IS IT POSSIBLE TO IMPLEMENT A COASTAL MARINE PROTECTED AREA IN THE BUENOS AIRES PROVINCE, ARGENTINA?

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Biographical statement

I am the Director of a local NGO dedicated to protect the marine environment in Argentina. I am working as an Associated Researcher to the Museum of Natural Sciences in Buenos Aires, as an Independent Consultant to the Secretariat of Natural Resources and Environmental Policy at the Federal Government, and as a Senior Project Leader to Wildlife Trust. My research topic is Aquatic Ecology and Coastal Management. At present, I am monitoring the Buenos Aires Province coastal health through various Research Projects on sentinel species working in association with local fishing communities.

Abstract

Almost the 45% of the total population in Argentina is concentrated in the Buenos Aires Province (BAP). In Argentina there are more than 35 coastal Protected areas. However, those including subtidal zones are mainly limited to Patagonian Provinces with low population rate. From a biological point of view, the BAP coast includes important breeding, resting and feeding areas for migratory shorebirds, nursery areas for several fish and areas of concentrations for crustaceans and marine mammals. In total, 9 coastal protected areas are located in the BAP. Although created earlier in the 80's and 90's, legal protection for many of them occurs recently since 1997.

These coastal protected areas are located close to urban settlements and mainly associated with tourism and commercial fishing activities. Basically, the use of natural resources sustain the regional economy. Human activities also include agriculture, cattle ranching, sand extraction, forestation and some industrial activities. The coastal protected areas are exposed to pollution, unsustainable fishing activities and coastal habitat destruction. The beaches and dunes contain aquifers used by coastal communities for their fresh water. These areas support the habitat of rare and threatened species and critical ecosystems. Human wildlife conflicts exist in these protected areas, especially with shorebirds and marine mammals. To date, available information suggests that the existing coastal protected areas in the BAP have a low level of management. The main causes are: lack of effective integrated Management Plan, inadequate legislation, illegal activities within the protected areas, lack of orientated research, and lack of environmental awareness and commitment in the general public and the authorities.

Although the BAP has included environmental concern in its Constitution, it has still not formed a local environmental policy, and existing laws are often enforced because of lack of adequate control mechanisms. The coastal protected areas in the BAP hold strong promise for management and conservation objectives, but following the historical and actual pattern of haphazard design; implementation, enforcement and evaluation could produce irreversible negative ecological effects in the future. There is little or no commitment to integrated management for these areas to ensure that their resources are used in sustainable manner with a social objective and being biodiversity protected. To implement effective protection will require a strong change in the attitude of the Government, politicians and local community. Given the complexity of the problems associated in the BAP coast, the number of invested players, and the likelihood that threats will increase in the next years, an immediate regional Program should be warranted.

Introduction

Argentina is the eight largest countries in the world, with a surface of 2.7 million km^2 and almost 4800 km of coastline. As one might expect in a country as large as Argentina, the relatively small and mainly urban population of about 36 million has as yet had little effect on huge tracts of natural habitats. However, recently with modernization and the pressure of the foreign debt for increased production over the next decades, are certain habitats being hammered into less natural areas, thus harming wildlife.

As in many other countries, one of the most affected areas has been the coast due to anthropogenic activities by habitat destruction, and uncontrolled commercial fishing and tourism.

Population increase in coastal areas and pressures for commercial exploitation and lack of alternative sources of resources affect important areas for local marine biodiversity in many developing countries. In Argentina, this is the case especially in the Buenos Aires Province (BAP) coast.

The BAP has the highest population among other Provinces in Argentina; more than 40% of the argentineans are concentrated in this province.

At present 10 human major settlements exist in the BAP maritime coast with over 1.5 millon inhabitants living throughout the year along the approximately 1000km of coastline. Economy in the area mainly depends on the use of natural resources as Commercial and Artisanal Fishing, Ranching, Oil Extraction, Tourism, and Construction and some Industrial activities.

As a consequence of cold Malvinas and warm Brazil currents flowing slowly along the coast, important areas of coastal upwelling, highly productive, occur along the edge of the continental shelf. This ecosystem provides much of the nourishment that sustains the Argentine marine environment. At the La Plata River Estuary in the BAP, a particular environment exists where both currents meet each other. The Argentina marine system is characterized by large biomass. Although the number of species is comparatively low, the importance of the system lies in volume rather than variety. Several species are indicators of the overall health of the ecosystem.

From a biological point of view, among other important features, the BAP coastal area include: breeding, resting and feeding areas for migratory shorebirds, breeding and nursery areas for several fish species, and areas of reproductive concentrations for crustaceans and marine mammals.

In Argentina, there are more than 35 coastal protected areas or natural reserves declared with a total of 5700 km2. However, marine coastal protected areas, and those including subtidal zones in Argentina, are practically limited to Rio Negro, Chubut, and Tierra del Fuego Provinces; all of them Patagonian Provinces with low population rate. Only the 4.5% of the Argentine population lives in the Patagonia area at a rate of under 3 inhabitans/km^2.

Why no more attention has been paid on the BAP, a place with high population rate?

It is not difficult to understand that the economy held the answer. The Province encompasses one of the most touristic areas within the country, located in the northern area popularly known as the "Costa Atlantica", which includes more than 15 small tourist villages. Statistics indicates that over 4.5 million tourists visit the total coastal area during summer seasons and weekends generating and an important amount of financial resources to the region.

On the other hand, in 1987 Argentinean income by Fishery exports was US$500 millions, but in 1997 the number increased to US$1.2 billons. The total catch declared reached more than 850.000 tons in 2000. The 11% of the total catch came from coastal fishing activities. Actually, the 8% of the total catch proceeds from coastal fishery activities in the BAP.

Geographically, the Rio de la Plata estuary located in the BAP dominates the northern portion of the Argentinean shoreline. From Cabo San Antonio, the shoreline is tidal mudflat. From Mar del Plata to Bahia Blanca the coast consist of a low cliffed shoreline fronted by a narrow beach, occasionally with large dunes. South of Bahia Blanca with the influence of Negro and Colorado rivers, broad mudflats, low islands and sandbars occur.

A total of 9 protected areas are located in the maritime zone of the BAP (see Fig. 1). For this case study, these protected areas were clustered in 4 main geographic areas as indicated below:

1. ***BAHIA SAMBOROMBON*** *(Rincón de Ajó, Bahia Samborombon, Campos del Tuyú, Punta Rasa)*

2. ***MAR CHIQUITA*** *(Dunas Atlántico Sur, Pque Atlantico Mar Chiquita, Faro Querandí)*

3. ***BAHIA BLANCA*** *(Bahia Falsa-Bahia Verde)*

4. ***BAHIA ANEGADA*** *(Bahia Anegada-Bahia San Blas)..*

Three of these main protected areas include parts of the subtidal marine environment. Two of them Bahia Samborombon *(Ramsar Site)* and Parque Atlantico Mar Chiquita *(UNESCO Biosphere Reserve)* have international interest and the others are protected under Provincial and County Laws.

Costal and marine protected areas in the BAP covers approximately 3000 km^2 . However, although some were created earlier in the 80's and 90's, legal protection for many of these areas occur recently since 1997.

These protected areas share the same main objective; to protect transitional areas between land and marine ecosystems conserving biodiversity, keeping the ecological processes and safeguarding the sustainable use of resources.

Are all these Natural Reserves good enough to protect the coastal environment in the BAP?

Are all these Natural Reserves sufficiently protected nowadays?

Only some previous works, mainly unpublished technical reports, contains information on the coastal protected areas in Argentina (Daciuk 1979, Dieguez et al 1995, Faggi et al 1996, Ardura et al. 1998, Yorio et al. 1998). Scarce information exists on the coastal protected areas in the BAP (eg. Diegues et al. 1995, Yorio et al. 1998).

Upon this base, and personal observations, the present report shows general preliminary recommendations to improve the management of the BAP coast.

Significance of the site as a case study

In general terms, all these protected areas are included or located close to urban places closely connected with tourism and fishing activities. At the same time, these areas support the habitat of endangered species and important critical ecosystems to the biodiversity. Although declared as protected areas, actually control levels are insufficient or null. With the exception of Campos del Tuyú and Laguna Mar Chiquita, these protected areas does not have infrastructure and personnel permanently assigned.

The coastal protected areas in the BAP are exposed to different land uses and land cover changes in the coastal zone. However, the areas share the same main threats: pollution, unsustainable fishing activities and coastal habitat destruction.

What important species exist in these areas?

The Bahía Samborombon is an extensive, intertidal zone which includes marshes, tidal channels brackish swamps, and crab and mud flats, including a portion of the La Plata River estuary. Vegetation is predominantly herbaceous, forming a mosaic of communities crisscrossed by meandering freshwater streams, creating a complex hydrological system with a diversity of wetland types. It is a valuable stopover site for migratory shorebirds (Morrison and Ross 1989), including some threatened species. It is also a breeding and nursery area for many commercial fish as croaker *(Micropogonias furnieri)*.

Mar Chiquita is located in "Moist Pampa" habitat with mixed woodlands in areas and poor drainage. The area includes a lagoon, unique on its type within the marine zone of Argentina. The tide channel through which it runs into the sea measures 6km long. The area also includes the biggest extension of natural dunes (5750ha along 30km of coastline) in the country. The Reserve is just beside a parcel of military use. Militay routine activities are developed in a sector of the reserve adjacent to the coastal lagoon and to one of its intangible areas.

The area is an important habitat for fresh water, amphibiotic and sea fish, as well as an important concentration area for shorebirds (Canevari et al. 1999). The capybara *(Hydrocaeris hydrocaeris)* and some amphibians inhabiting the area are species threatened by extinction.

The Bahia Blanca and Bahia Anegada areas include a group of islands and sandbanks. The coast is featured by several tide channels, marsh, sand beaches and dunes. Vegetation is predominantly herbaceous, with areas covered by *Spartina* sp. and *Salicornia* sp. Extended crab flats *(Chasmagnathus granulata* and *Cyrtograpsus* sp) are very common in the area. The area is of great importance for the Olrog's Seagull *(Larus atlanticus)*, an endemic and threatened species. The 90% of the reproductive population of this seabird inhabits the coast and islands in both areas. All the region is a nesting area for several Duck, Heron, Cormorant, Flamingo, Swan, Oyster eater and Seagull species *(Podiceps major, P. occipitalis, Rollandia Rolland, Haematopus sp., Phalacrocorax sp., Ardea cocoi, Nycticorax nycticorax, Coscoroba coscoroba, Cygnus melancoryphus, Anas versicolor, A. sibilatrix, A. georgica, Phoenicopterus chilensis, Larus dominicanus, L. maculipennis)*. It is also a breeding and nursery area for many commercial fish as Pescadilla *(Cynoscion striatus)*, Patagonian hake *(Merluccius hubbsi*), Sevengilled shark *(Notorhynchus cepedianus)*, Gatuzo *(Mustelus sp.)* ,Lenguado (*Paralichthys sp)*, and Shrimp *(Pleoticus muelleri)*. There is also an important reproductive colony of sea lions *(Otaria flavescens)*, considered the biggest in the BAP. The area includes a stable population of the almost extinct Yellow Clam (*Mesodesma mactroides)*. The islands are also the habitat for Guanaco *(Lama guanicoe)* and Nandú *(Rhea americana)*.

Actually, the *Bahía Anegada* is perhaps the only place along our coastline currently without the pressure of commercial overfishing. The unique environmental features of its coasts determine it as one of the most important areas for the conservation of biodiversity in the BAP.

Overall, the BAP coast is an area inhabited by several rare and threatened species. The rare La Plata dolphin *(Pontoporia blainvillei)* usually is found along the coast in shallow waters (Bordino et al 1999). The Patagonian hake *(M. hubbsi)* , one of the most important commercial fish in the country, has been almost depleted to verge of extinction due to overfishing along the argentinean coast. Almost the 40% of the total catch for this species still occurs in the BAP area. Furthermore, the migratory route of the endangered Southern Right Whale *(Eubalaena australis)* runs along the BAP coast. The Bahía Samborombon area is very important for the conservation of the Pampa's deer *(Ozotoceros bezoarticus celer*), considered the most threatened deer in America. With a total estimated population of 1500 within the country, the Bahía Samborombon is the refuge for almost 500 deer.

What valuable services provides?

The beaches and dunes contain aquifers used by coastal communities for their fresh water, especially in Bahía Samborombon and Mar Chiquita areas. Mainly, these areas support recreational activities especially during summer season. Eco tourism activities have been developed in some areas.

What types of activities are permitted there?

The use of natural resources sustains the economy of a great percentage of the stable coastal population. Basically, human activities include Tourism, Cattle ranching, Commercial and Sport fishing, Hunting, Sand extraction, Forestation, Firewood cutting and Aquaculture.

Are there human-wildlife conflicts?

Human-wildlife conflicts exist in these protected areas. Among others, the La Plata dolphin *(P. blainvillei)* is incidentally caught by artisanal and commercial fishermen along the BAP. It has been estimated that 400 dolphins are accidentally caught every year (Corcuera 1998). However, this value probably has been underestimated for several years (Bordino et al. 2000).

Although protected by national law, sea lions *(O. flavescens)* sometimes steal fish from nets and they are killed by coastal fishermen (Albareda and Albornoz 1994).

Furthermore, egg extraction has been documented in gulls' colonies of Bahia Blanca and Bahia Anegada areas (Yorio et al. 1998).

What are the threats and impacts of human use?

Some of these areas appear to be especially vulnerable to certain effects of environmental conflicts due to its condition of coastal wetlands and its present and potential land uses and activities.

Beach and dune zone suffers nowadays a critic process of coastal erosion. Sand extraction for construction and urbanization are major activities along the coast and one cause of beach degradation. At Mar Chiquita it is linked to rapid beach recession of up to 5 meters a year (Dennis and Schnack 1995). The beaches have suffered important rates of erosion related to anthropogenic activities which altered the natural coastal ecosystem (Lopez 1995, Marcomini and Lopez 1997, Bertola et al. 1999)

Due to excessive use by tourism in some coastal areas, the level of aquifers supporting fresh waters to local communities has decreased, and signs of marine intrusion has been recorded (Isla and Villar 1992).

Oil spills coming from tanker vessels or bilge cleaning have been affecting the coast of Bahía Samborombon and Bahía Blanca. Oil refineries, petrochemical facilities and thermoelectrical plants in Bahía Blanca are major sources of air and water pollution in the region, being the most polluted marine area in the country.

Overfishing along the BAP coast is affecting some commercial fish species as croakers and sharks with unknown consequences on the biodiversity in the area.

Among others, threats to the BAP coastal area and causes associated include:

a. Lack of coordinated and integrated management (Lack of management plans or these are inadequates)

b. Lack of environmental commitment within the community and local authorities.

c. Biological pollution (Sewage discharge from main urban centers)

d. Chemical pollution (Intensive agricultural activities that incorporate the use of fertilizers and pesticides with chlorine content, Industrial activity)

e. Overfishing and Illegal fishing (Limited participation of society in conservation, lack of opportunities for development, protection with limitations)

f. Coastal erosion (Engineering works without environmental impact studies, excessive tourism, vehicular traffic without planning)

g. Sand extraction (demands of regional construction industry)

h. Urbanization (Limited urban planning)

i. Non controlled tourism (Limited protection, Insufficient environmental legislation, lack of carrying capacity studies)

j. Non controlled nautical activities (No regulatory framework, lack of control)

k. Invasive animals (Little interest in regional development, Fixation dune areas, Ornamentation, Commercial purposes)

l. Dredging (Commercial and tourist interest)

m. Furtive hunting (Lack of efficient control, reduced participation in the conservation of natural resources)

n. Unsuitable cattle breeding use in fragile environments (Farming promotion, local narrow minded attitudes, incipient participation system)

o. Military practice (Inadequate protection, reduced participation in the conservation of natural resources)

Management Strategies and Preliminary Recommendations

Official monitoring, research, zoning and education have been mainly implemented as conservation measures, with the exception of Bahia Anegada area where no conservation plan has been developed yet. There are a Conservation Education Center and a Biology Station held by a local NGO in Bahía Samborombon. However, these measures have not been completely effectives or no evaluation has been done. In some protected areas, Park Guards are employed but their activities are restricted to very small areas. Therefore the management requires co ordination by several stakeholders.

There is not at present an Integrated Management Plan for the BAP coast. Protection of the coastal environment is based in a group of unconnected protected areas with different and mainly scarce control levels.

To date, available information suggests that the existing coastal protected areas in the BAP, and in Argentina, have a low level of management (Yorio et al. 1998). The main causes are: Lack of efficient and effective management program, inadequate legislation, illegal activities within the protected areas, lack of oriented research and lack of environmental awareness and commitment in the general public.

Some preliminary recommendations are:

- To develop specific management plans for any area in a coordinated National Program
- To add subtidal environments in some protected areas
- To identify priority landscape units at a site
- To identify the stresses and source of threats as well as monitoring
- To look at biological passages or muffling areas
- To develop coordinated research
- To identify the size and characteristics of protected area tourism.
- To develop case studies to investigate best practice models for tourism management.
- To develop guidelines for the management theory and practice to planners, managers and others.
- To develop guidelines for best practice tourism management in protected areas including capability, sustainability,

pricing, visitor management and community based management.

- To increase patrolling
- To invest funds obtained by the use of protected areas in its own management and conservation programs.
- To reduce the fishing activity in protected areas.
- To ban the introduction of exotic species within protected areas.
- To provide opportunities for people living in the community to work together on shared issues within the protected area.

Conclusion:

The future of the site and other protected areas in Argentina

Marine and coastal protected areas are an essential management tool to protect marine biodiversity and sustain human communities dependent on marine resources. Although the BAP has included environmental concern in its Constitution, it has still not formed a local environmental policy, and existing environmental laws are often not enforced because of lack of adequate control mechanisms. As a consequence, the actual BAP coastal protected areas system is inadequate.

Beach communities in the BAP are highly susceptible to deterioration by human action, and they should be managed with extreme caution in the future.

There is a lack of knowledge in a provincial level; in most of the cases the correct handling does not require great resources. Ecotourism activities for example has not been effectively implemented, despite their proximity to the largely seasonal resorts.

The coastal protected areas in the BAP hold strong promise for management and conservation objectives, but following the historical and actual pattern of haphazard design, implementation, enforcement and evaluation could produce irreversible negative ecological effects in the future.

The government agencies, at Federal or Provincial level with responsibility for management, have insufficient resources to carry out this task efficiently. There is little or no commitment to integrated management for these areas to ensure that their resources are used in sustainable manner with a social objective and being biodiversity protected. It is fundamental to understand the spatial-scale perspectives. Protecting more areas with high numbers of species is of little value if the areas contains the same species while other species are unrepresented. Protecting areas of lesser biotic similarity assures that the degree of protection for regional endemic species is increased.

To implement a protected area is different than to create or to declare ones. To implement requires a Program that justify the reasons for a protected area being declared. To implement effective protection of the coastal habitat and species will require a strong change in the attitude of the Federal and Provincial Governments, politicians and local community. Given the complexity of the problems associated in the BAP coast, the number of invested players, and the likelihood that threats increase in the next years, an immediate Regional Program should be warranted.

Bibliography

Albareda, D. and Albornoz, N. 1994. Mortalidad de franciscana en la pesqueria artesanal de San Bernardo y Mar de Ajo, Buenos Aires, Argentina. pp 54-60, In: M.C. Pinedo and A. Barreto (eds) *Anais do 2° Encontro sobre cordenacao de pesquisa e manejo da franciscana* , Florianopolis, Brasil, October 22-23, 1994, [In Spanish].

Ardura, F; R. Burkart, J. Garcia Fernandez and A. Tarak. 1998. Las Areas Naturales protegidas de la Argentina, Administracion de Parques nacionales, Buenos Aires.

Bertola, G. R; M. Farenga, L. Cortizo and F. Isla. 1999. Dinamica morfologica de las playas de Villa Gesell (1994-1996). *Revista Asociacion Geologica Argentina* 54. [In Spanish].

Bordino, P; G. Thompson and M. Iñiguez. 1999. Ecology and behaviour of the franciscana *(Pontoporia blainvillei)* in Bahia Anegada, Argentina. *Journal of Cetacean Research and Management* 1(2): 213-222

Bordino, P; S. Kraus, D. Albareda, K. Baldwin, A. Fazio, A. Palmerio, M. Mendez and S. Botta. 2000. Uso de alarmas acusticas para reducir la mortalidad accidental de franciscana *Pontoporia blainvillei* en redes de pesca agalleras. IX Reunion de Trabajo de Especialistas en Mamiferos Acuaticos de America del Sur, 29 Octubre-3 Noviembre 2000, Buenos Aires, Argentina, Abstract, 17p. [In Spanish].

Canevari, P. D. E. Blanco and E. Bucher. 1999. *Los Beneficios de los Humedales de la Argentina. Amenazas y Propuestas de Soluciones*. Wetlands International, Buenos Aires, Argentina, 64pp.

Corcuera, J., F. Monzon, I. Cornejo, J. Perez, A. Beilis, M. Gingarelli, D. Albareda and A. Arias. 1998. Mortalidad de *Pontoporia blainvillei* en el Norte de la Provincia de Buenos Aires. UNEP/CMS. 2000. *Report of the Third Workshop for Coordinated Research and Conservation of the Franciscana* Dolphin *Pontoporia blainvillei in the Southwestern Atlantic*. DT 25. [In Spanish].

Daciuk, J. 1979. Reservas de fauna marina en el litoral Patagonico del Atlantico e isles Malvinas: objetivos de su creacion, planificacion e investigacion cientifica. III. Contribuciones sobre proteccion, conservacion, investigacion y manejo de la Vida Silvestre y Areas Naturales. *Acta Zool. Lilloana* 34: 158-178. [In Spanish].

Dennis, K. C; and E. J. Schnack. 1995. Argentina-Sea Rise Risks are small but tangible. *Climate Alert* 8(2).

Diegues, A; G. Harris and A. Castro Moreira. 1995. Marine Region 9. South Atlantic. In: Kelleher, G. Bleakley, C and Wells, S. 9eds). *A Global Representative System of Marine Protected Areas.* Vol ii. Gt. Br. Rf. Mrne. Prls. Auth-WB-IUCN 71:85.

Faggi, A; M. Cagnoni and P. Otero. 1996. Mar Chiquita: nueva Reserva de la Biosfera. Actas del IV Encuentro de Geografos de America Latina, Buenos Aires. [In Spanish].

Isla, F. I; and M. C. Villar. 1992. Ambiente costero. Pacto Ecologico. Universidad Nacional de Mar del Plata y Senado de la Provincia de Buenos Aires. Mar del Plata. Diciembre 1992.

Lopez, R. A. 1995. Consideraciones sobre los efectos de las sudestadas en el Municiopio de la Costa. *VI COLACMAR* , 23-27 Ocubre 1995, Mar del Plata, Argentina, Abstract (448), 122 p. [In Spanish].

Marcomini, S. and C. Lopez. 1997. Influencia de la urbanizacion en la dinamica costera, Villa Gesell, Provincia de Buenos Aires, republica Argentina. *AAS Revista* 4(2):79-96. [In Spanish].

Morrison, R.I.G; P. Canevari and R. K. Ross. 1989. Argentina. *In:* Morrison, R.I.G and Ross, R.K. (eds). *Atlas of Neartic shorebirds on the coast of South America.* Vol 2. Canadian Wildlife Service Special Publication, 218-246pp.

Yorio, P., A. Tagliorete, G. Harris and M. Giaccardi. 1998. Areas Protegidas costeras de la Patagonia: Sintesis de informacion, diagnosis sobre su estado actual de proteccion y recomendaciones preliminares. *Informes Tecnicos del Plan de manejo Integrado de la Zona Costera Patagonica*. Fundacion Patagonia Natural, Puerto Madryn, Argentina 39: 1-70.

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marine mammals.

- In total, 9 coastal protected areas are located in the BAP.

- Although created earlier in the 80's and 90's, legal protection for many of them occurs recently since 1997.

Significance of the case study

- These coastal protected areas are located close to urban settlements and mainly associated with tourism and commercial fishing activities.

- Basically, the use of natural resources sustain the regional economy. Human activities also include agriculture, cattle ranching, sand extraction, forestation and some industrial activities.

- The coastal protected areas are exposed to pollution, unsustainable fishing activities and coastal habitat destruction.

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Conclusion: the future of the site

and other protected areas in Argentina

- Although the BAP has included environmental concern in its Constitution, it has still not formed a local environmental policy, and existing laws are often enforced because of lack of adequate control mechanisms.

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