

Argentina: Península Valdés, Frente Valdés and Punta Ninfas

Strengthening Ocean Protection in the Patagonian Shelf

Context and Goals

The Argentinian Patagonian Shelf is one of the most complex and productive marine ecosystems in the world¹. Within it, the areas of Península Valdés and Punta Ninfas, located in Chubut Province, Argentina, and Frente Valdés, an oceanic area shared by the Province of Chubut and national jurisdiction waters, support some of the highest levels of biodiversity and endemism. While each of these areas is of great environmental, cultural and economic significance in its own right, their combined value is remarkable due to their strong ecological interconnectedness. Together, they provide a feeding area and migratory corridor for the Magellanic penguin (*Spheniscus magellanicus*) and a place of transit of the Southern right whale (*E. australis*). Significantly, the area is home to the only continental reproductive Southern Elephant Seal (*Mirounga Leonina*) colony in the world². It is also home to a high concentration of eared seals (*Otariidae*), orcas (*Orcinus orca*), Dusky dolphins (*Lagenorhynchus obscurus*), Patagonian Red Shrimp (*Pleoticus muelleri*), anchovy, common hake, Argentine squid and shrimp. Despite its extraordinary value from a scientific and conservation perspective, the ecoregion faces great pressures that generate impacts on its biodiversity: maritime transport, pollution, the introduction of invasive exotic species, climate change, and unsustainable fishing systems and practices. These activities can cause impacts such as degradation of critical habitats, changes in seawater temperature, alteration of food chains, incidental death of marine specimens, among others. To address these threats, in 2021 the Pristine Seas team organized two scoping trips in partnership with various local environmental organizations. Through our findings, we identified these opportunities to **Strengthening Ocean Protection in the Argentinian Patagonian Shelf**:

- 1. Support the designation of a provincial new marine protected area in Punta Ninfas**
- 2. Support the designation of a national marine protected area in Frente Valdés**
- 3. Improve the implementation of the existing marine protected area in Peninsula Valdés**

¹ Belkin, I. M., Cornillon, P. C., & Sherman, K. (2009). Fronts in Large Marine Ecosystems. *Progress in Oceanography*, 81(1–4), 223–236. <https://doi.org/10.1016/j.pocean.2009.04.015>

² McGovern, K., Rodríguez, D., Lewis, M., Eder, E., Piola, A., & Davis, R. (2022). Habitat associations of post-breeding female southern elephant seals (*Mirounga leonina*) from Península Valdés, Argentina. *Deep Sea Research Part I: Oceanographic Research Papers*, 185, 103789. <https://doi.org/10.1016/j.dsr.2022.103789>

The Biological Importance of the Region

Península Valdés and its areas of influence constitute one of the most valuable and fragile marine ecosystems on the planet. This *Large Marine Ecosystem* (LME) is composed of the sea adjacent to the peninsula, Punta Ninfas and the oceanic zone of Frente Valdés. This Patagonian region, in particular, produces an abundant amount of phytoplankton, about three times higher than the world average³.

There are extensive records of species movement between these sites, including whales, orcas, seals and sea lions. Península Valdés and Punta Ninfas are important breeding areas, while Frente Valdés is a notable feeding ground. It is therefore necessary to safeguard the ecological connectivity of all three sites to ensure their functional integrity and long-term resilience, as well as the subsistence of the species that depend on them.



The Bigger Picture: The Patagonian Shelf

Bordering: Argentina, Falkland Islands, Uruguay

LME total area: 1,173,332 km²



Two currents mix: the southward flowing *Brazil Current* (warm and saline), and the northward flowing *Falklands or Malvinas Current* (cool, less saline, nutrient-rich sub-Antarctic water).



An important fishing grounds for short-fin squid, hake, southern blue whiting, anchovies, and grenadier.



This important and abundant ecosystem is threatened by the increasing pressures of commercial fishing and oil drilling.

The significance of the Patagonian Shelf as a LME

Large Marine Ecosystems (LMEs) are oceanic regions along Earth's continental margins, that span 200,000 square kilometers or more and extend from estuaries and river basins seaward to the outer margins of major currents or the edge of continental shelves. These are the world's most productive areas of the ocean, where most (about 90%) of the world's fish catch is taken⁴.

Threats

According to UNESCO's TWAP assessment of the LME where our three areas of interest are located falls in the cluster of large marine ecosystems that exhibit medium numbers of collapsed and overexploited fish stocks, as well as very high proportions of catch from bottom impacting gear. Fisheries in the area have undergone accelerated growth in the last decades involving mostly Argentine hake (*Merluccius hubbsi*), shortfin squid (*Illex argentinus*), southern blue whiting (*Micromesistius australis*), Patagonian grenadier (*Macruronus magellanicus*), and prawns (*Pleoticus muelleri*).

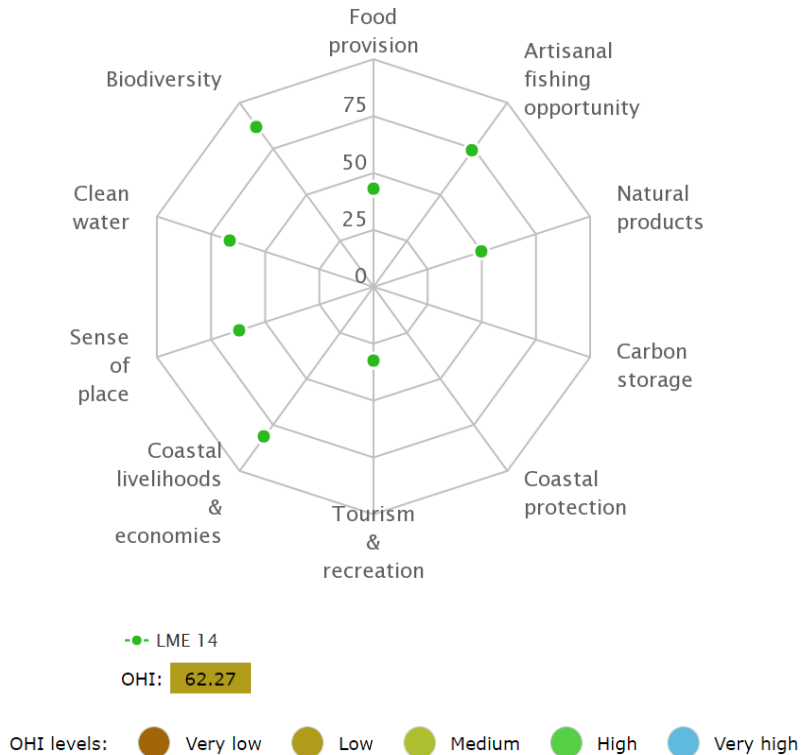
⁴ UNESCO: Intergovernmental Oceanographic Commission. (2022). *Large Marine Ecosystems: IOC UNESCO*. Intergovernmental Oceanographic Commission. Retrieved July 14, 2022, from <https://ioc.unesco.org/topics/large-marine-ecosystems>

³ *Valdes Biosphere Reserve, Argentina*. (2020, May 26). UNESCO. Retrieved July 7, 2022, from <https://es.unesco.org/node/297702>

“Based on a combined measure of the Human Development Index and the averaged indicators for fish & fisheries and pollution & ecosystem health modules, the overall risk factor is high.”⁵

Ocean Health Index ⁶

The Patagonian Shelf LME scores below average on the Ocean Health Index compared to other LMEs (score 68 out of 100; range for other LMEs was 57 to 82). This score is well below its optimal level of ocean health, although there are some aspects that are doing well. Its score in 2013 decreased 1 point compared to the previous year, due in large part to changes in the scores for food provision and clean waters. This LME scores lowest on food provision, tourism & recreation and lasting special places goals and highest on artisanal fishing opportunities and habitat biodiversity goals. It falls in risk category 4 of the five risk categories, which is a relatively high level of risk (1 = lowest risk; 5 = highest risk).



The Need to Expand Existing Protection

Despite the ecological importance of these sites and their high vulnerability, Peninsula Valdés is partially protected (permitting seasonal small-scale fishing) and there is not enough financial support for its regulation to be effective.

- The Península Valdés Natural Protected Area (Área Natural Protegida Península Valdés), which incorporated Peninsula Valdés as a Natural Protected Area in 1999, only has 12 park rangers (Guardafaunas) available year-round, with zero boats and a few vehicles to be able to monitor the 2,015,011 ha of surface it encompasses. This lack of resources is accentuated in the high tourist season (July-September), when the surveillance is overwhelmed and not able to cover this extensive area.
- Punta Ninfas does not have any type of protection despite its great biodiversity. However, there is a proposal to create an MPA by the province of Chubut.
- Finally, Frente Valdés has no existing protection despite being the main oceanic feeding ground for juvenile fish populations, whales, penguins and other species in all three areas.

⁵ Intergovernmental Oceanographic Commission [5856]. (2013). *Large Marine Ecosystems: Transboundary Waters Assessment Programme (TWAP)* (IOC/BRO/2013/3 REV.). UNESCO Digital Library. <https://unesdoc.unesco.org/ark:/48223/pf0000223419>

⁶ Open Ocean. (2022). *Patagonian Shelf: One shared ocean*. Pollution and Ecosystem Health: Patagonian Shelf. Retrieved July 14, 2022, from http://onesharedocean.org/LME_14_Patagonian_Shelf

Challenges and Opportunities

Chubut Province maintains jurisdiction over the first 12 miles of coastal waters of its adjacent ocean. Therefore, the creation of these MPAs depends on the active cooperation of the national and provincial government to complement and support each other's protection goals. In this regard, the entire system requires further financial support in order to be properly implemented. Nevertheless, the challenges that precede the creation of the MPAs are outweighed by the opportunities they could bring: Creating MPAs in Punta Ninfas and Frente Valdés, by adding to the existing protected area in Peninsula Valdés, could offer long-term protection to intact ecosystems that can also act as ecotourism destinations, given the already popularized whale-watching market in the area. In the open sea, establishing a well-enforced MPA in Frente Valdés with a focus on its role as a corridor and feeding ground for the life cycle of the marine species that support this entire ecosystem can ensure its sustainability in the long-term.

The opportunity to create a system of interconnected MPAs in this area is supported by a long-standing scientific effort in the region, where NGOs and governments have established strong and continuous programs to study the most iconic species: orcas, right whales, penguins, elephant seals and sea lions, for which scientific monitoring extends to over 50 years in some cases. Some of our strongest partners in the region who are involved in these efforts are the Global Penguin Society, which has been making marine conservation studies in Chubut for over 30 years, The Instituto de Conservación Ballenas, with over 50 years of whale studies in the same province, WCS Wildlife Conservation Society Argentina, which has studied elephant seals and sea lions for about 30 years, and CONICET (the main public agency dedicated to the promotion of science and technology in Argentina), which has offices in Chubut.

Overall, through the establishment and effective implementation of these three MPAs, we hope to secure the protection of marine biodiversity in some of the most ecologically important areas of Argentina.

A Roadmap to Strengthening Ocean Protection in Península Valdés, Frente Valdés and Punta Ninfas

In this case, we are working on three different areas that we believe are interconnected:

- a) Peninsula Valdés
- b) Punta Ninfas
- c) Frente Valdés

Each one has its own itineraries to either be designated or improve their implementation. The common goals for this system of MPAs are:

- a) Determine the ecological importance of Peninsula Valdés, Punta Ninfas and Frente Valdés, particularly for certain iconic species like whales, penguins and elephant seals.
- b) Prove the biological interconnection between Peninsula Valdés, Punta Ninfas and Frente Valdés.
- c) Show the economic potential of the protection of Peninsula Valdés and its areas of influence.

Next steps for second semester 2022:

1. Persuade the provincial government of Chubut to designate a marine protected area in Punta Arenas
2. Launch an expedition to Peninsula Valdes in Sept-Oct 2022. Among the issues we want to cover are:
 - a. Satellite tagging of penguins from the San Lorenzo colony.
 - b. Critter cameras on whales in the area of "the nest".
 - c. Satellite tracking of whales by scientists from the Whale Conservation Institute.
 - d. Learn about studies conducted on elephant seal colonies
 - e. Record the richest underwater habitats in Peninsula Valdes
 - f. Estimate the magnitude of the fishing activity that takes place near Frente Valdés, particularly bottom trawling.
 - g. Show the potential for nature tourism in this area, especially for whale watching, national park visits, lodging.
3. Commission a report to characterize the area of Frente Valdes through satellite imagery
4. Release a trailer of Peninsula Valdes future documentary

A Breakdown of the Potential of Each Area

Note: Chubut Province maintains jurisdiction over the first 12 miles of coastal waters. Therefore, the creation of these MPAs depends on the active cooperation of the national and provincial government to complement and support each other's protection goals.

ID	Península Valdés	Frente Valdés	Punta Ninfas
MPA Status	Natural Protected Area (land and ocean protected)	First proposal for a National Park (2017) ⁷ . Today is not under official consideration	Proposed MPA
Jurisdiction	Provincial (Chubut)	Federal	Provincial (Chubut)
Description	A peninsula into the Atlantic Ocean in the Biedma Department of north-east Chubut Province, Argentina.	Area off the peninsula located 12 miles out into national waters.	The Point is about 90 km southwest of Puerto Madryn.
Ecosystems	Rocky cliffs, shallow bays, lagoons, mudflats, beaches, and small islands.	Open ocean.	High, bare cliffs.
Biological Assets	Breeding ground for Southern right whales, elephant seals, sea lions, orcas, seabirds, and penguins can be found in the coastal waters.	Feeding and breeding area. Hake, red shrimp, anchovies, squid.	Migratory routes and feeding and breeding ground. Important colony of elephant seals (breeding season September to December, molting season January to April).
Major Threats	Uncontrolled tourism, pollution, lack of funding to implement regulations and enforce restrictions.	Industrial fishing.	Pollution and human activity: fishing and uncontrolled tourism.

Identified partners



⁷ Marine Conservation Institute. (2022). *MPA Atlas: Frente Valdés*. MPA Atlas. Retrieved July 7, 2022, from <https://old.mpatlas.org/mpa/sites/68808418/>

Appendix 1. Photographic Archive



Image 1. Sea lions
(Alex Muñoz, 2021)



Image 2. Southern right whale (*E. australis*)
(Alex Muñoz, 2021)



Image 3. Dusky dolphins (*Lagenorhynchus obscurus*)
(Alex Muñoz, 2021)

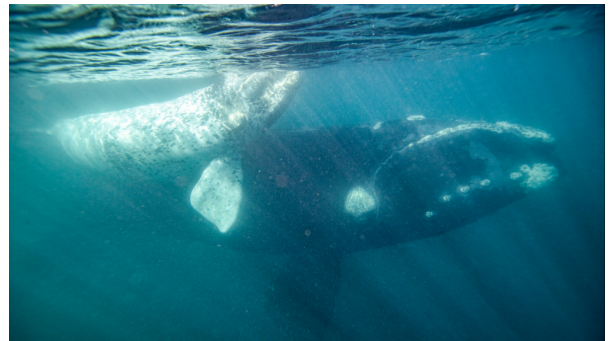


Image 4. Southern right whale with calf (*E. australis*)
(Manu San Félix, 2021)



Image 5. Whale watching tour in Peninsula Valdes
(Alex Muñoz, 2021)

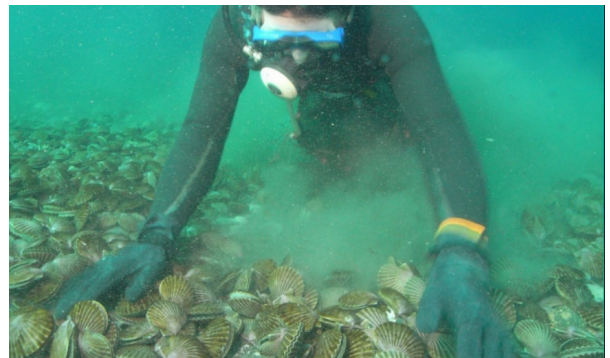


Image 6. Scallops