

The government's considered massive cuts to existing marine protected areas would have serious adverse consequences for commercial fisheries outside those areas. In a 1,000 km² study area in the Great Barrier Reef, populations resident in three reserves exported 83% of offspring of coral trout and 55% of stripey snapper to fished reefs. The researchers estimated that reserves, which account for just 28% of the local reef area, produced approximately half of all juvenile recruitment to fished reefs within 30 km. Their results provided compelling evidence that adequately protected reserve networks can make a significant contribution to the replenishment of populations on both reserve and fished reefs at a scale that benefits local stakeholders. Reserves benefit top predators only at the highest levels of protection and populations take years to build. These benefits can be dissipated quickly by targeted fishing. Therefore, high levels of protection and resolute enforcement will produce the greatest benefits.

If the government's intention in decimating Australia's marine protected areas is to make excised areas available for oil exploration and production, that intention is flawed. As the Paris climate agreement recognised, the world cannot afford for new sources of fossilised carbon to be exploited. Increased global temperatures of greater than 1.5C will probably cause unmanageable and irreversible changes to global atmospheric and marine systems, with the effects of the changes at that point becoming self-accelerating. The ice loss will cause increased absorption of solar energy. Melting tundra will emit increased amounts of methane, an extremely serious greenhouse gas. The implications for the whole world, including Australia, are catastrophic. It is imperative that the government begins to take climate change seriously.

Coral reefs are renowned for their ecological significance. Throughout the world, and notably in the Great Barrier Reef, recent unprecedented coral bleaching caused by lethally warm ocean water has caused mass mortality of corals, with cascading consequences throughout the ecosystem. This demonstrated that now, more than ever before, Australia's marine protected areas are crucially important as the best possible buffer against the effects of climate change. Slashing the Australia's marine protected areas could not be considered responsible in this situation.

Having personally been centrally involved in the establishment of Australia's marine protected area system, I am appalled by the government's move to demolish what is a fantastic national asset.

Dr Peter Coyne