

First successful wild whale shark health assessments performed

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Cenderawasih Bay whale shark. Credit: Georgia Aquarium

For the first time ever, scientists successfully performed health assessments, including collecting blood and biological samples, taking measurements and attaching satellite tracking tags, to a population of wild whale sharks - the world's largest fish, classified as "endangered" since 2016. The research advancement, which occurred in Indonesia's remote Cendrawasih Bay, has significant implications for unlocking the

mysteries surrounding the overall health of whale sharks—including the potential impacts of tourism on their health. These details can better inform future conservation policies to protect and encourage their population recovery.

"The data and [biological samples](#) we collected provide an invaluable snapshot into the lives and activities of a species we know relatively little about," said Alistair Dove, PhD, vice president of research and [conservation](#) at Georgia Aquarium. "As we begin decoding what we've collected from wild [whale sharks](#), we become better positioned to protect them and educate the public about their importance."

Scientists wasted no time cataloguing the information and testing the samples, setting up a field laboratory on their research vessel. This testing continued at a laboratory at the State University of Papua (UNIPA) in Manokwari, the capital of Indonesia's West Papua Province. While at the school, researchers also presented to students and faculty about the results of the expedition and the techniques used to collect the samples.

This expedition is the result of an international collaboration between [Georgia Aquarium](#), [Conservation International \(CI\)](#) and the Indonesian government that brings together critical skillsets from each of the partners. Georgia Aquarium experts, who care for whale sharks daily, brought to the expedition critical knowledge and proven techniques ensuring the welfare of the wild whale sharks while teams collected the biological samples. This was complimented by Conservation International's experience with local whale shark populations and strong relationships with the Indonesian government and local coastal communities, without which this expedition would not have been possible. Finally, the Indonesian Ministry of Marine Affairs and Fisheries (MMAF) and the Cendrawasih Bay National Park Authority hosted and permitted the expedition and will be integrating the findings

into their local and national policies on whale shark conservation and tourism management.

Dr. Selvy Tebay, S.Pi., M.Si., Vice Rector IV of University of Papua (UNIPA) shared, "The involvement of UNIPA's scientists allows for an expansion of expertise within the West Papua Province. Local scientists studying whale shark migratory behaviors shared their knowledge with Conservation International and Georgia Aquarium, and have in turn received a more complete worldview of whale shark migratory patterns—an important aspect of conserving a wide-ranging species. This will lead to practical and tangible conservation benefits for the species as well as wider marine tourism management within West Papua, which is a priority for the Indonesian Government."

The migratory species is constantly on the move, making it extremely difficult to perform health assessments or collect biological samples on free-swimming whale sharks. As luck would have it, the perfect opportunity came in the form of a unique interaction between fishers and whale sharks that occurs in Cendrawasih Bay.

Indonesian fishers in the area target schools of baitfish by suspending large nets beneath specialized bagan floating platforms and using bright lights at night to attract the baitfish above the nets - which are quickly lifted in order to catch the entire school at once. This "free" meal is too good to pass up for whale sharks, which can be seen feeding on the baitfish around the bagans all year round. In the process, these animals can accidentally trap themselves in the nets. Fishers, who see whale sharks as a sign of good fortune, release them after clearing the nets of their catch.

In 2012, CI scientists repeatedly observed this peculiar situation, and in 2015 opportunistically deployed the world's first fin-mounted archival satellite tags on wild whale sharks prior to their release—resulting in a

wealth of movement data which has since helped to inform the management and conservation of the species in Indonesia.

"The unique situation in Cendrawasih Bay provides researchers unprecedented access to these massive animals. These health assessments are designed to provide important insights on whether whale shark ecotourism and research activities are having a significant impact on the sharks' welfare. This is critically important for us to understand, both to inform our tagging and research activities and especially for the Indonesian government to be able to sustainably manage whale shark ecotourism in a manner that benefits local coastal communities without negatively affecting the whale [sharks](#)." said Mark Erdmann, vice president of Asia-Pacific marine programs at Conservation International.

Ben G. Saroy, Head of Cendrawasih Bay National Park Authority, agreed, "Cendrawasih Bay, home to the biggest whale shark population in Indonesia, requires comprehensive information to manage this endangered species. The data gathered from this research will complement existing information and be used to strengthen conservation and tourism management policies within the bay—which will ultimately bring benefits to the indigenous communities."

Andi Rusandi, Director of Marine Conservation and Biodiversity at MMAF, shared the importance of this study, "As we strive to develop whale shark ecotourism in Indonesia to benefit our local communities and these majestic animals themselves, it is important to highlight conservation. We have already published the Whale Shark Tourism Handbook as a guide, and the results of this study will further enrich our knowledge on the species. We greatly appreciate this support from our partners, and look forward to understanding these results and their recommendations in greater detail."

Over the course of the expedition, the team was able to successfully

deploy seven additional fin-mounted satellite tags, each of which are expected to transmit valuable data on the shark's movements and diving behavior for up to two years.

Provided by Georgia Aquarium

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