SHARKS AND RAYS OF BANGLADESH

A guide to identifying protected species and their commonly traded parts









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Shark and rays of Bangladesh - a guide to identifying protected species and their commonly traded parts

Bangladesh Forest Department Ministry of Environment, Forest and Climate Change, Bangladesh Wildlife Conservation Society, Bangladesh

Sharks and Rays of Bangladesh - A guide to identifying protected species and their commonly traded parts

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WHAT ARE SHARKS AND RAYS?

Sharks and rays are closely related fish. They have soft bones like the ones in our ears. They also have a big oily liver that helps them control their bouyancy. Sharks and rays breathe through gills in uncovered gill slits located on the side of the head in sharks and on the underside of rays. Some have special muscles that pump water through their gills, while others keep moving to breathe.

Whale sharks and devil rays have feathery gills that filter tiny creatures from the water for them to feed on. But most sharks and rays are powerful hunters that use smell, sight, touch, and sound to find their prey. They have strong jaws with sharp teeth to catch them.

The bodies of sharks and rays are covered with tiny scales that form a tough outer skin protecting them against predators and helping them swim fast.

Some species move in groups, others prefer staying on their own. Most sharks and rays take a long time to mature and produce low numbers of young called pups. Shark mothers produce fully developed pups. Some sharks and most rays hatch from eggs inside the mother's body. The pups get food from the large egg yolk that they are connected to and are born when the yolk is finished. Other shark and ray mothers lay egg cases that one or more pups grow in and finally hatch from. Many sharks and rays give birth in sheltered nursery grounds with few predators. The pups require no further care from their mother after birth.



Microscopic scales of Great hammerhead Sphyrna mokarran.

WHY ARE SHARKS AND RAYS IN TROUBLE?

Sharks and rays are vulnerable to overfishing because they reproduce late in life, have few pups, and grow slowly. This means there are naturally fewer sharks and rays than other fishes in our waters.

Overfishing is by far the biggest threat to sharks and rays in the world. About a third of all known shark and ray species in the world and more than half of all species known or suspected to occur in Bangladesh are threatened with extinction.

The fins, gill plates and skins of sharks and rays are highly valued in other countries, and some people in Bangladesh eat their meat. This pushes fishers to keep or even target sharks and rays, even if they could release them safely back into the water.



WHY DO WE CARE ABOUT SHARKS AND RAYS?

Sharks and rays contribute to a healthy ocean in many different ways that in turn supports healthy people. But without protection, they will likely disappear forever. The loss of sharks and rays impacts not only the fish we eat or their availability for future generations, but also the livelihoods of those who put fish on our plates.

HOW CAN WE PROTECT SHARKS AND RAYS IN BANGLADESH?

Sharks and rays that are globally threatened with extinction are protected under the Bangladesh Wildlife (Conservation and Security) Act 2012. It is a crime to kill, land or trade them or their parts punishable with up to one year imprisonment and a fine of up to 50,000 taka, unless you have an official trade permit.

This guide helps identify which species are protected and must be released safely at sea. Do not sell, buy or eat protected wildlife, including sharks and rays or their parts.



HOW TO USE THIS GUIDE

This guide describes and depicts diagnostic features for the visual identification of sharks and rays, and their commonly traded parts, which are protected under the Bangladesh Wildlife Act 2012 and regulated for trade across international boarders by CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) along with look-alike species.

An overview of legal regulations is provided on pages 12-13, and instructions for the safe release of protected species at sea on page 107-108.







Critically Endangered (CR) Extremely high risk of extinction

Threatened

Endangered (EN) Very high risk of extinction

Vulnerable (VU) High risk of extinction



VU

Near Threatened (NT) Likely to qualify for a threatened category in the near future



Least Concern (LC) Widespread and abundant



Data Deficient (DD) Inadequate information available for assessment of extinction risk

Species without an IUCN Red List status have not yet been assessed for extinction risk.

*as per June 2022.



NATIONAL PROTECTION STATUS WILDLIFE (CONSERVATION AND SECURITY) ACT, 2012



Schedule 1: Strictly Protected No killing, trade, consumption permitted.



Schedule II: Strictly Regulated Permit from Forest Department required for killing, possession, and trade.



CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora*



CITES Appendix I Strictly protected, no trade



CITES Appendix II Strictly regulated, CITES trade permit required

*Provisional identification of specimens or parts originating from CITES listed species suffice as probable cause to detain shipments without the appropriate CITES permits.

HABITAT PREFERENCE



Freshwater rivers – Spend all or a part of life in a naturally flowing watercourse, usually freshwater, flowing towards the ocean.



Brackish water – Spend all or part of life in the estuarine zone where freshwater rivers and salty ocean water mix.



Mangrove associated – Spend all or part of life in the tidal waterways of mangrove forests.



Open marine water – Spend all or part of life in the ocean area far from the coast.



Reef associated – Spend all or part of life around corals.

UNIT CONVERSION

 1 Bam = 3.5 Hands
 1 Inch = 2.5 Centimeters

 1 Hand = 1.5 Feet
 1 Meter = 39.4 Inches

 1 Foot = 12 Inches
 1 Meter = 100 Centimeters



IDENTIFYING FEATURES OF SHARKS



IDENTIFYING FEATURES OF SHARKS



IDENTIFYING FEATURES OF RAYS

Underside (Ventral)

Upper side (Dorsal)



IDENTIFYING FEATURES OF RAYS

MOBULIDS



Upper side (Dorsal)

IDENTIFYING FEATURES OF RAYS

RAJIFORMES, TORPEDINIFORMES

Upper side (Dorsal)

Underside (Ventral)



Total Length (TL)

TERMINOLOGY

English term	Bangla term	Definition/Description
Free rear tip	পিছনের মুক্ত প্রান্ত	Corner of fin that is separated from the trunk or tail
Barbel/Whisker	माँড़ि	Threadlike sensory organ sticks out from the corner of mouth helps detecting prey or food
Hyomandibular pores	মুখের চারপাশের ছোট ছিদ্র	Many small holes or pores around the corners of the mouth that produce sensory afferent excitation
Rough skin patches	কাঁটাযুক্ত অমসৃণ চামড়া	When the tooth-like scales or denticles are bigger or closer together
Spiracles	শ্বাসরন্ত্র	Two openings between the eyes for moving water across gills
Ridge	উঁচু রেখা	An elevated line - if between first and second top fin, called interdorsal ridge
Groove	খাঁজ	Indentation or dent - if at tail base, called pre-caudal pit
Keel	সুউচ্চ রেখা	Expansion on the sides of the body to increase stability, similar to keel on the underside of a boat
Mid-line	মধ্যরেখা	Line from front to back along the middle of the back or snout
Mark	চিহ্ন/দাগ	Not well-defined blotch or area of color
Spot	ফোঁটা	Well defined area of color
Stripe	ডোরাকাটা দাগ	A linear mark of a different color from the background
Schooling	দলবদ্ধ হয়ে চলাচল	When they all move together in the same direction, at the same speed, at the same time
Pregnant, gravid	গর্ভবতী	Female expecting babies
Cloaca	পায়ু ও স্ত্রী জননাঙ্গ	Common opening for digestive, reproductive, and urinary system on underside near anal fin

PROTECTED SHARKS AND RAYS OF BANGLADESH

Species protection regulations aim to reduce extinction risks for globally threatened sharks and rays.

Threatened sharks and rays are protected under the Bangladesh Wildlife (Conservation and Security) Act 2012. Killing, landing or trading species or their parts listed under Schedule I is prohibited, and requires an official trade permit for those listed under Schedule II. Species listed under CITES Appendix II or their parts or derived products can only be exported with a valid CITES permit.

By learning which species are protected and stopping their killing, trade, and consumption, you can help ensure their survival.

BANGLADESH WILDLIFE ACT SCHEDULE II SPECIES KILLING AND TRADING OF SCHEDULE II LISTED SPECIES WITHOUT A PERMIT IS A PUNISHABLE OFFENCE.



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BANGLADESH WILDLIFE ACT SCHEDULE I SPECIES KILLING AND TRADING OF SCHEDULE I LISTED SPECIES IS A PUNISHABLE OFFENCE.





C

খাঁজকাটা হাতুড়ি হাঙ্গর Scalloped hammerheads Sphyrna lewini

KEY TO SHARK ORDERS AND FAMILIES OF BANGLADESH

Mackerel Sharks LAMNIFORMES

THRESHER SHARKS

কান্তে হাঙ্গর

Alopiidae

- Extremely long upper tail fin
- Second side fins almost same size as first top fin
- No elevated lines

Thresher sharks are large sharks with an unusually long sickle-shaped upper tail fin - as long or longer than their body. These strong swimmers have relatively large eyes, a small mouth, and long first side fins.

Threshers prefer deep open ocean water but give birth to pups annually along the coast. Young threshers stay in shallow waters until maturity. They usually prey on schooling fish, squid and sometimes cuttlefish. They use their long tail to slap their prey.

(See page 22-23)



- Half-moon shaped tail
- Teeth visible even when mouth closed
- Mouth extends beyond eyes
- Five pairs of gill slits extending onto upper head
- Strong keel along side of body

Mackerel sharks are fast sharks easily recognized by their slender teeth visible even when the mouth is closed. The mouth extends behind the eyes, and the long gill slits extend onto the upper part of the head. Their tall first top fin is large and the second top fin very small in comparison. They have a strong keel on their side forward from their half-moon shaped tail.

Mackerel sharks inhabit temperate oceans and prey on schooling fish. Females often come close to shore to give birth.

(See page 24-25)

no see-through inner eyelid

5 aill slits, 2 top fins, anal fin, mouth extends beyond eves.



- Teeth visible even when mouth closed
- Top fins and anal fin same size
- Very short lower tail fin

Sand tiger sharks are large, slowmoving sharks with scattered dark spots on their light brown upper body side.

These migratory sharks live mostly in shallow near or inshore coastal waters, often near coral reefs. They hunt fish, shrimp, and other softbodied animals.

Female sand tigers produce two pups, one from each uterus, every other year.

(See page 25)

Ground Sharks CARCHARHINIFORMES

5 gill slits, 2 top fins, anal fin, mouth extends beyond eyes, see-through inner eyelid

HAMMERHEAD SHARKS হাতডি হাঙ্গর

Sphyrnidae

- Head flattened in front and expanded sideways
- Large first top and tail fins

These big sharks get their name from their hammer-shaped head. They have an all-around view thanks to their eves being on the outer edges of the wide head that helps them hunt and pin down prey. Their large fins, highly priced in trade, allow them to make sudden and sharp turns.

Hammerheads inhabit coastal and offshore marine waters up to 500 meters deep. They use nearshore and mangrove areas as nursery grounds. Hammerheads feed on fishes, octopus and squid, as well as on dolphins, rays, and other sharks.

(See page 26-27)



- Groove on upper and underside of tail base
- Rounded shout
- Short lip wrinkles

Requiem sharks vary greatly in size. Their markings on their first side fins differ. Most have round eyes and no spiracles.

Except when migrating, most requiem sharks prefer shallow waters. They live in our rivers, along the coast in estuaries, and in deeper marine waters. Requiem sharks eat mostly fishes, octopus and squid, but some hunt turtles, dolphins, or other sharks and rays.

(See page 28-38)

WEASEL SHARKS শিয়াল বলি হাঙ্গর Hemiaaleidae

- Oval eves
- Long lip wrinkles and no ٠ whiskers around mouth
- Large second top fin
- Wavy edge on tail fin
- All fins are incurved

Weasel sharks are small to medium size sharks with small spiracles, a mouth that reaches the eyes, and relatively long lip wrinkles.

They live mostly in coastal areas to a depth of up to 100 meters and feed on small fishes, squid, shrimp, mussels, and clams.

(See page 39)

Carpet Sharks ORECTOLOBIFORMES



- Checkerboard pattern on very large body
- Huge mouth
- Very large gill slits
- Tail with strong keels

Whale sharks are the largest fish in the world. They can grow to a length of 15-20 meters. Each animal has a unique pattern of white or yellowish spots and stripes.

Slow moving whale sharks move alone or in schools in marine waters. They feed by filtering tiny fishes, fish eggs and shrimp through their gills.

(See page 40)

CARPET SHARKS গুলে হাঙ্গর Hemiscylliidae

- Short whiskers
- Tail longer than body
- Large spiracles below eye

Bamboo sharks are small, up to one meter long, and slender sharks that live in shallow river mouths, estuaries and coastal waters. The young have strong patterns that disappear as they grow older.

Bamboo sharks spend most of their time alone resting along the bottom or feeding on small fishes and soft animals with or without shells.

(See page 42-43)

ZEBRA SHARKS চিত্রা হাঙ্গর Stegostomatidae

- Ridges on sides and back
- Upper tail fin as long as the body
- Short whiskers

Zebra sharks are small, strongly patterned, night-active sharks that live mostly around corals and in shallow coastal waters up to 60 meters deep. They hunt and snatch or suck up small fishes, snails, sea urchins, and crabs.

(See page 44)

NURSE SHARKS একশাখালেজী হাঙ্গর Ginalymostomatidae

5 gill slits, 2 top fins, anal fin, mouth ends in front of eyes



- Rounded top and first side fins
- Wide single tail fin

Nurse sharks vary in size, but they all have whiskers around their small mouths and small spiracles behind their eyes. They live around corals and mangroves in mostly 5–30 meter deep coastal waters. They hunt and feed at night on small animals living along the bottom, including fishes, crabs, shrimp, lobsters, squid, and octopus. (See page 44)

KEY TO RAY ORDERS AND FAMILIES OF BANGLADESH



Electric rays TORPEDINIFORMES

Body rounded, top fins are placed on strong tail, can generate an electric shock

GUITARFISHES & GIANT GUITARFISHES পিতাম্বরি ও বড পিতাম্বরি

Rhinobatidae & Glaucostegiidae

- Shovel-shaped snout
- First top fin set far behind second side fins
- Tail fins fused
- Fins of guitarfishes are smooth but giant guitarfishes have a rough texture.

Guitarfishes have a large triangular snout that differs among species. Many guitarfishes have patterns and lines or patches of small thorns on their back, shoulders, snout or near the eyes. Guitarfishes are found in estuaries and near river mouths, but not in freshwater. Some prefer deeper offshore waters, but most enter estuaries for mating and pupping. They rest and feed along the bottom on worms, crabs, clams, and smaller fishes.

(See page 55-58)

NUMBFISHES

কারেন্ট মাছ Narcinidae

- Small round disc and snout
- Large kidney shaped electric organs visible on disc
- Deep groove around mouth

Numbfishes are small rays with a thick smooth disc with different color patterns. Their tail is as long or longer than their body. They are thought to pup in brackish waters, but adults live in open marine water. The slow swimming bottom-dwellers feed on worms and small fishes. SLEEPER RAYS একপাখনা কারেন্ট মাছ Narkidae

- Small flattened round disc, snout and side fins
- Nasal openings just in front of mouth
- Usually only one top fin
- Shallow groove around mouth

Sleeper rays are very small rays that look like numbfish but are more uniformly colored. Like numbfishes, they can generate an electric shock to defend themselves or stun their prey.

(See page 59-61)

(See page 61)

Eagle, Manta, and Stingrays MYLIOBATIFORMES

Flat body with very large first side fins fused with head and disc, small or no dorsal fin, whip-like tail.

EAGLE RAYS ঠুইট্যা ঘাপরি Myliobatidae



- Short head
- Short and rounded snout
- No spine on tail

Eagle rays are medium to large rays with wide triangular first side fins fused to the head just below the eyes. Their head is narrow with a beak-like snout. The tail is very long, thin, and spine-less.

Eagle rays live alone or in schools in coastal and brackish waters. They move along the bottom and feed on hard-shelled mussels, clams and oysters, crabs and shrimps, as well as worms and small bony fishes. PELAGIC EAGLE RAYS ফুল ঠুইট্যা ঘাপরি Aetobatidae

- Long head
- Short and beak-like snout
- Large spine on tail

The inside of the nostrils of pelagic eagle rays have a deep V-shaped groove, which is not there in other eagle rays. The free rear tip of the large first side fins is rounded.

Pelagic eagle rays are found in coastal or open marine waters and around corals. They feed mainly on mussels, clams, oysters, crabs, shrimps, and small fishes. DEVIL RAYS শিংচোয়াইন Mobulidae

- Pair of horn-like lobes extend from front of head
- Very wide mouth
- Large wing-like side fins with pointed tips.

Devil rays, also known as mobulids, have two horn-like fins at the front of their head. They use these to funnel water into their mouth. Their large diamond-shaped body has wide triangular fins that move gracefully like wings. Devil rays use special gills to filter small creatures that they feed on from deep open marine waters.

(See page 62-63)

(See page 64)

(See page 66-68)

COWNOSE RAYS ভোঁতানাক ঘাপরি Rhinopteridae

- Snout with two large bulges separated by a deep groove
- One or more short tail spines

The medium-sized bodies of cownose rays are wider than long with a deep groove in the snout. They have a small top fin, a long tail with one or more short stings at the base, but no thorns on their smooth skin.

Cownose rays inhabit nearshore, estuarine and open waters. They mainly feed on hard shelled animals which they crush with their powerful jaws.

BUTTERFLY RAYS পদুনি Gymnuridae

- Disc is much wider than long
- Black tail bands differ between species

These relatively small rays have a wide butterfly-shaped body. Their short slender tail usually has dark bands which help distinguish species. They have smooth skin, a small dorsal fin at the tail base and some have spines.

Butterfly rays live in shallow coastal areas and at river mouths, with nursery grounds in estuaries. They feed on shrimps, crabs and clams.

STINGRAYS & WHIPRAYS শাপলাপাতা মাছ Dasvatidae

- Round, oval or diamond-shaped body is longer than wide.
- Slender tail is longer than disc and thinner at tip
- No top or tail fins

Members of this large family of rays vary in size, shape, and coloration. Their head is part of the disc. Many have one or more stings on their long, slender tail with small second side fins at the base.

Stingrays and whiprays mostly inhabit nearshore and open waters up to 400 meters deep. Some live in rivers and estuaries. They feed mostly on shrimps, crabs, worms and small fishes.

(See page 69)

(See page 70-71)

(See page 72-84)

KEY TO SHARK SPECIES IN BANGLADESH







ছোটপাখ ম্যাকো হাঙ্গর Shortfin mako Large first top fin Isurus oxyrinchus near first side fins EN CITES Half moon TL: Birth = 60-70. shaped tail fins Adult ♂ = 166-204. Adult Q = 265-312. ML = 445Sharply pointed snout with white underside First side fins curved and shorter than head বডপাখ ম্যাকো হাঙ্গর Large first top fin Longfin mako behind rear tips of Isurus paucus first side fins (CITES IN Half moon TL: Birth = 97-120, Adult ♂ = 225-245, shaped tail fins Adult Q > 245, ML = 427Funnel-shaped snout with darker underside in adults Long first side fins as long or longer than head with rounded tip

সাদা হাঙ্গর White shark Carcharodon carcharias



TL: Birth = 120-150, Adult σ = 310-410, Adult φ = 400-500, ML = 600-640



ধূসর বাঘা হাঙ্গর Sand tiger shark Carcharias taurus



TL: Birth = 85-105, Adult σ = 190-200, Adult ρ = 220-235, ML = 325









আঠাইল্যা/সোনালী লতাবলি হাঙ্গর Grey sharpnose shark Rhizoprionodon oligolinx














Requiem Sharks Carcharhinidae

34





36







তিমি হাঙ্গর Whale shark Rhincodon typus



TL: Birth = 55-64, Adult o = 800-1000, Adult o = 600-900, ML = 1700-2100



Whale sharks are extremly slow growing. Males become adults when they are about 7 - 9 meters long and around 25 years old, and females at about 9 meters in length at the age of 30-40 years.



Very wide and flat head with short snout and very large mouth

Several ridges on body

Second side fins almost the same size as the second top and anal fins.

Rhincodontidae

Whale Sharks



চা কি আয় তিমি হাঙ্গর Whale shark Rhincodon typus

খাঁজওয়ালা গুলে হাঙ্গর Burmese bambooshark First top fin starts Chiloscyllium burmensis behind second Triangular top fins with straight Ridge on the back but side fins edge and rounded tips not along the sides VU TL: Birth = ?, Adult of = 64.5. Adult $\circ = 54.6$. ML =? Long, low anal fin close to tail Fairly long, wide, and round snout ধসর গুলে হাঙ্গর **Ĝrey bambooshark** Chiloscyllium griseum First top fin starts Base of large second top over second side fins fin longer than base of VU Round snout first top fin No ridges on body TL: Birth < 12, Adult ♂ = 45-55, Adult Q = ?,1110 ML = 77Dark marks and Small, low anal fin Small straight mouth stripes on young, but close to tail ends with whiskers not on adults before eyes

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IDENTIFICATION OF LOOK-ALIKE SHARKS

Tip of upper tail fin black



IDENTIFICATION OF LOOK-ALIKE SHARKS

Ridge between top fins present, lip wrinkles absent



Small holes at mouth ends absent



IDENTIFICATION OF LOOK-ALIKE SHARKS



শিয়াল বলি হাঙ্গর Snaggletooth shark Hemipristis elongata



Top fins and second side fin same size

দাগহীন বলি হাঙ্গর **Sharptooth lemon shark** Negaprion acutidens

110





KEY TO RAY SPECIES IN BANGLADESH

বড়দাঁতী করাত মাছ Largetooth sawfish Pristis pristis



TL: Birth = 72-90, Adult ♂ = 280-300, Adult ♀ = 300, ML = 700





14-24 evenly spaced rostral teeth per side

Upper body yellowish to greyish with yellowish fins

First top fin starts well forward of second side fins

Short lower tail fin

Long and wide first side fins

Largetooth sawfish can grow up to seven meters long and live for about thirty years. They start giving birth after the age of ten. A long, flat, and saw-shaped snout helps sawfish find and stun prey. It easily gets entangled in fishing gear.

Sawfish are among the most endangered animals in the world. Bangladesh is a last stronghold for sawfish in the Indian Ocean. They are strictly protected in Bangladesh.



সবজ করাত মাছ First top fin starts over or slightly **Green Sawfish** Long narrow saw, teeth forward of second side fins Pristis zijsron near head shorter than those near tip CR CITES Tail fins joined TL: Birth = 80. Adult $\sigma = 430$. Adult Q = 430, ML = 73023–37 unevenly spaced rostral teeth per side Short wide first side fins Upper body uniformly olive to greenish brown চিকন করাত মাছ Lower edges of Narrow/pointed sawfish fins often pale Anoxypristis cuspidata First top fin starts over Long narrow saw without teeth the back-end of the on the quarter near head second side fin CITES TL: Birth = 43-70. CONTRACTOR AND A REAL PROPERTY OF Adult $\mathcal{O} = 200$. Adult Q = 225, ML = 47016-26 unevenly spaced rostral teeth per side Tail fin shaped Upper body like half-moon uniformly slate grey, Triangular first

often slightly bluish

side fins

with groove in

upper tail fin



শাখালেজী পিতাম্বরি Wedgefishes Rhinidae

পিতাম্বরি Guitarfishes Rhinobatidae

সরুনাক পিতাম্বরি Sharpnose guitarfish Glaucostegus granulatus বাংলাদেশি পিতাম্বরি Bangladeshi guitarfish Glaucostegus younholeei বড় পিতাম্বরি Giant guitarfish Glaucostegus typus চ্যান্টানাক পিতাম্বরি Widenose guitarfish Glaucostegus obtusus গোদানাক পিতাম্বরি **Clubnose guitarfish** Glaucostegus thouin



বড় পিতাম্বরি Giant Guitarfishes Glaucostegiidae



All rhino rays (guitarfishes, giant guitarfishes, wedgefishes) are strictly protected.

বোতলনাক পিতাম্বরি Bottlenose wedgefish Rhynchobatus australiae



TL: Birth = 46-50. Adult ♂ = 110-130, Adult Q = 150, ML = 300



মসৃণনাক পিতাম্বরি Smoothnose wedgefish Rhynchobatus laevis



TL: Birth = ?, Adult $\mathcal{O} = 130$. Adult Q = ?,ML = 200



Well defined black first side fin markina

Pale grey to yellowishbrown upper side

Con ? 2-3 short rows of

Bottle-shaped snout

small thorns on mid-shoulder

Three white spots in a line over dark marking on first side fins, often with two spots below

Tail fin deeply curved

4-7 white spots

Black marks over first side fins surrounded by

Large dark mark on underside of sometimes pinkish snout

Irregular small thorns

on mid-shoulder

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Wedgefishes Rhinidae

Short and very deeply curved tail fin

4-5 rows of white spots along each side of first top fin

সাদাফোঁটা বাংলা পিতাম্বরি Bengal guitarfish (Annandale's guitarfish) Rhinobatos annandalei



TL: Birth = ?, Adult \circ = 63, Adult \circ = 65, ML = 95

মসৃণপিঠ পিতাম্বরি

Smoothback guitarfish Rhinobatos lionotus



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TL: Birth = 15.

Adult ♂ = 40, Adult ♀ = 48, ML = 85 Prominent thorns around eyes and along mid-back ridge

al.

Pointed snout

Ridge down the middle of the snout

Wide snout with

wavy edge

Uniform small white spots on greyish to brownish upper side

Greyish brown patches on underside of disc and tail

Yellowish around gill slits on underside

Short thorns on mid-back

Mirror like dark brown patches but no white markings on upper side

Guitarfishes Rhinobatidae

Ridges down the middle of the snout clearly separated

Round side fins

সরুনাক পিতাম্বরি Sharpnose guitarfish Glaucostegus granulatus





বড় পিতাম্বরি Giant guitarfish Glaucostegus typus



TL: Birth = 38-40, Adult $\circ = 150-180$, Adult $\circ = 150-180$, ML = 270



Very long, pointed, almost see-through snout Irregularly sized and spaced thorns along mid-line of back

2-3 pairs of large thorns on each shoulder

Ridges on the snout almost joined along entire length

Large thorns along mid-line of back, better defined on juveniles

Dark mark on underside of snout Upper surface sometimes with irregular dark greyish marks

No thorns on shoulders

চ্যাস্টানাক পিতাম্বরি Widenose guitarfish Glaucostegus obtusus



TL: Birth = ?. Adult \circ = 48, Adult Q = ?,ML = 93



গোদানাক পিতাম্বরি **Clubnose guitarfish** Glaucostegus thouin



TL: Birth = ?. Adult $\mathcal{O} = ?$ Adult Q = ?,ML = 300



Short, almost seethrough or white snout with wide tip

Upper side greyish-brown with pale yellowish fin edges

No thorns on

Short top fins with rounded ends

Enlarged thorns along midline of back vary in shape

Swollen tip on almost see-through snout No dark mark on underside of snout

> No large thorns on snout or head

shoulders

Row of small thorns along mid-line of back



দাগহীন বাদামী কারেন্ট মাছ Plain upper side, Brown numbfish no spots Narcine timlei Whitish underside TL: Birth = 6, Adult of = 14, Second side fins Adult Q = ?, ML = 36wider than long First top fin slightly smaller than second Whitish edges on top, top fin second side, and tail fins ভোঁতামুখ কারেন্ট মাছ Shortlip numbfish Narcine brevilabiata Upper side covered with many very small dark brown dots and a few large spots TL: Birth = 8.

Adult \circ = 23.

Adult Q = ?,

ML = 32

First top fin starts over back end of second side fin

Greyish spots on underside of second side fins and disc

Second side fins medium-sized

First top fin slightly taller than second top fin

বড়ফোঁটা বাদামী কারেন্ট মাছ Chinese numbfish Narcine lingula



TL: Birth = 11, Adult σ = 24-27, Adult ρ = ?, ML = 35



ছোটফোঁটা বাদামী কারেন্ট মাছ Smallspot numbfish Narcine maculata



TL: Birth = 13, Adult σ = 28, Adult φ = ?, ML = 40



Pale brownish upper side covered with large spots of different shapes and sizes

Second side fins wider than long with edges curved outward



Short tail fin _

Brownish upper side covered with many dark spots the size of its eyes or smaller



Whitish underside, often with darker edges

Two top fins similar in size, distance between them smaller than base length

> Whitish underside sometimes with darker edges

Some spots merged into elongated blotches

Top fins similar in size, but base of second longer than of first

Numbfishes Narcinidae

কালোফোঁটালেজী কারেন্ট মাছ Tonkin numbfish Narcine prodorsalis



TL: Birth = ?, Adult o = ?, Adult o = ?, ML = 46.6



সাদাফোঁটা কারেন্ট মাছ Spottail sleeper ray Narke dipterygia



TL: Birth = 10, Adult σ = 15, Adult ρ = 15, ML = 35



Dark brown or blackish-brown small spots shaped like eyes on upper surface



Top fins with rounded tips and base of second top fin is slightly longer than base of first top fin

Whitish underside

Body shaped like a tear drop with very wide, almost straight front

Whitish spots on upper side, where the second side fins start and the first side fins end, and at the tail base



Very small eyes, smaller than spiracles

> Wide triangular but blunt second side fins

Single top fin smaller than tail fin set over second side fin














ছোটপাখ শিংচোয়াইন Shortfin devilray (Kuhl's devilray) Mobula kuhlii



DW: Birth = 31-34, Adult σ = 115, Adult ρ = 116, MW = 135



ধূসরপেট শিংচোয়াইন Sicklefin devilray (Chilean devilray) Mobula tarapacana



DW: Birth = 120-130, Adult of = 198-250, Adult of = 270-280, MW = 370







Devil Rays Mobulidae



লেজে ফোঁটাহীন পদুনি Tentacled butterfly ray Gymnura tentaculata



 $\begin{array}{l} \text{DW: Birth} = \ensuremath{\,?}\,,\\ \text{Adult}\ensuremath{\,?}\,= \ensuremath{\,40}\,,\\ \text{Adult}\ensuremath{\,0} = \ensuremath{\,?}\,,\\ \text{MW} = \ensuremath{\,85}\,\end{array}$



Light to dark brown upper side often with many small whitish dots Small top present a





Butterfly Rays Gymnuridae

লম্বালেজী পদুনি Longtail butterfly ray Gymnura poecilura



DW: Birth = 22-26, Adult σ = 35, Adult Q = 41, MW = 104



Long tail (up to half of disc width) with 8–14 black bands, but tail bands less clear in very large individuals

No top fin Small thin tail spine in adults but not in young Smooth light to dark brown upper side sometimes with black dots or with faint whitish spots



খাঁজহীন চোখামুখ ফাইস্যি Bengal whipray Brevitrygon imbricata

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 $\begin{array}{l} \text{DW: Birth} = 10,\\ \text{Adult}\ \ensuremath{\sigma} = 20\text{-}21,\\ \text{Adult}\ \ensuremath{\varrho} = 21,\\ \text{MW} = 29 \end{array}$



Very small body with brownish to greenishbrown upper side and paler edges

Yellowish edge on underside of second side fin

Usually 2 spines and up to 6 thorns on tail



Wide band of rough skin between shoulders in adults

Groove on both upper and under side of tail



খাঁজযুক্ত চোখামুখ ফাইস্যি Scaly whipray Brevitryaon walaa



DW: Birth = 7-10. Adult ♂ = 20, Adult Q = 22, MW = 32



ঘুডি শাপলাপাতা **Bennett's stingray** Hemitrygon bennetti



DW: Birth = 13-15, Adult ♂ = 32, Adult Q = ?, MW = 61



Very small body with brownish to greenishbrown upper side and paler edaes

Yellowish edge on underside of second side fin

Short and small row of

and along its mid-line

ends before tail spine

thorns on each shoulder

1-3 spines and a row of thorns on tail varying in size

> Wide triangular snout with pointed tip

> > Y-shaped band of rough skin on upper side from eyes to lower disc

Large second side fins extend beyond disc

Wide yellowish edge on white underside

Wide band of rough skin between shoulders in adults

Longish pointy snout

No groove on upperside but only has in underside side of tail



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পাইনা/বাইলা শাপলাপাতা Giant Freshwater whipray Urogymnus polylepis 10

গোল শাপলাপাতা Round whipray Maculabatis pastinacoides



DW: Birth = 15-16, Adult σ = 43-46, Adult ρ = 58, MW = 86





Wide band of rough skin on mid-line of oval disc

> Tail blackish after spine

Usually 1–2 large pearls on the middle of disc

One large thorn and

few smaller thorns adjascent to it



Snout short but wide triangular

White underside sometimes with narrow greyish edges

জাতি শাপলাপাতা Whitespotted whipray Maculabatis gerrardi



DW: Birth = 13-21, Adult of = 48-58, Adult of = 63, MW = 116





White underside sometimes with wide dark edges



Wide triangular snout with a swollen tip

Diamond-shaped disc with band of rough skin along mid-line on back in adults, no thorns or pearls.

Many white spots only on lower part of upper side

রাম্মি/চুনি শাপলাপাতা Bleeker's whipray Pateobatis bleekeri



DW: Birth = 21, Adult \circ = 51, Adult \circ = 51, MW = 119



সাদানাক শাপলাপাতা Whitenose whipray Pateobatis uarnacoides



DW: Birth = 18, Adult \circ = 50, Adult \circ = ?, MW = 119



U pr m th

Usually two big pearls on mid-disc much larger than those adjacent

Widely triangular and pointed snout

Rounded tips on first and second side fins

One large pearl midshoulder with a few smaller ones around it, but no other patches of rough skin or pearls



Flask-shaped denticle band on the disc

White underside with dark edges in young turns almost entirely dark with occasional whitish marks in adults

Long, narrowly triangular and pointed snout

> Greyish brown underside with paler center

No thorns on tail but rough skin patches after a single spine Stingrays & Whiprays Dasyatidae



78



কালোদাগী শাপলাপাতা **Blotched fantail ray** (Blotched stingray) Taeniurops meveni



DW Birth = 30-35Adult ♂ = 100-110, Adult Q = ?, MW = 180



বড়দাগী বাঘা শাপলাপাতা Honeycomb whipray (Bleeker's variegated whipray) Himantura undulata



DW: Birth = 26-27. Adult ♂ = 60-70, Adult $\circ = ?$. MW = 130



Round disc with white and black marks on upper side



Second side fins sometimes extend beyond disc

Short tail with a well-developed skin fold extending to tail tip and greyish-brown underside

Two small patches with small, short thorns on each shoulder in adults

Narrow triangular snout with small swollen but pointed tip

Large yellowish pearl mid- shoulder

followed by 2-3



Large dark marks on upper side of young grow into many large dark rings in adults

Weak bands on tail after spine

Pattern extends to tail up to spine.



নপুরা/নীলফোঁটা ফুল শাপলাপাতা Bluespotted maskray Neotrygon caeruleopunctata



DW: Birth = 17, Adult of = 31, Adult of = ?, MW = 47



Dark underside of tail with bands near tip

White underside with dark band along edges



Markings around eye

Small thorns along midline from shoulders to above cloaca

Small and mediumsized blue spots on disc with only a few or none on shoulders





DW: Birth = ?, Adult o = ?, Adult o = ?, MW = 30



White underside with dark fin edges

Greyish-blue tail with black and white bands at tip Ma ey

Markings around eyes like a mask

> Row of thorns along mid-line of back but not on tail

Very few bluish spots placed far apart

চ্যাপ্টালেজী নীলফোঁটা শাপলাপাতা Bluespotted lagoon ray (Bluespotted fantail ray) Taeniura lymma

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DW: Birth = 13-14, Adult σ = 20, Adult φ = ?, MW = 35









IDENTIFICATION OF LOOK-ALIKE RAYS

খাঁজহীন চোখামুখ ফাইস্যি **Bengal whipray** Brevitrygon imbricata খাঁজযুক্ত চোখামুখ ফাইস্যি **Scaly whipray** Brevitrygon walga কালোদাগী ঘুড়ি শাপলাপাতা **Jenkins' whipray** Pateobatis jenkinsii ঘুড়ি শাপলাপাতা **Bennett's stingray** Hemitrygon bennetti



1-3 spines and a row of thorns varying in size on tail

No groove on upper side but groove on underside side of tail



Thorns along midline end before tail spine



IDENTIFICATION OF LOOK-ALIKE RAYS





লম্বাশিংওয়ালা শিংচোয়াইন সাদাপেট শিংচোয়াইন Spinetail devilray Mobula mobular Longhorned pygmy devilray Mobula eregoodoo ছোটপাখ শিংচোয়াইন Underside of first Bright white Kuhl's devilray Mobula kuhlii underside side fins with dark triangular blotch at mid-point Spine on tail Silvery grey on underside of first side fin tips

IDENTIFICATION OF LOOK-ALIKE RAYS





IDENTIFYING COMMONLY TRADED BODY PARTS FROM PROTECTED SHARK AND RAY SPECIES



Cartilagionous blocks in first top fin base

Key features of fins are the same for sharks and rays.

Shark and ray fins are among the most expensive seafood products in the world. The soft needle-thin keratin fibers extracted from dried fins of sharks, sawfish, guitarfish, and wedgefish are considered a luxury food in China.

The global fin trade poses one of the most serious threats to shark and ray populations worldwide.

The first top, paired first side fins and the bottom tail fin are the most valued fins.

Fins that have been cut off from mature specimens of protected species can be identifyed following a few simple steps.







Upper side (top) and underside (bottom) of **side fins** differ in color.



Right and left sides of **tail fins** have the same color and no free tip.



Broad and erect with steep angled leading edge

(See full species description on page 22-23)





Top fin



Tall and upright with broadly pointed tip, short free rear tip, no markings on dark grey to black fin (See full species description on page 24)



White edge on free rear tip



Uniform white underside with no markings



White edge on free rear tip



Dark along edges and at the tip on underside



(See full species description on page 26-27)



(See full species description on page 38)









WHALE SHARK AND SAWFISHES







Side fins of Bowmouth guitarfish are also traded.



The fins of wedgefishes and guitarfishes are smooth to the touch, while those of giant guitarfishes have a rough texture.

The lower tail fin in guitarfishes and giant guitarfishes is not distinct.



In wedgefishes, the bottom tail fin is usually less than half the length of the upper tail fin with no distinct notch visible on the back edge.

(See full species description on page 54-58)
MOBULID RAY GILL PLATES



© Guy Stevens









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Manta and devil rays (mobulids) are filter feeders that strain small fish and plankton from the water. They have five pairs of gill slits with feathery gills known as gill plates. The size, shape and colour pattern of the gill plates can be used to determine the species.



Gill plate of mobulid ray

Gill plates of bony fish

They have five pairs of gill slits with feathery gills known as gill plates. The size, shape and colour pattern of the gill plates can be used to determine the species.



Small gill plates are light and dark. Large gill plates are completely brown or black.

Mobulids are strictly protected in Bangladesh under the Wildlife Act Schedule I. Trade in gill plates is therefore prohibited. **SKINS**

Dried shark and ray skins are processed into leather. Known as shagreen it is highly valued for luxury items.

Most skins feel rough like sandpaper due to tiny teeth-like scales called denticles. Shark and ray skin does not burn or scratch easily.



Skins from protected rays can be identified by the number and arrangement of pearls, thorns, and enlarged denticles.

The skins of small whiprays, as well as those from mobulid, butterfly, cownose, and eagle rays, are not separated from the meat.





Small whiprays sold whole



Small butterfly rays sold whole



Manta ray skin is not removed from flesh

SKINS

Guitarfishes and Wedgefishes



Sharpnose Guitarfish Glaucostegus granulatus



Guitarfish skins drying in the sun

Most species have a very rough skin with big denticles and blunt thorns of different sizes in lines across the shoulders or along the back.

All guitafishes and wedgefishes are protected by law. It is illegal to process or trade their skins.

Spots on their skin remain visible even when the skin is dried.

SKINS

Protected whiprays and stingrays





MEAT

Shark and ray meat has no hard bones.



Guitarfish and wedgefish meat is often cut into strips for drying.



Small guitarfishes, wedgefishes, and butterfly rays are dried and sold whole.



When dried ray meat generally turns darker.

OTHER SHARK AND RAY PRODUCTS IN TRADE

Liver oil

Sharks and rays have large oily livers to keep them afloat. Their liver oil is used in skincare products, animal feed, and for deriving squalene used as a boosting agent in vaccines.

Cartilage

Dried cartilage of sharks and rays is believed to have healing properties. The shape of the cartilage pieces can sometimes be used to determine the species it came from.

Teeth and jaws

Jaws, teeth, and rostra are used in various regions of the world as decorative objects.





Shark livers



Cartilage of guitarfish



Shark jaws

SAFE RELEASE PROCEDURES

The killing of sharks, rays and other marine wildlife listed under the Bangladesh Wildlife (Conservation and Security) Act, 2012 is a punishable offence. They must be released at sea. Many shark and most ray species, in particular females, have a good chance of survival if handled properly.

Follow these simple guidelines to minimize injuries and stress to yourself and the animal.



Release sharks and rays in the water, whenever possible.



Remove all netting, hooks or lines before releasing them. Cut the line as close to the hook as possible if you cannot remove the hook.



Keep the animal out of the sun.



Do not cut any part of the animal. They will die without the snout, fins, or tail.

SAFE RELEASE PROCEDURES







Large animals should be moved by several persons. Use a large cloth or net if necessary.





Lower the animal back into the water snout first with the head pointing straight down.

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Sharks and rays are unique fish that maintain the natural balance in our ocean, coastal waters, and rivers. Most of these soft-boned fish take a very long time to grow and have only few young. There are naturally fewer of sharks and rays compared to other fish.

Sharks and rays are among the most endangered animals in the world because too many are being killed.

This guide empowers you to identify the sharks and rays that are protected in Bangladesh so that you can safely release them at sea.



The Bangladesh Forest Department conserves forest, wildlife, environment and biodiversity through innovation and active participation of people.



The Sustainable Forests & Livelihoods (SUFAL) project implemented by the Bangladesh Forest Department under the Ministry of Environment, Forest and Climate Change with financial assistance from the World Bank aims to improve collaborative forest management and increase access to alternative income generating activities for forest-dependent communities in targeted sites.



The Wildlife Conservation Society saves wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature. Since 2004, we collaborate with government and community partners in Bangladesh to develop practical solutions for saving among the world's most threatened marine wildlife for a healthy ocean and healthy people.