

# A remote island in the heart of the Tropical Eastern Pacific

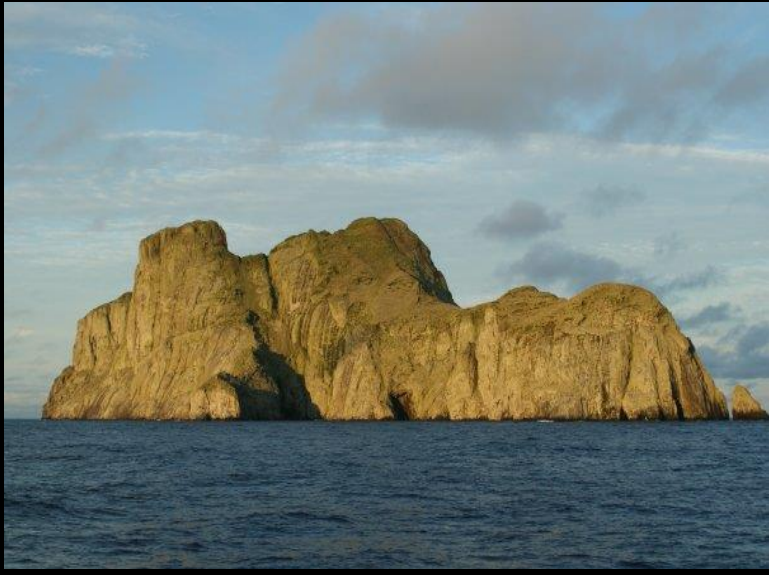


Figure 1: Malpelo Island.

Somewhere in one of the Earth's most isolated oceans, is hidden the island of Malpelo (Fig. 1). With its name deriving from the Latin word "Malveolus", which literally translates as inhospitable, this volcanic rock fortress emerged from the seabed 15.8 million years ago. Malpelo is located 390km off the coast of Colombia forming, together with the islands of Cocos (Costa Rica) and Galapagos (Ecuador), the biological corridor of the Eastern Tropical Pacific, and has been considered a World Natural Heritage since 2006 by UNESCO.

Currently, there are five endemic reef fish species reported on the island, of which *Lepidonectes bimaculatus* was recently described as a new cleaner species (Fig. 2). Another characteristic of Malpelo is the high concentration of large species such as tunas, groupers, moray eels, sharks and rays, searching for food (Fig. 3), mating and cleaning services (Fig. 4).



Figure 2: The cleaner fish *Lepidonectes bimaculatus* attending the grouper *Epinephelus labriformis*.



Figure 3: Feeding aggregation of large predators.



Figure 4: Sharks cleaning station.

These aggregations and the high endemism level observed highlight the ecological importance of Malpelo as a priority area for conservation both nationally and internationally, as a recently published study in *Environmental Biology* attests. By exploring the trophic and functional structure of reef fish on the island, this study provides detailed novel information about the reef fish assemblages of Malpelo, pointing out the relative importance of large carnivore species. The same study brings a comparison of the fish biomass and trophic structure of well-preserved oceanic islands, placing Malpelo definitely among them as one of the last pristine regions in the world's oceans (Fig. 5).

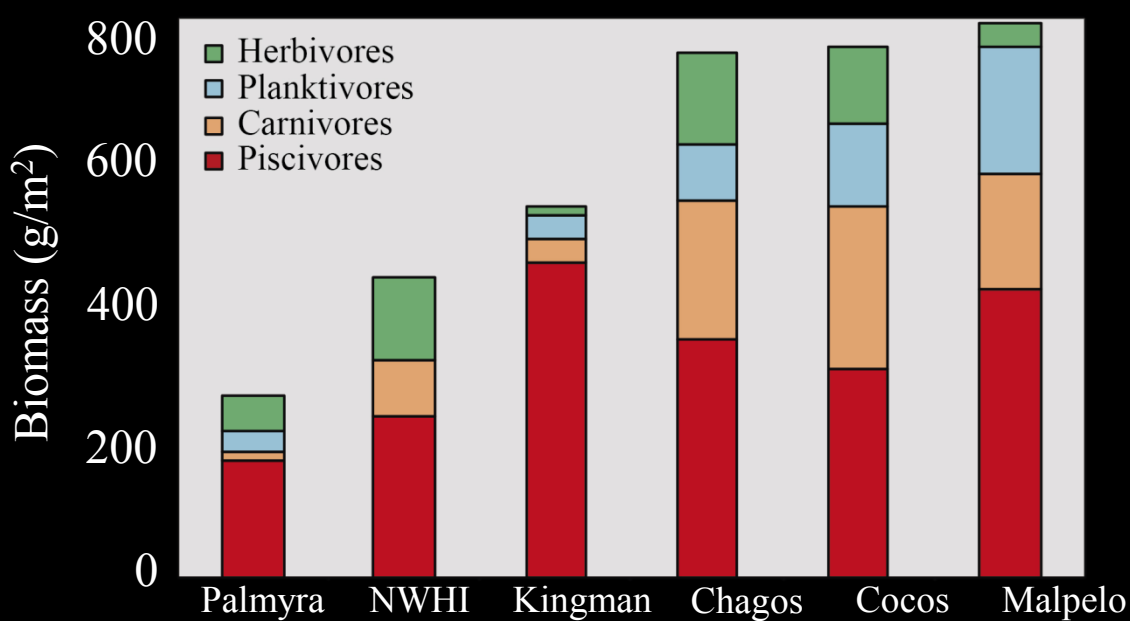


Figure 5: Comparison of reef fish biomass (excluding sharks and rays) of the world's most pristine islands.

- QUIMBAYO J. P., Zapata F. A., Floeter S. R., Bessudo S., Sazima I. (2010) First record of cleaning by a triplefin blenny in the Tropical Pacific. *Coral Reefs*, 29:909
- QUIMBAYO J. P., Zapata F. A., Floeter S. R., Bessudo S., Sazima I. (2014) Reef fish foraging associations at Malpelo Island, Colombia (Tropical Eastern Pacific). *Boletín de Investigaciones Marinas y Costeras*, 43: 183–193.
- QUIMBAYO J.P., Dias M.S., Schlickmann O.R.C., Mendes T.C. (2016) Fish cleaning interactions on a remote island in the Tropical Eastern Pacific. *Marine Biodiversity*. DOI 10.1007/s12526-016-0493-2
- QUIMBAYO J.P., Mendes T.C. Kulbicki M., Floeter S.R., Zapata F.A. (2016) Unusual reef fish biomass and functional richness at Malpelo, a remote island in the Tropical Eastern Pacific. *Environmental Biology of Fishes*. In press

## Acknowledgements



United Nations  
Educational, Scientific and  
Cultural Organization