

# MPA fails to protect sharks and rays

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New research led by researchers at the University of Victoria raises serious concerns about the ability of marine protected areas (MPAs) to effectively protect wide-ranging iconic species, such as sharks and rays.

The study, published today in *Conservation Biology*, investigated 21 years of recordings of shark and ray sightings at Cocos Island, a UNESCO heritage site and [marine protected area](#) off Costa Rica.

Cocos is surrounded by an extensive system of coral reefs and seamounts and lies at the confluence of several major oceanic currents, leading to exceptional biodiversity. It is renowned among scuba divers as one of the best places in the world to view sharks and rays in large numbers.

But is Cocos a conservation success story or merely a "paper park" where conservation goals are not managed or enforced? To find out, the UVic team and University of Northern Iowa biologist Mark Myers crunched numbers from more than 1.4 million shark and ray sightings made during dives led by Undersea Hunter, a local dive company. "In a region lacking fisheries data or dedicated research surveys, the dive logs give us a window to see how sharks and rays have changed over two decades in this isolated, globally unique reserve," says Myers.

Results reveal major declines in eight of the reserve's 12 commonly observed shark and ray species. "The largest species, like hammerheads and [manta rays](#), are simply moving in and out of protected areas as part of their natural migration patterns," says Easton White, a co-author of the study and a UVic Fulbright student at the time.

The team also found that other species like the whitetip reef shark and eagle ray, which tend to stay within protected waters, are also declining. "These [species](#) are likely suffering because of insufficient enforcement of the protected area," says UVic biologist and co-author Julia Baum.

"Sharks and rays are paying the price for illegal fishing inside the reserve and rampant overfishing outside the reserve, both of which are ongoing across the eastern tropical Pacific," she says.

**More information:** "Shifting elasmobranch community assemblage at Cocos Island—an isolated marine protected area." *Conservation Biology*. doi: 10.1111/cobi.12478

Provided by University of Victoria

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