

Cownose Ray

Rhinoptera bonasus

Relatives: Cownose rays are distantly related to sharks and skates. They belong to the Family Myliobatidae which includes bat rays, manta rays and eagle rays.



Appearance: Cownose rays get their name from their unique forehead which resembles the nose of a cow. They are brown to olive-colored on top with no spots, and pale below. Cownose rays have long, pointed pectoral fins, and a long whip-like tail with one or two venomous barbs which they use in defense. The barbs are made of modified scales, or “dermal denticles”. These barbs have toxins and mucus in their grooves, produced by glands located on the underside of the spine.

The mouth of a cownose ray, like all rays, is conveniently located on the underneath side of its body. This allows the ray easy access to bottom-dwelling prey. They have a row of five gill slits that are located on the underneath side. They also have additional openings, called spiracles, on the top just behind their eyes. These help the rays breathe more easily while resting on the bottom. Instead of sucking sandy water in through their gills, they can pull clear water in through the spiracles and then force it out through the gills.

Size:

- **Males:** 2½ feet across
- **Females:** 2-3 feet across
- Tail is about twice as long as the body.

Range: Cownose rays can be found in the Western Atlantic from the Northern U.S. south to Brazil, including the Gulf of Mexico.



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Habitat: Cownose rays are considered an open ocean (pelagic) species, but can inhabit inshore, shallow bays and estuaries. They prefer warm temperate and tropical waters to depths of 72 feet. Many gather in Chesapeake Bay during the summer months.

Feeding: Like other rays, their mouth is located on the underneath side. Cownose rays feed on bottom-dwelling shellfish, lobster, crabs, and fish. To locate their prey, these rays have electroreceptors on their snout as well excellent senses of smell and touch. They will also stir up the bottom with their flexible wing tips or use their nose to root around in the mud or sand. Once they find their prey, they flap their wings rapidly to move the sand aside. At the same time, they suck water and sand into their mouth and blow it out through their gills to create a depression in the sand that allows easier access to their food. They have very strong teeth arranged in flat plates that are perfect for crunching hard-shelled prey. These rays spit out the shells of the animals they eat, and only swallow the soft body parts.

Breeding: The size of cownose rays at sexual maturity varies widely among the population. Scientists disagree on the exact age of maturity, but it is thought to be between 4 and 8 years of age. The breeding season is June-October.

Cownose rays are ovoviviparous. Their gestation period has not been confirmed. They may have one long gestation period of 11-12 months or two separate 5-6 month gestation periods in one year; the evidence is inconclusive. They usually give birth to just one pup that is 9-15 inches across.

Behavior: These rays school and migrate in large groups, sometimes up to thousands of individuals. They are strong swimmers and can migrate long distances. Scientists believe that the migrations may be triggered by seasonal changes in water temperature and sun orientation.

Cownose rays have been seen jumping clear out of the water and landing on their belly, making a loud smacking sound. They don't rest on the bottom as much as other types of stingrays.

Predators: Predators include cobia and a variety of sharks (sandbar, bull, and hammerhead). Many sharks have been found with barbs from cownose rays embedded in their head and jaws.

Lifespan: Thought to be between 13 and 18 years.

Conservation: Cownose rays are currently listed globally as **Near Threatened** by the IUCN, meaning that they do "not qualify for Critically Endangered, Endangered or Vulnerable now, but are close to qualifying for, or are likely to qualify for, a threatened category in the near future without ongoing conservation measures". In the U.S. they are listed as **Least Concern**, meaning that "they have been evaluated against the criteria and do not qualify for Critically Endangered, Endangered, Vulnerable or Near

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Threatened” in this part of their range. No population size estimates exist, but they are thought to be increasing in numbers in U.S. waters.

The late maturity and low reproductive rate of cownose rays makes them susceptible to over-fishing. Cownose rays are taken as by-catch in a number of fisheries in the U.S., but this is not considered a significant threat to their population at this time. They are under heavy fishing pressure in Central and South America. They are also caught as by-catch in a number of fisheries there, but data regarding this is unavailable as elasmobranch fisheries in this region are unmanaged.

Currently there is no commercial fishery for cownose rays in the Northern Atlantic, but it has been considered due to high predation by the rays of commercial oyster beds. Cownose rays are considered a “pest” species by members of the shellfish industry because the rays’ feeding behavior is thought to damage commercial shellfish beds. There are many problems associated with a cownose ray fishery, including a potential decline in the population and a harvesting process that is both difficult and expensive.

Other: Beach-goers sometimes mistake these rays for sharks. When the rays are swimming near the surface, the tips of their wings sometimes stick out of the water, resembling a shark’s dorsal fin.