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# **NEW STUDY REPORTS THRIVING REEF MANTA RAY POPULATIONS IN INDONESIAN WATERS**

**December 5, 2022** 

### **Researchers estimate that the number of manta** rays living in the Raja Ampat archipelago has increased over the past decade

Raja Ampat, Indonesia (December 5, 2022) – Despite a continuing decline of their populations around the planet, the charismatic but threatened reef manta ray is now thriving in the waters of Raja Ampat, according to research published in *Frontiers of Marine Science* and released by Konservasi Indonesia, in-country implementing partner of Conservation International. Scientists estimate that, since the inception of population monitoring of the Reef Manta Ray (Mobula alfredi) in Raja Ampat 11 years ago, the species has rebounded and its population continues to grow following a series of conservation measures implemented by and in partnership with the Indonesian government.

"The Ministry of Maritime Affairs and Fisheries is compiling a management plan to accommodate strategy to protect and preserve Raja Ampat. This is a commitment of the Government of Indonesia to conserve this important area," reveals the Director General of Marine Spatial Management of Indonesia Ministry of Maritime Affairs and Fishery, Irjen. Pol. Drs. Victor Gustaf Manoppo, M.H. during the making of the film World's First Confirmed Reef Manta Ray Nursery.

The study suggests the thriving manta population is a result of a suite of strong conservation measures enacted over the past 15 years, including the implementation of a large-scale and effectively managed network of Marine Protected Areas (MPAs) and the designation of Raja Ampat as SE Asia's first shark and ray sanctuary, as well as national level protection of manta rays and a series of manta ray tourism management regulations put into place in Raja Ampat.

The Raja Ampat archipelago, found off the coast of Indonesia's West Papua, boasts a network of 9 different MPAs covering over 1.9 million hectares of tropical ocean, and is part of the larger Bird's Head Seascape. For this study, led by Edy Setyawan from the University of Auckland's Institute of Marine Science in partnership with the Raja Ampat MPA Management Authority, Konservasi Indonesia, and Conservation International Aotearoa, the team measured ray populations using photo-ID and acoustic telemetry techniques in two of the largest of these MPAs: Dampier Strait and Misool Islands.

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The study found an increase from 210 to 511 individuals in the Misool Islands and from 226 to 317 individuals in the Dampier Strait during the 11 years of study. Per year, the population of Reef Manta Rays increased by an average of 3.9% in the Dampier Strait and by 10.7% in the Misool Islands. This increase in abundance is highly significant, as it bucks the worldwide trend of oceanic shark and ray populations declining over the past 50 years, due in large part to human activities, particularly fishing.

"This is certainly good news for the region's Reef Manta Rays, but it's also a big win for conservation and Raja Ampat's local communities," said Mark **Erdmann**, Vice President of Conservation International Asia-Pacific's Marine Programs and one of Setyawan's PhD supervisors. "The findings clearly demonstrate the positive impact of a comprehensive set of collaborative and long-term conservation measures on the survival of a globally threatened species. Importantly, the indigenous communities of Raja Ampat benefit as well, as reef manta rays are a key attraction for the marine ecotourism that is the primary economic driver in Raja Ampat."

"We're delighted by these findings, which confirm that the conservation actions we've taken in the Raja Ampat Islands Marine Protected Area network have been effective in recovering our reef manta ray population. This is a rare good news story from the ocean, and it strongly motivates us to continue our efforts to carefully manage the increasing manta ray tourism in our MPAs," said Syafri, Head of the Raja Ampat MPA Management Authority.

Despite being the second-largest type of ray in the world (behind only the Giant Oceanic Manta Ray), little is known about the population dynamics of Reef Manta Rays in the Raja Ampat region. But the study authors believe a new method employed in their research could prove useful for similar studies moving forward.

"Our modification of the standard POPAN model, a statistical technique used to estimate population sizes, represents an important advance in mark-recapture modelling that can be employed when examining other ray populations or other highly migratory species with a significant percentage of transient individuals," said Setyawan, the study's lead author. Setyawan is a doctoral candidate from the University of Auckland.

"Ultimately, we feel the study underlines the importance of long-term monitoring to evaluate the effectiveness of conservation management measures," Setyawan said. "As we continue to advocate for actions that protect biodiversity, case studies like this can serve as an example of well-managed MPAs that influence the long-term health and balance of the ocean."

This is the fourth in a series of studies published this year on the reef manta rays of the region, with Setyawan, Erdmann and fellow scientists publishing related findings in three previous studies:

• In May, via research published in Frontiers in Marine Science,

- Setyawan, Erdmann and fellow scientists revealed that Raja Ampat's Wayag Lagoon is the world's first confirmed reef manta ray nursery. With support from the Government of Indonesia, researchers discovered that the shallower waters of the lagoon provide vital foraging grounds and cleaning stations for young rays. It was found that juvenile rays spend a year or longer living in the lagoon before venturing out to sea.
- In February, via research published in Drones, Setyawan, Erdmann and fellow scientists pioneered the use of drones to measure the size of reef manta rays in five locations, identifying a total of 86 individual rays. Collecting accurate measurements of size is critical for tracking conservation successes across the species as it can help identify age, maturity status and overall population demographics.
- In January, via **research published in Marine Policy**, Setyawan, Erdmann and fellow conservationists described in detail the holistic approach to manta ray conservation in Raja Ampat and the Bird's Head Seascape over the past two decades and documented both lessons learned from this conservation success story and ongoing challenges now being addressed to ensure that Raja Ampat's reef manta rays continue to thrive.

The research was further supported by managers and scientists from the National MPA Center in Kupang, the Raja Ampat MPA Management Authority and Konservasi Indonesia.

Read more on Conservation International and it's in-country implementing partner Konservasi Indonesia's work in the Raja Ampat region's **Bird's Head** Seascape here.

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About Conservation International: Conservation International protects nature for the benefit of humanity. Through science, policy, fieldwork and finance, we spotlight and secure the most important places in nature for the climate, for biodiversity and for people. With offices in 30 countries and projects in more than 100 countries, Conservation International partners with governments, companies, civil society, Indigenous peoples and local communities to help people and nature thrive together. Go to **Conservation.org** for more, and follow our work on **Conservation** News, Facebook, Twitter, TikTok, Instagram and YouTube.

About Konservasi Indonesia: Konservasi Indonesia is a national foundation that aims to support the sustainable development and protection of critical ecosystems in Indonesia. We believe in the importance of multi-stakeholder partnerships across sectors and jurisdictions. Working in partnership with the government and others, we design and delivery innovative nature-based solutions to climate change using a sustainable landscapes-seascapes approach to create lasting impacts for people and nature.

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