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News

Marine protection goes large

As the creation of giant reserves gains momentum, some fear such areas don't always conserve the habitats most in need.

Nicola Jones

The past five years has seen a spurt in the creation of giant marine protection areas, including a 320,000 km^{2}marine reserve announced earlier this

Huge marine reserves are cheaper to run and more effective at conserving species than small ones.

NOAA

month in Australia.

"Now we have a competition for politicians to see who can have the biggest one," said Daniel Pauly of the University of British Columbia in Vancouver, Canada, at the start of the Society for Conservation Biology's 2nd International Marine Conservation Congress in Victoria, Canada, on Saturday.

The trend has put smiles on the faces of conservationists, who say that large reserves are the fastest way to bulk up protected areas, and are cheaper to manage per unit area than smaller ones to boot. But they add that there is still a long way to go to achieve current targets, and caution that the most recent reserve has protected the "wrong" parts of the ocean.

Ocean grab

The rush to create giant conservation areas was started by former US president George W. Bush, who created the record-breaking Papahānaumokuākea reserve in Hawaii in 2006.

"It all went like dominoes after that," says Les Kaufman

of Conservation International and Boston University in Massachusetts. Kaufman works in the Phoenix Islands Protected Area in the Central Pacific Ocean, which was set up in 2008. More followed in 2009 and 2010 (**see Box: Biggies**). The areas are either entirely 'no take' — that is, fishing is banned throughout — or are managed for select fishing activities and incorporate large swaths of 'no take' areas. Giant reserves of more than 100,000 km^2 make up about 1% of all marine protected areas by number, but account for about 70% of the total area protected.

These large reserves are the best hope for getting anywhere near the extremely ambitious target of 10% ocean protection by 2020, set by the Convention on Biological Diversity in October 2010. At the start of that year, just 1.17% of the ocean was protected; by the year's end the number had reached 1.42%. That represents a 20% jump, much greater than the average 5% per year increase seen for protected marine areas in the preceding years. However, it is still slow progress.

On 5 May, Australia's environment minister proposed the creation of a 320,000 km^2 marine reserve around the country's southwest corner, with 250,000 km^2

designated 'no take'; the plan is expected to be confirmed in the coming months. That's an impressive 20–25% of that area's waters. But Hugh Possingham of the University of Queensland in Brisbane, who invented the software used to define such sites, says planners need to be sure to conserve 20% or more of every type of habitat within a protected area, and Australia hasn't done that.

"Only 3.5% of the protected area is shelf, where the oil and gas and fishing are," he says. "We have to beware of getting lots of stuff that no one cares about." The large headline figure will make it hard, he argues, to get more, and better, marine protection in Australia's waters.

Counting costs

Getting politicians to set up large reserves takes more than simply appealing to their competitive nature, says Pauly: it requires proof of the reserves' economic worth. A postdoc in Pauly's lab, Ashley McCrea Strub, has calculated that, worldwide, today's marine protected areas cost US$2 billion a year to run at full capacity. That compares, she says, with $16.2 billion a year spent on 'negative subsidies' that encourage fisherman to fish

more rather than less — subsidization of fuel costs, for example. On Sunday, McCrea Strub told the conference that if larger marine reserves accounted for a larger percentage of the total area protected — 10% instead of 1% — the costs of managing these would come to 83% less a year.

Conservationists say there is no question that the large reserves work, even though the time for data collection on most has been short. Scientists involved with the 545,000 km^2 marine reserve set up around the Chagos Islands in the Indian Ocean last year say it is expected to prevent 25,000 tuna, 10,000 sharks and 10,000 stingrays being caught every year. Larger areas are thought to be generally more effective than smaller ones, Pauly says, because they have a smaller area of edge per volume of protected waters, meaning that there is less opportunity for outside influences, such as illegal fishermen or pollution, to creep into the protected area. But small reserves can still be extremely effective, especially for relatively sedentary species such as sea urchins and lobsters.

The Pew

Environment Group's Global Ocean Legacy programme has set its sights on two further massive protection areas in the near future: they hope to see New Zealand approve a 630,000 km^2 area in the Kermadec Islands later this year, and Australia protect 900,000 km^2 in the Coral Sea in 2012. Others are even more ambitious. As of December 2010, the Sargasso Sea Alliance is aiming to get a 5-million-square-kilometre restricted-use marine protected area recognized around Bermuda.

"There's an interest in marine reserves like there has never been in the past, and we need to capitalize on

that," says Jay Nelson, director of the Global Ocean Legacy programme, based in Juneau, Alaska. But that will get harder over time, because the first large protected areas have been in remote places without strong commercial fishing interests.

"Getting new areas is something we'd like, but it's incendiary," says Kaufman. "We're running out of places where no one lives."

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