Unchecked Tourism in Galápagos Endangers National Park and Marine Reserve: Interview with Graham Watkins

Over the past decade and a half, tourism in the Galápagos Islands has boomed: from 40,000 visitors in 1990 to 140,000 in 2006. This has had a domino effect on the islands, according to a draft report by the Charles Darwin Foundation, soon to be released. Rising tourism has promoted the growth of local businesses and, in turn, increased immigration — doubling the islands’ human population over the same period. The influx of people has contributed to overfishing in the surrounding Galápagos Marine Reserve, and to rapid rises in the introduction of non-native species on land, according to the draft report. There are now more non-native plant species on the islands than native ones.

Due in part to these findings, UNESCO and IUCN have formally declared the Galápagos National Park and Marine Reserve to be “in danger” from these threats. The declaration, made in June, is intended to raise the profile of threats to Galápagos and highlight the need for national and international action. (The press release is at http://www.iucn.org/en/news/archive/2007/06/28_pr_Galapagos.htm.)

This month, MPA News discusses the situation in Galápagos with Graham Watkins, executive director of the Charles Darwin Foundation, which advises the Galápagos Park Service on scientific and conservation matters. Watkins is co-author of the draft report with Felipe Cruz, former sub-director of the Galápagos National Park.

MPA News: In recent years, international attention on Galápagos Marine Reserve has focused on overfishing and related conflicts between fishermen and the park service (MPA News 5:8), and on a major oil spill in 2001 (MPA News 2:7). You say these are related to tourism. How?

Watkins: Tourism is the driver of economic, social, and ecological change in the islands. Rampant immigration to work in tourism or tourism-linked businesses has been the basis for a “frontier” culture and exploitative attitude. This attitude in turn has an impact on the sustainability of fisheries. The main direct threat to the marine reserve is overfishing of target species including sea cucumbers, sharks, lobster, and grouper, resulting from increased fishing effort.

Pollution, such as the Jessica oil spill of 2001, is a secondary, but potentially devastating, threat to the marine reserve. The Jessica was carrying fuel for the growing tourism industry and the growing local population.

From a management perspective, the overcapitalized fisheries and pollution risks are inextricably linked, socially and economically, to tourism. In the 1990s, for example, the booming Asian market for sea cucumbers drew fishers from mainland Ecuador to Galápagos. Now that the sea cucumber market has gone bust in Galápagos, many of those fishers are being allowed to enter the tourism business, which increases the impact of that sector. Changes in one sector have impacts in the other. We should be managing the sectors in an integrated way and making all of them sustainable over the long term.

MPA News: What impact do you think the “in danger” listing by UNESCO will have on management of the park and marine reserve?

Watkins: The UNESCO listing backs up a call to action issued by the President of Ecuador in April 2007. We hope that the Government of Ecuador [which took office in January 2007] will continue to demonstrate responsibility and leadership and be able to construct a shared vision for the future of the islands. More importantly we hope that all players will work together to implement this vision in such a way that the islands remain conserved and the risks of invasive species and overfishing are addressed in the coming years.

MPA News: What will it take to get Galápagos off the danger list?

Watkins: We believe that actions in the following areas are critical for Galápagos to move off the danger list:

• Create a functional and effective institutional framework in the islands;
• Ensure that businesses are truly sustainable and orient growth in the direction of quality and equity, not quantity;
• Implement the process of integrated educational reform to help construct an “island culture”, rather than frontier culture, and train local residents for employment in local businesses; and
• Effectively manage the direct impacts — invasive species and fishing — on the terrestrial park and marine reserve.

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Note from the Editor
Canadian Trawlers Designate Voluntary Coral Closure; Fisheries Management Calls It “Good First Step”

Canada's offshore trawling industry for shrimp and groundfish has instituted a voluntary closure to protect coldwater corals off the coast of Baffin Island and the province of Newfoundland and Labrador, on the nation's Atlantic coast. The 12,500-km² coral protection zone will help prevent coral species from being taken as bycatch in trawl gear. Coral species in the region, including Primnoa resedaeformis and Paragorgia arborea, exist hundreds of meters below the surface and can live to be centuries old.

The closure will apply to members of the three industry associations that designated it: the Canadian Association of Prawn Producers (CAPP), the Groundfish Enterprise Allocation Council (GEAC), and the Northern Coalition (NC). All offshore shrimp license holders in the region are members of these associations, as are all but one of the offshore groundfish license holders. (The one non-member is currently inactive in the fishery.)

The trawling associations have called the measure one of the most progressive industry-based initiatives in the world to protect coldwater corals. “We are taking a lead role in identifying and protecting important coral concentrations,” says Bruce Chapman, executive director of CAPP and GEAC. He says the closed area was identified based on discussion among captains who had fished the wider region for many years. “For the most part, the area that is closed has been avoided in recent years because of the problem of gear getting tangled with the coral,” says Chapman. The associations have also instituted a code of conduct that requires their captains to stop fishing and move elsewhere if they believe they are in an area where corals may exist, even outside the voluntary closure.

“The right direction”

Nadia Bouffard, a director of resource management for Canada’s Department of Fisheries and Oceans (DFO) calls the voluntary closure “a good first step in the right direction.” “DFO supports conservation measures taken on a voluntary basis by industry,” she says. “Such actions demonstrate a recognition of the need to change behavior to improve conservation of marine ecosystems.”

Bouffard notes that the closure applies only to members of the three associations. Outside of those groups, a small number of bottom trawlers are approved by the government to fish aboriginal quotas. There are active gillnet and longline vessels in the region, as well.

“Although the [shrimp and groundfish trawl] sectors represent the large majority of sectors/fleets that fish or are capable of fishing this area, a mandatory closure could be considered to bind all sectors,” says Bouffard. “As such, consultations with stakeholders who have an interest in the area would need to be held, including with aboriginal management boards under land claim arrangements.” She says any consideration by DFO of a mandatory closure — either covering the voluntary closed area or elsewhere — would take several criteria into account, including natural disturbance regime, species present, types of gear used, and other factors.

Chapman of CAPP and GEAC says the associations would not oppose DFO if it were to make the closed area mandatory.

Evan Edinger, a coral researcher at Memorial University in Newfoundland, would prefer it to be mandatory. “Voluntary closures are attractive because they entail fishing industry buy-in, rather than enforcement,” he says. “However, voluntary closures probably are more appropriate in cases where severe habitat damage cannot be caused by the actions of a single vessel or small number of fishers — such as where deep-sea corals, sponges, and other vulnerable ecosystems are not present.” He notes that a single commercial trawl in May 2007 within the closed area hauled up more than 500 kg of corals as bycatch. In August 2006, a 15-minute research trawl in the area collected a similar amount of coral.

Edinger says the voluntary closed area covers less than one-third of the “Hudson Strait coral hotspot” — an area of unusually high coral abundance. “The voluntary closure is about 25-30% of what I would recommend in size,” he says. “It errs on the side of protecting corals only in those places where the industry generally does not fish anyway. The closure does nothing to stem the current rate of fishing-related damage to corals on the margins of the Hudson Strait hotspot.”

The voluntary closure is the largest coral protection zone in Canadian waters. The government has designated mandatory closures in two areas elsewhere on the Atlantic coast (hundreds of kilometers southward of the voluntary closed area) specifically to conserve and protect corals — Lophelia Coral Conservation Area and Northeast Channel Coral Conservation Area. The Gully Marine Protected Area, off the coast of the province of Nova Scotia, also provides protection for corals and other fauna. For descriptions of these protected areas, visit http://www.mar.dfo-mpo.gc.ca/oceans/e/ocmd/coral/coral-measures-e.html.

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More Lessons from California MPA-Planning Process:
Fishing Industry Viewpoints

Last month, *MPA News* asked resource planners for their views on an initiative to create a network of MPAs off the coast of the US state of California. The initiative completed its first phase in April, with designation of 29 MPAs along the state’s central coast (*MPA News* 8:10). Its second phase, covering the north central coast, was launched this past February, and phases for the north and south coasts will follow in coming years.

This month, *MPA News* asked representatives of the commercial and recreational fishing sectors for their views on the planning process so far:

- **Vern Goehring**, manager of the California Fisheries Coalition, an association of commercial and recreational fishing organizations; and
- **Rich Holland**, editor of *Western Outdoors*, a magazine dedicated to sportfishing in the western US.

*MPA News*: The state law on which this planning process is based, the Marine Life Protection Act (MLPA), calls for the use of the “best readily available science” to plan MPAs. An official report on lessons from the first phase [available at http://www.dfg.ca.gov/MRD/mlpa/lessonslearned_phase1.html](http://www.dfg.ca.gov/MRD/mlpa/lessonslearned_phase1.html) said the process was challenged by basic disagreement between marine ecologists and fisheries scientists. Ecologists tend to view MPAs, and specifically no-take reserves, as a simple but effective ecosystem-management method. Some fisheries scientists view reserves as blunt tools that cause economic inefficiencies. Will future planning phases need to decide how to address this?

**Goehring**: The MLPA says to use the best available science — it doesn’t say to pick among supposedly conflicting sciences. It means: Find a way to integrate the different applicable sciences, ensuring that the best thinking and discoveries of both get used. However, we saw that simply choosing a preferred science was easier. The MLPA Initiative staff made the decision to look only to ecology and the easier-to-understand concept of “conservation by MPAs”. Fishery science, with its more complex models, was ignored.

**Holland**: Not only is there basic disagreement between marine ecologists and fisheries scientists regarding no-take marine reserves as an effective ecosystem-management method; there is a difference of opinion among ecologists on how to make no-take reserves effective — for example, how large a reserve needs to be to work. In addition, the theory of larval transport between reserves in a network remains unproven. Yet the Science Advisory Team [appointed to advise the MLPA Initiative] used it in setting guidelines for spacing of reserves.

*MPA News*: There was some contention over how much information on socioeconomic impacts — as opposed to ecological impacts — should be incorporated in decision-making about networking design. What are your thoughts on this?

**Goehring**: Socioeconomic analysis was superficial, looking only at direct catch-related revenue to commercial fishermen and ignoring the multiplier effects in the

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**Paper on lessons from MLPA implementation**

A 2006 paper in *Environmental Law Reporter* journal expressed additional lessons from the first phase of the Marine Life Protection Act (MLPA) Initiative. Author James Mize, a former commercial fisherman and current law student at the University of California, Los Angeles, says one lesson is “Be realistic with expectations.”

“It is important to distinguish the original MLPA as passed in 1999 from the current MLPA Initiative,” Mize tells *MPA News*. “The law originally demanded development of a preferred alternative for siting of the entire California network of MPAs, including marine reserves, following only a year and a half of consultation. This statutory deadline proved hopelessly optimistic and insufficient to engage the relevant communities. By trying to do too much, too quickly, with too little resources, initial efforts were doomed from the start.

“By contrast, the renewed effort initiated in 2004 with the MLPA Initiative pursued goals that are more realistic. Rather than addressing the entire length of the state at once, the Initiative embraced a gradual approach, tackling one region at a time and extending the anticipated deadline out to 2011. This approach enabled planners to use robust stakeholder engagement strategies and prevented overextension of resources.”


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community (i.e., supporting industries and jobs; employee families shopping and spending; tourists eating seafood and strolling wharfs). Also, there was no effort to quantify the economics of increased seafood imports and the increasing public concern about ensuring food security. Likewise, little or no effort was made to identify the economic value of recreational fishing.

The MLPA does not require nor suggest an economic analysis to determine costs or gains be done. However, good government calls for implementing laws and adopting regulations using the least costly alternative to adequately accomplish a public policy goal. MLPA should be about adequately protecting ecosystems and biodiversity at the least cost — which requires considering other available measures besides MPAs to help meet the same goals.

Holland: Higher degrees of protection were given to rock, hard-bottom, reef, and headland environments — where fishing activity is most prevalent — even though ecologists on the Science Advisory Team admitted all habitats should be evenly weighted for true biodiversity. It has been said that the MPAs designated in the first phase cover “less than 10 percent of the Central Coast.” The potential impacts are actually much higher. The impact from loss of recreational fishing was not even considered and in several instances the safest areas for small boaters to fish were put off-limits.

This was and is a public policy move, not science. It is a land grab of much of the best remaining habitat along the coast. California already had very large MPAs [established by the US Pacific Fishery Management Council], including a 15,000-km² conservation zone for cowcod, in which bottomfishing is prohibited, and closure of the shelf off California to protect rockfish. Environmentalists opposed considering these as existing MPAs in the MLPA Initiative because they are not permanent.

Management Spotlight: MPAs Coordinate Management at Opposite Ends of Whale Migration Route

Two MPAs located nearly 5000 km apart have formed a “sister sanctuary” arrangement to coordinate management of a shared population of humpback whales. The Stellwagen Bank National Marine Sanctuary, off the northeast coast of the US, and the Marine Mammal Sanctuary of the Dominican Republic established the partnership in December 2006 to assist humpback whale recovery in the north Atlantic. The population of 900 whales migrates northward to Stellwagen Bank and the surrounding Gulf of Maine each spring and summer to feed, then returns to the Dominican Republic in the fall to mate and give birth.

“Coordinating management and research across these habitats moves us several steps closer to ensuring the health of this endangered species,” says Craig MacDonald, superintendent of the Stellwagen Bank National Marine Sanctuary (SBNMS). As sister sanctuaries, the two sites are launching several collaborative initiatives, including:

- A joint workshop on whale-watch best practices to help develop low-impact tourism and sustainable economic development at both sites;
- A sister sanctuary photo-identification project to establish a catalog of individual whales in the Dominican Republic, complementing an existing catalog from Stellwagen Bank;
- An intern-exchange program to provide specialized training in education and scientific research;
- Public education tools, including a traveling exhibit and public service announcements, to raise awareness of the partnership and the economic importance of the whale population.

Idelisa Bonnelly of FUNDEMAR, an NGO that assists in managing the Dominican sanctuary, says the partnership will help manage a fast-growing tourism industry there. “The joint research effort to evaluate the whale-watching situation and tourist impacts will be important in developing harmonized management strategies,” she says. Stellwagen Bank already has a thriving whale-watch industry that assists in research, including photo-identification. Bonnelly adds the agreement is about more than species conservation. “It means that we need each other, that everyone is important — small countries and large ones,” she says. “We all have a role to play.”

Nathalie Ward of SBNMS, who helped negotiate the sister sanctuary arrangement, would like to see the partnership serve as a model for other MPAs in managing transboundary species. “Through changing public attitudes, improving scientific understanding, and developing effective models, the sister sanctuary initiative can extend its benefits well beyond the boundaries of the individual sites,” she says.
Notes & News

Self-assessment tool available for MPA networks
A new checklist is available to help practitioners measure the effectiveness of their MPA networks against a range of planning and management principles. Various options enable users to rate their network for each principle, comparing it to currently perceived best practices. The tool can indicate where weaknesses should be addressed, and provides a way to monitor progress over time. It is intended to be applicable at a variety of scales, from national to local-level networks. The checklist is available online at http://www.iucn.org/themes/wcpa/biome/marine/checklist.html.

Produced by the Marine Programme of the World Commission on Protected Areas (WCPA-Marine), the checklist includes weblinks to examples of best practices in planning and management. Jon Day of the Great Barrier Reef Marine Park Authority, who co-authored the checklist with Dan Laffoley of WCPA-Marine, is eager that this aspect is expanded. “We hope this will evolve to become more useful than just a checklist,” he says. “Hopefully many more links are added so that users can readily locate best practice examples from their region and throughout the world.” He invites practitioners to send examples of best practices to their respective WCPA regional coordinators, as listed at http://www.iucn.org/themes/wcpa/biome/marine/contacts.html#coord. If your WCPA region currently does not have a coordinator, e-mail your best practices directly to Jon Day (j.day@gbmpa.gov.au) and Dan Laffoley (dan.laffoley@naturalengland.org.uk).

Report analyzes systems for measuring MPA effectiveness
A 2006 report for The Nature Conservancy, an international NGO, reviews 25 existing systems for evaluating the effectiveness of marine conservation programs, particularly MPAs. Recently posted online, the publication describes goals, indicators, data sources, and other characteristics of each evaluation system. It also provides a detailed chart of effectiveness indicators, and an annotated bibliography on the subject of marine conservation effectiveness. The 88-page report Measuring Conservation Effectiveness in the Marine Environment: A Review of Evaluation Techniques & Recommendations for Moving Forward is available in PDF format at http://conserveonline.org/workspaces/patools/resources/pame/pamedocs/stern2006.

Paper proposes new system for classifying coastal and shelf areas
A paper in the July/August 2007 edition of the journal BioScience proposes a new global system for classifying coastal and shelf areas. Intended to help identify and address gaps in conservation coverage, the system divides the world’s coastal and shelf areas into 12 “realms”. Each realm is then subdivided into “provinces”, which in turn consist of ecoregions — with a total of 232 ecoregions worldwide. As an example of the gap analysis capability offered by the system, the paper calculates that 112 ecoregions have no site represented under the Ramsar Convention for wetlands. The system covers all coastal and shelf waters shallower than 200 m; it does not consider pelagic or deep benthic environments. The paper “Marine Ecoregions of the World: A Bioregionalization of Coastal and Shelf Areas” is available in PDF format at http://www.aibs.org/bioscience-press-releases/070628_new_tool_for_marine_conservation.html.

Meeting on rec-fishing and MPAs agrees on ways to improve anglers’ role in planning
Proceedings are available from a November 2006 meeting on recreational fishing and MPAs in Australia, convened by Recfish Australia — an industry association — and the Fisheries Research and Development Corporation, an Australian Government agency. The meeting examined impacts on the recreational fishing sector from various national and state-level MPA-planning processes, including the program to rezone the Great Barrier Reef Marine Park (MPA News 5:10). Attendees agreed that “MPAs will happen”: i.e., that government agencies will continue to designate new MPAs as management tools. Therefore the recreational fishing sector’s focus should be on minimizing MPAs’ impacts rather than attempting to stop their use.

The proceedings detail lessons learned so far from planning experiences, priorities for research on MPA impacts, and tools for improving recreational fishers’ engagement in planning. The tools include a call for a clear, unified position statement on MPAs from the recreational sector, and detailed case studies of positive and negative impacts on recreational fishers from MPAs. The workshop proceedings are available in PDF format at http://www.recfish.com.au/mpa/pdf/MPA%20Workshop%20proceedings%20final.pdf.

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**Note from the Editor**
Dear Reader,

This edition of *MPA News* marks the start of our ninth year of publication, with subscribers now in 113 countries. The staff and editorial board look forward to continuing to serve MPA practitioners worldwide. Please keep us informed of your MPA’s latest efforts, whether new, different, or challenging (mpanews@u.washington.edu). We value hearing from our readers, and want to help you share your experience and knowledge with peers.

What makes the coming year particularly exciting is the launch this September of our sister publication on coastal and marine ecosystem-based management, announced in our June 2007 edition. It will adapt and improve on the *MPA News* model with new, useful features, and enable us to serve a broader group of practitioners.

I will keep you informed of our progress. On behalf of the *MPA News* team, thank you for continuing to allow us to serve you. It is our pleasure to do so.

Sincerely,

John Davis
Editor-in-Chief

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**MPA Tip: Managing research in MPAs**

“MPA Tip” is a recurring feature in *MPA News* that presents advice on planning and management gathered from various publications on protected areas. The purpose is two-fold: to provide useful guidance to practitioners, and to serve as a reminder of valuable literature in the MPA field.


**Tip:** MPA management agencies can derive considerable benefits from partnerships with universities and other research institutions, and should help make non-intrusive research possible in the protected areas. The following guidelines for managers can help ensure these partnerships are effective:

- Require approval, through a quick and simple process, of all research projects in an MPA before they begin so that managers know what kinds of research are being done there.

- Proactively define the research that the MPA requires for management purposes, and provide incentives for research institutions to carry it out.

- Consider providing logistics and funding support to applied research that is relevant to the MPA’s needs. While purely academic research should be welcomed as well, it should be expected to pay its own way.

- Agree on the kinds of support that will be provided to researchers by the MPA, such as transport, housing, laboratory facilities, etc.

- Require that any specimens collected become part of a museum or herbarium collection that is available to other researchers, unless questions of indigenous or local community ownership intervene.

- Ensure that any research is not significantly disruptive of the natural values for which the MPA was established.

- Ensure that copies of all publications resulting from the research are sent to both the MPA where the research was carried out and the national MPA management agency.

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