Closing Time for Pirate Fishing - Creating Pacific Marine Reserves

WCPFC4-2007-OP01 Suppl.

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CLOSING TIME FOR PIRATE FISHING - CREATING PACIFIC MARINE RESERVES

Three distinct high seas areas exist within the Western and Central Pacific Ocean (WCPO), entirely bound by the Exclusive Economic Zones (EEZs) of surrounding island nations, as shown in Fig.1. Colloquially known as "donut holes" or "high seas pockets", these areas of international waters appear relatively small in comparison to the huge sea areas falling within the EEZs of some of the Pacific States. Even so, they have great biological and ecological importance and face a number of threats, including overfishing and the potential extraction of seabed minerals in the future.

Greenpeace is advocating that these areas be designated as fully-protected marine reserves. We believe that doing so will yield a mixture of conservation, management and economic benefits to the Pacific region, its marine life and the all-important tuna fisheries.

Recent decades have seen a massive increase in the global fishing effort and drastic declines in global fish stocks, significantly impacting on marine diversity. The report, 'State of the World's Fisheries and Aquaculture, 2006', released by the FAO (Food and Agriculture Organisation of the United Nations) in 2007, stated that in 12 out of 16 regions evaluated, at least 75% of stocks are already fully or over-exploited. Populations of top predators are disappearing at an alarming rate, it is estimated that many populations have been reduced by 90% since 1950 The depletion of these species, coupled with the destruction of deep-sea habitats and associated habitat complexity, has been shown to cause shifts in ocean ecosystems.

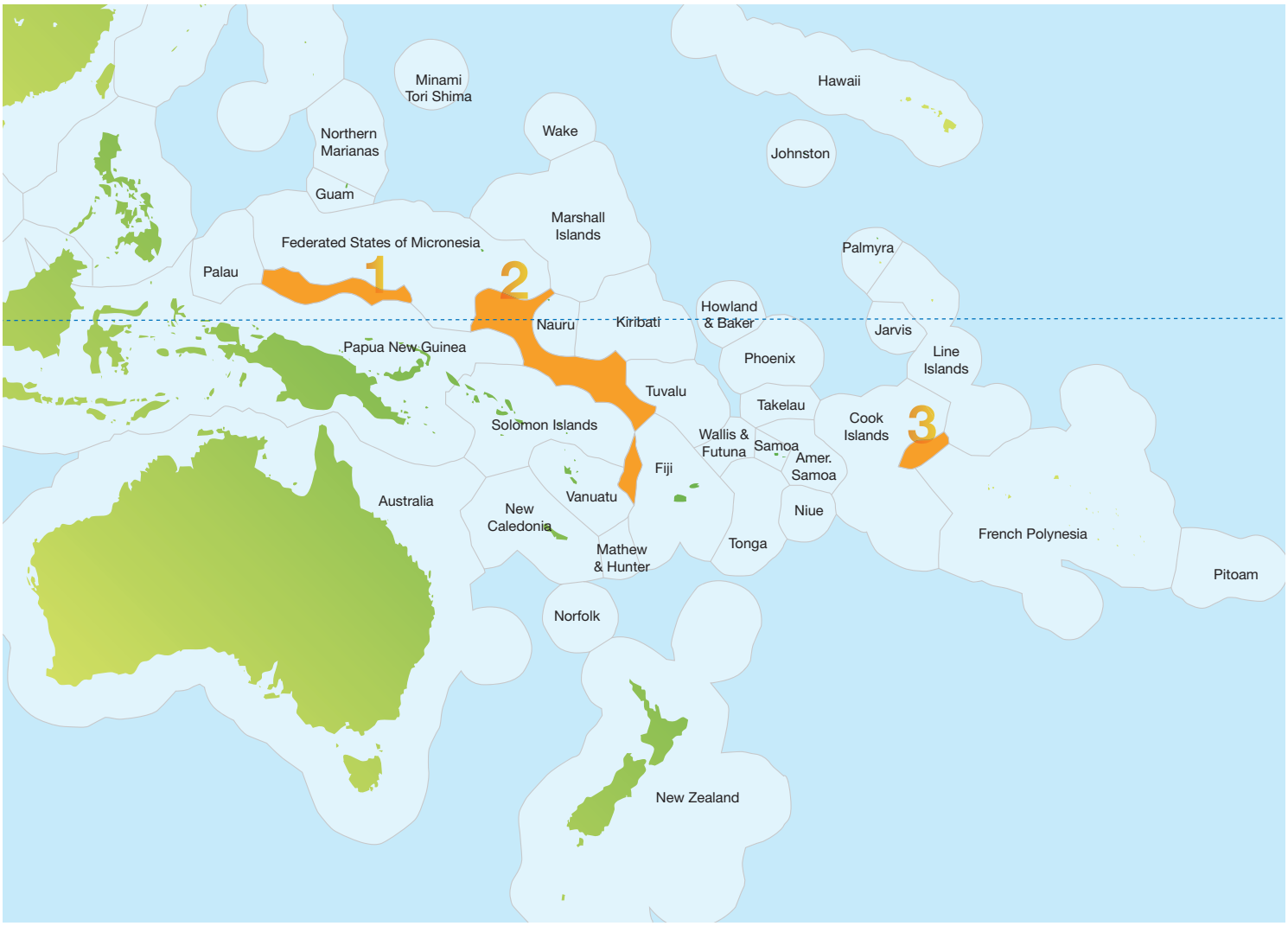
Marine reserves are highly protected areas off limits to all extractive and destructive uses, including fishing and mineral exploitation. They are the most powerful tool available for the conservation of ocean wildlife and may also benefit fisheries by promoting recovery and reproduction of exploited species.

Marine reserves provide the crucial underpinning for the implementation of effective management of the sea and have important benefits to scientific understanding of this environment. They provide control areas for all direct human disturbances and more natural baselines for the measurement of impacts. This enables scientists to obtain data less confounded by human activities (e.g. separating natural variation from fishing effects) and to acquire a greater understanding of the intrinsic processes of subject ecosystems.

Nonetheless, designation of an area as a marine reserve does not preclude the need to define adequate management strategies applicable to areas falling outside of them. The goal is also to achieve sustainable use of marine resources outside the marine reserves network. This means that activities must conform to principles of sustainability, causing no degradation of ecosystem structure and function, and also meet the needs of both current and future generations. Marine reserves are a complement to such fisheries management measures as reduction in fishing effort and capacity, prevention of Illegal, unreported and unregulated (IUU) fishing and development of non-destructive fishing methods.

Thus, marine reserves provide the bedrock of the ecosystem approach. In this context marine reserves may yield a range of benefits to fisheries management that flow directly from their primary role in the protection of marine ecosystems.

Fig. 1. Map showing the locations (in orange) of the three high seas "donut holes" proposed as marine reserves by Greenpeace.



Conservation and fisheries benefits

In the past, vast tracts of our seas were simply inaccessible to fishermen and other human activities and so were de facto marine reserves, providing natural refuges for marine species. Modern technical innovation has now enabled fishing practically anywhere on the planet, eliminating any refuges that once provided respite to fish populations. However, where marine reserves have been designated, they have been shown to result in long-standing and often rapid increases in the abundance, diversity and productivity of marine life, especially of species that were previously exploited.

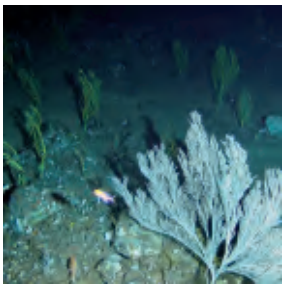
There is a growing body of evidence to suggest that the establishment of a network of marine reserves can lead to enhanced yields in adjacent fishing grounds. Marine reserves enable the development of more natural, extended population age structures that promote resilience to overfishing and are important in maintaining the integrity of marine ecosystems in the face of climate change. In addition, marine reserves can also help provide a more predictable catch from year to year, enhancing fisheries' stability. They also serve as a form of insurance against management failure resulting in degradation of the ecosystem in non-designated areas. A further benefit to fisheries that may flow from marine reserves is enhanced catches beyond their boundaries, as a result of either the spill-over of adults and juveniles across reserve boundaries or from the export of larvae or eggs from reserves to fished areas. However, this will be most marked when the non-designated areas are subject to failing management and overfishing.

While the benefits of protection are more apparent for species spending much or all of their time within a marine reserve, reserves can also offer protection to migratory species, particularly if they are protected at vulnerable stages such as spawning and nursery grounds. For highly mobile species like tuna it is important to encompass an adequate and significant proportion of their critical habitat.

The importance of establishing marine reserves has been accepted by many countries and this is reflected in the language of several important international agreements. The UN Millennium Project calls for 10% of the oceans to be covered by marine reserves in the short to medium-term, with a long-term goal of 30%. In 2004, echoing pledges taken at the World Summit on Sustainable Development (WSSD), the Convention on Biological Diversity's (CBD) 7th Conference of the Parties (CoP 7) committed to the establishment of a global network of marine protected areas by 2012 (Decision VII/28). According to Decision VII/5, such a network should be composed of:

“comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas that collectively … contribute to achieving the three objectives of the Convention and the 2010 target to significantly reduce the current rate of biodiversity loss“.

Greenpeace is campaigning for a global network of marine reserves, and presented at the 9th Conference of the Parties in 2006 (CoP 9) a proposal for a network covering 40% of the high seas. This network, designed by Professor Callum Roberts and his team at York University in the UK, identified a number of areas in the Pacific contributing to the global network that included 'donut hole' areas - all of which are important in terms of their marine life (Roberts et all 2006).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"Donut holes" - Ecological characteristics and threats

The area to the north of Papua New Guinea **(1)** lies across the nominal boundary between the North and South Pacific Oceans. This sea area is of importance to the western Pacific population of leatherback turtles, which nest on beaches in Papua, Indonesia and the Solomon Islands but which migrate to foraging grounds in the Northern Hemisphere. This species is endangered both by longline fishing and by gathering of eggs and killing of adult turtles for food (Kaplan 2005). The area is also divided north to south by the Eauripik Rise. This is a significant seamount area thought to have been formed by a volcanic "hotspot" (Macpherson & Hall 2001). Although relatively little survey work has been carried out (see International Seabed Authority, 2007), the adjacent areas have revealed the presence of polymetallic sulphides, polymetallic nodules and cobalt crusts. These are all potential targets for the deep sea mining industry. Little information exists on the biological resources in the area, but as a seamount system located in a region renowned for its high shallow water biodiversity, in common with other seamount systems could be expected to exhibit a rich biodiversity of deep-sea life with high levels of endemism. (Johnston & Santillo 2004).

Similar considerations hold true for the second "donut hole" in the Western Pacific, whose area is defined by the EEZs of the Federated States of Micronesia, Papua New Guinea, Solomon Islands, Tuvalu, Kiribati, Nauru, the Marshall Islands and Fiji **(2)**. Polymetallic sulphides and nodules have been located in the North Fiji Basin adjacent to the "donut hole". The whole area contains chains of seamounts and numbers of large topographical features. These have not been biologically characterised.

Both areas are likely to be important as spawning areas for commercially important species of tuna (skipjack, albacore and bigeye) as well as other large pelagic fish which spawn over wide areas of the sub-tropical and tropical Pacific. The southern bluefin tuna spawning grounds appear to be restricted to waters between Japan and the Philippines, but the other species spawn over very much wider ranges. (See e.g: Hampton et al. 2004). In the case of yellowfin tuna, significant proportions of the reported catch appear to have originated in the two "donut holes".

The third area categorised as a "donut hole" is bounded by the EEZs of French Polynesia, the Line islands and the Cook Islands **(3)**. Data held by the International Seabed Authority suggest that this area has been much more extensively characterised in relation to seabed resources. The area is shown as having deposits of polymetallic nodules and appears, together with adjacent seabed areas, to be fairly rich in such resources, raising the possibility of future commercial exploitation.

The level of exploitation of living resources throughout the entire region, where some key species are now thought to be being actively overfished (yellowfin and bigeye tuna), together with the poor level of biological characterisation of the area as a whole, suggests that better protection and management are urgently required. Added to this is the potential for additional exploitation of seabed mineral resources to impact significantly upon natural ecosystems.

Refuge for pirates - the "donut hole" problem

Illegal, unreported and unregulated (IUU) fishing is known to be rampant in the Pacific, where the Pacific Island Countries have limited means for patrolling the vast ocean. On the high seas, the resources necessary to monitor and control fishing activities adequately are even more limited.

At present, there are unknown numbers of large-scale industrial fishing vessels scooping up vast amounts of tuna in these areas; the declared catches from the "donut holes" are approximately 30% of the total tuna catch in the WCPO. In these areas, vessels do not have to pay access fees to the Pacific Island Countries nor do they adequately report the amount of fish taken - this undermines the management and conservation measures of the regional tuna resources and makes the scientific basis for it unreliable. Operators of the vessels often make indiscriminate use of destructive fishing methods that kill countless sharks, turtles and unwanted fish species. Finally, they may also fish illegally within rich fishing grounds inside EEZs and then falsely claim that their catch originates from the high seas "donut holes", therefore avoiding payment of access fees to the EEZs of the Pacific Island Countries.

Making these "donut holes" marine reserves would not only provide a safe haven for fish and other marine life between the EEZs of Pacific Island Countries, but would also deny IUU fishers the loophole currently allowing them to disguise illegal catches taken from the EEZs.

Permanent or Temporary Closure?

Most existing marine protected areas (MPAs) deliver very little in the way of real protection. Studies have shown that when even a small amount of fishing (including sports fishing) is allowed in a MPA it can have substantial detrimental effects on the area's ecology. For example, the extraction of large females from the population drastically reduces the number and quality of eggs exported to sea areas outside.

Fish populations benefit from the creation of marine reserves, and there is evidence from many places where marine reserves have been established that fisheries beyond the marine reserve boundaries benefit through export of eggs and larvae and spill-over of fish. However, campaigning for marine reserves is more than just about fish; such networks will also deliver significant fisheries management benefits, and, more importantly, marine reserves can act as reference areas so that we can determine the effects of other kinds of management outside and act as a sort of insurance for fisheries outside.

The primary purpose of establishing a network of marine reserves is to ensure adequate protection for the entire marine environment; permanent closure of some areas is absolutely fundamental to the long-term protection of our oceans. A global network of marine reserves will protect the whole range of marine biodiversity to be found in the oceans and indeed protect whole ecosystems. By stopping extractive activities and minimising disturbance in large-scale marine reserves we are allowing the oceans to assume a more natural state. Pristine and near pristine areas should remain so and degraded areas will recover.


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Steps for establishing the "donut holes" as marine reserves

Greenpeace is calling on the West and Central Pacific Fisheries Commission (WCPFC) to close these areas to all fisheries under its management as an urgent measure to protect the fisheries of the region and to improve the management of resources. In order to make these fully-protected and permanent no-take marine reserves, with the associated ecosystem level benefits, the Pacific Island Countries should explore the option of extending the northern boundary of the South Pacific Regional Fisheries Management Organisation (SPRMFO), which is currently under negotiation, to 20 degrees north, or alternatively to extend it to include the "donut holes". Such an extended SPRMFO could then designate these areas as marine reserves under its jurisdiction and effectively close them to all present extractive human use.

Conclusion

Marine reserves do not preclude the need for other management measures including effort reduction in areas outside the marine reserve boundaries. Indeed, comprehensive Vessel Monitoring Systems will be essential in both establishing and enforcing any future marine reserves in the WCPO.

Closure of the "donut holes" to fishing would make it significantly harder for IUU fishing vessels to operate and trade their products without being detected and constitutes a significant step towards ensuring sustainable fisheries in the region over the longer term.

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