

Whitespotted bamboo shark, *Chiloscyllium plagiosum*, in Kannoura Bay, Kōchi Prefecture, Japan

Text by Malcolm Nobbs
Photos by Malcolm Nobbs
and Norihiro Fukui

Whitespotted bamboo sharks, the elusive dwellers of southeast Asia's marine realm, are not easy to find. Maybe it is just that they are relatively scarce. Or maybe it is simply because during the daytime, they rest in deep crevices. Either way, they are rarely seen. Malcolm Nobbs takes us to Kannoura Bay in Japan in search of this rare shark.

In the tapestry of the ocean, the whitespotted bamboo shark is a study in elegance and adaptation. They are nocturnal phantoms with elongated silhouettes. With their finery of lobed fins, rounded snouts and skin adorned with a constellation of white and black spots, they glide the reef in search of bony fishes and crusta-

ceans. Reaching lengths of almost one metre, they are thought to live for up to a quarter of a century.

Where to see them

In the waters off Malapascua Island in the Philippines, they have occasionally been sighted in depths of 10 to

20m. Another possible haven for these enigmatic creatures is thought to be Kannoura Bay in the eastern reaches of Kōchi Prefecture, Japan. Here, from July until the following March, they are said to reside offshore in depths of 50 to 70m and come to shallower waters to mate from April

to July, with this mating aggregation peaking in May and June each year.

Off to Japan

Together with Andy Murch of Big Fish Expeditions, I travelled to Kannoura Bay in May, hoping that these stories were true. We met up with Norihiro

Fukui, the owner of Kannoura Bay's dive centre, Oranku Divers. Norihiro told us that the rumours were spot on, and that he had even seen between 30 and 40 whitespotted bamboo sharks on a single dive there.

He believes that this bay, with its tranquil waters and gentle undula-



The Elusive Whitespotted

Bamboo Shark

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Harmless to humans, whitespotted bamboo sharks are nocturnal, resting in crevices during the day and hunting at night (top left). From May to June, these sharks can be seen in Kannoura Bay, Kōchi Prefecture, Japan (top right). As benthic predators, hunting near the sea-bottom, they prey on small fishes and invertebrates (right). Andy Murch of Big Fish Expeditions photographs a whitespotted bamboo shark in Kannoura Bay (left).

tions, offers a unique sanctuary for these sharks. It is a cradle of new life where predators dare not venture. The sharks' eggs find a place to thrive here, caressed by the nurturing waves and moderate seawater circulation. After 110 to 135 days, the hatchlings emerge from their capsules, a new generation ready to glide through the waters of the sea.

Keeping our fingers crossed, Andy and I hit the water and within a few minutes, we spotted our first whitespotted bam-



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boo shark. Then another, then another. Elsewhere they are rarely seen by scuba divers, but it turns out that in Kannoura Bay, from May to June, they are easy to find. ■

For more information, visit: orankudivers.com

Based in Nelson Bay, New South Wales, Australia, UK native Malcolm Nobbs is a widely published underwater photographer and regular contributor to both Australian and dive magazines around the world. Formerly

an active member of the British Society of Underwater Photographers (BSoUP), he moved to Australia in 2009, after penning his first underwater magazine article. Teaming up with Jamie Watts in 2013, the pair have produced a steady stream of articles. Over the years, Nobbs has steadily expanded his website into one of the world's largest scuba-related websites, with over 10,000 categorised and searchable marine life images, numerous dive site location reports, published works and videos. Visit: malcolmnobbs.com



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Bamboo Shark

NORHIRO FUKUI

These sharks are found on coral reefs in the Pacific, from Japan to India (above). A backlit whitespotted bamboo shark egg (right).

FACTS ABOUT THE WHITESPOTTED BAMBOO SHARK

Edited by G. Symes

The whitespotted bamboo shark (*Chiloscyllium plagiosum*) is a nocturnal species of carpet shark that is harmless to humans and can grow up to 93cm in length. Notable for its dorsal fins with convex posterior margins, the shark is easily identified by its distinct colour pattern of purple and pink spots on a white body with dark bands. They typically rest on the seabed, supported by their bent pectoral fins, and have a distinct dorsal fin that influences their habitat choice and movement.

Whitespotted bamboo sharks are found across the coral reefs of the Pacific Ocean, from Japan to India, including the coastal areas of Indonesia. They are pri-

marily nocturnal feeders, preying on small fish and invertebrates.

These sharks are equipped with relatively undifferentiated teeth, which are adapted for both grasping soft prey, allowing the teeth to sink into the flesh, and crushing hard prey by pivoting backwards to protect the tips and form a plate for crushing crabs.

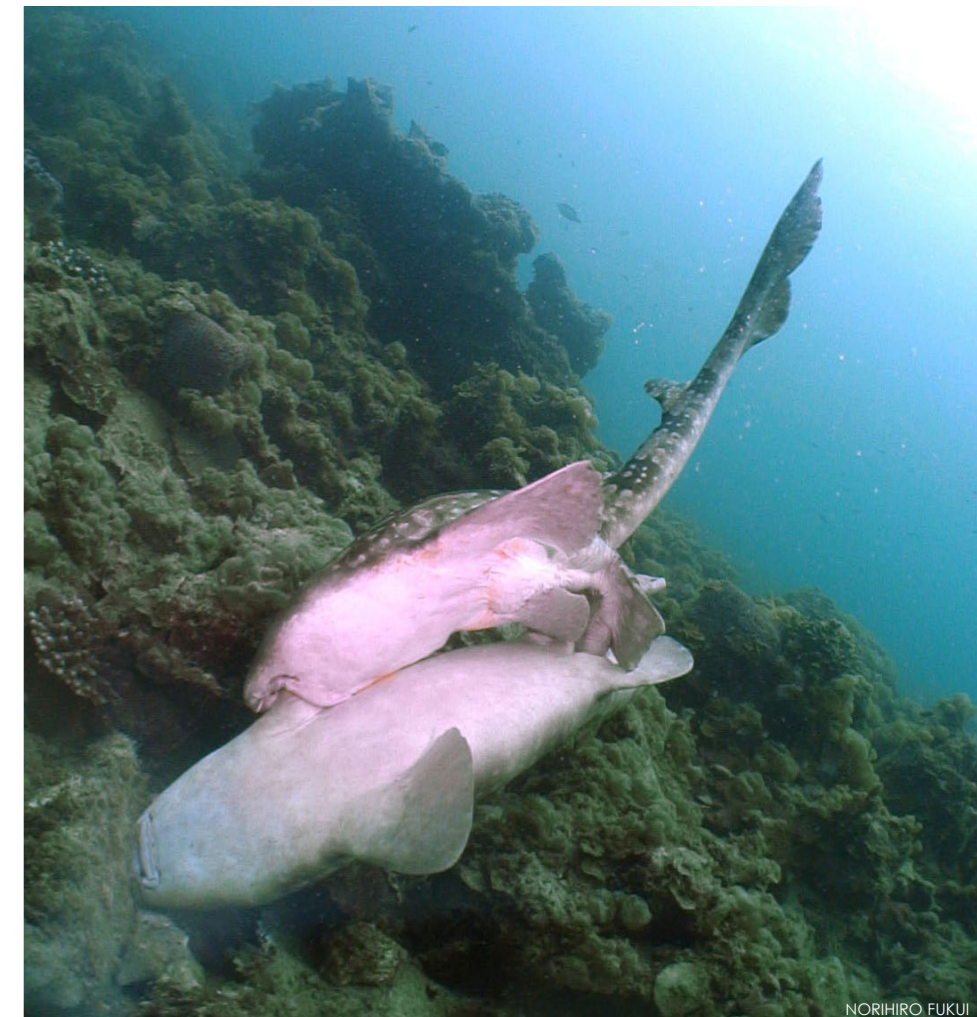
As benthic predators, they hunt near the sea-bottom, unlike pelagic sharks, and employ electroreceptors on their snout to detect prey hidden in sand and mud. During the wet seasons, the juveniles require a higher intake of carbon than the adults.



NORHIRO FUKUI

Reproduction in whitespotted bamboo sharks is through egg-laying, with eggs measuring about five inches (~13cm) and hatching within 14 to 15 weeks.

The hatchlings emerge at around six inches (~15cm) long, showcasing the shark's unique reproductive capabilities. ■ SOURCE: WIKIPEDIA



NORHIRO FUKUI

Mating pair of whitespotted bamboo sharks (above and top right)



By Ila France Porcher

Smooth hammerhead shark



Smooth Hammerhead Shark Nursery Found in Galápagos

The Galápagos National Park Directorate (GNPD) has unveiled the existence of a nursery site for smooth hammerhead sharks nestled in a secluded bay off Isabela Island.

This remarkable finding, uncovered during a recent expedition led by Greenpeace, has piqued considerable intrigue among scientists owing to the rarity of smooth hammerhead shark sightings during their early developmental stages.

Smooth hammerhead sharks (*Sphyrna zygaena*), were listed as vulnerable on the IUCN Red List in 2018, so their conservation is vital. They inhabit tropical and subtropical waters across the globe. Distinguished by the absence of the characteristic heart-shaped notch found in other hammerhead sharks, these elusive creatures have long fascinated researchers.

Already depleted, not studied Smooth hammerhead sharks have faced numerous threats and challenges. Before scientists began studying them, they had been subjected to overfishing by commercial fishing operations around the globe, targeting them, mostly for their fins. They are particularly vulnerable to overfishing due to their slow reproductive rates and late maturity, characteristics shared by many shark species. Additionally, their habitat, which includes coastal areas and open oceans, has been impacted by human activities such as pollution, coastal development and climate change.

With the backing of scientists and strategic partners, the GNPD will delve deeper into this newfound shark nursery, in hopes of gaining more valuable insights into its ecology and its significance for the hammerheads roaming the waters around these islands.

A local hammerhead tagged Amidst this discovery, a pivotal milestone was achieved as a satellite tag was successfully affixed to a sub-adult female smooth hammerhead shark. Monitoring her movements in the ensuing months promises to furnish crucial data on the efficacy of the Galápagos Marine Protected Areas, where this species enjoys legal safeguards.

Importance for conservation Dr Jorge Carrión, Director of Conservation, underscores the pivotal role played by smooth hammerhead sharks as apex predators in preserving the overall marine ecosystem's health. The identification of this nursery area marks a monumental stride forward in the conservation efforts aimed at safeguarding this species across the archipelago.

The Galápagos Conservancy, a key patron of research initiatives concerning shark behaviour, migratory

patterns, and habitats in the Galápagos, provides vital support. By furnishing essential data, these endeavours bolster the implementation of effective conservation strategies and foster close collaboration with the GNPD to ensure the protection of these awe-inspiring marine predators.

Efforts such as establishing marine protected areas, implementing fishing regulations, and raising awareness about the importance of sharks in marine ecosystems have been crucial in supporting the conservation of smooth hammerhead shark populations. But despite conservation efforts, they continue to face significant threats, and their populations remain vulnerable. Continued research, conservation measures and international collaboration are essential to ensure the long-term survival of this species and to maintain the health of marine ecosystems in which they play a vital role. ■
SOURCE: GALÁPAGOS CONSERVANCY

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A Closer Look at Human-Shark Encounters

Researchers at the University of California Shark Lab have found that swimmers, surfers, and great white sharks are often in close proximity in Southern Californian waters, much more so than had been assumed. Yet in spite of this, shark bites are rare. Shark Lab Director Chris Lowe emphasizes that white sharks generally ignore humans. They just do not see them as prey.

A recent **article** by Sam Fletcher begins with the gripping account of a wildlife videographer, Scott Fairchild. Using a drone, he captures a heart-stopping moment when a great white shark repeatedly approaches a lone swimmer off the coast of San Diego. Yet suddenly the shark veers away and disappears. Fairchild states that he has seen countless such encounters between swimmers and white sharks off the Californian coast.

We are not shark food

Shark Lab Director Chris Lowe has stated that people are around white sharks more than they are aware, making shark bites even rarer than previously thought. Lowe is studying these interactions and the circum-

stances surrounding various shark reactions. His work shows that white sharks, at least around San Diego, generally ignore people.

Shark mitigation measures

California stands out among regions where humans and sharks mingle along the shorelines. Unlike Australia and South Africa, where deadly measures such as culling have been used for over five decades, California refrains from using lethal measure to prevent shark attacks. In contrast, both Queensland and New South Wales in Australia use shark nets and baited hooks, as reported by the Australian Marine Conservation Society (AMCS).

But in the past ten years, California has recorded only two deaths caused by white sharks, while South Africa recorded three fatalities and Australia documented 13. Despite having a smaller population than Southern California, Australia sees three to four attacks per year, while California experiences one every four years, Fairchild noted. Although shark attacks remain extremely rare, they are more frequent in Australia and South Africa, he said.

Fear instead of science

Critics like Fairchild vehemently oppose Australia's approach, labelling it as "moronic". He points out the nega-

tive effects of these methods, especially the deaths of turtles and whales. Moreover, culling makes the situation worse by using bait to attract sharks in the first place.

Since 2001, Queensland's culling efforts have resulted in the capture of 413 whales and dolphins, 907 turtles, 1,766 rays, and the culling of 13,167 sharks, according to AMCS reports, though there is no reliable data to justify it. Fairchild underscores the reluctance to change these practices, driven in part by the fear of being held accountable for future shark attacks.

Shark behaviour is variable

Lowe acknowledges the ongoing challenge of predicting shark behaviour, especially globally. He points out the

geographical variability in shark behaviour, using the unique phenomenon of white sharks breaching fully out of the water, as an example. This behaviour is primarily observed in South Africa.

Fairchild emphasizes the individual nature of shark behaviour, drawing parallels between regional variations and human cultural differences. Lowe stresses how important it is to predict shark behaviour, stressing that while shark attacks may occur more frequently in certain areas, interactions resulting in bites remain extremely low compared to peaceful encounters.

Education and conservation are needed

While shark attacks receive significant attention, the article underscores that

the ocean poses greater dangers, with drowning being a far more common cause of death. The importance of sharks in maintaining marine ecosystems is highlighted, with researchers advocating for better public education and conservation efforts.

Fairchild's experiences as a videographer have led him to become an advocate for shark conservation, and he feels that accurate education is very important to dispel the misconceptions about white sharks, which are believed as if they are facts. Ultimately, the article stresses the importance of coexistence and understanding between humans and sharks, not only for their benefit, but also for the health of our oceans. ■

SOURCE: EARTH ISLAND JOURNAL



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