

## Balancing Ecology and Economics: Lessons Learned from the Planning of a Marine Reserve Network in the Channel Islands (US)

In the past year, milestones were reached in two high-profile processes to create representative systems of marine protected areas. In the Australian state of Victoria and in the Channel Islands of the US state of California, government officials approved plans for networks of new MPAs, concluding lengthy and contentious planning efforts in both cases. Both processes offer lessons to practitioners and stakeholders elsewhere who face similar challenges in planning MPA networks.

In a two-part series, MPA News distills lessons learned from each process by examining the obstacles encountered and how participants might have improved the processes in retrospect. Part one of the series, focusing on the Channel Islands, appears in this issue.

### Background on Channel Islands planning process

The unique mix of marine life surrounding the Channel Islands archipelago exists due to the convergence there of warm- and cold-water currents, flowing up and down the Pacific coast of North America. In 1980, the US federal government designated the 4,292-km<sup>2</sup> Channel Islands National Marine Sanctuary (CINMS) to protect these waters, principally from the threat of increased oil

drilling in the area. In the late 1990s, responding to calls from local stakeholders to protect dwindling fish stocks, the sanctuary and the California Department of Fish and Game instituted a joint process to consider no-take marine reserves in the sanctuary. (The sanctuary straddles state and federal waters.)

The multistakeholder Sanctuary Advisory Council for CINMS, which provides advice to the sanctuary's management, was assigned oversight of the reserve-planning process in 1999. To examine the issue of reserves in greater detail, the council formed a marine reserves working group (MRWG) of managers, fishermen, conservationists, and other stakeholders. The MRWG was responsible for recommending a plan to the council, which would then evaluate and forward the plan to the manager of the sanctuary. Final implementation would come upon approval from state and federal resource-management agencies (MPA News 2:10).

Notably, the MRWG established that all of its decisions on reserves would be made through a consensus-based process — i.e., all members must agree. The working group set a number of goals for the process, among them:

- Protection of representative and unique habitats;
- Achievement of sustainable fisheries in the Channel Islands; and
- Minimization of short-term economic losses to all resource users.

To inform its decisionmaking, the MRWG created two advisory panels, on science and socioeconomic. The science panel, directed by the working group to propose size and location criteria for reserves, recommended that at least 30% of each habitat type in the sanctuary be set aside to conserve biodiversity and sustain fisheries. The socioeconomic panel analyzed the potential impacts on fishing and other activities in the case of such closures.

In early 2001, the MRWG failed to achieve full consensus by deadline on a network plan, hindered primarily by dissent from recreational fishing representatives. Stuck without an agreed-upon option from stakeholders, the Sanctuary Advisory Council advised

*continued on next page*

### In the next issue...

In the February 2003 issue, the conclusion of MPA News's two-part series will examine lessons learned from the process to designate an MPA network in the Australian state of Victoria.

### Dear subscriber:

This issue of MPA News covers the months of December 2002 and January 2003, allowing our staff a year-end holiday. In February, our regular monthly delivery will resume.

On behalf of the staff and editorial board of MPA News, I thank you for your interest in our publication. We are pleased to serve the field of MPA practitioners and stakeholders, and look forward to continuing our work for years to come. Please let us know about projects on which you are working — we want to hear from our subscribers. Our e-mail address is [mpanews@u.washington.edu](mailto:mpanews@u.washington.edu). Thank you.

John B. Davis  
Editor

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the CINMS manager and California Department of Fish and Game to develop a plan themselves, based on the findings of the working group. The result was a preferred option that, if implemented, would set aside 25% of the sanctuary as no-take through a series of reserves, with 10% of the closures in state waters and 15% in federal waters. In October 2002, a state commission ratified that plan, effectively designating 10% of the sanctuary as off-limits to fishing, to take effect January 1, 2003 (MPA News 4:5). The process to consider designation of the remaining federal portion of the network, which will require approval from federal fisheries managers, is now getting started.

### Lessons learned

MPA News interviewed eight individuals who participated directly in the MRWG process. Ranging across government, NGOs, and the commercial and recreational fishing sectors, these participants described a variety of challenges faced by practitioners and stakeholders in the planning effort. Through these discussions, MPA News gathered the following lessons:

#### 1. Maximizing conservation while minimizing short-term economic impacts is difficult.

Although each of the surveyed participants concluded that the MRWG's goal of protecting biodiversity had likely been met, there was disagreement over whether the working group's socioeconomic goals had achieved similar success.

"The process failed to minimize the short-term economic impacts on fishermen," said Harry Liquornik, president of a local port association of commercial fishermen. According to a report of reserve-network impacts by the socioeconomic advisory panel, fishermen could see the ex-vessel value of their catches decline by 8%-19% depending on gear type, assuming they were unable to recoup the losses elsewhere. Liquornik said it was a major challenge for planners to find areas with good habitat to set aside that would not disproportionately affect any particular sector of the industry.

"Don't get me wrong — I fully support reserves," said Liquornik. "The goals that we developed, although pretty lofty, were excellent." However, he said, the MRWG erred in not setting criteria for measuring achievement of the socioeconomic goals. Like the science advisory panel's 30% target for closures, perhaps the working group should have set a maximum target for economic impacts and worked down from there, he said. He added that no plans for effort reduction were agreed upon, raising the likelihood of environmental impacts due to effort displacement from the new reserves.

Another MRWG member, Greg Helms of The Ocean Conservancy, an NGO, agreed that allocating economic impacts was a continual challenge. "The traditional

struggle between commercial and recreational fishermen was a strong undercurrent in the process," he said. "This added to the struggle between conservation considerations and economic ones."

Helms says the process was outstanding — and fortunate — in its ability to incorporate high-quality information, gathered by teams of scientists, in both ecological and socioeconomic decisionmaking. By applying natural and social features to a cell grid of the planning area, planners had a sophisticated and organized way to discuss and conceptualize various reserve alternatives. "There was a clear depiction of costs and benefits among alternatives," he said.

Linda Krop, executive director of the Environmental Defense Center, another NGO, said the working group satisfactorily met its goals. "Given the internal conflicts, it was virtually impossible to meet all objectives for both the short and long term," she said. "However, the [state-ratified plan] made great progress in meeting the agreed-upon goals and objectives. To some degree, the scientific input was ignored to elevate consumptive socioeconomic interests, but the end result was still an improvement over pre-existing regulations."

#### 2. Full consensus is not always achievable.

The MRWG process was built on a foundation of consensus-based decisionmaking. When the sanctuary and state officials moved forward to prepare a plan despite the MRWG's failure to reach full agreement, some participants felt that they and the process had been wronged. There was particular outrage from the recreational fishing community, whose MRWG representatives had favored smaller closures.

Sean Hastings of CINMS, who staffed the working group, said that although striving for full consensus was admirable, "It should not impede the necessity to fulfill the mandate of the law." He said that if the process were hypothetically to be done again, he would suggest not to repeat the full-consensus goal, and instead focus on generating the best advice possible.

Helms of The Ocean Conservancy agreed. "Consensus is not an achievable goal for stakeholder processes dealing with issues of this magnitude," he said. "A first reason is that it is unfair to expect stakeholder representatives to both represent their constituency and honor a negotiated compromise at the same time. Also, the goal of consensus poses the problem of giving each participant a veto power over any potential outcome. Thus stakeholder processes should be viewed as an outstanding method of identifying common ground, identifying and processing data, defining the contours of conflict, and potentially creating novel alternatives for their resolution.

"Participants should have been given more specific parameters about what to provide the ultimate

decisionmakers and more clarity that a decision was going to be made using the information generated by the process,” said Helms. “Perhaps the goals and objectives should have been provided to the MRWG so that its task would have been one of finding ‘how’, and not ‘whether’ or ‘how much’ to agree upon.”

John Ugoretz, senior biologist with the California Department of Fish and Game, pointed out that although the Channel Islands process did not ultimately achieve full consensus on a reserve network, MRWG members were able to agree on many other things, including the fundamental goals for what they intended to do. “All the working group members agreed that there was a problem in the area noted by declining [fish] populations,” said Ugoretz. “They also agreed that there are multiple causes for this problem and that marine reserves are one way to address it.” He said that these basic agreements were all used by state and federal officials in developing the final proposal. Therefore, to suggest that consensus-based decisionmaking should play no role in MPA planning would be wrong, he said. “Highly diverse groups of representatives can reach agreements,” he said.

Steve Roberson, an attorney and recreational fisherman, was part of a group of anglers who first recommended creation of reserves in CINMS in 1996. A MRWG member, he says that although final agreement on a reserve plan was not achieved, the goal itself likely brought people to the negotiating table. “Maybe people wouldn’t have participated at all if there hadn’t been the unanimity requirement,” he said.

### **3. Remain committed to the goals of the process.**

The MRWG planning process lasted two years, with dozens of meetings. Many of these consisted of long discussions on the precise wording of goals so that everyone would be in agreement before moving ahead. Without the commitment of MRWG members to the process, the group would not have reached the agreements that it did on goals and objectives. “The endless wordsmithing was driving me crazy, but I realized later that it was probably necessary for the later negotiations,” said Roberson.

Tom Raftican of the United Anglers of Southern California said, however, that the process could have benefited from a time extension at the end, allowing the process one more chance to reach unanimity on a plan. “If consensus is the goal that you start with, then it needs to be the goal that you finish with, too,” he said. With no extension of the deadline for a decision, he said, the result of the process was fundamentally unfair. He added that in the final days of the process, the MRWG was close to a solution that could have found agreement from all sides, but the deadline put an end to it.

Krop of the Environmental Defense Center said commitment to the process carried the responsibility of

keeping constituents — often diverse and decentralized — informed. She suggested that MRWG representatives from the fishing community did not always do a sufficient job of educating their constituents of the issues at stake. “Rather than present objective information and try to develop options based thereon, the fishing community continued to take an ‘all or nothing’ approach,” she said. “Fishers and harbor business people would show up at meeting after meeting, afraid that they would lose their jobs and livelihood. They did not have the benefit of the information that had been generated through the process.” She recommended that for such planning boards to be effective, they should include stakeholders who are truly interested in achieving full- or near-consensus, and who are not there simply to exercise their veto power.

### **4. Setting percentage-based targets can alter a planning process.**

When the MRWG asked the science advisory panel to provide size and location criteria for potential reserves, the panel took the initiative of delivering its advice with a percentage-based target: that at least 30%, and as much as 50%, of each sanctuary habitat be set aside as no-take. The figures were reported in the media, and fishing interests voiced strong objection to the idea of closing up to half of their fishing grounds. MRWG discussions, which had formerly focused on how to meet the group’s general goals of balancing ecology and economics, now veered toward how the group could set aside 30% of the sanctuary.

Ugoretz of the California Department of Fish and Game says the 30% target was never viewed as a firm goal by the federal and state officials, including himself, who drew up the eventual network plan. “The agencies, when developing the proposed project, took into account the science advisory panel’s advice, along with other science and goals such as limiting socioeconomic impacts,” he said. “We also considered the fact that MPAs would not be the only type of management used [in the region], and that many ongoing processes are reducing fishing effort. Thus we determined that representing habitats at a level of 20% or more was adequate.”

Although the sanctuary, as host of the planning process, worked hard to separate politics from the fact-finding and science processes, some participants felt the science panel had overstepped its bounds in picking and publicizing a percentage-based target. Bruce Steele, a commercial urchin diver, accused the science panel of being political. “If the scientists are going to take a political stance, then they should be prepared to go the whole way and participate in all the community meetings, too,” he said. He said one assumption that underlay the panel’s target — that all fisheries management outside the sanctuary was ineffective — was flawed. “Fishermen went into this process hoping it would produce a better interface between science and

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community stakeholders but, with some exceptions, that didn't transpire," he said.

Liquornik, representing the local port association of commercial fishermen, said the MRWG discussions in the end consisted of seeing how far the fishermen could go in setting aside fishing grounds. "The fishing community should have stopped and said, 'This is as far as we can go, percentage-wise, with the consensus of the industry,'" he said. Absent such a limit, the fishing representatives on the MRWG were left to consider each proposal on an ad hoc basis, weakening their negotiating position.

### 5. External factors can affect planning.

As noted above by Ugoretz, the Channel Islands process did not operate in a vacuum. Other fisheries management actions along the US Pacific coast have placed increasingly strict limits on fishing effort in recent years, including a ruling in 2002 by the Pacific Fisheries Management Council (PFMC) that fishing for rockfish would be off-limits in waters deeper than 120 feet (MPA News 4:3). The PFMC ruling, which came after the MRWG discussions but prior to state ratification of the Channel Islands network plan, has made the concept of closing shallow rockfish habitat in the sanctuary — particularly around the islands nearest to mainland harbors — that much more difficult for the recreational fishing sector.

"The PFMC essentially closed down the rockfish fishery beyond 120 feet," said Raftican of United Anglers. "There are an awful lot of moving parameters out there in fisheries management. It's extremely difficult in planning to take a static look at the situation."

Said Roberson, "The recreational fishing people had too many closures hitting them from other processes to allow them much flexibility. With the Channel Islands reserves and the rockfish closures, I think some of the [recreational fishing guides] will go out of business."

### 6. Clarification of roles may be necessary.

When a government agency is both a host and participant in a planning process, as the sanctuary was, there can be confusion among stakeholders as to where the agency's allegiance lies: to the process or to its own interests. "On a general scale, there was and still is confusion on the sanctuary's interest and involvement in the process," said Hastings of CINMS. "The public needs to recognize that agencies must operate within the scope of the law and their mandate. Certain constituencies appeared not to fully understand the sanctuary's role in protecting resources and providing a

very open public process to better inform the sanctuary and other resource management agencies."

Liquornik said the decision by the sanctuary and state officials (on advice from the Sanctuary Advisory Council) to develop a plan themselves without full consensus from the MRWG was indicative of where their interests lay. "We learned that agencies are stakeholders, too," he said.


### Outcomes of the process

Roberson says that although many in the recreational fishing community view the Channel Islands planning process as having been a negative one, it had one positive result: the community is now more organized and galvanized to take action on issues. "Hopefully that will be a positive thing environmentally," said Roberson. He said recreational fishermen might now be able to effect greater change, such as by working for better water quality and other issues impacting their target species.

Others in the fishing sector are not satisfied with the Channel Islands process. A coalition of several recreational and commercial fishing associations filed a lawsuit on December 3 to stop implementation of the Channel Islands reserve network and reopen the process by which state officials approved it. The lawsuit claims the state failed to consider the effects of the closures on adjacent areas or respond to public comments, among a range of other violations of state law.

In the meantime, the state of California is moving ahead with a process under the state's Marine Life Protection Act to design a network of MPAs throughout state waters (MPA News 3:9).

Helms of The Ocean Conservancy summarized the lessons he had taken from the Channel Islands. "The process was challenged by valid questions from many stakeholder sectors about whether a negotiated stakeholder process is a viable and proper means to resolve resource conflicts," he said. "Essentially, the willingness to pursue common ground and compromise challenged the process, and I believe these challenges will persist as MPA planning efforts move forward. 'End run' opportunities will continue to exist; that is, methods to secure superior outcomes outside the process will be available to each constituency and these have the potential to undermine stakeholder processes.

"The management of the ocean is becoming more contentious and the estimates of its status more bleak," he said. "How will future planning processes be affected by this context?" 

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## MPA Perspective Conserving Ecological Integrity of Marine

### Reserves: "No-take" Is Not Necessarily "Fully Protected"

By William Alevizon, Wildlife Conservation Society

A troubling trend has emerged in recent years among many MPA scientists, planners, and advocates: namely, the interchanging use of the terms "fully protected" and "no-take". Such usage suggests that extractive use *per se* is the only resource-use issue relevant to the protection of marine resources within marine reserves. The logical outcome of such a paradigm is that managers/planners are led to believe that simply making these areas off-limits to fishing might adequately protect the ecological integrity of such areas.


Such a view, however, is inconsistent with best-available science and common sense. Today, many biologists concur that on a worldwide basis, the greatest threat to wildlife, biodiversity, and ecosystem health is the widespread degradation, loss and fragmentation of natural habitats (Ehrlich and Wilson 1991; Soule 1991). While "extractive use" may frequently contribute to habitat degradation in marine ecosystems, it is far from the only factor or form of resource use so involved.

It has been well documented, for example, that unregulated numbers and/or activities of recreational divers and snorkelers can cause substantial damage to sensitive marine habitats. Such problems become evident even at levels of diving intensity far less than those presently experienced at many popular dive sites (CIDE 1997). Coral reefs are particularly sensitive to diver damage, with documented impacts typically including reduction of live coral cover, reduced abundance and diversity of corals and other benthic invertebrates, and increased turbidity and sedimentation at reef sites (Hawkins and Roberts 1992, 1993; Chiappone and Sullivan 1996; Harriot *et al.* 1997; CIDE 1997; Roberts and Hawkins 2000; Jensen 2001). Problematic impacts from unregulated recreational diving have also been documented on temperate rocky-reef habitats in both the Mediterranean (Zabala 1997; Badalamente *et al.* 2000) and in California kelp forests (Schaeffer *et al.* 1999).

Similarly, feeding and other forms of harassment of marine wildlife have been shown to cause ecological disruption in the forms of altered behaviors and/or unnatural distribution/abundance patterns in sharks (Burgess 1998), reef fishes (Perrine 1989; Quinn and Kojis 1990; Cole 1994; Hawaii DLNR 1993, 1999) and marine mammals (NOAA 1994). Marine mammals have been most thoroughly studied with regard to the impacts of inappropriate human interactions (feeding, touching, etc.). Here, the problems documented were of sufficient concern (NOAA 1994) that such activities are now classified a form of "take" and prohibited under provisions of the U.S. Marine Mammal Protection Act.

Despite such well-documented problems, the referenced activities remain unregulated at most so-called "fully protected" marine reserves. While the long-term impacts of chronic overfishing on reef communities are not to be taken lightly, neither should substantive documented "non-consumptive" impacts. In fact, given the problems documented from the referred activities within some established marine reserves, one could argue credibly that the latter should be of at least equal concern as the former in the development of management schemes designed to "fully protect" the long-term ecological integrity (or fisheries) of sensitive tropical and temperate reef habitats.

Roberts and Hawkins (2000) pointed out the need to regulate diving intensity on coral reefs, suggesting that a sizable portion (10-20%) of reef areas in "fully protected" marine reserves be completely closed to scuba diving. Badalamente *et al.* (2000) reported that newly established marine reserves in the Mediterranean quickly became magnets for increased dive tourism, and the resulting impacts on benthic communities and disturbance of reef fish assemblages (through rampant fish feeding) forced authorities to either ban divers completely, or strictly regulate their numbers in some areas. A focused study of the impacts of recreational diving impacts on kelp forests of central California (Schaeffer and Foster 1998) led authors to conclude that, "Marine reserves not based upon empirical data and allowing unmonitored levels of diving can be counterproductive to the conservation ideals they are supposedly based upon." Davis and Tisdell (1995) reached a similar conclusion: "The environment of heavily used dive sites...may be impacted by SCUBA diving and these impacts may conflict with conservation goals."

These lessons and admonitions should not remain unheeded. In an era of ecosystem-level approaches to conservation and management, it must be acknowledged that extractive use is but one of any number of ways in which the ecological integrity of marine ecosystems may be compromised by human impacts. Even when fisheries protection/restoration is the primary goal in establishing a marine reserve, it should be recognized that protecting the integrity of supporting habitats and biological assemblages is as necessary to that goal as the regulation of extractive use. Full protection for MPAs designed to conserve biodiversity, protect wildlife, and/or maintain natural ecosystem attributes must go beyond the simple concept of no-take. Regulatory schemes designed to provide "full protection" for sensitive marine ecosystems should invoke the precautionary principle as the management standard, and thereby encompass, to the degree practical, protections from the full spectrum of all known and readily controlled negative human impacts. 

#### Editor's note:

William Alevizon, author of this perspective piece, is a senior marine ecologist with the marine conservation program of the Wildlife Conservation Society, a US-based NGO. A specialist in population and community ecology of reef fishes, Alevizon has conducted ecological investigations of Caribbean and Florida reef habitats and fisheries since 1973, and has authored or co-authored numerous scientific papers and technical reports. He has participated in MPA planning efforts in several Caribbean nations, including Antigua, the Dominican Republic, Honduras, and Nicaragua. For the past two years, Alevizon has worked closely with the Bahamas Department of Fisheries to develop a planning framework for the nation's proposed marine reserve network and conduct preliminary site surveys of prospective reserve sites.

A list of the literature cited in this piece is available online at <http://depts.washington.edu/mpanews/Alevizon-cited.htm>

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## More information on women and MPAs

Readers who want to learn more about the subject of women and MPAs — featured in last month's MPA News — may refer to the *Women in Fisheries* bulletin, published by the Secretariat of the Pacific Community. The November 2002 edition features several articles on women's roles in community-based management and conservation in Pacific island nations. The issue is available online at <http://www.spc.int/coastfish/News/WIF/WIF11/WIF11.htm>.

## Notes & News

### Insurer ruled liable for damages from Galápagos spill

A court in Ecuador has ruled that Terra Nova, a British insurance underwriter, must pay a total of US\$10 million to the Galápagos National Park as compensation for a fuel spill that occurred in the park's waters in January 2001. The spill occurred when the tanker *Jessica* — insured by Terra Nova and carrying a cargo of 240,000 gallons (605,000 liters) of fuel — ran aground off San Cristobal Island. Two-thirds of the vessel's cargo was released directly into park waters (MPA News 3:11). Terra Nova has appealed the court's decision, arguing that the case falls under British jurisdiction rather than Ecuadorian. If upheld, the compensation would help reimburse the park for its spill-response and monitoring efforts. In addition, US\$600,000 would go to biologist Martin Wikelski of Princeton University (US), whose long-term study of marine iguanas in the park ended when 62% of them died at a study site affected by the spill. For more information: Eliecer Cruz, Director, Galápagos National Park, Puerto Ayora, Santa Cruz, Galápagos, Ecuador. E-mail: [ecruz@spng.org.ec](mailto:ecruz@spng.org.ec).

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### Designation expected soon: Antarctica's first wholly marine protected area...

A marine area encompassing 30km<sup>2</sup> in Terra Nova Bay, Ross Sea region, is expected in mid-2003 to become the first entirely marine protected area in Antarctica to be developed under the Madrid Protocol, which regulates environmental protection on the continent. A proposal by Italy to designate the site as an Antarctic Specially Protected Area (ASPA) was approved in October 2002 by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR); the proposal now heads to the Antarctic Treaty Consultative Meeting in June 2003 in Madrid for final approval. The Terra Nova Bay site is an important littoral area for well-established and long-term scientific investigations, and its proposed regulations would strictly limit any activities that could jeopardize the area's ecology. No marine resource harvesting has been conducted historically in the immediate vicinity. In addition to considering the Terra Nova Bay designation, the June 2003 meeting will consider revised management plans for three existing protected areas with partial marine components. The proposed management plan for the Terra Nova Bay ASPA is available online in PDF format at <http://cep.npolar.no/docArchive/documents/CEPV/English/wp036e.pdf>. For more information on the Madrid Protocol and its system for designating protected areas, go to [http://cep.npolar.no/Content/about\\_cep/env\\_prot.htm](http://cep.npolar.no/Content/about_cep/env_prot.htm).

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**...and UK's first no-take zone for biodiversity** The waters of Lundy Island, 12 nautical miles off the southwest coast of the United Kingdom, are set to feature the UK's first statutory no-take zone for nature

conservation purposes, pending approval by EU fisheries officials in early 2003. The 3.3-km<sup>2</sup> zone, banning all consumptive activities, would protect subtidal reefs on the island's eastern side. The reefs support fragile benthic species, including seafans and cup corals, and are regularly fished for crab and lobster. Although several closures already exist in UK waters for fisheries management and other purposes, the Lundy Island no-take zone would be the first enacted specifically to protect marine biodiversity. According to English Nature, the UK agency responsible for wildlife conservation, the protection should enhance populations of fish and shellfish inside and outside the reserve, which could provide benefits to the local diving industry and fishermen. For more information: Chris Davis, English Nature, Level 2, Renslade House, Bonhay Road, Exeter, Devon EX4 3AW, United Kingdom. Tel: +44 01392 889; E-mail: [chris.davis@english-nature.org.uk](mailto:chris.davis@english-nature.org.uk).

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### Best-practice guidelines released for diving, other coral reef activities

The Coral Reef Alliance, a US-based NGO, has released a series of best-practice guidelines to provide a template for educating visitors and regulating activities at coral-based MPAs around the world. Designed to be adapted to specific local situations, the guidelines cover diving, snorkeling, turtle watching, underwater cleanups, and whale and dolphin watching. "The guidelines embrace the most commonly held management tenets for each activity covered," said Kalli De Meyer, former manager of Bonaire Marine Park and director of the guideline project. An international peer review body of experts in the field, including industry and MPA interests, approved each guideline. The guidelines are available online at <http://www.coralreefalliance.org/parks/guidelines.html>.

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### CD-ROM provides data for MPA planning on Pacific coast of N. America

As part of an intergovernmental effort to encourage creation of an MPA network along the Pacific coast of North America, a new CD-ROM is available to provide baseline physical, biological, and social data on the region. Produced by the Marine Conservation Biology Institute (MCBI), a US-based NGO, the CD-ROM covers the Pacific exclusive economic zones of Mexico, the US, and Canada, and includes such data as bathymetry, chlorophyll<sub>a</sub> (a measure of primary productivity), and location of federal MPAs and ports. The tool is intended to inspire analyses and cooperation among conservation planners using ESRI ArcView 3.x and ArcGIS 8.x products. Development of the CD-ROM arose from an expressed need by the Baja California to Bering Sea Marine Conservation Initiative (B2B), coordinated by the trinational Commission for Environmental Cooperation of North America. To order the *B2B 1.0* CD-ROM, available for US\$25, contact Sara Maxwell, MCBI, 15805 NE 47th Court, Redmond WA 98052, USA. Tel: +1 425 883 8914; Fax: +1 425 883 3017; E-mail: [sara@mcbi.org](mailto:sara@mcbi.org)