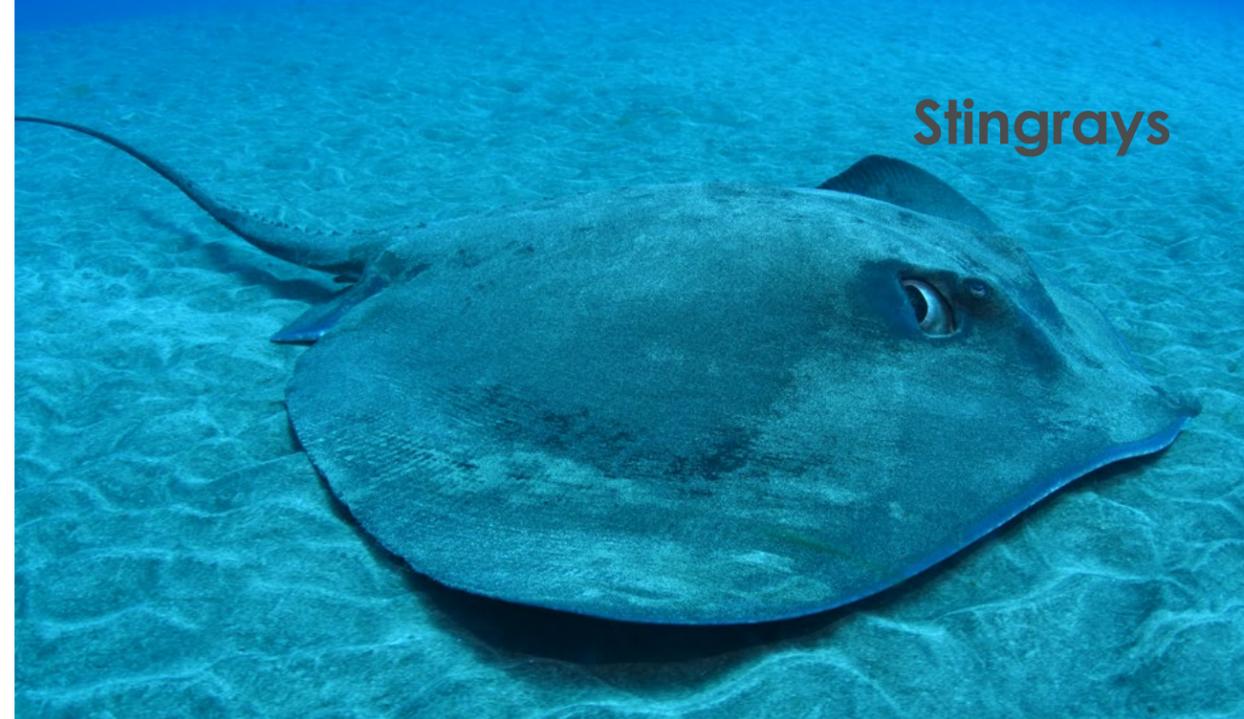
**Smooth stingray.** The best known member of this family is the one I first met as a child, the largest stingray in the world, the smooth stingray (*Bathytoshia brevicaudata*). This species, like most stingrays, was once placed in the large *Dasyatis* genus, but the revisions have seen this genus reduced to just five species.

The smooth stingray is found only in the Southern Hemisphere, inhabiting the temperate waters of southern Australia, New Zealand and South Africa. Well known to divers in cooler waters, the smooth stingray reaches a width of



2.1m, and has a short tail and often a white-spotted V-shaped pattern around the head. In Australia, this species is very common around jetties and boat ramps—spots where fishers clean their catch and throw scraps to the resident

rays. The rays are almost local celebrities, well known to everyone in the local community. Unfortunately, this does not stop some fishers from killing them or chopping off their tails if they are accidentally hooked.



The broad stingray is found around the world in temperate and subtropical zones and has many common names (above); One of the strangest stingray aggregations occurs off Byron Bay, Australia, each summer when thousands of Coral Sea maskrays gather in the gutters at Julian Rocks (left); The Tortonese's stingray is often mistaken for the common stingray, which is not common at all, but has a larger spiracle (bottom left). This one was photographed at the Canary Islands.



One of the best places to see this species is the Poor Knights Islands in New Zealand, where it is called the short-tailed stingray. Seen on almost every dive at this wonderful dive destination, these rays are known to occasionally gather en masse over the summer months, cruising in midwater in caves and arches.

**Broad stingray.** The other common member of this genus has caused quite a bit of confusion since the recent review. The broad stingray (*Bathytoshia lata*) looks very similar to the smooth stingray but has a long tail and a row of thorns along its back. This species varies in colour from black to brown and grows to 1.8m wide.

Once thought to occur only around the Hawaiian Islands, the review found that several other stingray species from around the world were actually this species. However, since the Hawaiian one was the first to be described, the other scientific names have become obsolete.

stingray. The broad stingray is found in both temperate and subtropical waters, with two of the best places to see them being the Canary Islands and Poor Knights Islands in New Zealand.

**Dasyatis – Rough Rays**

This poor genus took a beating in the recent review, losing almost all its members apart from five species that are limited to the Atlantic Ocean. The rough rays get their name from the Greek term *dasyatis*—with *dasys* meaning *rough*. But only some older rays in this genus have rough skin and a row of thorns along the back, but they all have the classic diamond shape and a medium-length tail with upper and lower skin folds.

**Common stingray.** Well known to the ancient Greeks and Romans, the common stingray (*Dasyatis pastinaca*) is the archetypal member of this genus. One of the first rays described by

science, the common stingray is found in the Eastern Atlantic, including the Mediterranean and Black Sea. Typically grey to golden-brown in colour, there is a bit of a dispute as to how big this species grows, with some sources saying 60cm wide, and others 1.4m wide. The common stingray is not as common as it once was, due to fishing pressures, and is now listed as “near threatened.” This species is mostly seen by divers in the Mediterranean and Canary Islands but is not really common anywhere anymore.

**Tortonese's stingray.** A more common member of this genus is the closely related Tortonese's stingray (*Dasyatis tortonesei*). This species is found over much the same area as the common stingray, and looks very similar, so telling them apart can be tricky, with the Tortonese's stingray having a larger spiracle. The Canary Islands appears to be the best destination to see this ray, especially at Los Gigantes on Tenerife. At this site, a ray feed is conducted, attracting up to six species of rays, with the Tortonese's stingrays being the most common and numerous of attendees.

# ecology



A southern stingray digs in the sand, looking for food off Grand Bahama (left); A red stingray at the famous Shark Scrabble, off Tateyama, Chiba, Japan (below)

**Southern stingray.** While a few of these stingrays are seen by divers, the most famous member of this clan is the southern stingray (*Hypanus americanus*). Found from the southern United States to Brazil, this species is best seen in the Caribbean. The southern stingray varies in colour from grey to brown, with the females growing to 1.5m in width, while the poor males only reach 67cm wide. The best place to see dozens of these rays is Stingray City in the Cayman Islands.

## Hemitygon – Small Whiprays

These small to medium-size stingrays have the classic diamond shape, a medium-length whip-like tail and some have dermal denticles on the body and tail, while others do not. There are ten members of this genus that are found in the central Indo-Pacific and northwest Pacific in tropical to temperate waters.

**Red stingray.** The red stingray (*Hemitygon akajei*) is probably the easiest member of this group for divers to see. Found off Japan, Korea and China, the red stingray does have a reddish-brown colour that can continue onto the ventral surface. Growing to a width of 66cm, this species is captured for food so is listed as “near threatened.” Occasionally seen by divers in Japan, large numbers of these usually shy stingrays gather at a shark feed called the Shark Scramble, off Tateyama, Chiba.

## Hypanus – Thorny Back Rays

The stingrays in this family all have a row of thorny dermal denticles along their back, and a medium-size whip-like tail. The genus contains eight members that are only found in the warmer waters of the eastern Pacific and western Atlantic.



ANDY MURCH

## Taeniurops – Fantail Rays

The fantail rays typically have a round disc and a short tail with a long skin fold.

**Blotched fantail ray.** The most common member of this genus, which only contains two species, is the blotched fantail ray (*Taeniura meyeni*). This wide-ranging tropical and subtropical species is found throughout the Indo-Pacific region. This species has many common names, such as the marble stingray, black-blotched ray and black-spotted stingray.

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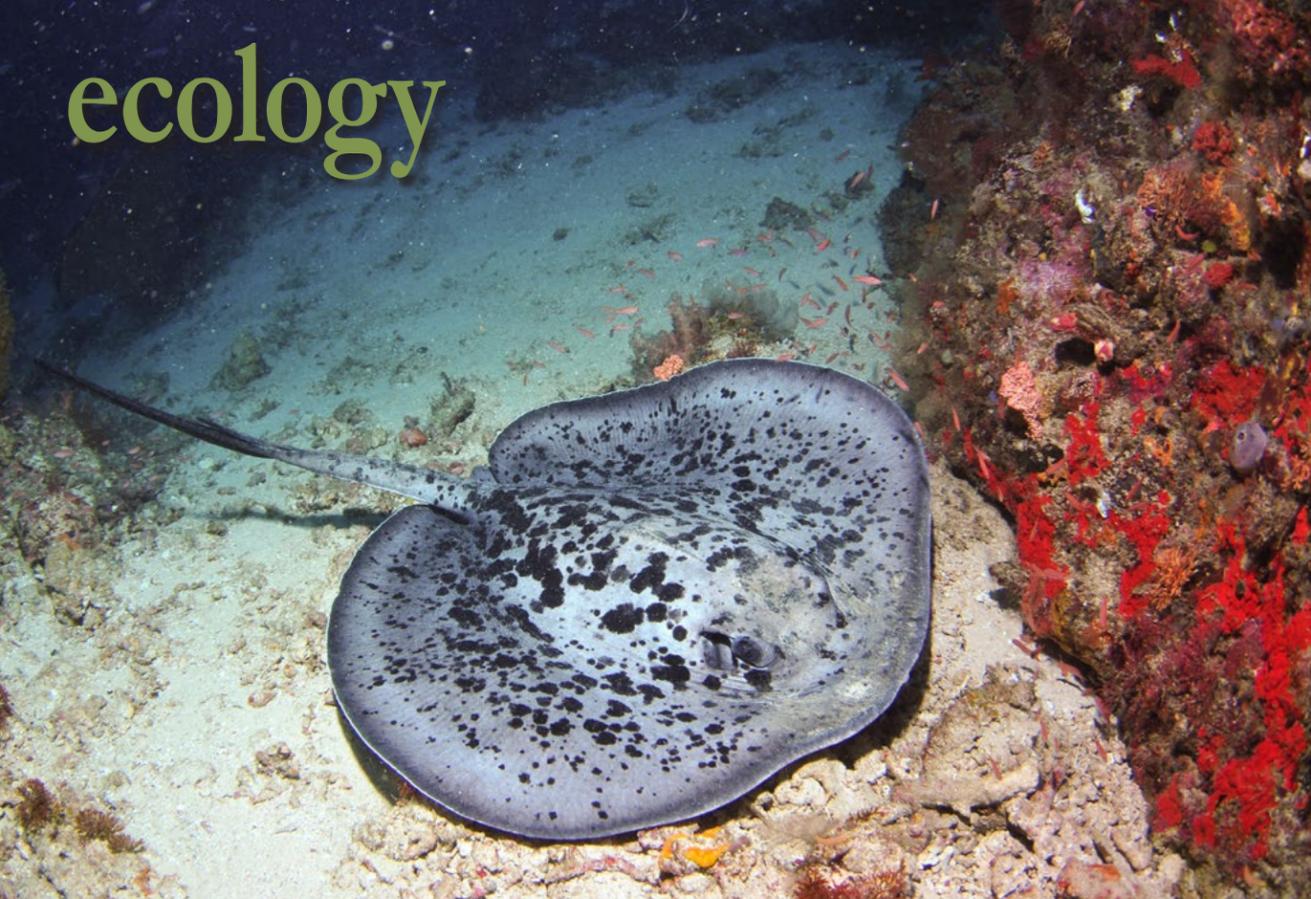
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## Stingrays

A juvenile bluespotted ribbontail ray found on a night dive off Uepi in the Solomon Islands (left). Baby and juvenile stingrays are rarely seen, as they hide from predators; Blotched fantail rays vary in colour from black to grey with blotches (far left); This round fantail ray shows off a typical feature of this genus, a round disc (center). This one was photographed in the Canary Islands.

The blotched fantail ray varies greatly in colour from black, to black with white or grey blotches and even grey with black blotches. This species grows to 1.8m in width and while it spends most of its time on the bottom, they also like to hover in midwater when a current is running. Blotched fantail rays can be seen almost everywhere, but they are particularly common in Australia. While you will run into the occasional one on the Great Barrier Reef or Ningaloo Reef, they are most abundant in subtropical waters, with large numbers seen off southern Queensland and northern New South Wales.

**Round fantail ray.** The only other member in this genus is the round fantail ray (*Taeniura grabata*). Found in the warmer waters of the eastern Atlantic, this species grows to 1m in width and is typically a brownish colour with darker spots and blotches. The round fantail ray is most commonly seen by divers around the Canary Islands. These two stingrays were some of the few that did not get a name change in the recent review, but two



members of this genus were removed to form the next genus, *Taeniura*.

### Taeniura – Ribbontail Rays

The two members of this genus were removed from *Taeniuraps* as phylogenetic

research showed they were not related, even though they have a similar fan-like tail, but an oval-shaped disc.

**Bluespotted ribbontail ray.** The most common member of this family seen

by divers is the bluespotted ribbontail ray (*Taeniura lymma*). Found in tropical waters throughout the Indo-West Pacific, this species is one of the easiest to identify when exploring coral reefs, due to its oval shape and bright blue spots. This small stingray only reaches a width of 30cm, and they tend to hide under plate corals and holes in the reef more often than bury in the sand. Divers can see this species anywhere across its range, from the Red Sea to the Solomon Islands. There are several other small bluespotted stingray species, but it is easy to identify which is which as these other stingrays have a kite shape, less vivid spots and a dark mask across the eyes, which has led to them being called maskrays.

### Neotrygon – Maskrays

One of the biggest shake-ups in the stingray family happened to the maskrays. These small stingrays got their own genus and what was once thought to be one wide-ranging bluespotted maskray, is now known to be eight different regional species. The maskray genus now contains 16 species that are found throughout the Indo-Pacific region.

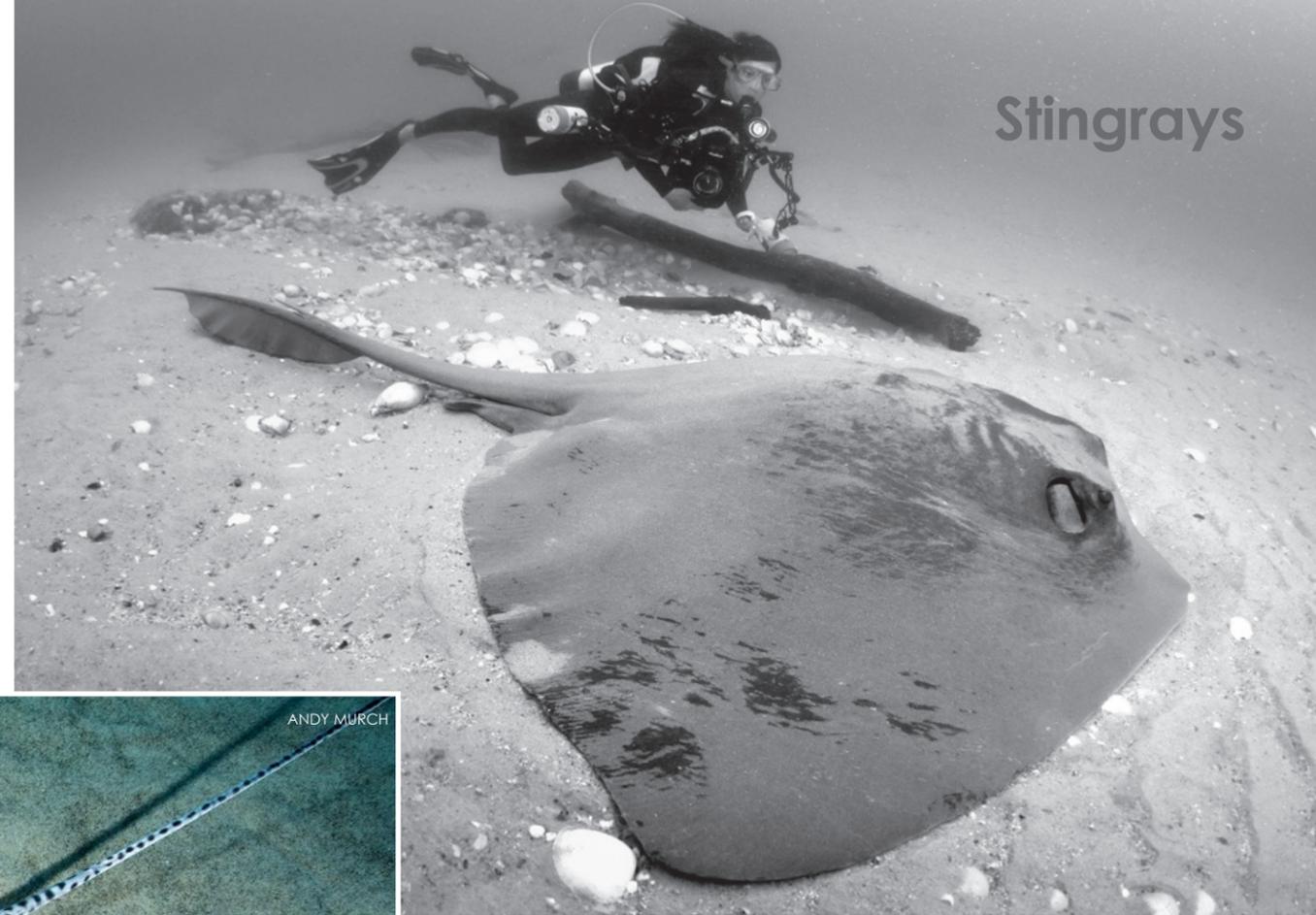
These stingrays are small, with a short tail and a distinctive dark mask colouration across the eyes. While species with blue spots are the best-known members of this family, others have black spots and some rarer ones have pretty mosaic patterns.

**Oriental bluespotted maskray.** Divers exploring the reefs and muck sites of Southeast Asia often come across the oriental bluespotted maskray (*Neotrygon orientale*). This small ray naturally has blue spots and was one of the rays commonly called the bluespotted maskray.

**Coral Sea maskray.** A far more common member of this genus that also has blue spots is found off the eastern coast of Australia and is now called the Coral Sea maskray (*Neotrygon trigonoides*). This is one of three maskrays with blue spots found in Australian waters, but this is the most abundant species, especially off southern Queensland and northern New South Wales. One of the best places to see this species is Julian Rocks off Byron Bay, and while several are always seen on a dive, sometimes over the summer months, thousands gather



The Coral Sea maskray is a common species off eastern Australia, with this one photographed at the Gold Coast (left); A diver gets close to a broad cowtail stingray off Brisbane, Australia (right); The beautifully patterned reticulated whipray is found throughout the Indo-West Pacific, with this one photographed off the Arabian Peninsula (below); The oriental bluespotted maskray is often seen at muck sites in Southeast Asia, with this one photographed off Lembeh, Indonesia (bottom right).



ANDY MURCH

in the sandy gutters at this site for some unknown reason.

### Patinachus – Cowtail Rays

Until recently, there was only thought to be one wide-ranging cowtail stingray species found across the Indo-Pacific region, but the research found there are five regional species with the distinctive long skin fold at the end of the tail.

**Cowtail stingray.** The original cowtail stingray (*Patinachus sephen*) is not as wide-ranging as originally thought and is only found in the northwestern Indian Ocean area.

**Broad cowtail stingray.** The most abundant and widespread member of this genus is the broad cowtail stingray (*Patinachus ater*). One of the newly described species, this large ray grows to 1.8m wide and is found in tropical and subtropical waters throughout the Indo-West Pacific. Targeted by fishers for its flesh and skin, this species is listed as “near threatened,” so is not as common as it once was. The only area that I have found this species to be common is off southern Queensland, Australia.

### Himantura – Patterned Whiprays

Many more stingray species were once found in this genus, but the shake-up created six additional genera from the members of this group, leaving only four species in *Himantura*. The patterned whiprays have a very long whip-like tail and are the prettiest of all the stingrays, with their beautifully patterned skin. These rays are only found in the tropical and subtropical waters of the Indo-West Pacific.

**Reticulated whipray.** The reticulated whipray (*Himantura uarnak*) is the most wide-ranging member of this genus, found throughout the Indo-West Pacific, but not in Australia. These pretty rays can grow to 2m in width and have a spectacular skin pattern of reticulations and sometimes leopard-like spots. Encounters with this ray are rare.

**Australian whipray.** The reticulated whipray was also thought to be found in

Australia until the recent review, when it was discovered that the Australian whipray (*Himantura australis*) is a separate species. These two stingrays look almost identical, so locality is the best way to tell them apart. Divers have a better chance of seeing this pretty ray, especially off southern Queensland. Groups of Australian whipray are sometimes found at dive sites off Rainbow Beach, Brisbane and the Gold Coast.

**Leopard whipray & honeycomb whipray.** The confusing thing about this genus is that

the reticulated and Australian whiprays can have leopard-like skin patterns, and the two other members of the group, the leopard whipray (*Himantura*

*leoparda*) and the honeycomb whipray (*Himantura undulata*) also have a leopard-like skin patterns but are less commonly seen by divers.

### Pateobatis – Plain Whiprays

This is one of the groups that split from *Himantura*, they also have long whip-like tails, but have very plain colouration.

### Pink whipray.

This genus contains five species found in the Indo-Pacific region, with the most widespread and abundant species being the pink whipray (*Pateobatis fai*). Although called the pink whipray, this species





Stingrays

A fever of pink whiprays at Manta Bommie off Brisbane, Australia (above); The strangest member of the stingray family is the spine-less porcupine stingray (right). These rare rays are best seen in Australia, with this one found at Heron Island on the Great Barrier Reef.

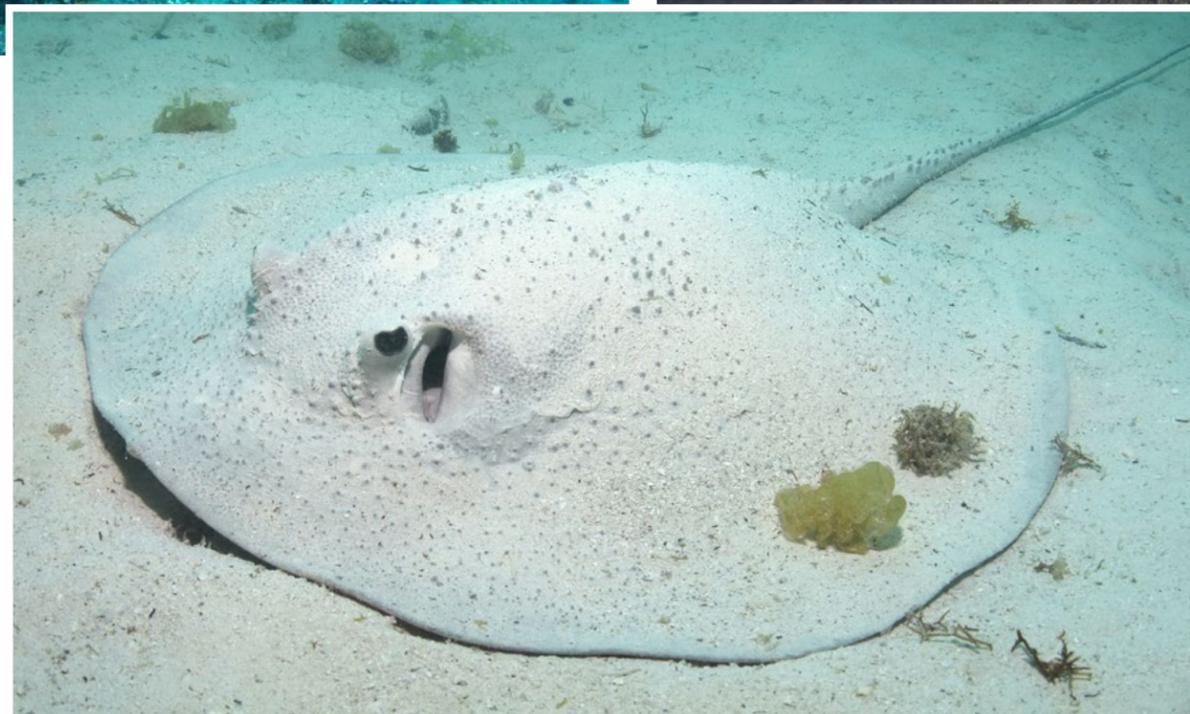
is generally a brownish-grey colour and can reach a width of 1.8m. A very social stingray, pink stingrays are often seen in a fever (a group of rays) that can number from five to fifty. These rays also like to hang around other larger stingrays, and have been seen riding the backs of blotched fantail rays. The Maldives is a good place to see pink whiprays, and they are seen in large numbers at a shark/ray feed at Alimatha Faru. They are also common off southern Queensland, Australia, with large groups of them seen at Manta Bommie off Brisbane.

**Jenkins whipray.** The very similar looking Jenkins whipray (*Pateobatis jenkinsii*) is found over an almost similar range to the pink whipray, but is less commonly seen by divers. It may look similar, but the easiest way to tell them apart is by the row of short spines along the back of the Jenkins whipray. One of the best places to see this stingray is the Perhentian Islands off Malaysia.

### Urogymnus – Prickly Whiprays

This genus was thought to contain only one species, the very strange porcupine stingray, but the recent review has found that several more species, once placed in *Himantura*, belong in this group. The genus now contains six species, all have a round disk, a long whip-like tail and dermal denticles on their backs and tail.

**Giant freshwater whipray.** A few of the prickly whiprays live in mangroves and rivers, including the famous giant freshwater whipray (*Urogymnus polylepis*) of Southeast Asia.



**Porcupine stingray.** The best-known member of this genus is the porcupine stingray (*Urogymnus asperrimus*), which is quite rare, but occasionally seen by divers in the tropical waters of the Indo-West Pacific. This strange ray is covered in short spines, hence the name, and is the only member of the stingray family to lack a tail spine. The porcupine stingray can reach a width of 1.2m

The Jenkins whipray is best identified by the row of spines along its back (above). This one was found sheltering under a shipwreck off the Perhentian Islands, Malaysia.

and is listed as “vulnerable.” Australia is one of the best places to see this weird ray, with occasional sightings on the Great Barrier Reef and Ningaloo Reef.

**Mangrove whipray.** The only other member of this genus

seen by divers is the mangrove whipray (*Urogymnus granulatus*). Found on reefs and in mangroves, this ray is easily identified by its long white-coloured tail. Found throughout the tropical Indo-West Pacific, the mangrove whipray reaches a width of 1.4m. This is another ray that is best seen in Australia, on the inner islands and reefs of the Great Barrier Reef.

### Other species

There are many other genera in the stingray family that I have not included in this article, as they are rarely seen by divers, either living in rivers and mangroves or having a pelagic lifestyle.

Sorting out the stingrays must have been a mammoth task for the scientists who did the research work, and there is sure to be more changes in the future in this complex and diverse family of rays.

If you would like to know more about stingrays and other rays, I have started a Facebook group called the Ray Photography Group, so people can share photos, videos and their knowledge of this very interesting group of marine creatures.

### Biology and behaviour

Stingrays, like all the rays, are very closely related to their cousins, the sharks, and share many similar body features. The main difference between the two is that rays have their pectoral fins fused with their head and also have their gills

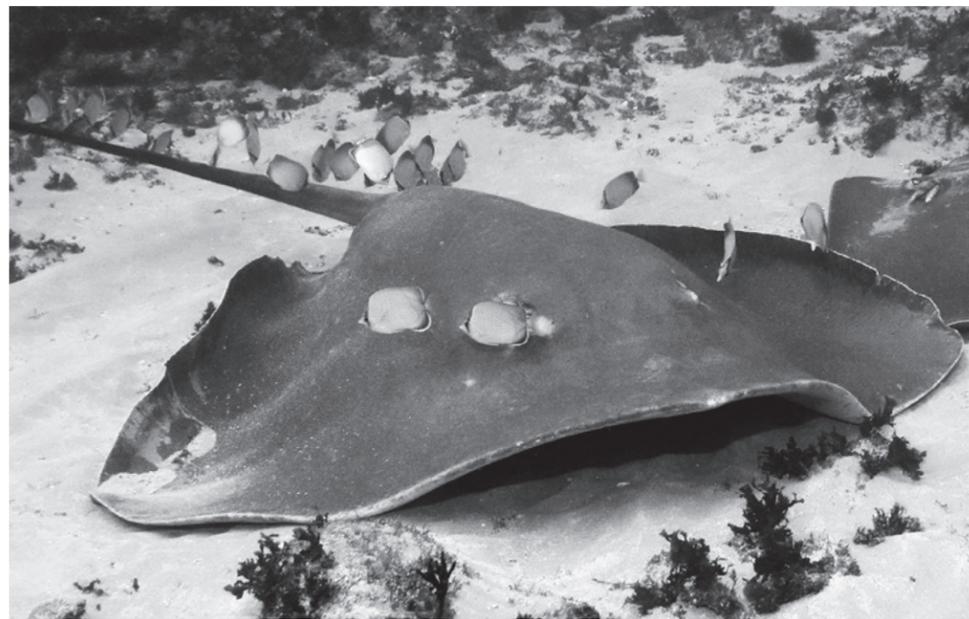


on their ventral surface (the underside of the body). Stingrays differ from other closely related members of the ray family by their longer tails, which lack dorsal, anal and caudal fins, but can have skin folds. Most stingrays are quite large, over one metre in width, but their disc can vary greatly in shape—from round to diamond-like to even oval. They also have small pelvic fins, and many have rough spines, dermal denticles or tubercles, on their tail or back. All stingrays have a tail spine (except for the porcupine stingray) for defence, which regrows when lost.

As most stingrays like to hide under a layer of sand, they have modified their breathing to suit this behaviour. While they can breathe in through their mouth and out through their gills to extract oxygen, they have developed large respiratory openings behind the eyes called spiracles to intake water. These spiracles allow them to breathe normally for extended periods when buried in the sand, without

ingesting sand. Sharks also have spiracles, but they are very small in most species, apart from a few bottom-dwelling sharks.

Like sharks, stingrays have an acute array of sensors that help them detect prey. As most of their prey lies buried in the sand, where they cannot be seen by rays, they rely on other sensors to locate prey. To find buried prey, stingrays use a combination of smell and special electrical sensors on their snouts called the ampullae of Lorenzini, which detect weak electrical signals given off by animals. The rays then use their mouths to dig into the sand to grab their food, which can be fish, worms, crustaceans or molluscs. Many stingrays feed by day, others only



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Like many stingray species, round fantail rays like to rest in caves (right); A rarely seen sight, a pink whipray being cleaned by a group of butterflyfish (below); When heavily pregnant blotched fantail rays get large bulges on their backs (center); The mangrove whipray is rarely seen by divers (bottom left). This one has lost its distinctive white whiptail and was photographed off the United Arab Emirates.



feed at night, but some feed at any time, driven more by the tides, especially if they feed on mudflats.

### Mating and reproduction

Stingrays are typically solitary animals, only coming together to mate, or when feeding. But a few species are quite social, forming small groups, called a fever. Little is known about the dynamics of these groups; are they together

for company, for ease of finding a mate, for defence in numbers or simply because there is abundant food in the area? Some gather into large aggregations when breeding, others get together for no apparent reason at all.

Romance and mating between stingrays is rarely witnessed. Premating rituals are poorly understood, but generally entail the male, or several males,

following a female to see if she is in season, and then biting and shoving the female (if she is smaller, but in many cases, the female is larger than the males). When mating, the male typically bites the female on the edge of her disc, then either twists around her, or lies belly-to-belly to insert one of his two claspers into her cloaca. The claspers are penis-like organs, formed from modified pelvic fins, that deliver sperm into the female. Pregnant females are often seen with large swellings in their back.

Stingrays give birth to live young, with litters varying in number from two to six after a gestation period of up to 12 months. Young rays are rarely seen, because they either hide in deep water, mangroves, estuaries or rivers. The only juvenile stingrays I have seen are bluespotted ribbontail rays at night on a reef at Uepi in the Solomon Islands, with the small rays emerging from hiding spots amongst the coral.

### Cleaning stations

Stingrays spend much of their time either resting or feeding, but many regularly visit cleaning stations to get rid of parasites, old skin and other blemishes. Over 50 species of fish are known to provide cleaning services, but most stingrays utilise the services of the widespread common cleaner wrasse (*Labroides dimidiatus*). These tiny wrasse pick over the skin of the stingray, and even enter the mouth and gills. But I have also witnessed a group of Guenther's butterflyfish (*Chaetodon guentheri*) picking over the skin of a pink whipray off Brisbane, Australia.

### Defense against predators

The main predators of stingrays, apart from humans, are sharks and orca. To avoid being eaten, stingrays hide under a layer of sand or rest in caves, shipwrecks or under ledges. But when these evasive measures fail, stingrays use their tail spines for defence. They use the spine like a dagger, bringing the tail over their head



Pink whiprays at a shark/ ray feed at Alimatha Faru in the Maldives (above); The business end of a blotched fantail ray, its lethal tail spine (right)

to either stab or slash at the attacker. The spine is serrated, covered in venom-secreting tissue and has two longitudinal grooves, which enclose venom-secreting cells. The spine is designed to break off in the attacker and cause infections.

Large stingrays have spines up to 20cm long, but even this does not deter some attackers, with some great hammerheads (*Sphyrna mokarran*) found with dozens of stingray spines stuck in their heads. Stingrays pose little threat to divers and snorkellers, with fishers and people wading in shallow water being the most likely ones to get jabbed. If ever jabbed by stingray, even if it is minor, seek immediate medical attention to get the wound properly cleaned to avoid infection.

## Diving with stingrays

While the general public have the perception that stingrays are dangerous, especially after the death of Australian zookeeper and wildlife expert Steve Irwin,

stingrays are in fact docile animals that have a tail spine for defence only. Very few divers or snorkellers have been stabbed by stingrays, as they would rather flee than fight; but if cornered or grabbed, they will lash out.

Over the years, I have encountered thousands of stingrays, and I have only ever had two raise their tail at me in a threat display. Both were smooth stingrays, and both encounters are worth looking at.

In the first case, my buddy and I were diving off Jervis Bay, south of Sydney, through a series of interconnected caves off Point Perpendicular. In one of the caves, we found a large smooth stingray resting on the bottom. Having encountered dozens of these large rays before, I thought it would not be an issue swimming over the ray to exit the cave. The ray was okay at first, but as I got closer to the exit, the ray felt trapped



and raised its tail at me, warning me to back off. I quickly did, and my buddy and I decided to find another exit from the cave. Lesson learnt—do not corner a stingray or block its exit.

Snorkelling off Sydney, I encountered a pair of smooth stingrays in a rocky gutter at Little Bay. One of the rays was huge, 2m across, but the other one was only half this size. I watched them from the surface as the small ray swam around

To get close to stingrays, like this blotched fantail ray in the Maldives, it is best to approach the ray from the side (above).

the large resting stingray.

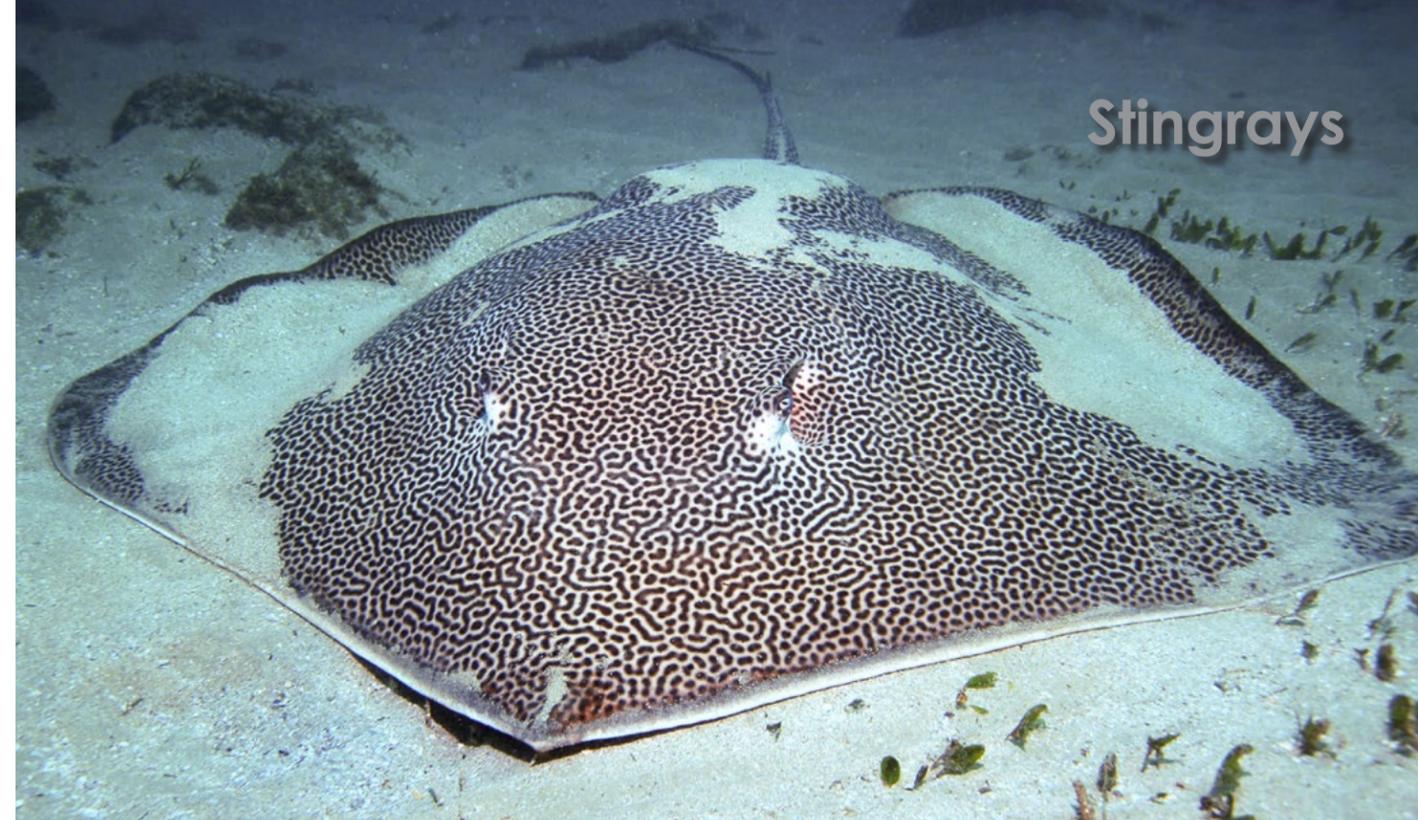
After observing them for several minutes, I realised that the large one was a female and the smaller one an amorous male. I then dived down to get some photos, thinking I might witness the rays mating.

But as I swam towards the female, she suddenly lifted her tail over her head and pointed her spine at me, warning me to stay away. I took note and headed back to the surface, but only minutes later saw her also do the same thing to the small male, telling him to back off. This was very interesting behaviour to see her warning both me and the horny male. I am still not sure if she thought I was another male stingray, or if she

was just sick of being harassed. Another lesson learnt—do not intrude on stingray romance.

At stingray feeds, the tail spine is not an issue, as the rays do not feel threatened; it is the mouth you have to worry about. Stingrays have small plate-like teeth that are designed to assist them grub in the sand for a variety of prey. However, as they need to crush the shells of some prey, their jaws are quite powerful. I have never been bitten at a stingray feed in the wild but I have been bitten in an aquarium when photographing feeding time.

The head diver warned me that the sharks and fish were not an issue, but to watch out for the stingrays, and to keep my hands well away from their mouth. This ended up being easier said than done as the stingrays, a gang of blotched fantail rays, were all over us. This made it very hard to get photos, as I had to constantly push and bump the stingrays away to avoid being knocked over. The rays were constantly searching



The Australian whipray is a recently described species that is only found in Australia (above). This one was photographed at Cook Island, Tweed Heads; Broad cowtail stingrays like to hide under a layer of sand, but are always ready to explode off the bottom when a diver gets too close (left).

for our hands, knowing that this was the source of food, and eventually one latched onto my hand and BAM! It felt like my fingers had been hit by a hammer! Another lesson learnt—keep fingers away from a stingray's mouth.

### Underwater photography tips

Getting close to stingrays underwater can be tricky, as most species are preyed upon by sharks, so are wary of large creatures heading towards them. Stingrays that regularly encounter divers at popular dive sites are often easy to get close to, as they are unperturbed by the close presence of a diver. However, most stingrays are shy, and take flight when a diver approaches.

To get close to a stingray, the best approach is to come in slowly from the side, and not charge in head first with a camera raised like a weapon.

A trick I often use is to angle my body like I am swimming away from the ray, but then shuffle sideways towards the animal, which is not an easy manoeuvre, especially into a current. It is also good to slow your breathing, and not look directly at the ray, instead face away and look at it from the corner of your eye.

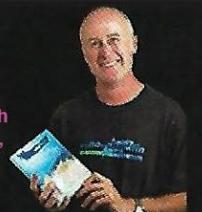
Some stingrays will allow you to get right up beside them, while others will take off the second they see you. The less threatening you appear, the better the encounter, and generally the fewer divers, the better. Stingray encounters are the highlight of many diving adventures. ■

*Nigel Marsh is an Australian underwater photographer and photojournalist whose work has been published in numerous magazines, newspapers and books, both in Australia and overseas. Over the last 37 years, he*

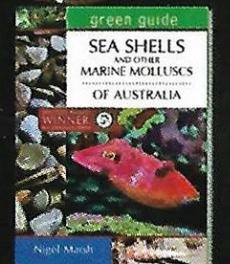
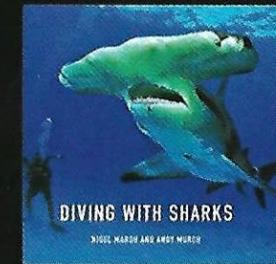
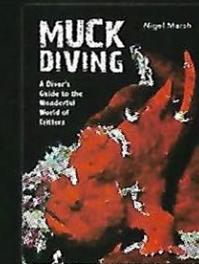
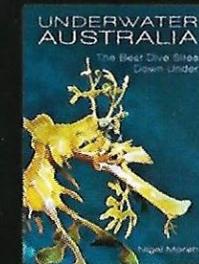
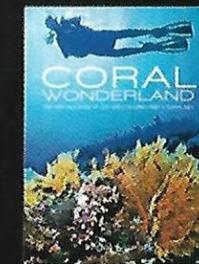
*has dived extensively around Australia and also throughout Asia, Pacific Ocean, Indian Ocean and Caribbean. He has also produced a number of diving-related books, including two dive guidebooks with Neville Coleman: Dive Sites of the Great Barrier Reef and the Coral Sea (New Holland, 1996) and Diving Australia (Periplus Editions, 1997). His self-published book, HMAS Brisbane Queensland Coral Warship (Nigel Marsh Photography, 2011), is a photographic exploration of one of Australia's most popular dive sites. Recently, he has produced a series of children's books on marine-related subjects (A to Z of Sharks & Rays, Exploring Shipwrecks, Crabs & Crustaceans, Weird & Wacky Fish) and a series of dive guides (Underwater Australia, Muck Diving, Coral Wonderland, Diving with Sharks) for New Holland Publishers. Please visit: [nigelmarshphotography.com](http://nigelmarshphotography.com).*

## NIGEL MARSH PHOTOGRAPHY

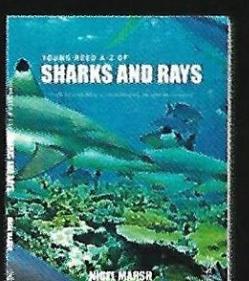
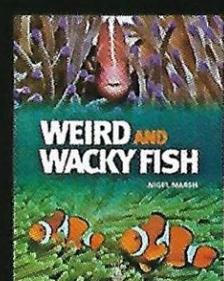
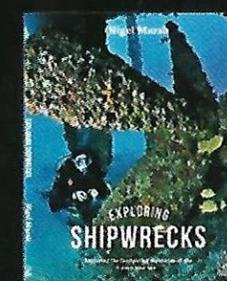
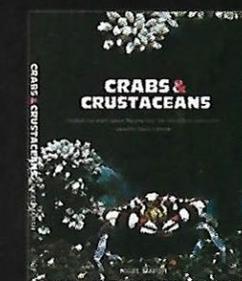
Nigel Marsh is an Australian photojournalist, underwater photographer and author. Working with New Holland Publishers, Nigel has produced a number of guide books for divers and snorkellers, and also a series of children's books with marine related themes.



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