

THE CASE FOR

# Conservation of the Salas y Gómez and Nazca Ridges



***In the Southeast Pacific Ocean, hundreds of miles from the shores of Chile and Peru, a vast underwater mountain range rises from the seafloor, creating oases of life found nowhere else on Earth. Pods of whales and turtles swim by in water so clear that the world's deepest light-dependent coral reefs can flourish. And the only sign of human life are shipwrecks from a bygone age of exploration. But today new threats are emerging, and this pristine natural wonder will not stay that way if we do not take action to protect it now.***

The Salas y Gómez and Nazca ridges lie at the very edge of the Polynesian Triangle and are bordered

to the west by Rapa Nui, the most remote inhabited island on Earth. They are recognized as Ecologically or Biologically Significant Marine Areas (EBSA) and prioritized for protection and conservation by the United Nations Convention on Biological Diversity (CBD), the Global Census of Marine Life on Seamounts, and the Global Ocean Biodiversity Initiative.

In recognition of their importance, Chile and Peru have already protected the portions of the ridges within their national jurisdiction. However, 73% of these ridges are in areas beyond national jurisdiction, or the High Seas, where they are unprotected and under threat from overfishing, plastic pollution, climate change, and potential deep-sea mining.

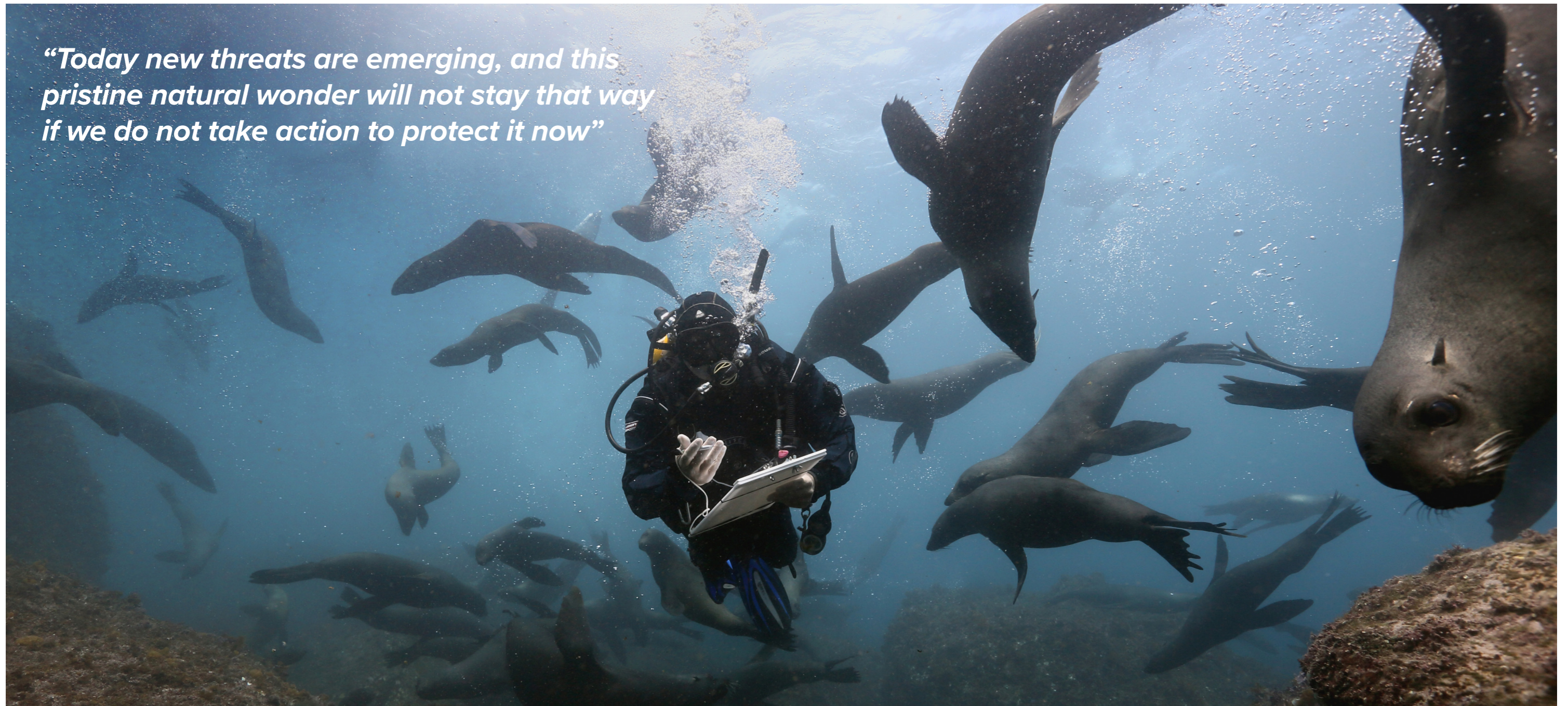
## **A Natural Wonder**

The Salas y Gómez and Nazca ridges consist of two underwater mountain chains that stretch for 2,900 kilometers across the Southeast Pacific Ocean. They are an irreplaceable part of our world, with uniquely high levels of production, that needs to be protected and conserved.

The Salas y Gómez and Nazca ridges are an internationally recognized global biodiversity hotspot that connects people and marine wildlife from across this vast ocean and through generations. In 2014, this region was named as an EBSA by the Conference

of the Parties to the CBD. It has also been identified as an important area by the Global Ocean Biodiversity Initiative and the Census of Marine Life on Seamounts, while Mission Blue identified the ridges as a "Hope Spot" critical to the health of the ocean. The eastern edge of the ridges touches the Desventuradas Islands, around which Chile created one of the largest "no take" marine parks in the Americas in 2016 due to its unique biodiversity. More recently, in 2022, the ridges were recognized as a candidate for Important Marine Mammal Area (IMMA) status, as the Southeastern Pacific Whale Migratory Corridor.

***"Today new threats are emerging, and this pristine natural wonder will not stay that way if we do not take action to protect it now"***

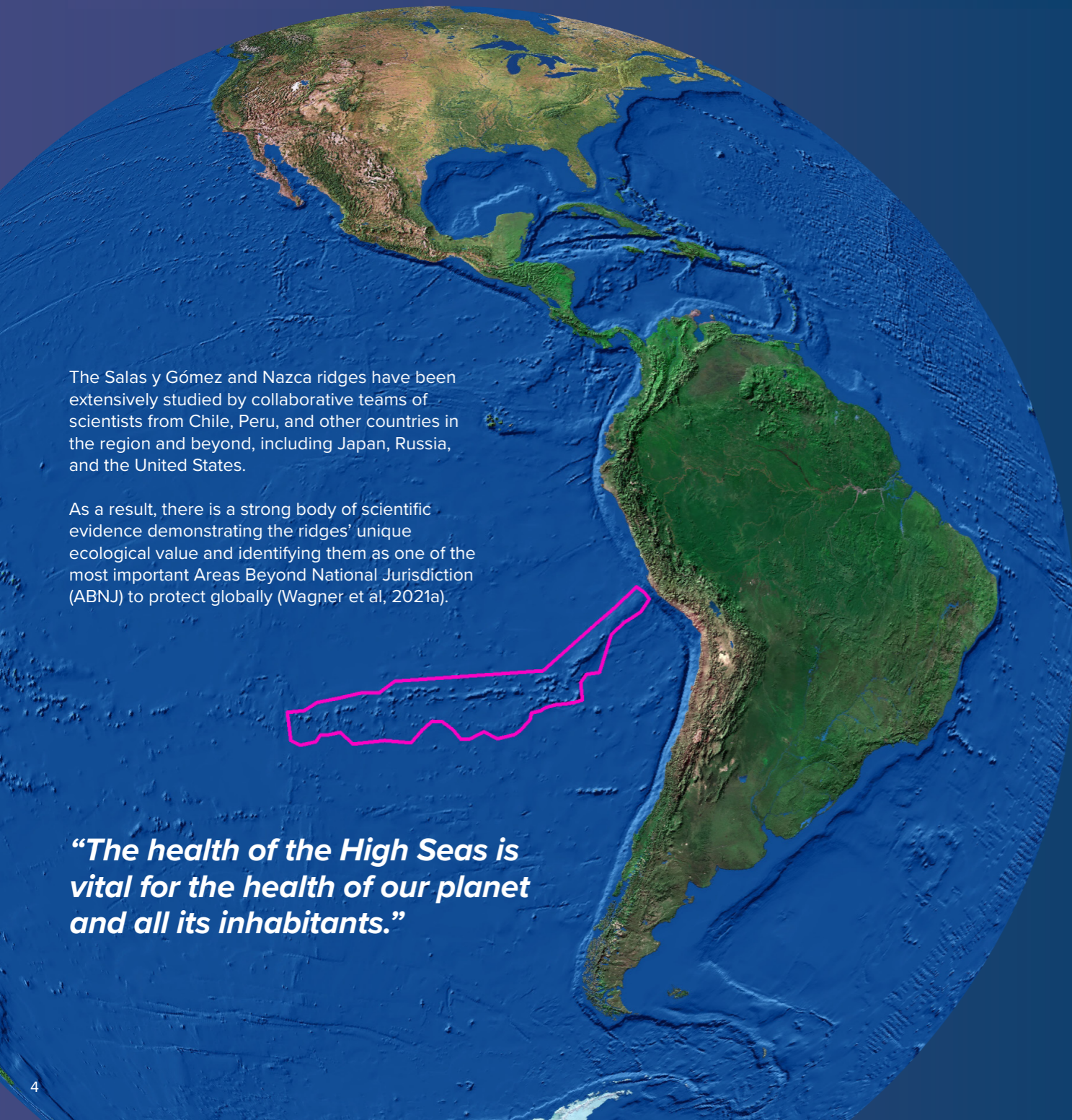


Fur seals. © Manu San Félix

## The High Seas – Our Shared Ocean Heritage

Areas Beyond National Jurisdiction (ABNJ) – or the High Seas – cover over 60% of the global ocean and contain 90% of the available habitat on Earth. The interconnected, complex ecosystems of the High Seas play a vital role in sustaining life on our planet, providing essential resources that feed and employ hundreds of millions of people, and delivering ecosystem services that regulate our climate. The ocean is the world’s largest active carbon sink, sequestering 2.5 billion metric tons of carbon every year and absorbing a quarter of humanity’s CO<sub>2</sub> emissions, mostly in ABNJ (Friedlingstein et al, 2019).

But despite its critical importance, just 1.2% of the High Seas is currently protected, leaving the vast majority of the ocean vulnerable to unsustainable exploitation and facing mounting pressures from human activities. This is one of the Earth’s last great wilderness and humanity’s final unprotected commons. The health of the High Seas is vital for the health of our planet and all its inhabitants.



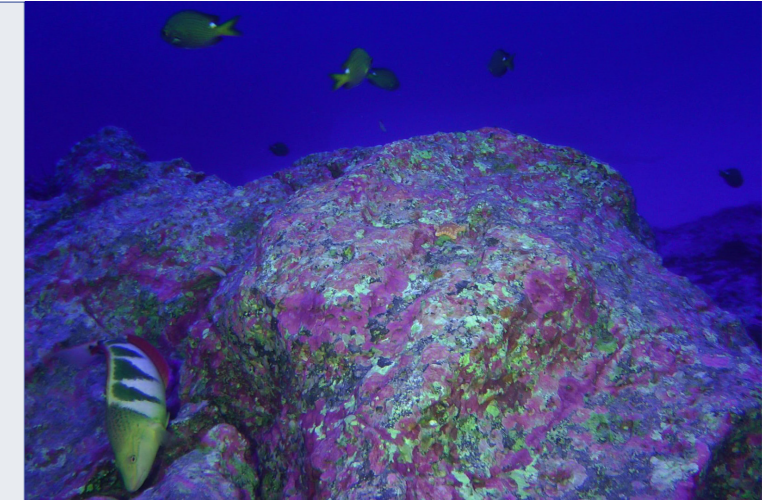
The Salas y Gómez and Nazca ridges have been extensively studied by collaborative teams of scientists from Chile, Peru, and other countries in the region and beyond, including Japan, Russia, and the United States.

As a result, there is a strong body of scientific evidence demonstrating the ridges’ unique ecological value and identifying them as one of the most important Areas Beyond National Jurisdiction (ABNJ) to protect globally (Wagner et al, 2021a).

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## Seamounts

Seamounts are undersea mountains formed by volcanic activity. Scientists recognize these structures as biological hotspots that support a dazzling richness of marine life. Their steep slopes shape ocean currents and carry nutrients upwards from the depths of the ocean toward the sunlit surface, providing food for myriad creatures from corals to crustaceans, fish, whales, and seabirds. The isolation of seamounts makes the creatures living on them especially vulnerable to human disturbances like fishing and mining.



Pukao Seamount summit at 155m. © Matthias Gorny/Oceana

Together, the two seamount chains that make up the Salas y Gómez and Nazca ridges contain over 110 seamounts, representing 54% of the seamounts in the entire Southeast Pacific (Gálvez-Larach, 2009) and hosting an exceptionally high diversity of unique and fragile organisms. They are part of a complex migration corridor for both protected and commercially important species, and coastal communities have profound cultural links to the surrounding waters.

Over 40% of the species in many taxonomic groups found on the ridges exist nowhere else on our planet. Surveys also indicate that the seamounts along the ridges have their

own unique biodiversity (Comité Oceanográfico Nacional de Chile, 2017), highlighting the need to protect the entire area rather than just a few representative seamounts (Georgian et al, 2021).

At least 93 threatened or endangered species are found in this region, including sharks and rays, birds, corals, marine mammals, bony fishes, marine turtles, and sea cucumbers. Recent studies provide evidence of numerous Vulnerable Marine Ecosystems (VMEs), including habitats suitable for deep-water corals and sponges, and new species are discovered each time seamounts are surveyed.



Salas y Gomez Island. © Enric Sala/NGS

### A Vital Migration Highway

The Salas y Gómez and Nazca Ridges are an important migration corridor for protected and critically endangered marine mammals, turtles (leatherback and green), sharks, and seabirds (albatross, petrels and the sacred Sooty Tern). Endangered blue whales and humpback whales pass through and over the ridges, using them as stepping-stones as they travel from cooler feeding grounds in the south to their warmer calving grounds near the Galapagos Islands. Other top predators that have been reported migrating through the Salas y Gómez and Nazca ridges include sperm whales, minke whales, bottlenose dolphins, leopard seals, southern elephant seals, and Galapagos sharks.



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Humpback whale, Nazca Ridge, Salas y Gomez Island. © Rodolphe Holler

### Spawning Ground for Jack Mackerel

Safeguarding important habitats in adjacent High Seas areas have been shown to have a positive effect on migratory fish stocks targeted by domestic fleets in neighboring national waters, meaning Chile and Peru’s national coastal fisheries and the communities who rely on them for their livelihoods and food stand to gain. This is particularly true for the Chilean jack mackerel, a vital fish stock that underpins the food security and wellbeing of millions of people, and which uses the unprotected High Seas areas of Salas y Gómez and Nazca ridges as a spawning and nursery ground essential for the survival of the species. (Arcos et al. 2001; Yañez et al. 2004, 2005; Nat Geo et al. 2013).



### Cultural Significance

The cultural heritage of the Salas y Gómez and Nazca ridges is equally rich and diverse. For centuries these waters were an important part of a voyaging highway linking Polynesian seafarers from the Western Pacific to Rapa Nui (Easter Island) at the western edge of the ridges, and beyond to the shores of South America.

The ridges are the eastern corner of the vast Polynesian Triangle and Salas y Gómez Island contains the most southeastern coral reef in the Pacific Ocean. Indigenous cultures first ventured to this remote ocean region a thousand years ago. The ABNJ region is uninhabited, but communities on the islands of Rapa Nui and Juan Fernández, and along the Peruvian and Chilean coasts, still have a profound cultural connection to these waters (Delgado et al, 2022). The people of Rapa Nui have been linked to the ridges through their *hakanononga* fishing sites on the productive offshore seamounts for centuries, and they have called for their protection on several occasions during the past decades.

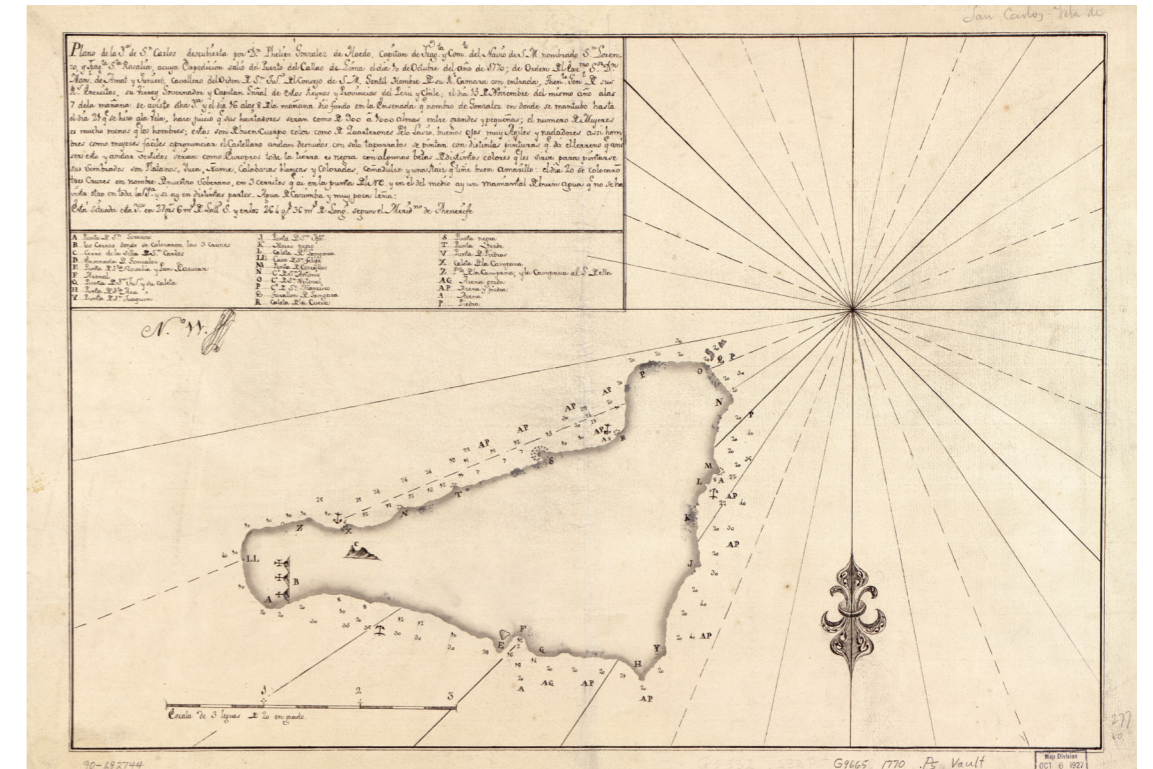


Chart of Rapa Nui, ‘discovered’ by Don Felipe Gonzalez de Haedo. © Library of Congress



Rapa Nui National Park. © Daniel Wagner/CI

## Vulnerable to Multiple Threats

The nutrient-poor waters of the Nazca ridge render this region particularly susceptible to climate change. Scientists predict that in the next 20-40 years the seawater will experience rising temperatures, higher acidity, and decreases in dissolved oxygen that could make it uninhabitable for some species and even threaten ecosystem collapse (Friedlander et al, 2021). In combination with the threat of climate change, commercial fishing represents a significant threat to the unique ecosystems of the Salas y Gómez and Nazca ridges. Although the level of fishing effort in the area has declined in recent decades, the significance of illegal, unreported unregulated (IUU) fishing in the region deserves attention and a precautionary response.

In addition, alarming new threats are emerging. The ridges are impacted by marine debris pollution, including abandoned fishing gear and plastics, which is exacerbated due to the proximity of the South Pacific Gyre where floating litter and debris concentrate (Gaymer et al, 2022). More than 97 species are estimated to be affected by plastic pollution in the region through entanglement and ingestion (Thiel et al, 2018).

Although no contracts for deep-sea mining have been issued for this region, as long as it remains unprotected, this poses a potential risk for the future and one that is largely driven by interests outside of the region. All this makes it even more important to use the best available conservation measures to protect this region and build ecosystem resilience.



Rapa Nui. © Enric Sala



Anemone. © Javier Sellanes/UCN\_ESMOI

## Low Levels of Commercial Activity

There are currently very low levels of commercial activity in Salas y Gómez and Nazca ridges. That means conservation measures can be put in place without incurring large costs to any of the major marine industries and before widespread and irreversible damage occurs. Only the northern section of the Nazca ridge intersects with major shipping routes. And even commercial fishing is very low compared to coastal regions and other High Seas areas in the South Pacific, although some exploratory fishing activity associated with lobster is already having worrisome effects<sup>1</sup>. Historic trawling for Chilean jack mackerel took place in the 1970s and 80s but has now ceased, although the damage to deep-sea corals and other ecosystems remains. The orange roughy fishery closed in 2006, and fishing for squid and other non-highly migratory species in the Salas y Gómez and Nazca ridges is negligible.

Today, most fishing in High Seas areas of the ridges takes place just outside the Peruvian national waters of the Nazca ridge and targets pelagic species, primarily skipjack tuna, bigeye tuna, and yellowfin tuna. This fishing is dominated by distant water fishing fleets, with vessels flagged by China, Spain, Japan,

Taiwan, and the Republic of Korea, representing 96% of the total fishing effort. Even these tuna fishing fleets have proven more successful when fishing in areas outside the ridges (Wagner et al, 2021b).

However, although the impact of commercial activities is currently low, there is no guarantee that this will continue to be the case without proactive conservation action. Squid fishing has increased in the region since 2021, and other future fishing efforts are already being proposed. Deposits of cobalt and manganese are known to exist on or near the ridges, leaving the possibility open for deep-sea mining in the future. And the region has been identified as a possible trans-shipment route for distant water fleets (Chavez-Molina et al, 2023). The opportunity to protect the Salas y Gómez and Nazca ridges in a near-pristine state will not last forever.

There is a high and growing cost of inaction as long-lived, slow-growing deep-sea species and ecosystems are highly vulnerable to anthropogenic threats and take a very long time to recover. The loss of these ecosystems means losing their resources and potential future benefits, including yet to be discovered medicines, forever.

<sup>1</sup> <https://static1.squarespace.com/static/5fdd14852071e510e61883b4/6171c248c1a79021754f25151634845267238/ESRI.pdf>

## Momentum is Growing

National governments in the region, Indigenous peoples, scientists, civil society, and local and international NGOs have identified the Salas y Gómez and Nazca ridges as a globally significant priority area in need of protection. Action has been taken to protect the areas in their national waters, now international cooperation is needed to extend this to the 73% of the ridges (1,097,846 km<sup>2</sup>) that lies in ABNJ and is currently unprotected and vulnerable to future threats. A broad coalition of scientists from across the region, representing all experts

in this site, have worked together to establish the scientific basis for conservation and have published 15+ peer-reviewed studies. We know more than enough about this region and the risks it faces to take action.

Increased and effective protection within the Salas y Gómez and Nazca ridges will catalyze globally important benefits to biodiversity, ecosystem connectivity, and climate change, resulting in abundant fisheries and positive impacts for those that rely on this site.

## International and Regional Commitments

Highly biodiverse seamounts like the Salas y Gómez and Nazca ridges, and the coral reefs that grow on them, are among the High Seas areas most at risk from anthropogenic threats, including climate change. An integrated, ecosystem approach is urgently needed to protect these fragile ecosystems (Chavez-Molina et al, 2023). However, today's governance and management of the High Seas is fragmented and lacks more effective cooperation among national, regional, and global actors.

Thankfully, there is growing recognition that this needs to change, and a growing list of international commitments and agreements that both call for and require stronger protection of the High Seas.



- **The Sustainable Development Goals (SDG)**, especially **SDG 14** that calls on States to: *“By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts.”*



- **The UN Fish Stocks Agreement**, which led to the creation of regional fisheries management organizations (RFMOs) with mandates to regulate High Seas fisheries and conserve the ecosystems they depend on.



- **United Nations General Assembly (UNGA) resolutions 61/105 and 59/25** for the identification and protection of VMEs from the effects of bottom fisheries, and **UNGA resolution 64/72**, calling on RFMOs to implement appropriate protocols to protect VMEs.



- **The 2022 Kunming-Montreal Global Biodiversity Framework**, agreed at the 15<sup>th</sup> Conference of Parties to the UN Convention on Biological Diversity calls on States to: *“Ensure and enable that by 2030 at least 30 percent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved”* in **Target 3**.



- **The (yet to enter into force) 2023 Agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ or the “High Seas Treaty”)**, in which States commit to: *“protecting, caring for and ensuring responsible use of the marine environment, maintaining the integrity of ocean ecosystems and conserving the inherent value of biodiversity of areas beyond national jurisdiction.”*

These international commitments, as well as regional efforts to adequately manage marine resources and action plans of the Permanent Commission of the South Pacific (CPPS), among other bodies of similar importance in the region, cannot be met without taking urgent steps to conserve ecosystems in ABNJ. The best place to start is in areas that have been identified as globally significant biodiversity hotspot that support ocean connectivity, like the Salas y Gómez and Nazca ridges.

## Pathways to Protect Today

There are currently available pathways to protection via collaboration between the bodies responsible for different activities in the region, spearheaded by their member States. The most important organizations are the South Pacific Regional Fisheries Management Organization (SPRFMO) and the Inter-American Tropical Tuna Commission (IATTC) for fishing, the International Seabed Authority (ISA) for deep-sea mining, and the International Maritime Organization (IMO) for shipping. The goals should be to minimize the impacts of human activities, prevent the introduction of harmful new activities, and protect the ridges from threats.

SPRFMO is best placed to take the lead as its founding Convention gives the organization a mandate to use a “precautionary approach and an ecosystem approach to fisheries management, to ensure the long-term conservation and

sustainable use of fishery resources and, in so doing, to safeguard the marine ecosystems in which these resources occur.” This can involve implementing legally binding conservation management measures, including area-based management tools like fisheries closures and gear restrictions where necessary.

Member States of SPRFMO and/or IATTC can show global leadership and advance their international commitments to ocean protection by working together to safeguard the Salas y Gómez and Nazca ridges. Leaders of this region can seize the opportunity to be the first in the world to take action to conserve and protect a High Seas area. The first step is to agree to take an integrated, ecosystem approach to conserving the marine resources and safeguarding the ecosystem services of this unique region. The time to take that step is now.



**“There is an unmissable opportunity to protect the amazing richness of the Salas y Gómez and Nazca ridges”**

Rapa Nui Anakena reef at 70-82m. © Matthias Gorny, Oceana & ESMOI

## A Local Opportunity for International Leadership



There is an unmissable opportunity to protect the amazing richness of the Salas y Gómez and Nazca ridges through currently available conservation tools and the mandates of existing regional and international organizations. This precious ecosystem must be protected while the level of human activity and impact in the area remains low. If we wait, the impacts of fishing, pollution, and climate change will continue to grow, and the cost of inaction will rise.

States in this region have the vision and capacity to make the Salas y Gómez and Nazca ridges one of the first biodiversity hotspots in the High Seas to be formally protected. This will

strengthen regional collaboration, meet national and international commitments to address the biodiversity and climate crises, and demonstrate strong willingness to work together in our common heritage, the High Seas.

This international protection will ensure that future generations benefit from the unique recipe of resources in the Salas y Gómez and Nazca ridges: the vibrant biodiversity of its coral reefs, the potential medicinal properties in its rare organisms, the historical artifacts waiting to be discovered, the migration pathways of endangered whales and turtles, and the spawning grounds of species vital for food and livelihoods like the jack mackerel.

## The Coral Reefs of the High Seas Coalition

The Coral Reefs of the High Seas Coalition (CRHS) is a global alliance of partners created in 2019 that aims to protect coral reefs on the High Seas by advancing the science, strategic communication, and political support necessary to catalyze action. Coral reefs are a top conservation priority globally, as they harbor extraordinary biodiversity, provide many human benefits, and are highly vulnerable to impact. Up to 90% of coral reefs may disappear in the next 30 years in the absence of urgent conservation action.

The CRHS identified the Salas y Gómez and Nazca Ridges as its top focal geography due to its cultural and ecological significance, and location near established large-scale MPAs. The Coalition has been working to protect these ridges within existing frameworks by strengthening scientific findings and building partnerships and support between Indigenous communities, regional bodies, NGOs, scientists, and government leaders.

[www.coralreefshighseas.org](http://www.coralreefshighseas.org)



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