

Financial Support for Fishermen Who Are Affected by Marine Reserves: Examining the Merits

Commercial fishermen sometimes suffer financial losses due to the designation of new no-take marine reserves. Their catches may decline, at least in the short term, while trip costs — affected by having to travel to farther fishing holes — may rise. This prospect can lead to opposition to new reserves from the fishing sector.

To gain commercial fishermen's support for reserves, some politicians have taken a new tack: namely, subsidizing or compensating the fishermen affected by new closures. This method has supporters in the fishing sector, but some conservationists and others view it warily. This month, MPA News describes an

assortment of reserve-related financial assistance programs for fishermen, and offers the views of supporters and skeptics.

Victoria and Tasmania: Australian states pursue assistance schemes

In general, subsidies to support commercial fishermen have existed for some time. In the US, for example, federal fishery managers have often provided research and funds to help fishermen adjust to catching alternative species. In several nations, resource managers have offered boat-buyback programs and job-retraining to fishermen to guide them out of the industry, thereby reducing overcapacity.

But the concept of providing financial compensation to fishermen affected by reserves, in particular, is fairly novel. The compensation programs that have been implemented — or which are under consideration — are not generally geared to help fishermen leave the sector. They are there to help the industry adjust to a new system of closures, and to enable it to continue fishing elsewhere, should that be a viable option. Perhaps most importantly, they are there to secure "buy-in" for reserve plans from fishermen.

The government of the Australian state of Victoria has a plan, now under state parliamentary consideration, to create a system of marine national parks that would set aside 5.5% of Victorian waters as no-take areas (MPA News 3:9). Enshrined in the plan is a compensation scheme for fishermen affected by the new closures: financial assistance would be available to fishery-license holders to cover increased fishing operating costs and reduced catches directly related to the new parks. This assistance would be available for up to three-and-a-half years, depending on the type of fishing license held and the park site. A three-member assessment panel, including at least one person associated with the fishing industry, would determine compensation amounts.

The Victorian government proposed a more limited compensation plan last year, capping the financial assistance at a total of AU \$1.2 million, roughly

A right to fish?

In most countries — including those with financial-assistance programs addressed in the adjoining article — commercial fishermen do not possess a legal "right to fish", whether they hold fishing concessions or not. As a result, if resource managers shut down a fishery or close areas, there is no legal requirement for the government to compensate fishermen for lost revenue. Nonetheless, political circumstances have led some politicians to consider ways of easing the potential financial burden of reserves for fishermen.

Margaret Tailby, director of Environment Australia's marine protected areas program, said that although compensation related to Commonwealth reserves is unlikely, the department is looking at other forms of financial assistance attractive to both industry and government. "What we are currently doing is looking at other options for responding to claims by fishers that their ability to earn a living has been compromised or the security of the business environment irrevocably altered by declaration of an MPA," she said.

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equivalent to US \$685,000 (MPA News 3:1). Criticism of that plan by opposition members of parliament, backed by fishing interests, led the government to remove the cap from the plan's current version. James O'Brien, an advisor to the state environment ministry, said that even without the limit, however, compensation claims should be minimal. "We don't believe there will be a huge need for compensation payments, as we expect the fishing industry will be able to make the adjustment to the creation of marine national parks," he said. "But in the interests of fairness, if there is an impact on the fishing community, then they will be able to access compensation."

Meanwhile, the Australian state government of Tasmania has released its own state-level strategy for establishing a system of MPAs. Under the Tasmanian proposal, any person who could show that the designation of an MPA resulted directly in a financial loss — and that there was no alternative for recouping the loss elsewhere — could be eligible for an "adjustment payment" from the government (MPA News 3:4). Fishermen would be eligible, but so would be owners of shops, motels, or other services, as long as they could prove they had been affected by an MPA.

Doug Nicol, principal fisheries management officer for the government's environment agency, is careful to point out that the assistance program is not compensation. Rather, he said, it is a subsidy to help individuals adjust to changes, such as by enabling them to move or change their operations. A local fishing tackle shop, for example, could use the money to purchase snorkel gear or a glass-bottomed boat to serve tourists to the MPA.

As in Victoria, Nicol said the Tasmanian plan would not likely be subject to large payouts. "Most fishers operating around Tasmania are very mobile, either on the water or by road," he said. Because of this mobility, it would be difficult for fishermen to demonstrate an inability to recoup losses elsewhere. "It is true that some fishers will lose access to specific sites, but they will maintain their access to the remainder of the open state waters," he said.

Two compensation programs: one large, one small

What is likely the most expensive compensation program to date is ongoing in the US state of Alaska, in Glacier Bay. The National Park Service (NPS), under pressure from conservationists, developed a plan in the late 1990s to phase out most commercial fishing in Glacier Bay National Park, the waters of which had been fished commercially for much of the past century. In response, the US Congress — prompted by an influential Alaskan senator — allotted US \$23 million to compensate fishing-permit holders, crew, processors, and local communities expected to suffer lost income due to the closure.

The deadline for applications was in January 2002. As of May 2002, \$20 million had been assigned, with the remainder being held pending completion of an appeals process. "Every last penny will be paid out of the \$23 million," said Ron Dick, manager of the compensation program for the park.

The \$23 million figure arose from a 1999 economic estimate of the closure's impact. To be eligible for compensation, permit holders, crew, and processors had to demonstrate participation in a Glacier Bay commercial fishing activity during the years 1989-98, with proof of current participation. Eligible communities were judged on their number of resident fishermen and their proximity to Glacier Bay, among other factors. Because of the difficulty of demonstrating actual losses, compensation was to be based primarily on share of past harvests. Each approved recipient of compensation will receive a one-time payment roughly equal to eight times his average annual Glacier Bay earnings during the 1989-98 qualifying period. Notably, recipients may continue to fish elsewhere. (Summaries of the compensation plan and approved payouts are available on the park website at <http://www.nps.gov/glba/learn/preserve/issues/fish/index.htm>.)

On a much smaller scale, fishermen on the Caribbean island of St. Lucia benefitted from a targeted compensation program a few years ago. In 1995, pot and gillnet fishermen around the Soufrière Marine Management Area (SMMA) complained of severe declines in their catches as a result of new no-take zones within the MPA. They could only set their gear in multiple-use areas, where there happened to be little concentrated reef habitat. Pressure from these fishermen grew until the St. Lucian government crafted a plan: a group of 20 pot and gillnet fishers — consisting of individuals judged to be the most dependent on this type of fishing for food and income — would be compensated a sum equivalent to US \$150/month for a year, and part of one reserve would be reopened to pot fishing. In addition, the SMMA management team worked to improve access to loans for fishermen to invest in deepwater fishing, offered training in longline fishing, and performed various other projects to encourage acceptance of the closures.

The result was a success, according to Juliana Samuel, officer in charge for the SMMA. Among other things, the year of compensation allowed time for the fishermen to become knowledgeable of the benefits of the reserves. "The existing marine reserves continue to flourish, and fishers have expressed satisfaction and cooperation," she said. Asked whether the compensation program would now necessitate similar measures for reserves elsewhere on St. Lucia, Samuel said no. "Fishing communities to the east, south, and northeast of the island are closer to migratory routes of valuable ocean species such as dolphin [*mahi mahi*], tuna, and

kingfish, and rely less heavily on reef fishes captured using pots," she said.

For and against compensation

Several commercial fishing organizations have expressed their support for the concept of compensation. In the US, where the Glacier Bay compensation program remains somewhat of an anomaly on the national MPA scene, some fishing organizations have called for similar measures elsewhere in US waters. The US-based Pacific Coast Federation of Fishermen's Associations, in its position statement on MPAs, states that where significant reductions in catches are an unavoidable consequence, then "funding for the compensation of fishermen in proportion with the reduction of the fishery shall be part of the establishment of the MPA." The Tasmanian Fishing Industry Council (TFIC), in Australia, is also a strong proponent of compensation, and has reportedly indicated its intent to raise the matter as an issue in forthcoming state elections.

But other stakeholders caution that reserve-related compensation may present managers with an array of

dilemmas, both managerially and ethically. Patrick O'Leary, former regional coordinator of the Marine and Coastal Community Network in Northern Territory, Australia, said the question of compensation opens a Pandora's box of other questions regarding its fairness to non-fishing groups.

"If fishing-industry activity is shown to be damaging to marine ecosystems and fish stocks, should industry have to pay compensation to other stakeholders — divers, tourists, conservation groups, aboriginal groups, and management agencies?" said O'Leary. "And if the creation of no-take MPAs results in stock recovery and increases the viability of the industry, should industry be asked to contribute to the upkeep of the reserve?"

Some skeptics of compensation worry that once managers begin considering it, fishermen will demand it, engendering situations in which no reserves will be designated without compensation. It remains to be seen how the issue of economic mitigation for reserves — whether through compensation or subsidies — will evolve, and how it will affect the other challenging discussions that are already a part of reserve-planning efforts. 

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Notes and News

Mozambique designates new national park

The government of Mozambique has designated a new national park consisting of 1500 km² of marine habitat and 6000 km² of forest lands. Among the ecosystems to be protected in the new Quirimbas National Park will be savannahs, coastal forests, rivers, mangroves, turtle nesting beaches, seagrass beds, and coral reefs. The marine component consists of part of Quirimbas Archipelago, an 11-island chain stretching for 100 km along the northern coast of the country; it is home to healthy dugong and turtle populations. Within the park boundary is a community of 55,000 people, mainly along the coast.

According to Helena Motta, program coordinator for the WWF Mozambique Programme Office, park planners are working now to develop a zoning scheme for management and access, and to secure funding for park development and management. **For more information:** Helena Motta, WWF Mozambique Programme Office, PO Box 4560, Maputo, Mozambique. Tel: +258 1 301 186; E-mail: hmotta@wwf.org.mz

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Report available on bio-impacts of oil spill in Galápagos

The January 2001 grounding of the fuel tanker *Jessica* in the Galápagos Islands, Ecuador, was likely a factor in the high mortality of marine iguanas observed on one island, according to a report on the spill's biological impacts prepared by the Charles Darwin Foundation for the Galápagos Islands. Aside from the spill's effect on iguanas, however, the report cites no clear evidence yet of significant impacts on other coastal vertebrates, fish, or coral. The spill released 240,000 gallons (605,000 liters) of fuel oil into the waters of the Galápagos Marine Reserve; most of the oil apparently threaded through the archipelago and out to sea without coming shore (MPA News 2:7). The report, *Biological Impacts of the Jessica Oil Spill on the Galápagos Environment*, is available online in PDF format at <http://www.darwinfoundation.org/jessicareport.html>

A separate study of marine iguanas in the Galápagos Islands, published in the 6 June 2002 issue of the journal *Nature*, reported that 62% of marine iguanas on the island of Santa Fé died in the months following the *Jessica* accident. The authors cite several lines of evidence to suggest that the mortality was the result of residual, low-level oil contamination from the spill.

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MPA Perspective: Dangerous Targets and Inflexible Stances Threaten Marine Conservation Efforts

By Tundi Agardy

Marine protected areas (MPAs) are fast becoming mainstream tools for conserving biodiversity in all the world's coastal areas. Yet with the welcome rise in MPA interest has come discord, as differing interpretations of what MPAs are and divergent approaches to their use have led to fractures in the once united front for MPA use in marine conservation. This article poses two questions: 1) do only no-take reserves confer legitimacy as MPAs?, and 2) should one spatial target for closures be used for all MPAs? I hope that discussion of these and other questions will help strengthen the use of the MPA tool and ultimately serve to hasten global marine conservation.

Editor's note:

Tundi Agardy, author of the adjoining perspective piece, is the executive director of Sound Seas, a US-based, independent policy group. Agardy excerpted this piece from a paper she co-wrote with several MPA scientists and practitioners, forthcoming in *Aquatic Conservation: Freshwater and Marine Ecosystems* ("Dangerous Targets? Unresolved Issues and Ideological Clashes Around Marine Protected Areas". T. Agardy, P. Bridgewater, M.P. Crosby, J. Day, P.K. Dayton, R. Kenchington, D. Laffoley, P. McConney, P.A. Murray, J.E. Parks, and L. Peau).

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Do Only No-Take Reserves Confer Legitimacy as MPAs?

MPA advocates have long clamored for a single, broadly accepted definition of what constitutes an MPA. In fact the array of goals, and their order of priority, varies widely – so much so that every MPA is essentially unique. MPA planners can follow a standardized methodology to design and implement MPAs, but they should not cling to the idea that a single model will fit all circumstances. Instead, planners must be sure that the final design reflects clearly defined and site-specific objectives.

There are those who argue that only no-take reserves can confer conservation benefits, and those who argue that MPA benefits go well beyond what no-take areas can possibly confer. The problem that this difference of opinion creates is twofold: first, rather than clarifying the scientific validity of MPA benefits, it creates confusion for those searching to find the appropriate tool to fit their needs; and second, it dismisses the very valid other sorts of benefits that MPAs provide. Such benefits include resolving user conflicts, strengthening local and regional economies, empowering local communities, and providing small-scale examples of integrated management.

Perhaps the most important problem with the strong push to establish exclusively no-take MPAs has to do with the perception that only MPAs that fence the ocean to keep people out are worthwhile. Experience shows that this dangerously undermines the ability of managers to implement MPAs successfully. In fact, the best examples of MPAs are those that have drawn fishers and other users into the planning process, creating strong advocates for MPAs among the groups most affected by the prospective restrictions. And most successful multiple-use MPAs include no-take components, making the dichotomy between "hard" no-take and "soft" multiple-use MPAs a false one.

Should One Spatial Target for Closures be Used for All MPAs?

The push to create scientific consensus statements and publish theoretical papers on MPAs is a natural response to the proliferation of seemingly meaningless MPA designations. This is especially true regarding efforts to

identify a single target to describe the minimum amount of area set aside as no-take.

The 20% figure has now become dogma. The origin of this figure is debated, yet it was certainly extrapolated from very localized studies of particular fisheries within particular habitats – not from representative community ecology from a wide range of habitat types. For a small subset of fisheries in a particular biome, the figure may indeed be valid. However, it is most certainly not a magic number for many biomes that face serious degradation from inadequately controlled uses of the marine and coastal environment. The one-size-fits-all approach cannot be expected to work in all environments to combat all threats. And such failures have repercussions: a very real danger exists if MPAs do not meet expectations, for decision-makers and the public may well eventually abandon them altogether.

Another problem with simplistic targets is that they provide absolutely no guidance on which areas should be protected, from what, or how to achieve the desired outcome. In the end, the tendency will always be to establish no-take areas in the remotest, least-used areas – where strict restrictions can be imposed with minimal resistance. These, unfortunately, are the areas where MPAs are least needed. This leads to another dangerous tendency that adherence to strict minimum targets will present: creating a false sense of security that marine issues are being dealt with adequately.

Inadvertent Consequences and the Danger of Derailing Conservation

All of us working in marine conservation welcome the newfound interest in MPAs. Yet inflexibility and rigid dogma threaten the progress made to date. Narrow interpretations of what constitutes an MPA; objective-setting that is done by a single interest group (often scientists) as opposed to the broadest possible array of stakeholders; adherence to scientifically questionable targets; and the disingenuous labeling of scientific opinion as truth are all extremely dangerous tactics that will not serve defenders of MPAs or marine conservation well in the end. Science can and should be harnessed to guide MPA planning, yet it should not drive the process unilaterally, especially when it leads to myopia and inflexibility. We must recognize the limits of science – and we must always be honest with ourselves and with the public about the existence of those limits. Anything less than honesty threatens the integrity of all of us working in marine conservation, defeating us, coastal peoples, and oceans themselves. 

MPA Perspective: Responding to the Commercial Fishing Industry's Concerns With MPAs In Australia

By Pascale Baelde

The development of a national representative system of marine protected areas (MPAs) is a core component of the Australian Oceans Policy released in 1998. While there is no doubt that MPAs have an important role to play in the protection of marine resources, this government initiative generates great uncertainty within the commercial fishing industry. In 1999, researchers from the Universities of Canberra and Queensland carried out a study to identify and analyze industry's concerns with MPAs.

In Australia, MPAs are used essentially for biodiversity conservation and are implemented by conservation agencies. The study shows that most of the difficulties between government and industry are created by the lack of integration of fisheries management (increasingly based on allocation of fishing rights) and biodiversity conservation objectives. As a result, existing MPA planning processes often fail to properly recognize and address the potential negative impacts of MPAs on commercial fisheries.

The assessment and management of these potential impacts are the responsibility of fisheries agencies, but to date these agencies have shown limited engagement with MPA planning. This situation has created an imbalance between the needs for environmental conservation using MPAs and the needs for sustainable use of fish resources. The study concludes that the combination of loss of access to fishing grounds; poor planning and poor consultation; mixed and confusing messages on whether MPAs achieve their objectives; and lack of government commitment to monitoring and enforcement gives fishers little confidence in the value of MPAs.

This situation presents challenges for both government and industry. To assist MPA negotiations in Australia, deficiencies in government processes in responding to industry's concerns and industry's responsibilities were identified.

In this piece, Baelde uses the term "MPAs" to refer to reserves implemented primarily for biodiversity conservation and not for fisheries management purposes – i.e., areas selected for their representativeness, rather than according to biological and ecological characteristics of individual fish species.

Challenges for agencies planning MPAs

Some essential principles need to be acknowledged during MPA planning by government:

- Commercial fishing is a long-established, legitimate activity and a service to the community, and fishers are major stakeholders in the management of marine resources;
- MPAs may have little, if any, benefits to commercial fisheries; and
- MPAs may have negative impacts on commercial fisheries and on the effectiveness of existing management systems.

To apply these principles, government conservation agencies should demonstrate a commitment to addressing fisheries-specific issues by:

- Seeking expert advice on fisheries issues through consultation with fishers, fisheries scientists and managers;
- Ensuring that adequate research is undertaken to assess biological and socio-economic impacts of MPAs on fisheries; and
- Exploring ways to mitigate identified negative impacts (e.g., by negotiating MPA boundaries, or developing compensation or fisheries re-structuring mechanisms).

It is necessary that agencies demonstrate that MPAs are being used properly for environmental protection. That is:

- Environmental values, land- and sea-based threats, and conservation needs are identified at the relevant regional and local scales;
- Objectives of individual MPAs are clearly established and address identified conservation needs;
- Management plans are designed before the declaration of MPAs and:
 - Clearly relate the size, location and regulations of MPAs to specific conservation objectives;
 - Include a monitoring program to check MPA performance, with practical performance measures;
 - Include adequate compliance measures (both education and enforcement);
 - Include audit mechanisms to review the performance of MPAs and describe actions to be taken if they do not reach their objectives; and
 - Detail resources needed to manage MPAs and describe agreements between jurisdictions on management responsibilities and cost-sharing.

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Editor's note:

Pascale Baelde, author of the adjoining perspective piece, is a senior research fellow in fisheries at the School of Resource, Environmental and Heritage Sciences, University of Canberra (Australia). The piece is based on a report she co-authored with Robert Kearney of the University of Canberra, and Daryl McPhee of the University of Queensland. (P. Baelde, R. Kearney and D. McPhee [2001]. "A coordinated commercial fishing industry approach to the use of marine protected areas." Final FRDC project, Project No 1999/163, University of Canberra, Australia, 197 pp.)

A non-technical summary of the report is available online at <http://www.frdc.com.au>. Copies of the full report may be obtained from the Fisheries Research and Development Corporation, P.O. Box 222, Deakin West ACT 2600, Australia. There is a charge to cover printing costs; e-mail frdc@frdc.com.au to confirm availability and price.

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Challenges for industry in addressing MPAs

Industry needs to acknowledge ongoing changes in community values and demands with regard to the protection of the marine environment, and to recognize that MPAs have a role in addressing these needs.

One of the challenges for industry is to engage constructively in MPA planning processes by promoting its expertise and demonstrating how government could benefit from it. To be able to achieve this, industry needs:

- To be aware of the principles underpinning MPA development (e.g., ecosystem-based and precautionary management, habitat representativeness) and of associated government policies and procedures; and
- To develop a consistent and pro-active response to MPA development, reflecting industry principles and a commitment to environmental conservation.

Notes and News

Update: Malpelo and Florida Keys are approved as PSSAs The archipelago of Malpelo — off the Pacific Coast of Colombia — and the marine area around the Florida Keys in the US have been designated as Particularly Sensitive Sea Areas (PSSAs). The new status, conferred by the International Maritime Organization (IMO), offers managers of these sites a comprehensive approach to seeking vigilance and awareness from the international shipping industry (MPA News 3:8). In May, an IMO committee also approved associated measures for both sites to provide the legal basis for restrictions on maritime activity, including three mandatory no-anchoring areas in the Florida Keys.

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Reform of EU fisheries policy to include closures In late May, the European Commission unveiled initial plans for a major overhaul of EU fisheries policy, including a call for cutting some national fleets by as much as 60 percent. The measures threaten to put thousands of fishermen out of work, but EU authorities say severe steps are needed as European fish stocks suffer from vast overfishing. Details of the reforms will be developed in a series of action plans, to be produced over the course of the coming year. According to statements of the European Commission, the action plan for conservation should address "the identification of key habitats and biotopes" and "the setting up of temporal and spatial closures including 'no-take zones'." For more information on the reform plans, go to http://europa.eu.int/comm/fisheries/reform/roadmap1_en.htm.

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In practice, the immediate issues for the Australian fishing industry are:

- To seek greater involvement from fisheries scientists and managers to ensure that conservation agencies understand the implications of MPAs on commercial fisheries and their management;
- To dedicate time and resources informing other stakeholders — including conservation groups — on fisheries issues and making alliances;
- To actively address fishing impacts (e.g., on habitats, by-catch species) and collaborate with scientists to assess the nature and extent of these impacts and associated risks for the environment, and
- To improve sharing of experience among fishing sectors and develop unified industry-wide positions to provide unbiased, relevant and timely expert information. 📧

Mexico, Papua New Guinea declare their waters to be whale sanctuaries In May, as another contentious annual meeting of the International Whaling Commission (IWC) came and went, the governments of Mexico and Papua New Guinea declared their respective Exclusive Economic Zones to be whale sanctuaries. According to the Mexican government, its sanctuary will support the maintenance of conditions necessary for sustaining the biological functions of whales, 21 species of which live in Mexican waters. Papua New Guinea Prime Minister Mekere Morauta said his nation's sanctuary would protect migratory routes and potential breeding grounds for whale species at risk from hunting.

At the IWC meeting, initiatives to designate international whale sanctuaries in the South Pacific and South Atlantic failed to receive enough votes to pass. Two IWC sanctuaries currently exist in the Indian Ocean and the Southern Ocean surrounding Antarctica.

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