

CORALS, CALYPSO AND CONTRABAND

A case study on the management and enforcement of marine protected areas within San Andres, Old Providence and Santa Catalina's archipelago, Colombia

DAVID LLOYD, G.D.V. MARTINEZ & WILLIAM E. BOYD

Abstract

A global proliferation of marine protected areas (MPAs) includes a push to create MPAs in developing countries. They are often only token designations, created at the behest of international donors to comply with international conventions promoted by the developed world. They are often also in areas of growing populations and economic pressure. There is a growing recognition that many developing nations do not have the appropriate infrastructure and legislative instruments to manage MPAs; their management does not reflect local communities aspirations or in-country institutions coordination or compliance capabilities. This is especially so where first world management models – such as the Great Barrier Reef Marine Park model (GBRMP) – are adopted as the primary planning tool. This paper examines a Colombian MPA example – the southwest Caribbean San Andres archipelago – to critique such adoption. While declared as biosphere reserve, management has to deal with increasing population, lack of management coordination, and illegal drug and gun running enforcement. This critique questions the validity of a first world management approach in this context.

Keywords

Marine protected area, Colombia, Great Barrier Reef management, developing world environmental management

Introduction

The term and concept of marine protected area (MPA) is expanding following the World Convention on Biological Diversity growing recognition that many marine fisheries are heavily exploited. It refers collectively to marine zones, both coastal and off-shore, set aside for management and conservation and provided some semblance of protection, and range in size from the Great Barrier Reef Marine Park (344,000 kilometres²), to wreck sites of only a few hectares. Aims of individual MPAs also vary equally widely, from preserving pristine areas, to prohibiting take of any kind, to conservation linked closely with tourism, recreation, education and marine resource extraction within the framework of sustainable development; unlike (terrestrial) national parks, resource extraction is allowed to some degree in many MPAs. As MPAs provide ecosystem goods and services to millions of people around the world, conflicting values leads to compliance becoming a major issue. There is a current but unresolved debate over the virtues of the two main approaches to marine protected area management: the inclusionary or people included approach, versus the protection or ecology first approach. Reflecting this complex of issues, 66% of Caribbean and 90% of the East Asian MPAs have not yet reached their management goals.

Issues and management of marine protected areas

This paper considers issues around the appropriateness of MPA management models, based in one region, being adopted in other regions. It may seem sensible to use proven and successful models in this way, especially since there are some clear common management issues to be addressed. In particular, there is the need to manage: intensive use to ensure it does not devalue visitor experience at popular destinations; spatial distribution of activities; impact of commercial fishing, collecting and mariculture on other users; and conservation values the impact of tourism on other users. In responding to these common needs, it is important to note the influence, on the development of MPAs in the developing world, of first world donor-assisted nongovernment organisation (NGO) and government projects targeting coastal communities to promote fisheries, coastal habitat management and tourism promotion from a first-world perspective.

Such groups often promote management models, such as the Great Barrier Reef Marine Park Authority (GBRMPA) model, based on socially and politically-stable Western developed countries, as suitable models for developing country MPAs. The GBRMPA model promotes rapid zoning to protect valuable core areas and resources, while allowing some managed activity and extractive activities in adjacent buffer zones. This approach is articulated through the use of zoning plans. Zoning plans identify areas defined by their core use and resource values, which in turn define approved or prohibited activities. Such an approach then allows for definition of conditions under which any activity is allowed, managed or moderated. Zoning plans, therefore, aim to achieve: separation of activities, and therefore user groups, that may conflict with each other, such as fishing and tourism; delimitation of areas that need permanent conservation to be protected from threats, by being off limits to some activities; and provision for uses that are allowable as a right, with conditions of access, including permission, limitations or prohibition. In practical terms, management is articulated and communicated through formal listings of activities that can or cannot be undertaken in each zone, and under what conditions (e.g., whether permission is required) and widespread use of maps to show what and where activities are permitted.

While such an approach is widely adopted in Australian land- and sea-use management, and is thus aligned well with both the practice and the culture of environmental management in Australia, the social conditions under which many developing country MPAs are set up differ significantly. It is not unreasonable to question whether such models are directly applicable to developing countries. This paper, therefore, questions whether this approach is appropriate in developing countries, using a case study from Colombia, the south-west Caribbean archipelago of San Andres, which was declared as a UNESCO biosphere reserve in 2000.

San Andres comprises an area of approximately 300,000 kilometres² (nearly 10% of the Caribbean Sea (Baine et al., 2007) (Figure 1) and includes three inhabited islands – San Andres, Old Providence and Santa Catalina – and several uninhabited cays (with an area of 57 kilometres²) (Mow et al., 2003, 2007). The main island, San Andres, is located at approximately 800 kilometres north of Colombia, 200 kilometres east of Nicaragua, and 725 kilometres south of Grand Cayman. The marine area of the archipelago includes a large reef system, five atolls and banks that extend for over 500 kilometres.

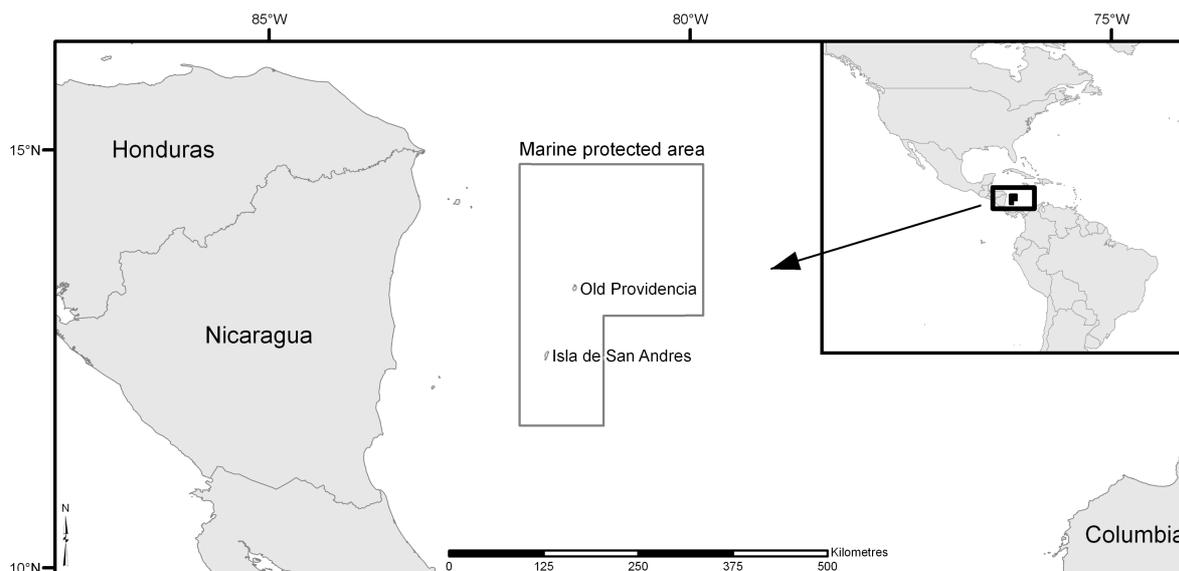


Figure 1. Map of the archipelago of San Andres, Old Providence and Santa Catalina and its surrounding banks and atolls. The brown lines indicate Colombia's boundaries while the green area shows the Seaflower biosphere reserve Marine protected areas within the archipelago (CORALINA, 2010)

The coral reef ecosystems, including the Old Providence and Santa Catalina true barrier reef, are considered some of the largest in the Americas (Howard, 2006). The area is recognised as a major site of coral and fish diversity, and is considered a biodiversity hotspot (Baine et al., 2007). Despite limited biological studies, 57 coral species and 273 fish species in 54 families have been identified, including several endemic species (Geister and Diaz, 1997); the archipelago has very high levels of marine endemism. It is defined as a secondary Endemic Bird Area, and was declared in 2004, by Birdlife International, as an Important Bird Area. The mangrove swamps and the remote cays are considered key bird habitats; 18 resident species and 76 migrants have been recorded, including two threatened endemic species and several endemic subspecies. The archipelago is also part of the eight sites on the Latin America/Caribbean list of priority areas recommended for marine World Heritage Site status (Howard, 2006). The islands bear other significant species, such as sea turtles (hawksbill, green, leatherback, and loggerhead), where feeding and nesting areas are provided for. The turtles and other species of coral, fish, and avifauna are listed on the IUCN Red List (IUCN, 1996). Commercial species of high importance in the area include the queen conch, spiny lobster and spotted spiny lobster (*Strombus gigas*, *Panulirus argus*, *P. guttatus*).

In 2000, UNESCO declared the entire archipelago, under the Man and the Biosphere Program (MAB), as the Seaflower Biosphere Reserve (UNESCO, 2005). The Colombian government department in charge of the sustainable development of the archipelago, CORALINA (the Corporation for the Sustainable Development of the archipelago of San Andres, Old Providence, and Santa Catalina), has worked collaboratively with NGOs and other agencies to establish a MPA management plan, which currently protects an area of 65,000 kilometres². A multiple-use MPA program was meant to be operational in the Reserve. However, due to economic, political and social issues, success in meeting management targets has been limited. This appears to be due to the effects of individualism and insufficient coordination, and has largely left the natural resources unprotected.

Socio-economic conditions

The social conditions of the archipelago have changed significantly over the last decades. The native islanders, who are West Indian inhabitants of Anglo-Puritan/African heritage, and descendants of the early English-speaking settlers and slaves, were the first people to live on the islands. Two other groups became part of the island community; resident immigrants from continental Colombia and their descendants, and immigrants from foreign countries, mainly from the Middle East (Lebanon), Central America, and Europe (Mow, 2010).

In 1953, San Andres was designated as a free port, and this changed the economic base from its original small-scale agriculture and fishing to commerce, causing economic and political marginalisation of native islanders. Until the 1960s, society was based on community input. The declaration of the free port resulted in the development of commercial tourism targeting Colombian mainlanders. The uncontrolled influx of immigrants, encouraged by economic incentives for continental Colombians to settle in San Andres, looking for work in the growing tourism and commercial sectors, and seeking to avoid mainland drug war and guerrilla violence, had important social consequences: poor social conditions, unfair benefit distribution, disruptive cultural tensions, and deterioration of quality of life. This situation has worsened over the last decade, due to global economic condition, the collapse of the free port, and the loss of national trade restrictions. Unemployment in the archipelago is now estimated at 53.6%, with 48.6% of the population earning less than the World Bank's poverty criterion of US\$1 per person per day (Van't Hof and Conolly, 2001). The tourist industry employs 45% of the work force, while the public sector employs 37%; 32% of the working age population have no income, and almost half the population (49%) earns less than the minimum wage. Currently the population in the archipelago is estimated to be over 100,000 (78,000 in 2003, c.2,900 people per kilometres²), making San Andres the most populated oceanic island in the Western hemisphere and one of the most crowded in the world (Howard, 2006; Mow, 2010). The settlements, which mainly house recent immigrants from Colombia's Caribbean coast displaced by the mainland violence, are unplanned and without legal public services.

Administrative and political background

The archipelago of San Andres has been part of the Colombian territory since the 1800s, and was declared a department in the constitution in 1991. However, its historic, linguistic and ethno-cultural roots are linked to the other West Indies islands colonised by the English. The archipelago is governed by an elected governor and an 11-member elected assembly that rules for three-year periods. Several national and local institutions share jurisdiction and authority in the coastal and marine area of the archipelago, including CORALINA, the Environment Ministry, the National Park Office, the Naval Maritime Authority, the Coast Guard, the National Police, the National Fisheries Institute, the Departmental Fishing Board, and the Departmental Government (Howard, 2006). In 1993, Law 47 established the Departmental Board of Fishing and Aquaculture in the San Andres archipelago, decentralising the previous authority from the National Fishing and Aquaculture Institute (Senate of Colombia, 2010). At present, however, enforcement of quotas and regulations under this law is unsuccessful, as stakeholders who find the regulations unreasonable are not complying wanting greater local autonomy in fisheries management. Law 47 also identifies the protection of coastal and marine resources and the establishment of artisanal fishing areas in the archipelago as key processes. Importantly, Law 136 (1994) provides protection for the archipelago's mangroves. CORALINA is the government agency charged with regional planning, management and regulation of natural resource use in the archipelago.

Coastal and marine management challenges for the Seaflower MPA

Like many other MPAs around the world, there is a need to bridge the gap between a paper and a functional reserve. In an area like the archipelago of San Andres, composed of small islands, land-based issues are critical in marine management. The objectives of the Seaflower MPA are: the preservation, recovery, and long-term maintenance of species, biodiversity, ecosystems, and other natural values including special habitats; promotion of sound management practices to ensure long-term sustainable use of coastal and marine resources; equitable distribution of economic and social benefits to enhance local development; protection of rights pertaining to historical use; and education to promote stewardship and community involvement in management (CORALINA, 2005). To achieve these objectives, the application of integrated coastal management is essential. However, there are challenges to the achievement of integrated management for the Seaflower MPA. These challenges come from the unsuccessful management of the open access regime, lack of integrated environmental management, insufficient coordination between the coastal and marine authorities, and the failure to enforce regulations. The growing population is also linked with unsustainable harvesting of the marine resources and pollution-based environmental degradation.

However, there are more serious socio-political challenges to the successful management of Seaflower MPA. Since the beginning of the MPA process, CORALINA's policy has been to increase local ownership of the MPA through extensive stakeholder consultation and provision of employment and training of local people, with capacity-building projects led by international and national experts working with local managers. While there has been some success, it has been limited by territorial attitudes by governmental agencies and stakeholder groups, who tend to work in isolation from each other, influenced by a complicated tangle of social and cultural issues. Fragmented decision-making processes, distant from central national government, has resulted a lack of coordinated management. This lack of inter-agency cooperation and communication is probably one of the most important obstacles to achieving integrated management in the archipelago. This also leads to issues with enforcement and compliance. Currently in the Seaflower MPA there are no effective legal tools to apprehend those who disregard the regulations; despite CORALINA being the autonomous corporation for the sustainable development of the archipelago of San Andres, its officials lack any legal authority to take actions where the regulations are violated. CORALINA officials can talk to the violators and report the issue to local authorities such as the National Police, Coast Guard or the National Armada (Marine Infantry).

This situation has been exasperated by being, due to its unique location, a hot-spot for drug and armament traffic between South America, Central America, Mexico and United States of America. The Coast Guard and the Marine Infantry authorities, consequently, focus on combating trafficking problems rather than environmental compliance. Furthermore, the breakdown of law resulting from agencies overwhelmed by the drug trade, and a history of corruption and government based on ethnicity, family interests and remoteness from the central government has resulted in the national government removing local government autonomy in an attempt to regain control. With agencies being concerned with other community problems such as insecurity, violence and narcotics-trafficking, and an overall lack of resources in the archipelago, even repeat offenders go uncontested. This sends a powerful message of the impotency of reserve managers to the community.

Conclusion

Can management models based on socially- and politically-stable Western developed countries, such as the GBRMPA model, be applied effectively in developing countries, and, especially to Colombia and this region specifically? While the management methodology of zoning as a rapid technique to identify sites in need of protection or subject to overuse is well established in developed countries, is familiar and works reasonably well, it is not effective in all situations. Importantly, models such as the GBRMPA model, are first world solutions, structured and developed to reflect, and to operate and be contextualised within, the following socio-political conditions: high levels of community compliance and support; a community not directly dependant on marine resources for survival; social safety nets for those suffering economic hardship; resources for management and monitoring; and social consensus on non-violent resolution of issues through trusted mediation and judicial instruments, process and institutions. Furthermore, there are also some important limitations to such models. First, the GBRMPA model, for example, does not deal with levels of use, that is numbers of tourists or fishers that are permitted to use a site, and must be complemented by a permit system. Secondly, it is unable to deal with land-based threats, such as pollution and runoff, and as a result 90% of the Great Barrier Reef inshore reefs have been lost since the 1960s. Thirdly, and most importantly, due to its fundamental structure as a management system, it cannot deal with disrupted, dis-coordinated or dysfunctional political, judicial or social systems, or politicised public governance systems.

The implication of this clear misalignment of (i) the socio-political and management context of the Seaflower MPA, in Colombia, and (ii) the conditions within which developed world MPA management systems such as the GBRMPA system are constructed and operate, is clear: adoption without any adaptation of such established models in new developing country MPAs is likely to result in failure. While the established models can be demonstrated to work, their application in very socio-politically different conditions is unlikely to provide effective MPA management.

Bibliography

Baine, M, Howard, M, Kerr, S, Edgar, G and Toral, V (2007) 'Coastal and Marine Resource Management in the Galapagos Island and the Archipelago of San Andres: Issues, Problems and Opportunities', *Ocean and Coastal Management* v50: 148-173

Corporation for the Sustainable Development of the archipelago of San Andres, Old Providence, and Santa Catalina (CORALINA) (2010) *CORALINA – Seaflower* – <http://www.coralina.gov.co>

Geister, J and Diaz, J (1997) 'A Field Guide to the Oceanic Barrier Reefs and Atolls of the Southwestern Caribbean: Archipelago of San Andres and Providencia, Colombia', in Lessios, H A and Macintyre, I G (eds) *Proceedings, 8th International Coral Reef Symposium*, Balboa, Panama: Smithsonian Tropical Research Institute: 235-262

Howard, M (2006) *Evaluation Report Seaflower Biosphere Reserve Implementation: The First Five Years 2000-2005* – http://www.unesco.org/csi/smis/siv/Caribbean/San_actEnvEd_Seaflower2000-2005%20.pdf

IUCN (1996) *The 1996 IUCN Red List of Threatened Animals*, Gland: IUCN

Mow, J (2010) *The Native Islanders of San Andres, Old Providence and Santa Catalina: Dreaming between Two Worlds* – <http://www.unesco.org/csi/smis/siv/inter-reg/comvision-panel-June2.pdf>

Mow, J, Taylor, E, Howard, M, Baine, M, Connolly, E and Chiquillo, M (2007) 'Collaborative Planning and Management of the San Andres Archipelago's Coastal and Marine Resources', *Ocean and Coastal Management* v50 n3-4: 209-222

Mow J, Howard M, Delgado, C and Tabet, S (2003) 'Promoting Sustainable Development: A Case Study of the Sea Flower Biosphere Reserve', *Prospects* v33 n3: 313-312

Senate of Colombia (2010) *Senate Secretariat* – <http://www.secretariasenado.gov.co>

UNESCO (2005) *Man and the Biosphere* – <http://portal.unesco.org/science/en>

Van't Hof, T and Connolly, E (2001) *Financial Sustainability for the Marine Protected Area System in the Seaflower Biosphere Reserve*, Draft/Technical report, Washington: The Ocean Conservancy