

Women and MPAs: How Gender Affects Roles in Planning and Management

Knowledge of how people interact with each other and with their environment is a necessary component of effective resource policy. Policymaking, including for MPAs, appears to be most informed and innovative when it is open to the views and experience of all stakeholders. However, despite their involvement in the use of coastal and marine resources around the world, many women face barriers to participating fully in the planning and management of those resources. Such barriers can be institutional, educational, or cultural in nature, and can profoundly influence decisionmaking that affects the welfare of marine resources and coastal communities.

This month, MPA News examines gender-related issues in the fields of coastal resource management and MPA practice, including the challenges faced by female practitioners and how they are meeting those challenges.

Missing half the information

Problems arise when any major stakeholder group is excluded from resource-use decisionmaking, says Nancy Diamond, a US-based consultant who has conducted social science research and other activities for the World Bank, the US Agency for International Development, and other environmental programs. Excluded groups and individuals often withdraw from project activities, taking their ideas and insights with them. When planners and policymakers make decisions based on information from only part of the population, says Diamond, resource threats may be inadequately understood and solutions will not incorporate all possible ideas.

Yet decisionmaking on the use of coastal and marine resources is often principally based on the input of men, according to Diamond and other experts interviewed for this article. "When planners consult only men in resource management, they're consulting only half the population," she said. "They miss half the information that way."

Diamond has seen this first-hand in coastal management projects around the world. Fisheries researchers are usually men, she says, and most of their informants are men. As a result, policies often focus exclusively on males' needs and priorities. Men — who, across

cultures, generally serve as the primary offshore fishers in small coastal communities — not only have greater control of marine resources, says Diamond, but also often have greater access to decisionmaking, credit, and extension services, such as new fishing practices and technologies. This situation occurs despite the fact that women, too, often play significant roles in resource use, such as processing and selling captured fish and collecting mollusks inshore.

"Women frequently know more about certain aspects of the resources, because they often occupy different spaces in the landscape," she said. "Planners need to make sure that women have the confidence and skills to speak up." She said planners can use culturally appropriate and nonthreatening ways to elicit information from women, such as conducting single-sex focus groups and separately interviewing male and female adults from each household.

Lorena Aguilar is the senior gender advisor for the IUCN (World Conservation Union). She cites an example in Mexico where coastal-management efforts to improve the living conditions of a community in Campeche focused on improving the nets, outboard motors, and other fishing technologies of crab fishermen. When living standards failed to improve, planners discovered that the main obstacle to development of the fishery was actually that women in the community lacked access to cold storage: responsible for processing and selling the catch, the women had been forced to sell the crab meat at whatever price they were offered before it spoiled. "Particularly in rural and underdeveloped countries, the major problem is that women are not seen as stakeholders — they don't appear in surveys," said Aguilar.

Cultural mores or myths can hinder the involvement of women in marine activities in general, beyond just management. "In some countries, women are not allowed in fishing boats because they are thought to bring bad luck," said Aguilar. "In many countries, young girls are not even taught to swim."

Aguilar's book *About Fishermen, Fisherwomen, Oceans, and Tides* provides an adaptable framework to help coastal planners incorporate gender-equity concerns in their work. (It is downloadable for free in PDF format at

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<http://www.poam.org/articulos-estudios/genero/marine.shtml>
She is now working on another publication designed to help laypeople improve gender equity in coastal management, without the presence of an outside planner.

"I hope there will eventually be gender equity in coastal management," she said. "The whole gender system has taken thousands of years to develop. It will take some time to undo the knots."

Bringing a unique set of skills and experiences

Marion Howard, coordinator of a plan to network MPAs within the 300,000-km² marine section of Colombia's Seaflower Biosphere Reserve, says women bring a set of skills that can be useful in community-based planning. "Women can be especially effective at setting up community-based MPAs with disenfranchised resource-user groups that are distrustful of authority," said Howard. "Women are generally not seen as part of the power structure or as competing for authority."

Howard says she has seen a tendency in women on her MPA team to focus on "the human side" and consider social issues, irrespective of whether their training is in social sciences. She says this gives them an integrated approach and makes them especially effective advocates for the rights of communities in MPA planning and management. "Women are used to having their knowledge devalued and opinions ignored, so the female team members understand that marginalized peoples can have a wealth of knowledge about their environment and surroundings," she said. "Honoring stakeholder knowledge equally with science and incorporating traditional information is central to our MPA planning process."

Lesley Squillante, assistant director of the Coastal Resources Center (CRC) at the University of Rhode Island (US), leads a CRC initiative named WILD to help mainstream the consideration of gender equity and population demographics into coastal management programs. "Are women likely to lend different experiences and insights than men to coastal management?" she said. "Sure — not because they inherently have different capabilities or skill levels, but rather because of how society has categorized their position, which then shapes their experience and the issues they consider most important. For example, it is usually women who take care of the family, including tending to children when they're sick. As a result, clean water is often a high-priority issue to them, while a lower one for men."

Squillante suggests that coastal-management projects use a combination of male and female extension workers and research assistants, thus ensuring access to a range of venues where women or men gather. The WILD initiative just secured funding from the David and Lucile Packard Foundation for a 22-month study of coastal-management field programs in East Africa, the Western Pacific and Mexico, generating baseline data on

gender roles and developing a set of tools and best practices for linking gender and demographics with effective coastal management.

Around the world, various projects to train women in fisheries-related skills and knowledge are ongoing. The New Zealand School of Fisheries has offered training courses on fisheries subjects, including conservation, to women from the southwestern Pacific region. Designed to train people who will in turn train other women at the grassroots level, the school's courses have attracted participants from 11 nations.

Alec Woods, director of the school, says the main challenge faced by most of the course participants revolves around the lack of support in many fisheries departments for the role of women as fisheries trainers. "Most fisheries departments are dominated by men, and most training of women is still done by men," said Woods. "However, the hard work that is done at the village level to make new fisheries management initiatives succeed is usually done by women." He said that some of the best opportunities for women in southwestern Pacific fishing communities may lie in the development of conservation initiatives, a nontraditional area not yet established as a male bastion.

Conservation is very important to women in fishing communities, says Chandrika Sharma, editor of *Yemaya*, a newsletter on gender and fisheries published by the International Collective in Support of Fishworkers (ICSF). "We would say that concerns for sustainability are viewed in conjunction with concerns related to access to resources, technologies, and business opportunities," said Sharma. "It is only where communities benefit from the resource that they feel a sense of responsibility for it, or even feel that they can play a role in its conservation and management."

Women's concern for sustainability, however, is mediated by their material reality and immediate survival concerns, said Sharma. Thus, poor women who process the bycatch of trawlers, for example, may see their interests closely tied to the continuation of bottom-trawling activities that provide them an income, even where those activities are proven to be destructive. "Where the community basis of fisheries continues to be a reality, it would be fair to say that women have a clear interest in the continuation of small-scale, selective fisheries that provide them a supply of fish to process and sell, bringing back the income from the fisheries to the family and community," she said. "The problem, of course, is that with the growth of the industrial fisheries model, the community basis of fisheries is being rapidly eroded. As a consequence, small-scale fishermen in several parts of the world have joined the race for fish by adopting technologies that are often destructive to the resource base, but which bring them a livelihood."

Achieving gender equity within the dominant, industrial fisheries model would not be in the long-term interests

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of either environmental sustainability or women's well-being, said Sharma. There is a need to re-value the services provided by natural resources and the often-unpaid work done by women in fishing communities, she said. Policies should be based on recognizing these aspects. "Such policies are much more likely to come about when women are better represented at all levels of decisionmaking and implementation," she said.

Women in MPA practice

Angelique Songco is manager of the Tubbataha Reef National Marine Park, a UNESCO World Heritage Site in the Philippines. The main obstacle she has encountered in her management work relates to the gender-

related views of some rangers in the park. "Most marine park rangers in Tubbataha come from the military service and all are male," she said. "Military personnel here are known for their chauvinism. There have been instances when rangers made sexist remarks, mostly out of earshot, but which were related to me by other rangers. These remarks can be infuriating at times, but can be solved through private conversations."

Songco says that although her gender allows her to bring more empathy, and perhaps thoroughness, to her job than a male manager might, other characteristics that are unrelated to gender can be more important, such as disposition, experience, and willingness to learn.

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Gender as a Factor in Community-Based MPA Work: Interview with Marion Howard

Marion Howard is MPA advisor for CORALINA, a Colombian government agency that manages the natural resources and sustainable development of Colombia's San Andrés Archipelago, designated by UNESCO in 2000 as the Seaflower Biosphere Reserve. Howard has been overseeing a project to develop a network of marine protected areas within the biosphere reserve, which has an estimated population of more than 80,000 people. Although not a Colombian, she has lived in the San Andrés Archipelago for 25 years; she is the only non-national at CORALINA. MPA News interviewed her about how her project incorporates gender concerns in its work.

MPA News: How is gender a factor in your MPA planning processes?

Marion Howard: There is a "macho" culture here with conventional gender expectations. Therefore, in MPAs, gender is a factor when working with stakeholders and communities, which is a large part of our work. Conventional gender roles mean that women rarely work in the marine area — fishing, diving, or working with watersport businesses — and many never go in or on the sea. There are few women in the interest groups set up in the project, except in education and tourism. But in this society, women are vocal and active when included, so the challenge has been to develop mechanisms to ensure their participation. Some themes of our education program target women. Some of these are land-based threats to MPAs, household waste management alternatives, public health risks associated with loss of environmental quality, how to maintain health and productivity of coastal and marine ecosystems, marine ecosystem services, and MPA benefits.

As a foreign woman, for my work to be effective it has been important to accommodate my personal

style, dress, manners, and language to the local context. Conforming to certain local expectations demonstrates my respect for community values, which in turn engenders trust and support for my work, much of which is new and sometimes inconsistent with local traditions. It is also useful to focus on possible advantages of local gender perceptions. Although sexist, the macho attitudes of men hinder them from becoming overly aggressive when dealing with women in professional or public situations. Mature women are treated with particular deference. When our MPA activities are led by women, participants have never become severely acrimonious or violent toward the MPA team, even when discussing controversial issues.

MPA News: CORALINA is principally led by women....

Marion Howard: At CORALINA, the leadership is almost entirely women, including the general director, general secretary, two sub-directors, and most coordinators. The MPA project professional staff has nine women, including myself and the project supervisor, and two men. This is not as unusual as it might appear on the surface. Characteristic of many disenfranchised ethnic minorities and colonized societies around the world, in this archipelago women are more likely to have regular jobs, carry the burden of family support, and take on social responsibility. Also, the environment is a new field that does not have the prestige or power associated with more established professions, so islander men who have the opportunity to become professionals tend to choose more customary fields like medicine, law, engineering, economics, or business administration.

MPA News: Has your position of leadership with CORALINA had an effect on the number of local women getting involved in activities related to the project?

Marion Howard: The women on the MPA project team are strong role models. Not only has the community mentioned this, but the MPA project includes an accredited technical degree program in collaboration with a local university. The goal of this program is to train islanders to work in the MPAs and other coastal and marine management jobs. Half the students are women, and to date they are more dynamic, ambitious, and academically successful than their male counterparts. Team members visit schools and youth groups, emphasizing careers in environmental sciences and management for women. In project management, we actively seek off-island training and conference participation for women. ✉

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"I deal with colleagues as a person, not as a female person," she said.

It is unusual for women to be managers of terrestrial or marine parks in the Philippines. "Protected areas are mostly located in isolated places where living conditions are usually spartan and where a female manager will be in the company of males for extended periods," said Songco. "These factors may be a reason for the paucity of females in protected area management in the Philippines. However, more local women have gotten involved in activities related to Tubbataha as a result of my position in the park because I endeavor to demonstrate that MPA management, even of an isolated reef in the middle of the sea, is everyone's concern. Conservation, I think, transcends issues of gender."

In the Indonesian province of North Sulawesi, several community-based marine sanctuaries have been established and are serving as demonstration sites as part of a district-wide, community-based coastal resource management program. In the village of Blongko, the objectives of the 0.12-km² sanctuary include economic benefits for local stakeholders through sustainable fisheries production; empowerment for the rural community (including women) in managing resources; and conservation. The project — made possible through the joint efforts of national, regional, and local Indonesian government entities, as well as the US Agency for International Development and Coastal Resources Center of the University of Rhode Island — has tracked women's awareness of and participation in the village's management plan and MPA development.


"The project met a target of at least 30% female participation in project activities such as trainings and workshops," said Johnnes Tulungen, the project's field program manager, citing the results of an interim assessment performed in 2000. However, he notes, the percentage of community females who participated in community decisionmaking bodies was just 2%, compared with 20% of males. "The lack of female participation in these organizations risks the exclusion of concerns and inputs from half of the village stakeholders," said Tulungen. "The project team needs to put more effort into designing appropriate strategies for increasing female participation rates, especially in formal organizations."

Although women's attendance at formal meetings has remained lower than what project leaders would like, extension workers have held multiple informal meetings and discussions about the sanctuary with

women in the community. Monitoring results have shown no differences in knowledge of sanctuary rules and perceptions of human impacts on the marine environment between male and female survey respondents in the village — indicating the importance of the informal meetings in reaching women.

In Tanzania, the Mafia Island Marine Park has benefited markedly from the involvement of women. Catherine Chando, a Tanzanian who studied the park for her master's thesis at the University of Tromsø (Norway), says that women in surrounding communities have developed alternative livelihoods — including seaweed farming, shell collection and factory work — that have raised household income and thereby decreased the need for fishing to support families. As a result, the once-rampant practice of dynamite-fishing by men, which had placed severe pressure on fish stocks, has declined.

Although men are the traditional household breadwinners in Tanzanian society, women have been included in the park's planning since its establishment in 1995. "From the very beginning, the ideology and structure of the project included women," said Chando. "The projects mobilized women: they were leaders of planning committees and active participants. And as they gained a better socio-economic status [through the development of alternative livelihoods], women found it easier to share their experiences and knowledge with the rest of the community." The Mafia Island Marine Park has a gender officer on staff who is paid by the Tanzanian government.

In 2001, WWF, an international NGO, launched a scholarship program on Mafia Island for 25 girls at the primary- and secondary-school levels. Currently the scholarship provides them with general educational instruction. In the future, WWF intends to supplement that with participation in a "conservation camp", which will introduce the girls to resource-management issues and hands-on conservation experience at the marine park. (WWF already operates a conservation camp for girls and boys at the Kiunga National Marine Reserve in Kenya.) "Girls' scholarships are long-term investments in women's capacities," said Mia MacDonald, a consultant for WWF. The conservation payoffs, she says, could include increased, effective participation of women in conservation activities and management, and the likelihood of smaller, healthier families. In addition, WWF hopes that students will understand and accept the need for conservation of marine resources, and share that message with their households and the greater community. 

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Update There has been a change in website location for the WWF-published report *Policy Proposals and Operational Guidance for Ecosystem-Based Management of Marine Capture Fisheries*

described by MPA News in its September 2002 issue. The new web address, from which the report may still be downloaded for free, is [http://www.panda.org/
news_facts/publications/marine/index.cfm](http://www.panda.org/news_facts/publications/marine/index.cfm).

Letter to the Editor

Dear MPA News:

In the lead article in the October 2002 MPA News ("Measuring the Effects of Marine Reserves on Fisheries: The Dilemmas of Experimental Programs"), Ray Hilborn raised concern about the design of appropriate experiments to evaluate the impact of marine reserves. He noted that most studies to date "have not involved sufficiently rigorous experimental design," and that current research on reserve effects suffers from two internal biases: (1) current protected areas were "almost certainly selected for protection because of their higher productivity," and (2) effort excluded from the reserve area will be "redirected to the unprotected areas," thereby decreasing measures of biological response (density, etc.) in the control site and inflating the perceived effect of reserve protection.

These are valid concerns, and we can address them using an existing database developed by Benjamin Halpern to synthesize results from studies that assessed the biological impact of marine reserves from around the world (Halpern, in press). Are reserves preferentially placed in areas of high productivity? There are many examples of reserves that were created for non-biological reasons, such as a location's proximity to a

university (research), military base (buffer zone), or natural feature (aesthetic value for a park). Certainly some reserve locations were chosen because the sites were particularly productive, but given the current difficulty in creating reserves around any location deemed productive, and therefore good fishing grounds, it seems

reasonable to assume that many reserves were placed haphazardly at best and in non-productive locations at worst. Furthermore, some case studies (e.g., Roberts *et al.*, Science, 2001) show that despite the displacement of fishing effort due to reserve creation, catch size and value actually increased in fished areas adjacent to the reserve. In many cases, then, the spillover of fish to control sites may actually diminish the perceived enhancement of populations within reserves, even though fishing effort is displaced to areas outside the reserve.

One can test these ideas more rigorously, however, by analyzing data from studies of marine reserves that collected data in both a control and a treatment site, before and after the treatment (a before-after/control-impact, or BACI, experimental design). Of the studies included in the database mentioned above, eight were

BACI designs. If reserves were placed in highly productive locations, then they should have higher initial values compared to control sites. The results from the studies are revealing, and do not indicate the biases suggested by Hilborn. Density, biomass, and average size of organisms were not significantly different in the reserve site compared to the control site before reserve creation. (In four studies, density in the control site was higher than, or not different from, the reserve site; in three cases, the reserve-site density was higher.) The same studies can also be used to assess whether declines occur in control sites due to redirected effort by comparing conditions in the control site before and after the reserve was created. Here the overall results are actually contrary to Hilborn's expectation, with density, etc. increasing in control sites after reserve protection. (For density, five studies showed higher values in the control site after reserve protection compared to before, while only one study showed the opposite trend.)

These results do not invalidate concerns about inadequate experimental design – most studies of reserves have only compared conditions inside and outside a reserve at one point in time. But the results from these better-designed studies suggest such concerns are probably overstated, and even suggest a bias against seeing a reserve effect.

As a final note, one of the greatest difficulties in designing adequate monitoring programs for assessing the impact of marine reserve networks stems from the very criteria used to design the networks. Individual reserves within a network need to be connected to each other so that the network is truly a network, but this connection between individual reserves means that all areas between the reserves will also benefit from the increased production, etc. coming from within the reserves. How, then, does one find a control site that is independent of the treatment so that the real reserve effect may be deduced? This is a serious concern, because the actual reserve effect is likely to be underestimated if control sites benefit from nearby reserves. Hilborn is correct that we need to be careful about how we design programs to evaluate reserve performance, but we believe the bias in such programs is more likely to be against than in favor of seeing a reserve effect.

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MPA News is published monthly by Marine Affairs Research and Education (MARE), a 501(c)(3) not-for-profit corporation, in association with the School of Marine Affairs, Univ. of Washington. The MPA News staff is solely responsible for content.

The MPA News project is funded in part by the David and Lucile Packard Foundation. The views expressed herein are those of the author(s) and do not necessarily reflect the views of the Foundation.

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Shrimpers and Mexican Government Compromise on Fishing in Reserve

Mexican government officials reached agreement with shrimp trawlers in late October in a contentious dispute over fishing restrictions in a marine reserve. The agreement, which allows trawlers to resume harvesting shrimp in the Upper Gulf of California and Colorado River Delta Biosphere Reserve, ended community protests that had blocked the movement of hundreds of tourists between Mexico and the USA.

The dispute was sparked in September when Mexico's environment secretariat announced an emergency law to prohibit trawling in the reserve and restrict the types of gillnets allowed. The measures were intended to protect benthic habitat and reduce bycatch of endangered species, including the vaquita, an endemic species of porpoise. However, members of communities surrounding the reserve — almost entirely dependent upon shrimp fishing as a livelihood — viewed the law as a threat. Street protests by fishermen and their families began in October, and by mid-month had grown to include a blockade of the highway leading from the reserve area to the US border. At that point, federal police ordered the protesters to disperse, and Mexican environment officials began negotiations to resolve the crisis.

The agreement allows 130 trawlers from local communities to resume fishing in the reserve under certain conditions. (Gillnetters working in small pangas were never banned from the reserve.) Peggy Turk Boyer, executive director of CEDO, an NGO active in fisheries issues and located next to the reserve, said that although the compromise agreement might seem to be a setback for conservation goals, it was an improvement over the protection that had existed in the region just a few months earlier. Prior to the September regulation, for example, the entire Pacific fleet of Mexican trawlers — totaling 450 vessels — was allowed in the reserve. "It is clear that significant advances have been made," she said.

The September restrictions marked an effort by SEMARNAT (Secretaría de Medio Ambiente y Recursos Naturales), Mexico's environment secretariat, to strengthen protection of marine protected areas throughout the nation's waters. Laws that took effect in 2000 restricting high-bycatch fisheries and seafloor destruction in MPAs have emboldened the agency. Silvia Manzanilla, an assistant on marine mammal issues at SEMARNAT, said that shrimp trawling is incompatible with habitat restoration and vaquita recovery in the Upper Gulf, and she would not rule out a total ban on trawling there in the future. "Environmental law in Mexico is only beginning to be taken into account," said Manzanilla. "We are establishing our boundaries for the first time. Natural protected areas are under our jurisdiction and we will fight to ensure that environmental laws and regulations are respected."

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Notes and News

Leasing submerged lands: new conservation tool?

Leasing or acquiring submerged lands may provide a valuable new tool for coastal and marine conservation, particularly when paired with shellfish restoration, according to a new report from The Nature Conservancy (TNC), a US-based nongovernmental organization. The 32-page report *Leasing and Restoration of Submerged Lands: Strategies for Community-Based, Watershed-Scale Conservation* suggests such strategies could provide several benefits, including long-term habitat protection, restoration of ecological processes in coastal watersheds, and economic benefits for local communities and fishermen. The report is downloadable for free from the TNC website at http://nature.org/files/lease_sub_land.pdf.

"It is commonly assumed that strategies for marine conservation must be substantially different than those for terrestrial conservation, in part because it is not possible to 'buy' the seas," said Michael Beck, team leader for the report. "This is a misconception." In a US nationwide analysis, his team identified that submerged lands are available for lease and/or acquisition in every coastal state. Of those available lands, shellfish habitats are especially amenable to restoration and management of native species in natural habitats, according to the report.

In October, TNC acquired 46.5 km² of submerged lands in Great South Bay, New York, from an oyster-processing company and is developing new approaches to managing the property in a sustainable way. Beck said TNC is now looking outside the US for examples of submerged-lands leasing. **For more information:** Michael Beck, The Nature Conservancy, Univ. of California, 100 Shaffer Rd., Santa Cruz, CA 95060, USA. Tel: +1 831 459 1459; E-mail: mbeck@tnc.org.

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No-take zones designated for Channel Islands

Following four years of study and debate, a network of no-take and limited-fishing areas has been designated in the Channel Islands National Marine Sanctuary, off the Pacific coast of the US. The new zones — consisting of 10 fully closed areas; one recreational-fishing-only zone; and one zone with limited commercial and recreational fishing — will comprise roughly 10%, or 453 km², of the sanctuary's waters. The network includes sites only in state waters within the sanctuary; a separate process to designate additional closures in the sanctuary's federal waters, beyond three nautical miles from land, is now set to follow. The federal process could take up to two years to complete, according to sanctuary officials who will consider a range of alternatives including a plan that would set aside a total of 25%, or 1100 km², of the sanctuary as protected from fishing. In 2000, a panel of scientists recommended that 30% or more of the sanctuary be set aside as no-take areas to protect dwindling fish stocks (MPA News 2:10). For more information on the network of reserves, refer to <http://www.cinms.nos.noaa.gov/marineres/main.html>.