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## PRESS RELEASE

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### **Northern Galápagos Islands Home to World's Largest Shark Biomass**

Ecuador Designated Area a Marine Sanctuary in March 2016 -  
Ensures Protection of Hammerheads, Reef Sharks and Other Top Predators

In a study published today in the journal PeerJ, scientists from the Charles Darwin Research Station (CDRS) and the National Geographic Society revealed that the northern Galápagos islands of Darwin and Wolf are home to the largest shark biomass reported to date (12.4 tons per hectare).

Worldwide, overfishing has reduced the biomass of most sharks and other large predatory fishes by more than 90 percent — even in remote areas. The findings detailed by CDRS and National Geographic Society researchers in PeerJ are significant because the presence of these top predators indicates a healthy marine ecosystem. Moreover, the data amassed over two years of rigorous research will add to a growing body of literature about the role of top predators in marine ecosystems.

“The islands of Darwin and Wolf are jewels in the crown of the Galápagos because of the sheer abundance of sharks and other top predators,” said Pelayo Salinas de León, the paper’s lead author and senior marine ecologist at CDRS.

Despite the large shark biomass, the abundance of reef fishes in this area has been severely reduced because of excessive fishing. The area was not fully protected from fishing until the Ecuadorian government announced the creation of a marine sanctuary around Darwin and Wolf in March 2016. Given how important the Galápagos are to Ecuador’s tourism industry and to the well-being of these top predators, the paper’s authors urge strong enforcement of the new marine sanctuary.

“Charles Darwin made the Galápagos Islands famous, but for the underwater world to be so full of life is something he probably never imagined,” said Enric Sala, National Geographic Society Explorer-in-Residence and leader of the Society’s [Pristine Seas project](#).

The National Geographic Society conducted a Pristine Seas expedition in the Galápagos Marine Reserve in December 2015. Led by Sala, the Pristine Seas team of international scientists and filmmakers, in collaboration with the Galápagos National Park and CDRS, surveyed and documented the waters around the islands, with a focus on the deep and offshore environments. The expedition, made possible in part by a grant from The Leona M. and Harry B. Helmsley Charitable Trust, helped inform the government's decision to create the new sanctuary around Darwin and Wolf.

The shark biomass research team collected data using stereo-video surveys at seven sites in collaboration with the Galápagos National Park Directorate. The quantitative surveys recorded at Darwin and Wolf are considerably larger than those reported at Costa Rica's Cocos Island National Park and the Chagos Marine Reserve in the Indian Ocean, home to the world's next largest shark biomasses.

According to the CDRS and National Geographic Society scientists: "The study published today adds to the growing body of literature highlighting the ecological uniqueness and the irreplaceable value of Darwin and Wolf — not only for Ecuador but for the world."

**Images:**

For more photos and video related to the National Geographic Society/Galápagos Shark Biomass announcement, visit: [http://bit.ly/pristine\\_seas\\_shark\\_paper](http://bit.ly/pristine_seas_shark_paper) or contact [pelayo.salinas@fcdarwin.org.ec](mailto:pelayo.salinas@fcdarwin.org.ec)



**Photo** by Neil Gelinas/National Geographic, from 'National Geographic Pristine Seas'

**Text:** A natural rock formation known as "Darwin's Arch" protrudes from the water southeast of Darwin Island. The waters around the small, remote islands of Darwin and Wolf contain the largest biomass of sharks on the planet.



**Photo** by Enric Sala/National Geographic, from ‘National Geographic Pristine Seas’

**Text:** A group of hammerhead sharks swims over the sandy seafloor populated with garden eels at Darwin Island. These sharks are known for their ability to make sudden and sharp turns as the unique wide-set placement of their eyes allows them a vertical 360-degree view, which is ideal for stalking their prey.

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## **About the Charles Darwin Foundation**

The Charles Darwin Foundation's mission is to provide knowledge and assistance through scientific research and complementary action to ensure the conservation of the environment and biodiversity in the Galápagos Archipelago. For more information, visit [www.darwinfoundation.org](http://www.darwinfoundation.org).

## **About the National Geographic Society**

The National Geographic Society is a global nonprofit organization driven by a passionate belief in the power of science, exploration, education and storytelling to change the world. The Society funds hundreds of research and conservation projects around the globe each year and works to inspire, illuminate and teach through scientific expeditions, award-winning journalism and education initiatives. The National Geographic Society's Pristine Seas project seeks to help protect the last wild places in the ocean. The project's partners include Blancpain and Davidoff Cool Water, among others. For more information, visit [www.nationalgeographic.org](http://www.nationalgeographic.org).

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**Abstract** (from the article)

Overfishing has dramatically depleted sharks and other large predatory fishes worldwide except for a few remote and/or well-protected areas. The islands of Darwin and Wolf in the far north of the Galapagos Marine Reserve (GMR) are known for their large shark abundance, making them a global scuba diving and conservation hotspot. Here we report quantitative estimates of fish abundance at Darwin and Wolf over two consecutive years using stereo-video surveys, which reveal the largest reef fish biomass ever reported ( $17.5 \text{ t ha}^{-1}$  on average), consisting largely of sharks. Despite this, the abundance of reef fishes around the GMR, such as groupers, has been severely reduced because of unsustainable fishing practices. Although Darwin and Wolf are within the GMR, they were not fully protected from fishing until March 2016. Given the ecological value and the economic importance of Darwin and Wolf for the dive tourism industry, the current protection should ensure the long-term conservation of this hotspot of unique global value.