

2006 Whitley Gold Award Winner

Patricia Majluf, Peru

Mapping traditional fishing grounds to develop Marine Protected Areas

Also Winner of The Whitley Award donated by Natasha and George Duffield



The issue:

The industrial anchovy fishery off the Pacific coast of Peru is the largest single species fishery in the world. With average annual landings of between 8 and 12 million metric tons, this fishery represents around 10% of all global marine captures. Incredibly, most of this wild catch goes to produce fishmeal and fish oil to feed farmed fish in Europe and China. The economic importance of the fishery has meant its impact on the marine ecosystem has largely been ignored. The once magnificent populations of anchovy predators – pelicans, sea lions, fur seals, penguins and dolphins – typical of the region have suffered steep declines over the past 50 years.

As anchovies have declined, so has the resilience of the ecosystem and its ability to recover from El Niño, a periodic natural event when unusually warm, nutrient-poor seas cause a drop in fish availability. Conservationists fear El Niño events will become stronger and more frequent as a result of climate change. Combined with overfishing, experts warn that slow breeding predators may not be able to reproduce fast enough to recover and replace their numbers.

Overfishing of anchovies is also bad news for local people. Artisanal fisheries struggle to survive because the large carnivorous fish on which their trade depends are now scarce. The discharge of industrial effluents from fishmeal plants also pollute the main breeding grounds of commercially important species of fish and shellfish. Improved fisheries policies and effective marine reserves where life can replenish undisturbed are urgently needed.

The project work:

Winner of the 2006 Whitley Gold Award, Dr. Patricia Majluf has worked for nearly three decades to study and improve conservation management of Peru's marine resources. One of Patricia's most ambitious goals has been to establish a system of marine protected areas (MPAs) – Peru's first – to provide safe breeding and nursing sites for some of the country's last populations of marine birds, mammals and fish. MPAs can only be successful where they have the full support of fishermen. To ensure this is the basis of the Peruvian MPA system, Patricia is working with local fishermen around Punta San Juan – site of the first proposed MPA – to map their traditional use of the seas. The information will form the basis of

the first marine zoning proposal and ensure fishermen's views are taken into account, minimising the potential for future conflict. If successful the model will then be expanded to create a network of MPAs across Peru in collaboration with fishermen. The data collected through the study will moreover provide real evidence of the benefits of MPAs – higher fish yields and a healthier ecosystem.

The future:

Beyond MPAs Peru needs better fisheries' management. Peruvian anchovies are used almost exclusively for the production of fishmeal and fish oil, and constitute the second largest source of foreign revenue for Peru. Industrial fleets catch millions of fish on each trip, and because the fish are not intended for human consumption, commercial boats stay at sea longer, landing smashed, rotting anchovies of all sizes. This unsustainable practice is justified only because anchovies are perceived as fit for animal feed and nothing else. To reduce Peru's annual anchovy catch quota, Patricia is convinced the value of anchovies first has to significantly increase so that higher revenues can be obtained by catching fewer, higher quality fish.

Patricia is working to change people's attitudes towards the anchovy and to increase local demand for its nutritious protein. Slowly, anchovies are becoming more common in Peru's markets and consumption is increasing. Working closely with industry, some fish canning companies are now increasing exports of anchovy for high-end human consumption, which requires hand-sorting and produces more local jobs. There is a long road ahead, but Patricia's work is beginning to show how it may be possible to sustain local livelihoods, improve Peru's fishery policies, and restore one of the world's most productive marine ecosystems.

Patricia Majluf 2006 Whitley Gold Award Winner



WHITLEY
FUND FOR NATURE





Leader Profile:

Patricia grew up in Lima, Peru, where from an early age she was encouraged to become a scientist. An undergraduate at the Cayetano Heredia University in Lima, where she now works, Patricia went on to complete a PhD in Zoology at Cambridge focusing on Peruvian fur seal behaviour at Punta San Juan. Extending her PhD into a long-term study, Patricia was an associate research scientist for the Wildlife Conservation Society for almost twenty years. Since 1998, when a strong El Niño wiped out her entire study population, she has been leading marine conservation efforts in Peru, promoting the establishment of the region's first MPA system and strongly pushing for improvements in Peru's industrial fishery policies. She founded and currently directs the Centre for Environmental Sustainability at her University, where she is committed to building knowledge and local capacities to enable restoration of Peru's outstanding marine and terrestrial biodiversity.



Key Threats & Objectives

Threats

- **Overfishing** – of anchovies leading to wildlife declines, unstable livelihoods and a reduction in the ability of the ecosystem to recover from El Niños.
- **Poverty** – among coastal populations, particularly artisanal fishermen, leading to increased pressure on coastal resources and illegal wildlife hunting.
- **Growth of industry & infrastructure** – Economic growth is leading to large-scale infrastructure projects including new ports and hydrocarbon exploration, disrupting marine life and fish breeding areas.

Objectives

- **A network of MPAs for Peru** – by working with local artisanal fishermen and local authorities to reduce direct pressure on marine resources.
- **Education and increased awareness of marine issues** – locally and nationally to raise public support for effective marine conservation policies.
- **Ecosystem-based management (EBM) policies** – to maintain a healthy, productive marine ecosystem providing

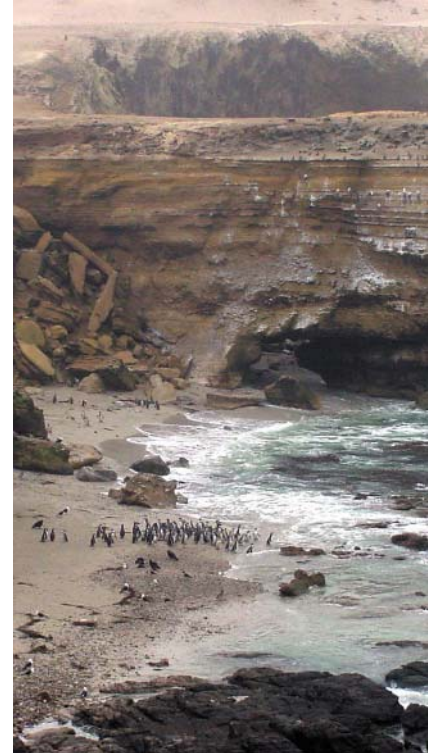
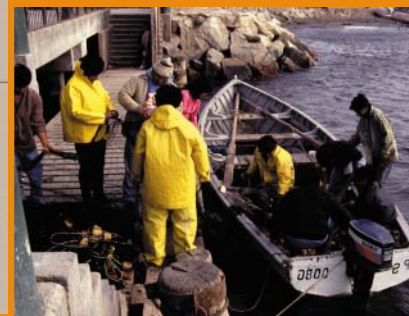


Location of Project

Place/Town Punta San Juan, Southern Peru

Region Peruvian national waters of the Pacific Ocean

Country Peru



people with goods and services.

- **Applied Biological research** – to underlie new policies and evidence the value of MPAs to fishermen and wildlife.

Collaborative Organisations

- PROABONOS – National Seabird Guano Administration
- INRENA – Peruvian Natural Resources Institute
- IMARPE – Peruvian Marine Research Institute
- Humboldt Penguin Species Survival Program – St. Louis, Brookfield and Philadelphia Zoos

Key Project Team Members

- Bruno Vildoso**
Fisheries Monitoring Coordinator
- William Alderete**
Fisheries community leader and liaison with fishing community
- Jesus Leguia**
Field Assistant
- Pablo Rosas**
Field Assistant
- Milena Roca**
Field Project Coordinator

Project website

www.anchoveta.info



Whitley Fund for Nature
50 Queensdale Road, London, W11 4SA
t: +44 (0) 20 7602 3443
e: info@whitleyaward.org
w: www.whitleyaward.org

Patron: HRH The Princess Royal
Trustees: Sir David Attenborough CH FRS, Catherine Faulks, John Laing, Edward Whitley
Company limited by guarantee, No. 3968699, registered in England and Wales. Registered office: Calder & Co., Regent Street, London SW1Y 4NW. UK Registered Charity Number 1081455