



Sanctuaries protect crucial feeding and breeding areas to ensure we have fish for the future

Photo: Mark Spencer

THE SCIENCE BEHIND SANCTUARIES

The establishment of the national network of marine parks and sanctuaries in 2012 was one of the most evidence-based and consultative processes in Australia's history.

14 years of scientific assessment and 606 days of consultation across the country over three years underpinned the decision.

Internationally published and peer-reviewed science from Australia and also across the globe strongly supports the protection of marine biodiversity through the creation of sanctuary areas.

Sanctuaries are designed to ensure that the full range of our unique marine life is protected for present and future generations, with a minimum impact on other activities such as fishing and oil and gas exploration.

Once areas are fully protected, science research has consistently shown that the number, size and diversity of marine life greatly increases.

A three-year study by the University of Queensland in 2013 found that sanctuaries made coral reefs six times more resilient to coral bleaching and other disturbances.

Importantly, evidence of 'flow-on' benefits into adjacent areas is growing. Increases in size and the numbers of rock lobsters, corals, fishes and reef sharks reaching reproductive stage are now well documented.

The world's largest study in 2014 found marine parks and sanctuaries have twice as many large fish species, five times more large fish biomass, and 14 times more shark biomass than comparable fished areas.



Photo Main: Jürgen Freund

Photos below (L-R):
Mark Spencer, Doug Anderson

THE SCIENCE BEHIND SANCTUARIES

In 2015, a major review of 100 recent research papers into marine parks and sanctuaries found that:

ENVIRONMENTAL BENEFITS

- Well-managed sanctuaries of any size have larger and far more abundant marine life than nearby fished areas, as shown by studies of mud crab in NSW, flathead in the Baltic Sea, striped marlin off California and lobsters in New Zealand.
- These differences become even greater with increases in sanctuary size and age, along with improvements in its management effectiveness.
- Networks of large sanctuaries also benefit migrating whales, sharks and seabirds by protecting their critical breeding and feeding habitats.
- Shark numbers in sanctuary areas on the Great Barrier Reef are, for example, 10 times that of areas that can be fished.
- Once established, sanctuaries re-establish previously more natural conditions. Research in NSW, Mexico and Florida has revealed that sanctuaries lead to an increase in predator species and adult spawning fish.
- This can increase natural productivity by up to four times, resilience to climate change and recovery from flood damage and pest invasions – crown-of-thorns starfish outbreaks are less frequent in sanctuary zones on the Great Barrier Reef.
- Sanctuaries can also be used to reduce the number of cumulative impacts, protect threatened species and improve the overall health of an area of ocean, as shown by research in Tasmania, the Adriatic Sea and Brazil.



SOCIO-ECONOMIC BENEFITS

There are many Australian and overseas studies indicating that marine sanctuaries boost the tourism industry.

For example, NSW sanctuaries are assisting the recovery of Australia's east coast grey nurse shark numbers, as well as providing tourism income to local dive operators.

Shark diving tourism in Palau is worth \$18million each year, far higher than the \$10,800 that would be generated by harvesting the local shark population.

An economic study of Coral Sea tourism found that Osprey Reef receives between 4890 and 6542 visitors per year and generates visitor expenditure of between AU\$11.5 million and AU\$15.34 million per annum.

An assessment of the tourism potential of a highly protected Coral Sea Marine Reserve found the area's reputation as a pristine dive destination would be enhanced, marine wildlife tourism would be boosted and opportunities for research improved.

Full review at: www.saveourmarinelife.org.au/sanctuary-science

WISE WORDS

There is a national and international science consensus that high levels of marine sanctuary protection will protect marine life, and marine sanctuaries are supported by Australia's leading marine science organisations:

"Creating a worldwide system of very large marine no-take areas is an essential and long overdue contribution to improving stewardship of the global marine environment."

Statement by more than 245 of the world's leading scientists to the Australian Government, 2010.

"The final MPA network should consist of a minimum of 30% of the area of each Bioregion ... Conservation features that are known to be significant, threatened, or in a degraded state will normally require greater proportional representation [than the recommended min of 30%]."

Scientific Principles for Design of Marine Protected Areas in Australia: A Guidance Statement, (2009), produced by University of Queensland and endorsed by 60 of Australia's top marine scientists.

"Once every ten years the world's conservation leaders gather to talk about protected areas – the bedrock of conservation ... Increasing protection of the oceans is a flagship element of the Sydney Promise [that came out of the 2014 World Parks Congress]. The meeting adopted a new target: to protect 30% of all of the habitats in the sea by 2030 in strictly protected marine parks.'

Callum Roberts, Professor of Marine Conservation, University of York and Blue Marine Foundation Trustee, 2014.



Photo: Attila E Kaszo



Jessica Meeuwig
Director, Centre for Marine Futures, Oceans Institute
University of Western Australia

"Australian marine reserves not only protect the biodiversity within their boundaries, but support regional fisheries and provide resilience in the face of flooding and climate change"

"As a tool for managing the oceans sustainably, marine sanctuaries complement fisheries management. Australia risks losing everything it has gained in just two short years if protections are removed."



Dr Daniel Pauly
Principal Investigator, Sea Around Us Project
University of British Columbia

MARINE PARKS AND FISHERIES MANAGEMENT - a winning combination

While some may claim that we don't need, or need fewer, fully-protected marine sanctuaries because our fisheries are managed sustainably, this is not true or relevant to Australia's national network of marine parks.

Fisheries management, together with marine sanctuaries, offers a 'two tool toolbox' to the sustainable management of our oceans.

The prime purpose of marine parks is the conservation of species, communities, habitats and ecosystems, as has been well established. This should not be confused with fisheries management, which manages exploitation of fisheries to maximise yield.

Detractors who argue that any failure to increase catches equals a lack of justification for the implementation of marine parks or highly protected sanctuary areas are either misinformed or being willfully misleading.

The best available research indicates that fisheries management tools are effective in increasing the catch of targeted fish.

However, they cannot match the performance of marine sanctuaries in the conservation of the wider marine environment. This is because the focus of most fisheries management is largely on single species and not the wider ecosystem.

Even one of Australia's most valuable, well-studied fishery – western rock lobster – requires no-take areas to satisfy the ecological and management requirements of Ecosystem Based Fisheries Management (EBFM) and third-party sustainability certification.



David Booth, Professor of Marine Ecology, Director of the Centre for Environmental Sustainability at the University of Technology Sydney, & member of the Ocean Science Council of Australia.

Other Australian fisheries have less data and funding available for management, and yet all Commonwealth and Western Australian managed fisheries are required to adhere to EBFM principles. Satisfying the requirements of EBFM will only become more important in the future. Marine reserves with fully-protected sanctuaries at their core are already proven to be the most cost effective and feasible means of achieving these goals in the future.

There is also demonstrable proof that networks of highly protected sanctuaries benefit fisheries management by:

- Providing resilience to large scale environmental pressures such as flooding and climate change;
- Providing the most cost-effective and feasible tool for scientifically determining and distinguishing the effects of climate change from fishing;
- Providing proven and cost-effective benefits for fisheries seeking to secure the marketing advantages of third-party sustainability certification;
- Improving the 'social licence to operate' of commercial fisheries among Australian consumers. Every Australian industry makes concessions to potential resource access and profitability in order to improve social licence in the communities they operate. The Australian fishing industry should be no different.

Photo: Glen Cowans

Many of our most revered fishing destinations have been marine parks for years now



SAVE OUR MARINE LIFE

saveourmarinelife.org.au