

# UNDERWATER WONDERS

Cabo Pulmo, Mexico

Ocean conservation advocate and keen scuba diver **Kathryn Curzon** recommends her top five marine reserves to visit worldwide.

**M**arine reserves and marine protected areas are vital to the health of the ocean. They prevent human activities in defined areas and allow marine life to increase in diversity and numbers. While only 3% of the world's ocean is currently protected, new marine reserves are being created each year, and existing reserves have been successful in their conservation efforts. Here are my top five marine reserves and why they are working so well.

## Cabo Pulmo, Mexico

Cabo Pulmo, a marine reserve on the east coast of the Baja California Peninsula, was designated as protected in June 1995. The park is home to a 20,000-year-old coral reef, the oldest of only three on the western coast of North America and the most northern in the east Pacific. The park was heavily fished before it became a protected area.

When local fishermen realised they had to go further from shore to catch fish, they took the fate of the area into their own hands and moved from fishing to scuba diving. Local communities supported this move from fishing to sustainable ecotourism, and the area soon became a no-take zone.

Following the action of the locals, the Mexican government designated the area as a marine reserve, and it was also declared a UNESCO World Heritage Site. The marine life biomass increased by more than 400% during 2000–10 and continues to flourish. Work still needs to be done to protect this unique environment, as the reserve has been threatened in recent years by proposals for nearby coastal developments.

## Palau, western Pacific Ocean

Palau designated 499,868km<sup>2</sup> of its waters as a marine reserve in 2015 and banned all fishing and mining activity there. It became the world's sixth-largest marine reserve at the time and is larger than California.

Palau's president is committed to conserving the island nation's livelihood and increasing the number of fish

available to feed local communities. The nation's economy relies on environmental tourism, so healthy marine life is essential. The nation has no military to enforce its reserve rules, and, instead, the Council of Chiefs placed certain reefs off-limits to fishing. Its local communities have a strong conservation culture, and this was also key to the reserve's success.

A study undertaken in 2017 has demonstrated that the protected waters near Palau's populated areas already have twice the number of fish and five times the number of predatory fish as unprotected waters.



Palau

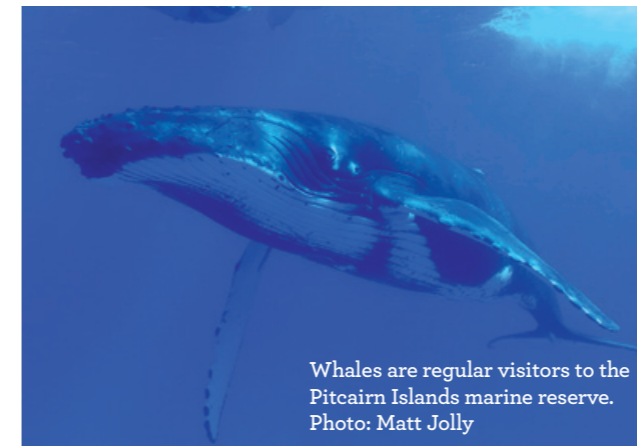
## Pitcairn Islands, southern Pacific Ocean

Pew Environmental Group's Global Ocean Legacy project has worked with Pitcairn islanders since 2011 to establish a marine reserve in their waters, and the UK government announced the Pitcairn Islands marine reserve in March 2015. The reserve covers 830,000km<sup>2</sup> and is more than three times the size of the United Kingdom.

Locals are permitted to fish coastal areas for their own food, but all commercial fishing is prohibited. The reserve is home to more than 1200 species of marine mammals, seabirds, and fish. Being remote, enforcing the reserve

rules has been challenging and potentially expensive.

New technologies have been used to monitor the area for illegal fishing and develop the reserve's enforcement plan. A low-cost integrated platform, Project Eyes on the Seas, has been used to analyse fishing vessel behaviour in the area remotely and is being used to develop long-term surveillance plans for the reserve. The project not only confirmed that the Pitcairn Islands has a low level of illegal activity in its waters but also paved the way for new, inexpensive surveillance techniques to be used in other marine reserves worldwide.



Whales are regular visitors to the Pitcairn Islands marine reserve. Photo: Matt Jolly

## Poor Knights Islands, New Zealand

New Zealand has 37 marine reserves, including the Poor Knight Islands. This string of small islands is home to a unique marine ecosystem that contains marine plants and animals not found elsewhere, as well as tropical species. In 1981, the islands became New Zealand's second marine reserve in recognition of its diversity and abundance of marine life.

Fishing of any kind is prohibited in the reserve, and no-one can take or disturb any kind of marine life. Visitors are also not allowed to land on the islands, the only place in the world where Buller's shearwaters breed. Tough penalties exist, including imprisonment, seizing of vessels, and large fines.

Enforcement of the regulations and best environmental practices of tourism companies have been successful in creating a reserve with abundant marine life that is also enjoyed regularly by scuba divers. Jacques Cousteau rated the islands as one of the top 10 dive sites in the world. The



Poor Knights Islands

reserve also has cultural importance, having been inhabited by an ancient people, Ngātiwai, guardians of a tapu placed on the islands by the chief in 1822, following the massacre of his people while his warriors were absent from the island.

## Ross Sea, Antarctica

The Ross Sea Marine Protected Area was declared the world's largest marine reserve when it received international protection in October 2016. It covers an area of 1,548,812km<sup>2</sup> off the coast of Antarctica and was created by a unanimous decision involving 24 countries, including New Zealand, the United States, and the European Union. Environmental groups, scientists, and countries had campaigned for protection of the Ross Sea for decades.

The Ross Sea or "Last Ocean" is mostly untouched by humans and has not been heavily fished or affected greatly by shipping pressures. The waters are the most productive in the Antarctic and contain more than 16,000 species, including emperor penguins, leopard seals, and various species of whale. Fishing was prohibited in the reserve from last December. This new reserve is a great example of how the world can cooperate to protect one of our last remaining wilderness areas.



Ross Sea

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