

SAVING THE MOBULA RAYS

Working together to reduce Mobula bycatch in tuna fisheries

Mobula rays are also called "manta rays," "Mobulid rays," and "devil rays." This project focuses on the five species of Mobula rays listed below.

Giant Oceanic Manta Ray *Mobula birostris*

- Broad head with long cephalic lobes (the protruding "horns")
- Front-facing mouth (as opposed to a downward-facing or ventral mouth)
- Small bump at the base of the tail
- The white shoulder markings on the dorsal (back) side form two mirror-shaped right-angled triangles, creating a black 'T'

Total Width:
Maximum: 700cm
Average: 400-500cm
Weight: up to 2000kg

Spinetail Devil Ray *Mobula mobular*

- White stomach
- Front-facing mouth
- Dorsal (back) side is dark blue to black
- White patches on the tips of the cephalic lobes
- Gill openings are white
- Spine at the base of the tail
- White-tipped dorsal fin

Sicklefink Devil Ray *Mobula tarapacana*

- Olive-colored body
- No white shadow above the eye
- White stomach
- Dorsal (back) side is gray with a zigzag stripe

Total Width:
Maximum: 320cm
Average: 180-280cm
Weight: up to 300kg

Bentfin Devil Ray *Mobula thurstoni*

- Stomach mostly white, with dark shadows on the edge of the front
- Blue to black color on dorsal (back) side

Total Width:
Maximum: 340cm
Average: 200-270cm
Weight: up to 400kg

Pygmy Devil Ray *Mobula munkiana*

- Black shading on dorsal (back) side behind the head
- Small cephalic lobes in front are rounded
- Gray color on dorsal (back) side

Total Width:
Maximum: 110-130cm
Average: 88-102cm
Weight: up to 25kg



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WHY SHOULD WE PROTECT MOBULAS?

	Yellowfin Tuna	Dolphin	Mobula
Number of pups/offspring each year	Up to 8 million	1	1-2
Duration of incubation/pregnancy	1-3 days	12 months	12 months
Maturity age	2-3 years	8 years	3 years
Life expectancy	Up to 7 years	Up to 40 years	Up to 40 years

WHERE ARE THEY?

- FADs
- Dolphin
- Free School

BEST PRACTICES TO SAFELY RELEASE MOBULA RAYS

NOT ACCEPTABLE

Do not grab by the cephalic lobes (protruding "horns").

Do not use hooks or grapples to move or lift it.

Do not punch a hole in the body to pass a cable or wire through.

ACCEPTABLE

Release it as quickly as possible.

Use a stretcher or cargo net to remove it from the deck.

Use a brailer net to remove large individuals.

WHAT DO WE NEED TO KNOW TO REDUCE THE IMPACT OF THE FISHERY?

In the Eastern Pacific Ocean, about one in every six purse seine sets contain a Mobula ray, and many of these animals die. But with good practices, we can considerably reduce the chances of incidental mortality for Mobula rays.

To find solutions, researchers are conducting two studies:

- 1) An investigation of the genetic structure of Mobula populations, and
- 2) An investigation of the likelihood of mortality after a Mobula ray is released.

These two studies will reveal crucial information to guide conservation efforts and protect these iconic species. This work is led by researchers at UC Santa Cruz, Mobula Conservation Project, The Manta Trust, Monterey Bay Aquarium, and CIAT, and is supported by the International Seafood Sustainability Foundation, the Save Our Seas Foundation, and TUNA CONS.

**WE APPRECIATE YOUR IDEAS TO IMPROVE THE RELEASE AND PROTECTION OF MOBULAS
TOGETHER WE CAN SAVE THE MOBULA RAYS!**

