

*Translated from Spanish*

## **Permanent Mission of Mexico to the United Nations**

### **ONU01789**

The Permanent Mission of Mexico to the United Nations presents its compliments to the Division for Ocean Affairs and the Law of the Sea and has the honour to refer to communication DOALOS/STUDY/2007 of 22 January 2007 requesting the opinions of States pursuant to General Assembly resolution 61/222 on oceans and the law of the sea.

In order to ensure implementation of the provisions of that resolution, the Permanent Mission of Mexico to the United Nations has the honour to transmit the reply of the Government of Mexico for the study that the Secretary-General will prepare for the sixty-third session of the General Assembly on measures that may be taken by developing States, in particular the least developed States and small island developing States, as well as coastal African States, to realize the benefits of sustainable and effective development of marine resources and uses of the oceans within the limits of national jurisdiction.

The Permanent Mission of Mexico to the United Nations takes this opportunity to renew to the Division for Ocean Affairs and the Law of the Sea the assurances of its highest consideration.

New York, 11 May 2007

Division for Ocean Affairs and the Law of the Sea  
United Nations  
New York

## **Navy Secretariat**

### **Measures taken in Mexico to realize the benefits of sustainable and effective development of marine resources and uses of the oceans within the limits of national jurisdiction**

#### **1. National Contingency Plan for preventing marine pollution from oil spills and other harmful substances in the sea**

##### **Introduction and objectives**

The Plan was published in the *Diario Oficial* on 8 December 1981 and was corrected and amended on 8 February 1999.

It has the following objectives:

1. To establish accountability and set up a response organization to provide a timely and adequate reaction in cases of pollution caused by oil spills and other harmful substances in the sea;
2. To minimize damage to the marine ecosystem;
3. To specify procedures whereby all units of the Executive Branch involved in this Plan can contribute and coordinate efforts with a view to optimizing economic resources.

##### **Scope**

The Plan provides basic information on the characteristics of the affected areas and the resources available for controlling spills and suggests courses of action under a unified command for tackling pollution. The Plan is a prerequisite for successful response operations and adequate decision-making.

The Plan is activated when an accident causes a spill in waters under national jurisdiction. Controlling and combating these incidents will involve containment, collection and disposal of the oil or other harmful substances and cleaning with a view to promoting the environmental rehabilitation of the affected areas.

The Plan is an essential component of national policy on ecological protection, environmental sanitation and the national civil defence system. It requires a high level of coordination, which will be achieved in an efficient manner and will reflect the scale and nature of incidents. It will be able to provide a response to small and localized spills and to undertake large-scale operations in response to dangerous spills requiring the mobilization of considerable resources in terms of staff and equipment.

The Plan involves the Navy Secretariat, the Secretariat of National Defence, the Secretariat of Communications and Transport, the Secretariat of the Environment and Natural Resources, the Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food, the Secretariat of Public Education, the Secretariat of Health, the Secretariat of Economic Affairs and scientists from various research institutes.

### **Outcomes**

In 2001-2006, 34 simulations on both coasts were coordinated, implemented and carried out in cooperation with local and federal agencies. In addition, there were 18,346 training exercises on combating spills, 8,330 staff training exercises on the use of specialized equipment for controlling spills and 1,005 regional and/or local coordination exercises for this Plan.

These activities are ongoing, because it is the responsibility not only of the agencies involved but also of the general public to ensure ecological protection and environmental sanitation in an effort to achieve a sustainable balance.

Rapid response is now coordinated among the units involved. There is an updated list of the equipment, materials and human resources at the disposal of each unit and all units know what they should do in every eventuality.

## **2. National Programme for the Management and Sustainable Use of Mangroves**

### **Introduction and objectives**

The National Development Programme 2000-2006 set out a series of strategies to achieve social and human development in harmony with nature and promote sustainable development.

To that end, in 2002 the Inter-Agency Coordinating Office for Oceanographic Research under the General Directorate for Oceanography, Hydrography and Meteorology proposed a National Programme for the Management and Sustainable Use of Mangroves with the following objectives:

1. To establish a national management plan for the protection, conservation, restoration and sustainable use of mangroves;
2. To establish strategies with targets and concrete actions for the management and sustainable use of mangroves;
3. To coordinate actions among the three levels of Government and research institutes for protection, restoration, education, legislation, regulations and financing regarding mangrove areas;
4. To propose mechanisms for coordination and concerted action at the national, state and regional levels with a view to enhancing the protection of these ecosystems through sustainable development.

### **Scope**

Mangroves play an important role in the ecology of tropical shorelines, because they indirectly affect water quality, contribute organic matter and influence the primary and secondary productivity of coastal ecosystems. They also sustain tropical fisheries by offering sanctuary and food at critical stages in the life cycles of many fish, crustaceans and molluscs, since they are used for production and breeding. They provide stability and protection to coasts and contribute to the reduction and/or control of climate change.

Over the last few decades, mangrove areas have decreased considerably as a result of human interference, changes in land use, excessive tree felling and the effects of pollution.

Mexico has a large area of mangroves covering approximately 488,367 hectares; in the Pacific Ocean, these ecosystems are located from halfway down the Baja California peninsula to the State of Chiapas, throughout the Gulf of Mexico and the Caribbean Sea. The State of Campeche has the largest area of mangroves.

### **Outcomes**

A schedule of activities was established, setting out seven strategies to be followed: (1) scientific knowledge, (2) environmental impact, (3) protection and conservation, (4) restoration and reforestation, (5) environmental education, (6) sustainable use, and (7) monitoring and oversight. It involves four phases: (1) assessment, (2) ecosystem maintenance, (3) sustainable development, and (4) ongoing inspection.

Sixteen mangrove areas in the Gulf of Mexico and the Caribbean Sea were identified, though specific areas still need to be identified in the State of Quintana Roo because there are extensive areas on and near the coast. Eleven mangrove areas were identified in the Pacific Ocean.

In all cases, the species of mangrove growing in each area were identified, and working groups, in the form of committees, were established to highlight problems and devise alternative solutions. Considerable progress was made on several fronts, including:

1. Raising public awareness of the importance of mangroves and the need to protect, conserve and care for them;
2. Developing reforestation and resource rehabilitation programmes;
3. Coordinating with federal, state and educational institutions in order to clean up the mangroves;
4. Monitoring physiochemical, bacteriological and primary production indicators, as well as conducting characterization studies to determine the current state of the ecosystem;
5. Visiting sites in order to detect activities liable to disrupt the ecological balance of the aforementioned ecosystem.

## **3. Marine pollution: prevention, control and oceanographic research**

### **Introduction and objectives**

The National Development Programme 2000-2006 set out a series of strategies to achieve human and social development in harmony with nature and promote sustainable development.

To that end, in 2002, the Inter-Agency Coordinating Office for Oceanographic Research, part of the General Directorate for Oceanography, Hydrography and Meteorology (DIGAOHM), proposed an evaluation of marine pollution, including prevention and control activities and related oceanographic research.

**Scope**

Natural resources are now so depleted and damaged that conservation, restoration, prevention and protection strategies are needed, as evidenced by the joint efforts undertaken by various governmental bodies. The sole purpose of those efforts is to improve the situation and allow for the sustainable use of resources in Mexico.

**Outcomes**

There have been 62 vessel inspections; 1,703 water quality assessments; 5,180 seminars and practical workshops on ecological awareness-raising and education for military and civilian personnel; 3,493 meetings with Governments with a view to preventing pollution; 23,910 inspection and monitoring operations covering a total area of 522,050.2 kilometres; and 50,583 maritime operations covering a total of 743,080.18 nautical miles.

**4. Studies on maritime dynamics, water circulation and marine currents****Introduction and objectives**

The ocean is a source of food, chemicals and energy, and it plays an important role in shipping and recreational activities. The constant movement of water owing to waves, tides, currents and winds must therefore be taken into consideration in the context of marine construction works and navigation and in efforts to combat accidental spills of oil and other harmful substances. Furthermore, the heat capacity of water has a considerable influence on climatic conditions, and hydro-meteorological events have a significant effect on human activities.

In light of the foregoing, and given that the primary function of the Navy Secretariat is to protect and monitor our seas and coastline by means of maritime units that travel great distances along our shores in order to carry out their mandated tasks, the Directorate for Oceanography of DIGAOHM is planning to document ocean dynamics along our coastline. The primary objective is to obtain a clear description of the oceans that is sufficiently quantitative to give an overview of and, where necessary, to predict with some degree of certainty oceanic behaviour. The information will be made available to the Command for the purpose of decision-making, to operative inspection and monitoring units and to the wider scientific community.

**Scope**

The Atlas of Dynamics in the Territorial Sea and Coastal Zones of Mexico is a compilation of the data obtained from studies conducted by oceanographic institutes and stations on board oceanographic vessels belonging to the Mexican Navy over a four-year period (1997-2000).

These data are presented in the form of interpretative maps illustrating the horizontal and vertical distribution of a number of physical variables, such as temperature, salinity and density, recorded in different coastal regions, which supply information that can be used to detect and identify beach profiles, expanses of water and currents. The data are checked against satellite images, which confirm the

usefulness of the information obtained. The latter is entered into a database used to draw up tactical maps. Currently, every institute and station is continuing to conduct oceanic characterization studies and, in some cases, individualized local information about our seas and coasts has been obtained.

### **Outcomes**

The data obtained during oceanographic surveys carried out between 1997 and 2000 was used to create the Atlas of Dynamics in the Territorial Sea and Coastal Zones of Mexico. Copies of the Atlas were sent to local authorities and to the various inspection and monitoring units so that they could consult it and use it for decision-making purposes.

The Atlas is on sale at the Directorate for Hydrography of the Navy Secretariat.

## **5. Study to evaluate seawater quality in ports and bays along the coast of Mexico throughout the year**

### **Introduction and objectives**

In recent decades, environmental problems have been aggravated by industrialization and urban population growth in the main coastal ports of the Pacific Ocean, the Gulf of Mexico and the Caribbean Sea. This has led the Federal Government to accord greater priority to national policies on the environment, particularly in those regions that currently play a crucial role in the economic and social development of coastal systems for the purposes of food production (fisheries and aquaculture), transportation, port construction and administration, extraction and transformation industries and, more recently, urban expansion and the development of tourism.

None of the coastal ecosystems of the Pacific Ocean, the Gulf of Mexico and the Caribbean Sea are currently immune to the effects of human activity. Pollution levels have risen above the maximum permissible limits provided for in domestic legislation.

Accordingly, as part of its scheduled activities, the High Command of the Navy Secretariat, through the Directorate for Oceanography of DIGAOHM, proposed a study on marine pollution in Mexico. That study began in 1997 and, from the outset, was designed to help identify and address that problem at the regional and national levels.

The study was conceived as a way of creating a repository of information that could be used to advise the unified command and the territorial authorities in the implementation of programmes and preventive measures to control marine pollution, prevent or mitigate the deterioration of ecosystems and introduce an environmental framework designed to support contingency programmes implemented by the Navy Secretariat.

It also aims to serve as a database that can be incorporated into an environmental information system on natural resources, thereby providing a means of essential technical and scientific support for the development of ecological regulations.

**Scope**

The Atlas of Marine Pollution in the Territorial Sea and Coastal Zones of Mexico was prepared using data obtained from studies conducted by the oceanographic institutes and stations on board oceanographic vessels belonging to the Mexican Navy.

The information is presented in the form of interpretative maps illustrating the horizontal and vertical distribution of a number of physiochemical variables, recorded in different coastal regions, which indicate current rates of change, dispersal of pollutants in the water column and possible areas of pollutant accumulation. They also show temporal and spatial variations in the physiochemical and biological parameters which are indicative of pollution in some of the ports where, using data obtained during the monthly sampling carried out between 1999 and 2001 in the ports of each jurisdiction, critical levels of pollutants have been detected.

The Atlas provides an overview of the issue of pollution in our country's coastal marine environment with a view to determining the probable origins of the pollutants and identifying the most significant discharge sites in each region.

**Outcomes**

The Atlas of Marine Pollution in the Territorial Sea and Coastal Zones of Mexico was prepared using the data obtained. An electronic version of the Atlas is on sale at the Directorate for Hydrography of the Navy Secretariat.

**6. Support for maritime operations**

Catalogue of Species which have a Temporary and Permanent Closed Season in the Gulf of Mexico and the Caribbean Sea, Catalogue of Species which have a Temporary and Permanent Closed Season in the Mexican Pacific and Catalogue of Specially Protected and Endangered Species on Both Mexican Coasts

**Introduction and objectives**

In pursuance of article 30, paragraphs IV, XII, XVII and XVIII, of the Organic Act on the Federal Civil Service and article 2, paragraphs III, VIII, X and XI, of the Organic Act on the Mexican Navy concerning the duties of the Navy to exercise sovereignty and vigilance in territorial waters and exclusive economic zones, to participate in the granting of foreign research permits, to schedule and implement oceanographic research projects in cooperation with other units and institutions, to coordinate government efforts to protect, conserve and preserve the country's biological resources and to constitute the national oceanographic information archive, the Oceanography Directorate within the General Directorate for Oceanography, Hydrography and Meteorology is proposing that documentation should be prepared to inform the operational units responsible for inspection and monitoring of the minimum characteristics needed to identify species which officially have a temporary or permanent closed season and which are being caught illegally, as well as endangered and specially protected species. The aim is to give the operational units of the Mexican Navy responsible for inspection and monitoring

the tools to identify the marine species that fall into these categories and that are the object of illegal fishing, marketing or trafficking.

### **Scope**

This documentation lists species which have a temporary or permanent closed season on the shores of the Gulf of Mexico and the Caribbean Sea and in the Mexican Pacific, as well as those included in the categories of specially protected or endangered organisms, ranging from invertebrates to marine mammals, giving for each species the scientific name, the common name, the closed season dates and location and identifying characteristics. It also lists, where applicable, the marine species included in specially protected or endangered categories which are of economic interest to persons engaged in the illegal harvesting, trafficking or marketing of organisms or parts thereof. It includes a glossary of terms.

The goal is to take into account and enforce the existing legal provisions and to permit coordinated efforts by the government units dealing with the conservation, monitoring and utilization of natural resources with a view to adopting measures to protect and preserve marine stocks.

### **Outcome**

Publication of 250 copies of the Catalogue of Species which have a Temporary and Permanent Closed Season in the Gulf of Mexico and the Caribbean Sea, 250 copies of the Catalogue of Species which have a Temporary and Permanent Closed Season in the Mexican Pacific and 600 copies of the Catalogue of Specially Protected and Endangered Species on Both Mexican Coasts, which were sent to the various units engaged in inspection and monitoring for consultation and application.

These are on sale at the Hydrography Directorate of the Navy Secretariat.

## **7. Ongoing red tide programme on the national coasts**

### **Introduction**

Red tide is a natural phenomenon characterized by an increase in the concentration of certain components of plankton. In favourable environmental conditions, there is a marked increase in phytoplankton organisms (dinoflagellates), known as bloom, which cause changes in water colour (red, yellow, green, brown or combinations of these) because they contain pigments.

This phenomenon is unpredictable: it occurs quite regularly in some sectors and occasionally in others.

Red tide phenomena are currently a public health problem not only in Mexico but worldwide, since the high toxicity has economic and social repercussions in the fisheries sector and on tourism and trade.

The biotoxins produced by red tide organisms are mainly concentrated by filtration in bivalve molluscs, although they are also found in shellfish and fish. The toxins bind with the tissues or are concentrated in the digestive glands, so that their level of toxicity is not immediately apparent. The paralytic and diarrhetic poisoning caused by eating the shellfish produces one of the most common lethal forms of shellfish poisoning, found most frequently in tropical zones.

### **Objectives and scope**

Consequently, and taking into account the duties of the Navy Secretariat, the Oceanography Directorate within the General Directorate for Oceanography, Hydrography and Meteorology will, in assisting with activities of oceanographic research and protection of the public as well as with inspection and monitoring activities, detect and track red tide occurrences using permanent monitors along the Mexican coastline, with the help of oceanographic institutes and stations. The goal is to minimize the risk that the public will become sick from eating shellfish contaminated by red tide, evaluate the magnitude of the phenomenon, trace its evolution or natural history and thus detect or anticipate changes that may occur, with a view to adopting efficient and timely measures for disease prevention and monitoring based on reliable data. Similarly, at the national level, the Directorate participates in the Committee of the Mexican Bivalve Mollusc Sanitation Programme.

### **Outcome**

There is a database of physiochemical and biological information reported by institutes and stations for occurrences identified and active coordination with the health sector so that efficient action can be taken to deal with them in order to protect the public.

## **8. Programme for the protection and conservation of sea turtles**

### **Introduction and objectives**

As part of its duties, the institution conducts biological surveys to obtain information that will enhance the knowledge of Mexican resources and seas in order to support naval operations and promote the protection of marine ecosystems. Inspection and monitoring activities are conducted along the coastline in order to promote the protection of marine ecosystems and conserve living marine resources.

Accordingly, the Navy Secretariat implemented the Sea Turtle Protection Programme, under which operations and inspections are conducted in coordination with institutions in order to enforce the legal framework designed to protect important marine species or to regulate endangered species harvesting activities.

### **Scope**

Seven of the planet's eight species of sea turtle lay their eggs on Mexican shores and, although they are all endangered species, the turtles are still being killed and their eggs are being sold illegally in Mexico.

Sea turtles successfully migrate and then return to the same beach to nest. They struggle to survive from the time when they emerge from the shell, since they have to make their own way from the beach to the sea. The first 48 hours of life are critical, since they have to elude predators and find their own food. They also have to allow themselves to be borne on currents, after surviving for several years in the sea and fighting off predators. When they reach adulthood and sexual maturity (after seven or eight years), they mate and lay eggs in a specific place, swimming for several miles to reach the beach where they were born.

In view of this, and since the extinction of these turtles would not only cause a species to disappear but would also affect the marine ecosystem in general, the Navy Secretariat considered it vitally important to take action to conserve and protect not only adult turtles but also turtle eggs and maturing turtles.

### **Outcomes**

Through local authorities and oceanographic institutes and stations, the Navy Secretariat is currently monitoring and inspecting Mexico's shores in order to assist the relevant units to protect the eggs during the mass arrivals of sea turtles. It also detects the harvesting and illegal trafficking of adult sea turtles and turtles at any stage of development (eggs, hatchlings, etc.). This information is centralized and a database has been created.

Mention should also be made of two turtle camps. The one at Cayo Arcas, Campeche, run by the staff of that institution, was declared to be a reference camp in 2005 by the Secretariat of the Environment and Natural Resources and is part of the National Committee for the Conservation and Protection of Sea Turtles in Campeche. The other camp (Priciatrabsub) is in Acapulco, Guerrero. As a result of all these activities, the existing legal framework has been strengthened and compliance improved, in order to conserve and preserve sea turtles and to combat the extinction of and illicit trafficking in this group of reptiles.

## **9. Biological collection of the Mexican Navy Secretariat**

### **Introduction and objectives**

A biological reference collection is a register of biological species recording the history and biodiversity of an area or region. Such data are currently extremely important. It is well known that the environment in which we live is being transformed by many factors, including exploitation of natural resources, pollution and climate change, causing losses and changes in the biodiversity of Mexico and of the world at large.

Since 1963, the Navy Secretariat has been conducting oceanographic research in Mexico, including oceanographic expeditions using Navy vessels to collect samples of the main groups of flora and fauna, which were used to create scientific reference collections that were duly maintained until 1985.

### **Scope**

At present it is important and necessary for all countries to maintain biological collections in order to record regional biodiversity.

In 2003, in view of the existence of the historical register and the value of the biological collection in the unit, the Navy Secretariat initiated action to obtain support and update the collection. It submitted to the National Commission for the Management and Use of Biodiversity (CONABIO) the project for updating of the shellfish database and incorporation of the Pacific fish database into the Biótica information system. The project was authorized and was completed in 2004.

**Outcomes**

At the central level, there is an updated reference collection of duly identified shellfish and fish. At the local level, institutes and stations have regional collections.

**10. Numerical tables and graphed calendars for tide prediction prepared by the Navy Secretariat****Introduction and objectives**

Tides are a major component of ocean movements and globally affect all waters contained in ocean basins. They are basically connected with the attraction of the Moon and Sun and therefore depend on the movements of those bodies in relation to the Earth.

The numerical tables and graphed calendars for tide prediction prepared by the Navy Secretariat used to be based on information provided by the National Autonomous University of Mexico.

In 1996, the Navy Secretariat initiated studies and efforts to establish an updated institutional tidal network to meet its needs, realizing that the same data could be used at the national level. The goal was to obtain tidal information and to monitor the sea level nationally for both coasts and the islands. The information would also be automated using the latest technology in order to obtain comprehensive, current and reliable data as needed

**Scope**

Hydrographers are interested in water level fluctuations because they are responsible for providing reliable depth information on nautical charts. Mariners are interested in tides because their safety depends on having reliable tide prediction information for coastal navigation, particularly in restricted waters, canals, bays and roadsteads.

For this reason, recognizing the responsibility of the Navy Secretariat for assisting in the protection of human life at sea, the unified command is contributing to these efforts by issuing the necessary publications and nautical charts. It plays its hydrographic role competently, with the help of the General Directorate for Oceanography, Hydrography and Meteorology and is successfully meeting the goals set by the Nation by making tide prediction tables available to the public.

The tide prediction numerical tables and graphed calendars use information collected at the 33 Navy Secretariat transmitter stations. This information is presented in graphic form, interpreting sea level variations in metres and feet at six-hour intervals at specific points in each coastal State.

**Outcome**

The automatic tidal measurement network consists of five satellite transmitter stations located on the Pacific coast (Puerto Vallarta, Jalisco; Lázaro Cárdenas, Michoacán; Zihuatanejo and Acapulco, Guerrero; and Huatulco, Oaxaca) and 26 non-satellite stations from which data are downloaded on site every two months. Of these, 10 are installed on the Pacific coast (Ensenada and San Felipe, Baja California; Santa Rosalía and La Paz, Baja California Sur; Puerto Peñasco and

Guaymas, Sonora; Mazatlán, Sinaloa; San Blas, Nayarit; Salina Cruz, Oaxaca; and Puerto Madero, Chiapas) and 15 are installed in the Gulf of Mexico and the Caribbean Sea (La Pesca, Altamira and Tampico, Tamaulipas; Tuxpan, Veracruz and Antón Lizardo and Coatzacoalcos, Veracruz; Dos Bocas and Frontera, Tabasco; Ciudad Carmen and Lerma, Campeche; Progreso, Yucatán; Isla Mujeres, Isla Cozumel and Mahahual, Quintana Roo). Two power-operated tide gauges have been installed on Isla de Cedros, Baja California, and in Topolobampo, Sinaloa.

These data are centralized and processed at the Navy Secretariat control centre located in Mexico City.

Since 1999, the automatic tidal measurement network has received near-real-time data from satellite stations and data collected every two months from the stations not equipped for telemetry.

A databank is used for the calculation and publication of the numerical tables and graphed calendars for tide prediction. Since 2001, this has been done with the institution's own staff and data. The tables are published and distributed to Navy Secretariat units and are available for sale to the public at the Directorate for Hydrography.

## **11. Oceanographic information system of the Navy Secretariat**

### **Introduction and objectives**

In the light of the duties of the Navy Secretariat concerning sovereignty and oversight in territorial waters and the exclusive economic zone, scheduling and implementation of oceanographic research projects in cooperation with other units and institutions and incorporation of such information, the Directorate for Oceanography within the General Directorate for Oceanography, Hydrography and Meteorology is engaged in compiling an oceanographic database for the purpose of incorporating, archiving, classifying and updating information from the oceanographic surveys conducted by the staff of that institution on both coasts of Mexico and developing research by the Navy and in some cases by foreign institutions (United States National Oceanographic Data Center).

### **Scope**

There is now an archive of oceanographic information that is easy to understand and available for interactive consultation which shows the work done. In the area of physical oceanography, there are data on surface currents and data from seawater sampling using SeaBird 19 and SeaBird 25 electronic profilers, which have been used in oceanographic surveys since 1999.

As regards chemical oceanography, physiochemical data and the results of seawater quality monitoring are available.

As regards geological oceanography, sediment sampling and analysis provides information about the geological characteristics of the seabed in order to assist national cartography activities.

The oceanographic data concerning biology focus on the pelagic, benthic and neritic region, zooplankton and Mexican coastal fish.

**Outcomes**

The Oceanographic Information System compiles in digital format or hard copy all the oceanographic information existing in the institution.

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