An Overview of Governance of the Gulf of California

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An Overview of Governance of the Gulf of California

By Donald Robadue, Jr.
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November 20, 2001

I. Managing Mexico's Insular Sea: the *Mar de Cortés or Gulf of California*

A Brief Description of ecological and economic importance

The Gulf of California is recognized by leading international conservation organizations including Conservation International, World Wildlife Fund and The Nature Conservancy as a key priority area for marine and terrestrial conservation.

The Sea of Cortéz or Gulf of California is more than 1,600 km long, has an average width of 205 km, has more than 3,000 km of coast line, depths of more than 3,000 m and encompasses 28'300,000 Ha of water area bounded by the states of Baja California and Baja California Sur on the Peninsula and the states of Sonora, Sinaloa and Nayarit to the east. Tuna, shrimp, sardines, and squid make up the commercial fishery (only trawlers have legal access to open water fishing areas) of nearly 500 000 tonnes per year, while riparian fisheries (usually restricted to lagoons, estuaries, river mouths, and managed through local cooperatives) include 70 species with a volume of 200 000 tonnes. About half the total Mexican fishery by volume, and 90 per cent of shrimp aquaculture production is from the Gulf region, as well as forty per cent of national farm production. An estimated 4.8 million tourists generate nearly $2 billion USD.

The status of the Gulf of California as Mexico's insular sea elevates its importance to the Mexican government. Key issues are generated by the major economic activities of fisheries, tourism, aquaculture and agriculture. These include regional concerns such as the management of the Colorado River Delta, commercial shrimp fisheries management, conservation of the region's 34 marine mammal species including the endemic *Vaquita* Porpoise, the functioning of the Gulf Islands park covering more than 900 unpopulated islands and recreational boating coupled with expanding tourism development.

A selection of excerpts on the ecological and economic importance of the Gulf to both Mexico and the world can be found in the Annex.

Management initiatives related to unique concerns in the Gulf

The important issues in the Gulf are reflected in several regional projects and proposals to conserve marine and coastal resources. Many important elements of the regional governance system have been unfolding during the past decade. These include the following:

The *Escalera Nautica* or Nautical Route Agreement
2001
This regional development project envisions a chain of 22-26 recreational ports from Ensenada to Puerto Vallarta. About half will be newly developed sites, and the

remainder significantly expanded, with boat slips and hotel development. A formal cooperative agreement was signed between federal agencies, including the federal environment agency, SEMARNAT, the Tourism agency SECTUR, the Communication and Transporation agency, Housing and Public Finance agency, Agriculture Reform agency and the five state governors in February 2001, at the urging of FONATUR, the national tourism facility development agency. FONATUR was previously responsible for the original Cancun development. The plans for the project continue to evolve, with FONATUR promising to complete a regional environmental impact assessment of the overall proposal. Perhaps more than any other initiative it has galvanized attention and spurred interest in effectively utilizing the planning and regulatory tools described below. Over the next fifteen years, the plans call for:

- A land connection, know as a "dry canal," to connect the Pacific coast of the Baja Peninsula to the Sea of Cortez. Boats will be trucked between the coasts.
- Further plans call for the construction of 20 airports in the region and fuel distribution channels, according to the Web site.
- US$1.72 billion will also be invested in hotels and motels.
- Approximately 8,000 boats per year visit the area, but for 2010 the plan calls for 76,400 vessels.
- Most tourist boating to the area comes from the United States.
- As many as 53,000 jobs could be created.

Most environmental professionals and conservation groups have expressed concern about a project of this scale. They also are worried about the uncontrolled sprawling growth generated by Cancun, the weak government track record up to now in getting good plans in place before large scale developments occur, and the limited ability to make environmental decision-making conform to plans and policies after they have been adopted.

Marine Environmental Plan for the Gulf of California

An initial characterization has been prepared toward the goal of developing an environmental master plan (1:250000 scale) for the waters and adjacent shore areas of the Gulf of California. This project was initiated in 1997 to create a framework for integrating fisheries management, marine mammal conservation with tourism, island and marine park and coastal area management. The announcement of the Nautical Route has created greater sense of urgency for completing this plan.

Biosphere Reserves in the Gulf of California

These are internationally recognized sites within the framework of UNESCO's Man and the Biosphere (MAB) Program.

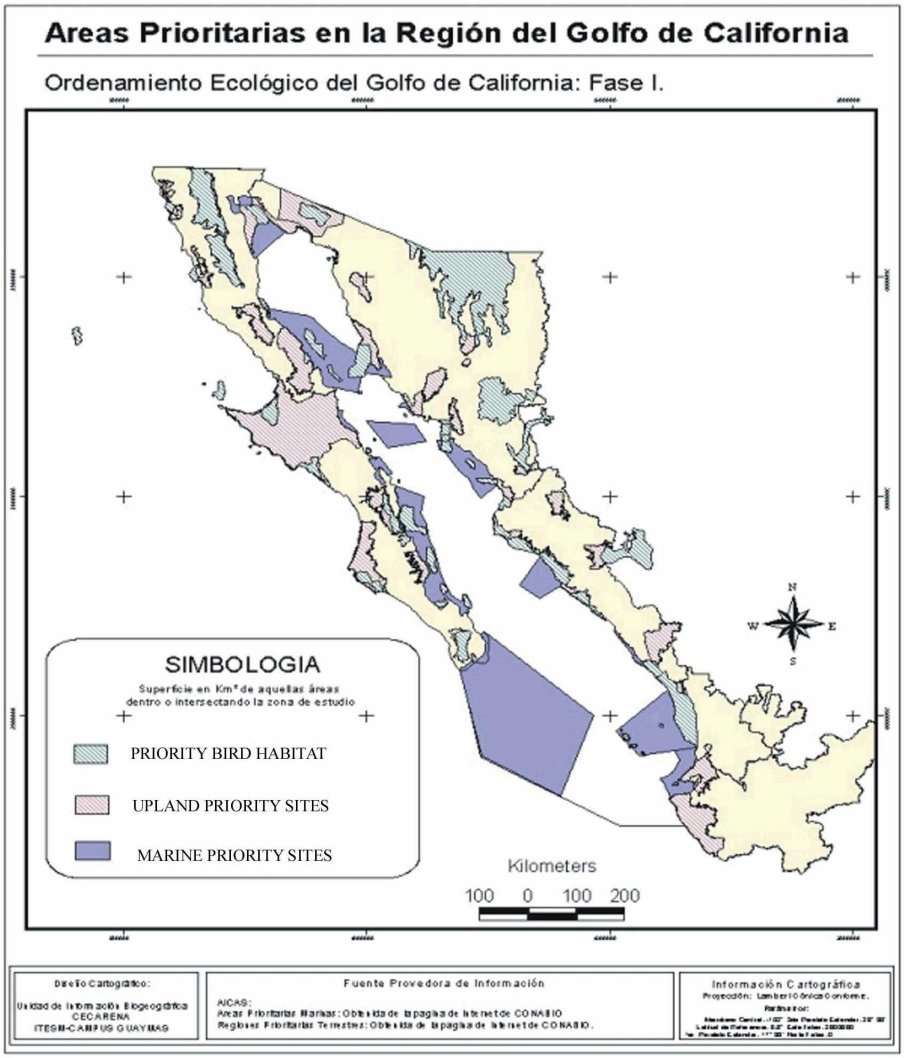
Gulf Islands Park 1995 *(*Marine areas around the islands proposed as a biosphere reserve, 2001)

As of 1978, the 900 large and small islands of the Gulf are held and managed as a national park. A framework plan and rules for this massive resource was published in the Official Register only in 2001 and only a few of the larger islands have management

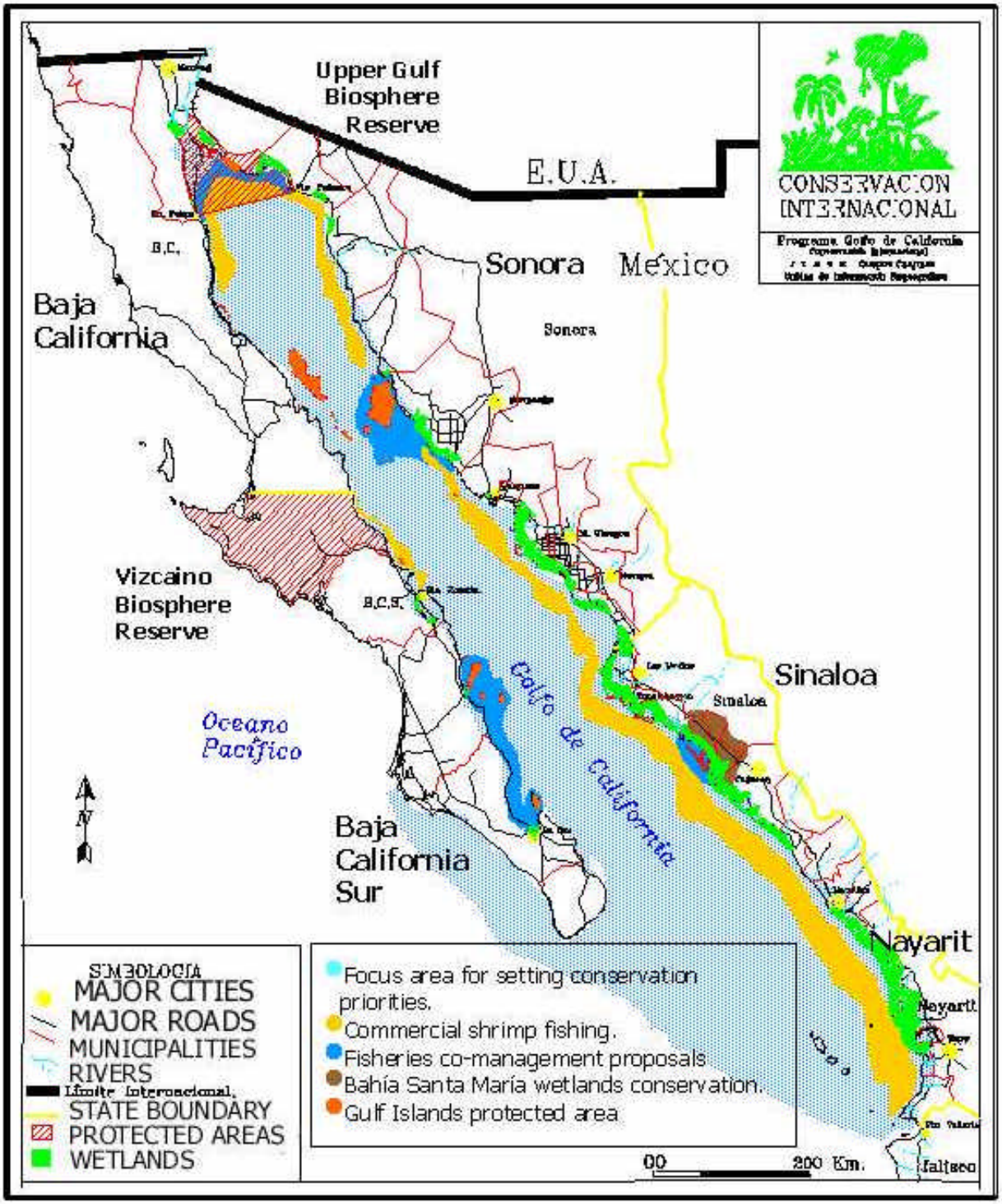
plans. Park managers in the three regional offices (units of SEMARNAT) charged with the care and supervision of the islands have no jurisdiction over the adjacent marine waters of these islands, except in a few areas such as Loreto, where a marine park was also declared. In 2001, President Fox accepted the proposal to incorporate the Islands park system into a more comprehensive biosphere reserve program that would include adjacent marine waters.

*El Vizcaíno,*1988
This large desert area is located in Baja California Sur along its border with Baja California, and links to the Pacific coast. A management plan is currently under preparation.

Upper Gulf-Colorado River Delta, 1993
This reserve has an approved management plan and has been the focus of intensive interest by the community of civic organizations in the region as well as the State of Sonora. During the May 2001 Gulf Priority Setting Workshop, it was identified as one of



Recommended priority conservation areas in the Phase 1 Marine Environment Master Plan



Gulf of California Conservation Priorities, from Conservation International's Strategy

Note: Conservation priorities have now been identified for the focus area of the Gulf at the May 2001 Biodiversity Priority Setting Workshop in Mazatlan, Sinaloa.

the areas with highest levels of use conflicts, but also one the areas with the greatest chance for resolving them.

Marine Protected Areas
In contrast to the Caribbean coast, relatively few marine waters have been set aside as marine protected areas, most notably the waters surrounding the Gulf Islands near Loreto.

Commercial Fisheries: The "Carta Nacional de Pesca"
2000

Mexico's fisheries policies for the Gulf are published as part of the "Carta Pesquera" or National Fisheries Map. There has been considerable concern about the loss of marine mammals due to shrimp fishing, and encroachment into marine protected areas and biosphere reserve areas. PROFEPA has reported considerable problems with artisanal (riparian) fishers. Riparian fishing areas assigned to cooperatives are subject to encroachment by 'free' or non-member fishers. PROFEPA is supporting experiments with fisheries such as blue crab in Bahía Santa María where local fishers work with buyers on size restrictions and appoint their own enforcement personnel.

Estuaries
2000
The National Fisheries Institute has prepared diagnoses and recommendations for action for the principal estuaries in the five coastal states. In addition, some civic associations are developing management plans for selected estuaries, such as the Bahía Santa María in Sinaloa state, which is expected to be incorporated into the recently revived Environmental Master Plan,OET, for the northern coast.

A Regional Vision for the Gulf of California
Ongoing

International and domestic civic associations have been engaged in the region for some time. Conservation International Mexico, (CIMEX) has been a regional leader since the 1980s and maintains a central office in Guaymas, Sonora. It led the preparation of a Global Environment Facility proposal for a ten year sustainable development initiative. PRONATURA is a Mexican civil organization with several offices and programs in Gulf states. PROESTEROS focuses on coastal estuaries on the Baja Peninsula. ISLAs is been engaged in Gulf Island and marine protected area conservation planning. The World Wildlife Fund has more recently initiated a Gulf program as part of its "G200" or representative global ecosystems effort, and is based in Hermosillo, Sonora.

ALCOSTA, an alliance of these and other coastal civic associations in northwestern Mexico, is working to prepare a regional vision statement on sustainable development as a guiding framework for collaborative and individual work. They have already completed an extensive report on conservation and research efforts.

An international scientific meeting on the Gulf is also held annually, led by the University of Baja California in Ensenada.

II. The Three Layers of Government in Mexico as they affect Gulf of California governance

The regional initiatives mentioned above all represent efforts to develop policies for a geographic place. These efforts are attempting to flourish in the context of a strongly vertical political system that requires the engagement of all three levels at the same time if success is to be attained.

Federal level

Traditionally, Mexico's political system has been highly centralized. Environmental and natural resource management exhibited this as well in the 1990s. Many federal agencies maintain delegations at the state level to carry out administrative work. All marine and coastal waters and the coast line up to 20 meters inward of the high water mark are federal. This 'federal zone' is administered by ZOFEMAT, which is a small agency within SEMARNAT, the federal natural resources and environment ministry. ZOFEMAT is mainly concerned with settling claims to shore lands within the 20 meter federal jurisdiction. Federal jurisdiction also extends to the 900 islands located in the Gulf of California.

State level

States have a group of departments that roughly correspond to the authorities of SEMARNAT and other federal agencies, but their nature and quality varies widely. States do not have jurisdiction over marine waters or the coastal zone, however they are increasingly important are key players in the approval process for environmental plans prepared under federal authority. States may also have development agencies to promote tourism projects, for example, in parallel with the federal tourism agency, SECTUR, and development corporations like FONATUR (national tourism fund).

Municipal level

Coastal municipalities tend to be quite large (close to the size of Rhode Island) and play the role of county government. Local administration focuses on policing, land records, community and economic development, planning for urban areas and villages, provision of public services and works. Some in the Gulf region have prepared environmental policies and plans. Municipalities in the Gulf are also gaining approval to manage the collection of fees from the federal maritime zone agency ZOFEMAT. They retain the bulk of these funds, a fraction of which must be applied to coastal management.

Mexico's General Law on Ecology and the tools for decision making

General Environmental Laws

The general law on Ecological Equilibrium, LGEEP, was substantially amended in 1996, and creates the overall framework for Mexican public administration of environmental issues. Dispersed agencies were joined to create SEMARNAP, which dropped the P (fisheries) in 2000 when the Fox administration took office. The National Ecology Institute (INE) sets standards and reviews environmental impact assessments. SEMARNAP, like most federal agencies, maintain offices in each state. SEMARNAT is currently being reorganized by watershed region.

There are specific organic laws which SEMARNAT implements for fisheries, wildlife, forestry. and the federal coastal zone (which primarily focuses on the 20 meter strip above the high water mark to clarify land ownership and collect use fees). Other federal ministries are responsible for human settlements, urban planning, navigation, ports, and tourism.

The Environmental Master Plan, OET

Mexico's principal environmental planning tool is the *Ordenamiento Ecologico*, OET, which is prepared at various scales: general (1:250000 to 1:4000000), regional areas targeted for development such as tourism or aquaculture (1:50000 to 1:250000), local (1:20000 to 1:50000), and maritime (the Gulf of California). These plans typically include:

- an inventory of resources and uses
- a suitability analysis
- a broad, large scale zoning scheme which includes areas designated for:
  - productive use (agriculture, urban, tourism and so on at different levels of intensity),
  - restoration areas, which requires the implementation of improvement programs such as pollution control or reforestation are required,
  - conservation, which incorporates various environmental stipulations and limits, and
  - protection, which is a low or no use area that might be one of several categories of protected area.
- Tables for each zoned polygon listing acceptable use densities and setting activity restrictions.

All environmental master plans are prepared with substantial federal oversight.

Most OETs which have been initiated either have not been completed or adopted. Only 6 of the 14 OETs in the Gulf of California region have been published in the official register, and not all published OETs are actually utilized.

Protected areas

Mexico has made extensive use of protected areas as a tool for marine and coastal management. Some states have also placed land and coastal areas in protected status, but in marine areas states actually have no jurisdiction. Most of these federal and state designated areas remain as 'paper parks'. The Gulf of California includes two internationally recognized Biosphere Reserves, as well as the 900+ island federal Gulf Islands Park, and a few other large federally approved marine reserves.

Environmental Impact Assessments

SEMARNAT operates a permit program through the use of environmental impact assessments that may involve filing a preliminary report, then possibly a site specific report, or could include a regional impact assessment. There are twelve categories of included projects that have a probability of generating irreversible impacts. These include roads and hydraulic works, industrial facilities, mining and oil development, waste treatment and disposal, certain forest and desert areas, industrial parks, projects that could impact coastal and fresh water ecosystems and wetlands, projects in protected areas.

Projects in areas which have approved OETs gain a certain advantage due to the zoning regulations, and most of the drafted OETs are for coastal areas. However only a few of these documents have been completed and approved. Projects must conform to the Official Regulations which apply to their sector (see below). Many projects only need to file a preliminary report and can be approved with conditions.

The movement to decentralize the administration of environmental decision making began in the administration of Zedillo (1994-2000), with state delegates of SEMARNAT taking on the role of receiving and reviewing applications for impact assessments. For projects of regional concern, SEMARNAT has proposed preparing a regional impact assessment, such as for the Nautical Route project, that would allow it to consider cumulative impacts.

Normas Oficiales Mexicanas

Mexico has prepared some sets of detailed regulations, called 'official norms' for marine and coastal uses, including both the key management tools such as impact assessment and water quality and solid waste disposal, as well as for individual resources such as fisheries, wetlands, forests. Still missing are national guidelines for such key change agents as tourism and aquaculture.

Environmental law enforcement

PROFEPA is an agency within SEMARNAT responsible for enforcing all natural resource laws including fisheries, environmental impact assessment and protected areas.

Park managers, for example, need to have a PROFEPA officer present to carry out an arrest.

UMAs and UGAs

Typically, during the diagnostic phase of an OET, the project team will identify and map Environmental Management Units or **UGAs**. These are large polygons that might include associated landscape features which then are the subject of the potential use analysis and zoning proposal, and for which detailed use restrictions and stipulations

Land owners or concession holders can manage environmentally sensitive areas under the category of **UMA**, or *Unidades de Manejo Ambiental*. These can be translated as Environmental Stewardship Units. For example, a duck hunting club which is mainly protecting fresh or coastal wetlands can manage an area for this purpose under the designation as an UMA.

III. The next wave: Towards results- based environmental management for Mexico, 2001-2006

The administration of President Vicente Fox released its overall environmental agenda and program on October 18, 2001. The focus is on sustainable development…*crecimiento con calidad*…growth with quality. This agenda calls for cities that work, an engaged citizenry, emissions reductions, a supportive culture and personal habits, and an intact and productive resource base. It also requires 'order and respect', public involvement, law enforcement and environmental factors considered within government and economic decision making, and 'rendición de cuentas'---a results based approach. The program sets targets for key areas:

Integration---create 13 integrated watershed programs, and focus efforts on the 250 subwatersheds where poverty is most severe. This implies a reorganization of SEMARNAT, the environment and natural resources agency.

A **federal commitment to sustainability**: 14 federal agencies are required to work together to carry out economic and environmental programs.

A new focus **on environmental management**: the President's agenda sets specific targets for improvements in air quality, increased water supply, and expanded wastewater treatment. The agenda also addresses pollution abatement for storm water abatement, as well as advocates expanded reuse of agricultural drainage.

Watershed management will become the organizing framework for environmental programs. The federal administration plans to complete 15 regional environmental plans, and expects that every state must have an environmental plan. It intends to triple the number of federal functions decentralized to states. Finally, the Fox administration plans to reduce the time it takes to get an impact assessment approval from 140 to 60 days.

Annex

Additional summary descriptions of Gulf of California issues and initiatives

WWF Mexico

The Gulf of California accounts for a mere 0.008% of the world's seas but it has an outstanding diversity of marine mammal species: 34 species, including the sea lion—the only Pinniped in this gulf—and the sea otter (the other 32 species account for one third of the world's cetaceans). It also provides the refuge for one of the world's most endangered cetaceans: the Vaquita-Porpoise, endemic to the Upper Gulf of California. On the other hand, in its subtropical and rich waters thrive two of the world's largest whale species: the blue whale and the fin whale. However, the outstanding diversity of marine mammal species is not the only reason why the Gulf of California has been given the highest status in WWF Mexico's five-year strategic plan. Fishing fleets go after the lucrative blue shrimp, a species so large in size that a single individual can be worth between $1.00 and $1.50 USD. In addition, some of the Gulf islands serve as important nesting sites for migratory and resident bird species and breeding grounds for sea lion colonies.

The Gulf of California is a very active zone in terms of its economic activities; tourism alone attracts more than 12 million visitors per year and generates almost 2 billion dollars revenue. Because of the richness of the marine basin and a very particular social-geographic situation (border with the US), key productive activities have been increasing in the Gulf's littoral driving an uncontrolled coastal population growth. Port activities and marine traffic represent a fundamental support for agriculture, industry, mining and fishing. Therefore, the region is considered a natural port for international traffic routes and tourism development, increasing the demands on infrastructure and causing environmental conflicts. However, the major threats to the Gulf's biodiversity come from fisheries, tourism, aquaculture and agriculture. The progressive intensive fishing efforts within the Gulf of California have resulted on the reduction and commercial extinction of a large number of species of fish and invertebrates such as the totoaba, mero (Epinephelus itajara), rays, sharks, and marine turtles. Agricultural development has not followed any environmental legislation, polluting rivers and coastal wetlands, releasing agrochemicals and promoting the alteration of the coastal zone. Coastal wetlands are mostly affected by agriculture and aquaculture activities.

WWF Global representative Ecosystems: G200 Report David M. Olson et. al. October, 2000.

Gulf of California [214] – Mexico

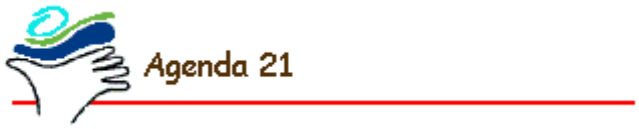
Geographic Location: Eastern Pacific between mainland Mexico and the Baja Peninsula

Biodiversity Features: This was once an enormously rich region, with major nutrient influxes from the Colorado River. It remains a globally important site with high level productivity and endemism. HIGHLY PRODUCTIVE SUBTROPICAL SEA WITH UNUSUAL ENDEMISM IN VERTEBRATES AND INVERTEBRATES

Selected Species: The gulf supports an endemic porpoise species, the endangered vaquita (*Phocoena sinus*), and is a vital breeding area for the Forster's tern (*Sterna forsteri*). Other species include blue whale (*Balaenoptera musculus*), resident populations of the fin whale (*Balaenoptera physalus*), California gull (*Larus californicus*), Mexican rockfish (*Sebastes macdonaldi*), roughjaw frogfish (*Antennarius avalonis*), Pacific seahorse (*Hippocampus ingens*), and the endemic totoaba fish

(*Cynoscion macdonaldi*). Marine turtles include black (*Chelonia agassizi*), hawksbill (*Eretmochelys imbricata*), olive ridley, (*Lepidochelys olivacea*) and loggerhead (*Caretta caretta*).

General Threats: Sedimentation from and diversion of the Colorado River for irrigation has seriously altered the ecology of the gulf. Overfishing poses a threat to species such as the endemic and threatened totoaba fish (*Cynoscion macdonaldi*). Further, bottom trawling destroys eelgrass beds and kills shellfish. Pollution and mining represent other important threats to biodiversity in this region.



Selections from Mexico's Agenda 21 update report, 1997, relevant to the Gulf of California (Sea of Cortés)

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Mexico. Sustainability in the oceans: national and international policies

http://www.semarnap.gob.mx/dgplaneacion/agenda21/oceans.htm

The marine use arrangement (*Ordenamiento Ecológico Marino* or OEM) is a federal instrument which has the main goal of establishing the baseline and previsions to preserve, restore, protect and use in a sustainable way the natural resources found in the marine and coastal zones under national jurisdiction.

Considering the need to control human activities on the Exclusive Economic Zone, in 1998 the first study of Marine Use Arrangement in the region of Cortés Sea (Gulf of California), where Mexico has exclusive jurisdiction. This region was selected because of its unique biological diversity, environmental conditions and socioeconomic relevance. By now, region characterization is available as an effort of an interdisciplinary group composed by academic, research and governmental institutions. In the first phase of the project processes and tendencies have been identified and evaluated related to coastal lagoons, fisheries, oceanographic processes, socioeconomic studies, where the most relevant results are mentioned.

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The Gulf of California is more than 1,600 km long, has an average width of 205, and more than 3,000 km of coasts, depths of more than 3,000 m and has more than 900 islands and islets. The management study includes four states, and 33 counties. In the Gulf of California waters

considerable volumes of sardines, tuna, squid and shrimp are caught and disembarked, that together may reach 500 thousand tons per year. The riparian fishing includes more than 70 species such as shark, snapper, spotted sandbass, lobster, clam and octopus. The total catch volume is more than 200 thousand tons per year.

Considering the northwest region, where the Cortés Sea is located, its volumetric proportion and commercial value compared to the national fishing production have been about 56% and 44% respectively during the last ten years. This activity employs more than 50,000 workers and has generated the construction and operation of nearly 250 processing plants in that region. In attention to such activity, the SEMARNAP has important infrastructure for fisheries research and administration. In aquaculture, the Gulf of California has the major participation in shrimp farming, because more than 90% of nationally cultivated shrimp came from its coasts. In 1997 its production represented nearly 14,000 tons of shrimp.

Sport fishing is a strong tourist attraction for the region. It is the activity that started the hotel, marinas and boat facilities development. In the Gulf of California the most important sport fish are blue marlin, sailfish, and dolphin fish, which are caught during the warm months and the spotted sandbass, thazard sierra and snapper in the cold months, allow a full year activities for sport fishing. Annually, there are near 1.7 million tourists, more than half are foreign, representing 8% of the national tourism; in ecotourism activities near 90 companies work (from where only 6 are Mexican), mainly dedicated to birds and marine mammals observation surrounding the islands and islets.

In the coastal fringe of the Gulf of California there are more than 2 million people settled, distributed in 26 localities and discharging 6,723 litres per second (lps) of waste water. There are 25 water treatment plants on 17 locations, with a installed capacity of 4,341 lps. However, only 2,983 lps are treated from the discharged volume.

This region is one of the most important for the Mexican agricultural sector. It concentrates almost 50% of the irrigated lands in the country, it contributes with 40% of the national agricultural production. The main farming activities are wheat, oleaginous and green vegetables. There are 4.5 million of bovine live-stock and more than 900,000 porcine. Water, ever scarce in the region, is distributed through a system of 29 reservoirs assigned for agriculture, urban and industrial use as well electric generation. All agriculture drainage reaches the Gulf.

More than 13% of the basin surface and 4% of the marine surface is under different levels of protective regime. The Natural Protected Areas (ANP) have potential to develop non extractive or low impact economic activities such as wind surfing, diving, sport fishing and ecotourism, generating employment and significant profits.

The first phase of the OEM has permit determine with rigorous approach:

> Zoning by region of the marine area using indicators of primary productivity concentration.

Characterization of the fishing activity in the high seas, riparian and sport, using distribution parameters, catch, infrastructure, population and commercial value.

Characterization of the ecological processes considering biodiversity and research needs on protection and conservation elements.

Characterization and assessment of the tourism activities and urban development from the socioeconomic perspective.

In the following phase the formulation of the strategy for the regional development must incorporate the environmental variable and the benefits granted by the environmental services from the ecosystems defined in the sectoral projects, as well as the necessary instruments for its application. A relevant element within this process is the completion of public planning workshops. With the expected experience of this OEM, it is planned to develop and apply methodology for an unexplored environment in terms of spatial regulation and sustainable development planning.

From 1972 to 1980 several refuge areas were declared for the gray whale in diverse marine regions over the West Coast of the Baja California Peninsula, a process that ended in the creation of the El Vizcaino Biosphere Reserve in 1988. As initiative of the Mexican Government it was incorporated in 1993 to the international network of the MAB-UNESCO and was also inscribed in the World Heritage list. Nowadays, it is estimated that the west gray whale (Eschrichtius robustus) population is recovered, calculating the existence of more than 25,000 individuals. The Mexican efforts to protect the gray whale have been recognized by several international organizations such as the International Whaling Commission (IWC) of which Mexico is member since 1949.

During the last years whale watching activity has increased, in order to regulate this activity, protecting the whales and its habitat, the Wild Life Program established an emergency bylaw to regulate the activity during 1997, which is actually in process of revision to declare a new bylaw to define as well the ecoturism activities.

The seal (*Phoca peninsularis),* the sea wolf (*Zalophus californianus)*), the sea elephant (*Mirounga angustirostris*) and the fine skin seal (*Arctocephalus townsendii*), are species considered under special protection since 40 years ago and the protection strategies have allowed the populations to recover, considering that the major sea wolves site in the Pacific region of Latin America are located in the Gulf of California Islands.

Since 1976, a total ban was declared on the vaquita (*Phocoena sinus*), an endemic porpoise of the Gulf of California considered as one of the two cetacean species with the higher threat of extinction. To intensify the recovery works of the species, since 1992 the International Committee for the Vaquita Recovery (CIRVA) was created, integrating representatives from national and international researchers and public offices, which prohibited non selective fishing gears in its habitat located in the high Gulf of California.

As a Mexican Government initiative, since 1993 the CIRVA was constituted, with the specific goal of applying a recovery plan and increasing significantly the conservation efforts. Such efforts have been recognized by the IWC. In that same year the High Gulf of California and Colorado River Delta Biosphere Reserve was declared to protect the vaquita's habitat.

As a fundamental strategy for biodiversity conservation in the marine and coastal zones in the country, the CONABIO established regional zoning for the coastal and marine areas with highly biodiversity interest. With help from the national academic sector, 70 priority marine areas were identified, of which 6 are oceanic. Within these areas, some are used by the productive sector, others with highly biological importance with potential conservation factors. Among the last mentioned, 44 present potential threats. For each priority area a technical file was conformed, with data such as geography, climate, oceanography, economy, ecology (biodiversity), as well as use and conservation conflicts.

In the same way, major threats were identified with significant impacts in the coasts and seas (over exploitation, pollution, tourism, oil extraction and the lack of application of integrated management strategies), in accordance with this several recommendations were presented to point prevention, mitigation, control and cancellation, in order to facilitate the priority of strategies and activities towards the plan definition for conservation, use, management, scientific research and specific actions of maintenance, restoration and conservation.

For a better understanding of the marine environment essential base scientific information was diagnosed, on:

Different levels of biological integration (genes, species, populations, ecological interactions, habitats, communities and its functional processes);

Physical and chemical factors, and oceanographic processes,

Nature and magnitude of the components threats.

In such work it was recommended to accomplish the following actions:

Apply measures to protect the marine resources in priority order;

Review the actual classification of the marine ANP; and

Identify the adequate zones for the new decrees.

Although the regional zoning effort for the marine areas and the sustainable use program are fundamental for the coastal zone integrated management, there are still actions to complete such as the ecological characterization and extension of definition or marine coverage definition to establish a national inventory allowing a baseline to initiate realistic planning and sustainable use of the coastal zone.