

FINAL REPORT

PROGRAMMATIC EVALUATION  
OF THE  
NAWCA PROGRAM  
IN MÉXICO

1991-2001

PRESENTED BY

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**The views in this report do not necessarily reflect the views of the U.S. Fish and Wildlife Service.**

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# A PROGRAMMATIC EVALUATION OF THE NAWCA PROGRAM IN MEXICO, 1991-2001

## INTRODUCTION

This is a Report on the Programmatic Evaluation of the North American Wetlands Conservation Act (NAWCA) during its first eleven years of implementation in Mexico, 1991-2001. As specified in the scope of work for this evaluation, its purpose is: 1) to identify results and challenges of the Act's implementation in Mexico, and 2) to provide recommendations for Program improvement to the U.S. Fish and Wildlife Service, as administrators of the NAWCA Program in Mexico, the North American Wetland Conservation Council (NAWCC), and the Wildlife Division (DGVS) of the Mexican Secretariat for the Environment and Natural Resources (SEMARNAT). By providing an independent perspective and an objective overview of the NAWCA project portfolio Program as it has evolved over the past 11 years, the evaluators hope to inform the readers, and to affect improvements where they are necessary for the growth and development of the NAWCA Program in Mexico.

The evaluation was conducted in five phases: 1) an analysis of existing data from the NAWCA computerized database and hardcopy project files, 2) a series of personal interviews with stakeholders, 3) an electronic survey sent to the most difficult to contact stakeholders, 4) two case studies of long-term, multi-phased NAWCA supported projects, and 5) this final report that captures the overall analysis of findings from all sources. See Appendix 3 for complete description of methodology.

### From the Evaluation Team

PG7 Consultores S.C. and Faunam, A.C, are pleased to have had the opportunity to undertake this evaluation. As Mexicans, we are grateful for the support and visible benefits that the NAWCA Program has brought to our country. The evaluation team would like to thank the many people who provided support, information and guidance throughout the entire process, especially the NAWCA Mexico Program staff at the U.S. Fish and Wildlife Service and all the stakeholders who participated in lengthy interviews and site visits.

# 1. Background

## 1.1 The Mexican Context for Wetland Conservation – Summary

To better understand the implementation of the North American Wetlands Conservation Act Program in Mexico, it is important to briefly discuss the context of wetlands and coastal areas in Mexico. This context must be taken into consideration if the NAWCA Program is to have long-term influence on the conservation of migratory bird habitat in Mexico. The following are highlights of a more in-depth contextual analysis that can be found in Appendix 2 of this report.

Mexico has an estuarine surface area of approximately 16,000 km<sup>2</sup>. The extension of the coastline is approximately 11,000 km, of which about 68% corresponds to the Pacific Ocean and Gulf of California, and 32% to the Gulf of Mexico and the Caribbean Sea. There are approximately 130 coastal lagoons that cover a total surface area of 12,000 km<sup>2</sup> (CONABIO, 1998).

Numerous wetlands and bodies of surface water are polluted with untreated sewage that limits their use. This is the case in the Lerma, Alto Panuco, Alto Balsas, San Juan and Valley of Mexico watersheds. Some sectors consider pollution of marine and coastal ecosystems by oil and its derivatives one of the major ecological problems of our time by. Pollution caused by domestic and urban waste is the most common Mexican coastal problem (CONABIO, 1998).

It is also important to note the high level of degradation of the forests and wetlands as a whole throughout the country, given that the alteration and the disappearance of these environments limits their role in the control of flooding, the replenishment of aquifers, the mitigation of impacts of global climate change and extreme climatic phenomena, the seasonal availability of water and the preservation of ecosystems and biological diversity. (Herzig, M., C. Leon & R. Pérez-Gil, 2000)

In contrast to Mexico's high environmental diversity, there are very few organizations or institutions concerned with coastal or marine issues, much less wetlands. A limited number of non-governmental organizations are associated with the subject of wetlands, coastal and marine conservation in Mexico (FMCN, 2002). The absence of qualified professionals to provide instruction in these areas slows the development of expertise in wetland and bird habitat conservation.

In Mexico, an operative definition of the coastal zone does not yet exist, unlike in the United States (where the Coastal Zone Management Act was declared in

1972). Institutional responsibility for water related issues--potable water, fisheries, aquatic plants and animals, wetlands, rivers and ponds, access rights, uses, quotas, norms, etc.--has always been a source of debate within the Mexican government (CONABIO, 1998). Conservation strategies must acknowledge that an adequate legal framework for coordinating government actions toward long-term conservation plans for Mexico's wetlands does not exist. The lack of linkage between federal and state governments in relation to environmental themes is an important part of the problem.

It is fair to say that Mexico's biodiversity is undervalued in all its aspects. The recognition of wetland biodiversity is less valued still; even its economic value has been overlooked. This is true, not only for the analysis and decisions made with respect to the use of these resources, but also in the definition of policies and investment strategies, in information gathering and dissemination efforts, and generally, in the planning of the country's development (CONABIO -INE, 1998).

Lack of care in the management of water resources, failure to apply an integrated management vision, inefficiency of its use coupled with its rarity, have caused a situation where the surface and subterranean waters of the country are insufficient in quantity or quality to satisfy the environmental and human demand (CNA, 2000). The present situation of Mexico's wetlands is of grave concern, and is a result of the historical paths of urban and industrial expansion, an increase in rural settlements and agriculture, and the unruly exploitation of natural resources.

In summary, in Mexico, as in other countries, wetland benefits that humankind enjoys are still not adequately valued and serious dangers persist in terms of contamination, degradation and overexploitation. These threats usually originate on interior lands. If continued, this will threaten human populations located on its shores as well as the economy and society in general. For this reason, the care, management and use of wetlands are shared responsibilities that demand the maximum efforts possible from all Mexicans.

## **1.2. The North American Wetlands Conservation Act Program in Mexico, 1991-2001**

Those who know the history of the NAWCA in Mexico state that in 1990 the Secretariat for Urban Development and Ecology (SEDUE), the entity in those days partially responsible for the management of natural resources, initiated discussions for the participation of Mexico into the NAWCA Program. Since then the desire to better understand Mexico has been evident (NAWCC, 2000).

And, the development of the NAWCA Program in Mexico has been very evident, with an ever increasing number of projects. The funding levels have increased incrementally and the number of partner organizations and beneficiaries has also grown. There are a number of reasons these advances were possible:

- The historical period during which the NAWCA Mexico Program has developed has played an important role.
- The political will to give attention to the theme of wetlands came into play.
- The incorporation of trained technicians into public administration permitting agency counterparts to assist in Program administration.
- A pace and spirit of work was established between representatives of the Mexican government and their counterparts from the USA and Canada, as well as with NAWCA Program personnel within the USFWS.
- Mexican partners have been able to make matching funds available in significant amounts.

NAWCA projects in Mexico have involved a variety of partners including public, academic, peasant and non-governmental organizations, all oriented to wetland conservation. The projects have encouraged habitat protection, not only for waterfowl and other wetland associated migratory birds but for wildlife in general. Each completed project has had very clear objectives, achieved in accordance with the terms of specific grant agreements. This process has led to activities of planning, management and restoration in 27 wetlands of priority concern, 46 important hydrologic zones, 7 Ramsar sites and 58 Important Bird Conservation Areas (AICAs) throughout Mexico.

The steps initiated by the NAWCA Program during the past 11 years of work in Mexico, have fomented new partnerships in NAWCA projects. These partnerships not only bring economic support but other types of resources and capacities. This has brought about the sharing of responsibilities for project development, towards a change in wetland management with the participation of communities in restoration and other actions that have benefited not only the communities themselves but wetland conservation in general. And, it is important to note that Mexican partner participation in the NAWCA Program has particular significance because it has represented extraordinary expenditures of limited Mexican resources.

In Mexico, the NAWCA Program is supported by the USFWS's Mexican counterpart, the Wildlife Division (DGVS) of the Secretariat for the Environment and Natural Resources (SEMARNAT). Since 1995, the Mexican Government has attempted to participate in all NAWCA meetings. Further, in the late 1990's a Mexican Committee for the Management of Waterfowl was created comprised of non-governmental organization, academic institution and government agency representatives. This Committee has been functioning as a complement to the North American Waterfowl Management Plan Committee, operating in the United States and Canada. Although the Committee has been active, to date its influence and impact has been very limited.

### **1.3. NAWCA Mexico Program: Processes and Procedures**

The eligibility criteria for project proposals are stated in the NAWCA legislation. Canadian and US partners focus on protecting, restoring, and/or enhancing critical migratory bird habitat. In addition to those fundamental activities, Mexican partners may develop training and management programs and conduct studies on sustainable use if they lead to wetland conservation. Recognition of the uniqueness of the priorities and needs of each country is an important aspect of the NAWCA Program.

Proposal selection and prioritization projects must be in accordance with the criteria set forth in the NAWCA Mexico Program Terms of Reference (See [www.birdhabitat.fws.gov](http://www.birdhabitat.fws.gov)) including:

- Projects should be located within one of Mexico's wetland priority areas (list developed by SEDESOL, Conservation International, and NAWCA in 1993);
- Projects may be proposed by non-governmental organizations, peasant or indigenous organizations, public institutions, private initiatives, research centers, universities, state, municipal and federal government agencies;
- Projects must be feasible and the organization should have a background in working on such projects;
- The organization should have the legal status to receive financial assistance.

Proposal selection criteria are derived from the basic philosophy of the NAWCA and the analysis of conditions peculiar to the proponent. Projects must meet certain biological criteria, and grant requests are limited to \$1 million. Partners must minimally match the grant request at a 1-to-1 ratio.

The format and Terms of Reference for presentation of proposals by proponent organizations and a corresponding instruction guide was developed by NAWCA-USFWS program staff in conjunction with DGVS-SEMARNAT. The latest version was presented in 2002 and is available on various websites including: <http://birdhabitat.fws.gov>

Each proposal should demonstrate that the project proponents understand the wetland issues and problems of the area in which they intend to implement a project. Key actors in the area must be identified and involved for the conservation and management of those wetlands. The interventions proposed must help to resolve the problems identified or at least help to reduce them, in order to ensure conservation of the site in the long-term.

All the proposals should include a public participation component, and/or a community strengthening component, and the transfer of information through various communications means such as web pages, brochures or direct transfer

to offices or organizations that are key players in the conservation and management of the wetland project area (SEMARNAT, 2002).

Proposal proponents may apply for funds in consecutive funding cycles. Applicants are instructed to submit copies of their proposals to the DGVS-SEMARNAT and the USFWS. If a proposal is not received by both offices it may not be considered for review. The preliminary review of proposals is conducted by both offices; first separately and then jointly, prior to submission to the North American Wetlands Conservation Council (NAWCC) Staff who will make recommendations to the NAWCC who in turn make recommendations to the Migratory Bird Conservation Commission (MBCC) who has final approval authority. See Appendix 1 for more information.

Participation of the DGVS-SEMARNAT staff is always encouraged although it is not always manifested. The input of the Mexican Government is seen as key to the success of on the ground projects. However, notification of project selection is sent directly to proponents from the USFWS and the formal and legally binding agreement is made between the USFWS and the proponent with specific terms and conditions for the disbursement of funds. This process, from proposal submission to disbursement of funds may take up to 10 months.



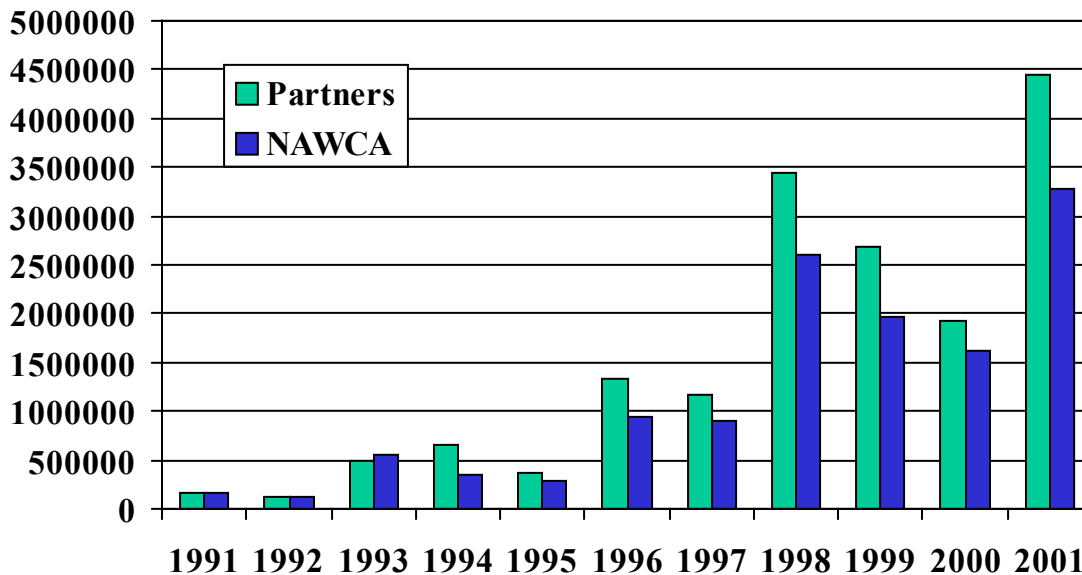
## 2. - NAWCA Mexico Program Results, 1991-2001

### 2.1 Project Portfolio Analysis

Information provided in proposals is captured in the USFWS NAWCA Program database. Approved grant information is also captured throughout the life of the project. Data from this database and information gleaned from hard copy files has been analyzed and is presented in this section.

✘ The support for wetland conservation in Mexico by the North American Wetlands Conservation Act has translated to the funding of 116 grants to 73 different projects, totaling \$12,066,755.00USD in NAWCA funds, with mostly Mexican partners contributing more than \$18 million USD in an eleven year period, 1991-2001.

**NAWCA Project Funding in Mexico, 1991-2001**

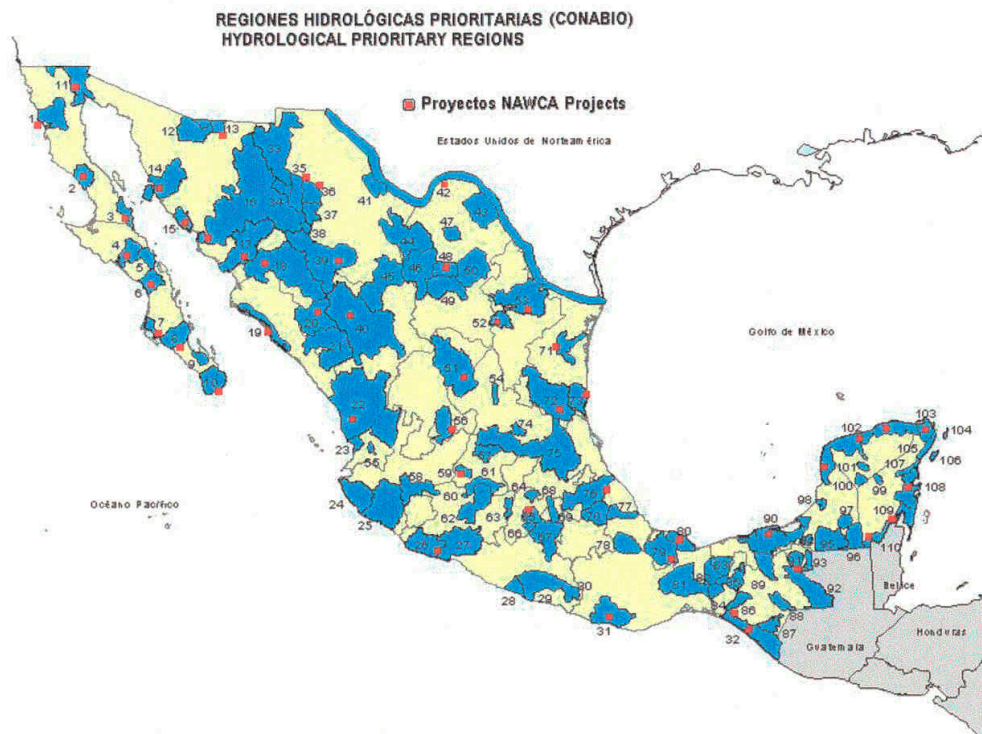


✘ NAWCA has supported 51 different grantee organizations, the majority of which are non-governmental conservation organizations. Projects submitted by universities, federal and state agencies and a few other organization types have also been supported. This has translated to more than 200 partners involved in NAWCA grants in Mexico. See Appendix 4 for a complete list of NAWCA partners in Mexico.

✘ Between 1991-2001, of the 73 NAWCA supported projects, 43 projects have been supported for more than one year through various phases and 30 projects (41%) received funding from NAWCA only once.

✘ 85% of projects have been conducted in estuarine ecosystems, mangroves and coastal lagoons recognized as coastal wetland zones; 15% have been conducted around lakes and rivers. 95 grants were provided by NAWCA in 46 areas (61%) defined as hydrologic regional priorities with endangered biodiversity (CONABIO 2000 a, CONABIO 2000 b). Projects have been funded in 27 of the 32 Mexican priority wetlands. Please refer to the map below.

### Mexican Priority Hydrological Regions and NAWCA Supported Projects 1991-2001

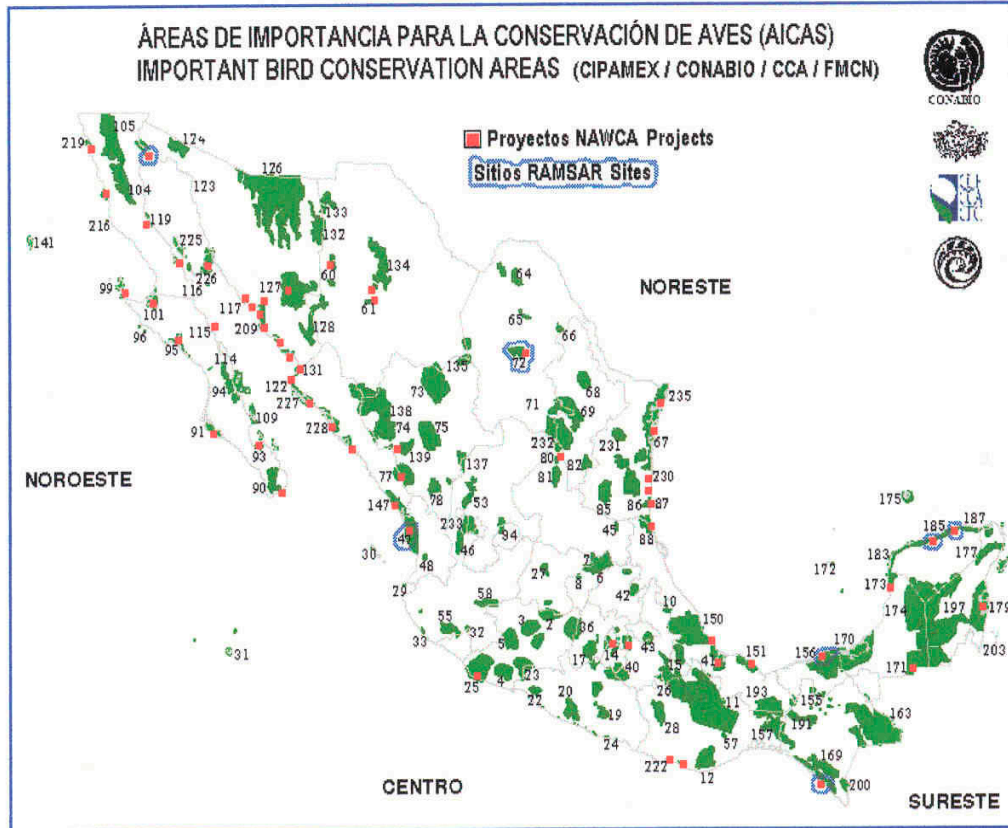


(Conabio, 2000)

✘ NAWCA has supported 25 projects in all 7 RAMSAR sites recognized in Mexico, with the largest number in Ria Lagartos, Yucatan—10; followed by the Colorado River Delta between Sonora and Baja California with 7 projects each.

✘ NAWCA has supported 58 projects in 23.6% (of 245) of Mexican Important Bird Conservation Areas (AICAs). The areas with the greatest number of NAWCA supported projects are #106-Colorado River Delta and #186-Ria Lagartos with 7 projects each; #67-Laguna Madre with 6 projects; #185 Dzilam and #102 San Quintin with 5 projects each, and #91 Magdalena Bay with 4 projects. Please refer to the map below.

## Important Bird Conservation Areas and Ramsar Sites in Mexico



✘ NAWCA has supported: 30 projects in the Northwest (36%); 17 projects in the Yucatan Peninsula (20%); 11 projects in the Northeast (13%); 8 projects in the Southeast (9%).

✘ NAWCA has supported projects in 21 Mexican States; Sonora leads with 13 projects (15%); Yucatan with 12 projects (14%); Tamaulipas with 9 projects (10%); and Baja California with 8 projects (9%).

✘ Project duration, independent of particular characteristics, ranged between 15 and 25 months (52%). The shortest project duration was of 9 months and the longest was 55 months.

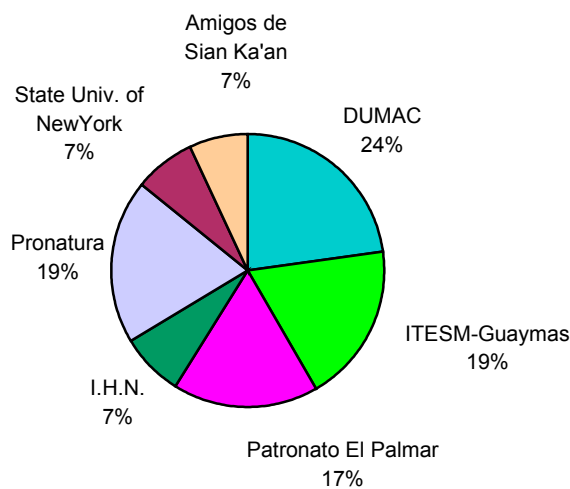
✘ 93 projects (80%) were completed. 23 projects are to be completed during 2002-2004.



⌘ Ducks Unlimited Mexico, A.C. (DUMAC) leads Mexican partners in total amount awarded by NAWCA, with \$1,859,984.00 USD followed by Pronatura with \$1,583,497.00 USD. The seven organizations that have received the most funding have received a total of \$5,735,250.00 USD, which is 43.89% of the total amount received by Mexico in 11 years. Of organizations supported: 80% are Mexican entities; 20% are U.S. based.

⌘ The principal recipient organizations with the highest number of projects supported by NAWCA are: the Pronaturas with 14 projects; DUMAC with 12 projects; ITESM Guaymas with 8 projects; el Patronato El Palmar with 7 projects; the Instituto de Historia Natural and the State University of New York, each with 6 projects; and the Amigos de Sián Ka'an with 5 projects. These 7 organizations together represent almost 50% of the projects supported by NAWCA from 1991 to 2001. Please see the graph on the next page.

### Major NAWCA Partners in Mexico, 1991-2001



✘ The NAWCA Mexico Program portfolio contains 9 project types: management, planning, restoration, research, environmental education, training, monitoring, infrastructure and nurseries. Four activities have attracted the majority of funds: planning, restoration, management and research, utilizing 91% of NAWCA funds between 1991-2001. See Table below.

Project Type	Number	% of Portfolio	Funding	% of Total Funds
Planning	21	27.63%	\$3,820,265	29.23%
Restoration	15	19.73%	\$4,054,784	31.0%
Management	14	18.42%	\$1,694,160	12.96%
Research	12	15.78%	\$2,583,001	19.76%
Environmental Education	5	12.87%	\$363,179	2.7%
Monitoring	4	5.26%	\$640,397	4.9%
Training	3	3.94%	\$315,162	2.4%
Infrastructure	1	1.31%	\$62,262	.47%
Nursery	1	1.31%	\$10,467	.08%

✘ Of the 73 projects analyzed, 24 (32.8%) achieved all the NAWCA goals relative to protection of wetlands, waterfowl, migratory birds and other species; 36 (49.3%) achieved 3 of the 4 goals; 9 achieved two; and, 4 achieved only one of the goals. Analyzing for each one of the goals we find that every project achieves some protection of wetlands; 62 protect migratory birds; 52 protect waterfowl; and 39 protect other species.

## **2.2 Interview and Questionnaire Findings**

1) The majority of the interviewees—57%- think that the goals of the Program are being met even though it is unclear to what degree.

2) Interviewees were asked to indicate what the principle strengths of the NAWCA Mexico Program are and the following comments are examples of responses given:

- ❖ It facilitates resources by providing them directly and locally when necessary (10%).
- ❖ Great promoter of institutional strengthening (30%).
- ❖ Principal source of funds that supports local projects (10%).
- ❖ Strengthens local initiatives (10%).
- ❖ Funding continuity permits follow-up on phased projects (10%).
- ❖ The flexibility of the approved budget avoids gaps in the continuity of project activities (11%).
- ❖ Flexibility in types of projects permitted (11%).
- ❖ Generates institutional alliances around conservation of wetlands (50%).
- ❖ Specifically provides support to wetland conservation programs (53%).
- ❖ It has a regional and continental vision that is realized for wetland conservation (11%).
- ❖ It is an efficient program operationally, little bureaucracy (7%).
- ❖ It provides the opportunity to link other efforts to conserve wetlands in Mexico and North America (25%).
- ❖ More human resources are involved in conservation work and hence, overall efficiency increases (11%).

3) Interviewees were also asked to indicate what the principle weaknesses of the NAWCA might be and the following comments are examples of responses:

- ❖ The process to obtain funds is quite lengthy, and complicates the initiation of projects (29%).
- ❖ The selection process takes too long (18%).
- ❖ Mexico's voice goes unheard on the NAWCC (4%).
- ❖ There is a marked bias toward ducks and game birds (4%).
- ❖ It is difficult for the grantees to obtain the matching funds (4%).
- ❖ The orientation of the Program's goals does not permit the support of types of projects other than those dealing with waterfowl (11%).
- ❖ Not all the resources benefit Mexican organizations. (2%)
- ❖ The selection of proposals is based solely on the criteria of the Mexican Government (4%).
- ❖ Not all the priority areas (geographic or thematic) in terms of wetlands are included (7%).
- ❖ It could generate beneficiaries dependent upon continued funding (2%).

4) In terms of the lessons learned, the following are representative comments:

- ❖ The participation of social groups, of ejidatarios and private landowners is a determining factor in the conservation of wetlands (32%).
- ❖ A change of attitude has been generated in the communities along with a new confidence and trust (25%).
- ❖ The processes are long-term, with few immediate results (7%).
- ❖ The support of all involved is the critical condition for the success of the project (25%).
- ❖ Detailed control of expenditures and advances must be maintained (2%).
- ❖ Projects should be carried out in stages and there should be continuity between phases (2%).
- ❖ It is essential to develop diversified financing even with the basic funding NAWCA provides (7%).

5) Regarding how the Program benefits wetland conservation: 59% believe that the environmental benefits are brought to light when there is an attitude change in the communities. The changes in the restoration processes are also visible as well as the actions in education that raise awareness about conservation. Others (31%) take the view that it is still premature to see substantive changes that indicate the benefits.

6) Regarding the continued application of what has been learned by those individuals who received training: all believe that they continue to reapply the acquired skills and knowledge and that the training has been key in making them a specialized team in the management of wetlands.

7) 66% believe they are like a nursery for restoration actions, of methodologies for wetland management, of ways to create environmental education programs, and of promoting changes in attitudes in the communities, towards wetland conservation.

8) 86% (primarily higher ranking individuals) believe that changes are necessary in the Program towards more tangible projects and of lasting conservation such as physical restoration (earthmoving), land purchase, signage, etc., and that the capacity for conducting these types of projects exists in Mexican organizations. However, the comments on this topic were extremely diverse, from those who did not feel able to answer the specific question, to others that feel it is urgent to conduct precisely that type of project.

9) It is important to note that field personnel, with local communities, in general did not agree with this view. Some believe there is still not enough built-in capacity in the Mexican organizations to implement such a change in scope of the Program. However, at least 44% think that these kinds of changes are necessary and that Mexican organizations do have the capacity and interest to conduct them.

10) In the meeting held in Xalapa, Veracruz (1999), when Mexico produced many worthy projects, the funding ceiling was 5%, as predefined by the NAWCC, but the demand exceeded the funding allotment. The possibility of increasing that ceiling to 7% was discussed but the NAWCC rejected the idea. With this in mind and based upon the responses to changes in the Program towards more tangible projects, the interviewees were asked about the possibility of increasing the flow of NAWCA resources to Mexico.

42% consider the current levels of funding as insufficient and 57% consider it barely enough. The majority interviewed voted to increase the 5% that is annually apportioned to Mexico in the belief that the time has arrived to do so, given the quality and quantity of the projects the NAWCC is being invited to consider for funding.

However, it must be said, that a few interviewees agreed with the Xalapa decision, stating that Mexican organizations and scientists have failed to prove that there is local capacity, expertise and professionalism for wetland conservation action and to wisely spend NAWCA funds.



### 3. NAWCA Mexico Program Challenges

❖ **1. Although the proposals submitted for consideration under the NAWCA provide vast amounts of information, it is not currently captured for use in program and project management.**

There is a systematic deficiency in the information collected and maintained on projects. Valuable information important to the Program as well as to assist the projects is not collected. Information should be systematized in order to derive lessons from the experience of conducting projects, thereby developing a culture of learning. It is of critical importance to collect project performance information through the events and processes of follow-up, monitoring and evaluation to develop trend information.

Data provided by proposals but not captured includes: history of the organization; public access to project area; types of problems, types of land tenure; importance of specific wetlands; important bird areas; important wetland conservation areas; general objectives; accomplishment of NAWCA wetland goals; presence of waterfowl, migratory birds and other species within project location; environmental benefits; areas of influence; problems in project development, goals accomplished; experience gained with NAWCA; special considerations; proposed title holders/managers; whether or not phases of the project exist; and, how much financing the grantee has received under previous NAWCA grants.

❖ **2. The NAWCA Program has practically no visibility outside the circle within which it works, that is to say, beyond its partners.**

*“RAMSAR is more recognized than NAWCA even though its impact, levels of action and financing are not comparable.” (A former Director of Wildlife, SEMARNAT).*

In spite of an apparent abundance of available information regarding the NAWCA Program, it requires greater, targeted dissemination, directed to increase awareness and to encourage the better design and management of projects as well as to increase the number of proposals in NAWCA's areas of interest and to stimulate more resources. There is no dissemination plan or process to inform partners or the public at large of all the actions and accomplishments realized by the Program.

Another well-placed interviewee believes that in terms of its economic capacity, NAWCA's impact on the administration and protection of waterfowl is superior to other wildlife conservation instruments such as CITES. Although the comparison might seem imprudent, the stature of the interviewee and the depth of his knowledge of both instruments obliges us to recognize this as a clear indication of the benefits that can be attributed to the NAWCA Mexico Program.

**❖ 3. The general oversight provided by NAWCA Program personnel consists of periodic visits to the areas where the projects are taking or have taken place.**

A NAWCA Program project monitoring and evaluation program does not exist. The monitoring and evaluation processes of the NAWCA Program in Mexico could be improved through the active participation of the project proponents and all the entities involved. There is no systematic site visit process or formal project evaluation system to strengthen a grantee's work in the future or the conservation actions taken. At present, administrative supervision is seen by many grantees as based solely on the review of a project's budget execution.

In addition, the strategic decision to support many projects for small amounts, clear in the expansion policies of NAWCA in Mexico, undoubtedly provided benefits but also had a logical consequence--the dispersion and scattering of impact. Little can be said about the impact of NAWCA projects in Mexico even on a case by case basis, since a monitoring and evaluation program does not exist.

**❖ 4. Innovative criteria to rank proposals as to the nature of their planned impacts on wetland conservation is needed.**

Perhaps the critical problem in selecting proposals has to do with the quality of the projects. Quality, in this context, means not how well the proposal was written or on how efficient the project might be, but rather, the quality of the actual intervention the project proposes, in terms of its impact on wetland conservation. But, it is difficult to determine true impact if verifiable indicators, baselines and quantifiable parameters for comparison (benchmarks), as well as the results of other previous evaluations are lacking. It is reasonable to exercise caution and to require that interventions be subject to considerable impact evaluation--social, economic, environmental--on results and processes.

Project themes vary with the environmental problems and the specific needs being addressed. However, the design phase in most of the projects reviewed (See Case Studies, Appendix 5) demonstrated a lack of basic information and planning. This not only affected the planning stage in terms of formulating feasible and appropriate interventions, but also translated into high expectations within the organizations regarding the scope and benefits of the project.

**❖ 5. Regular and consistent communications and relations do not exist among the three North American countries working together under the NAWCA and thus misconceptions about roles, responsibilities, and priorities are perpetuated. (horizontal communication)**

It is clear that each country has its own geographic focus and priorities but there is not necessarily any coherence with a tri-national strategy. The risk is to perpetuate working only at the minimum common denominator.

The NAWCC has the final word on which projects will be recommended for funding. However, the three countries have to, separately, review the proposals received, select and prioritize those seen as best candidates for funding. There was some concern expressed with regards to the overruling of the prioritization that Mexico gives to the projects selected and submitted to the Council. A sense of frustration for the uselessness of the local selection process was openly expressed to the evaluation team by highly placed individuals in Mexico.

It is also important to note that a perspective exists that even though three countries are recognized as a partners under NAWCA, the Act is indeed an instrument of the United States Government. Thus, neither Mexico nor Canada can truly be treated as full-fledged partners but rather as allies. This is not a negative statement but an explicit recognition of the nature of NAWCA. The dominant presence of U.S. citizens on the Council is understood clearly, but regardless of this understanding, there is interest, on the Mexican side, to see more Mexicans taking part in the Council.

To further complicate communications and relations, is the recurring problem of the lack of continuous attention or political will for programs, at all three levels of the Mexican government—federal, state and municipal—that impedes the continuity of similar-minded, trained or experienced staff. The interruptions in continuity are usually only temporary due to the changes in administration and adjustment of structures and the natural learning curves they require but they still have an impact on the conduct of the NAWCA Program in Mexico.

However, it can also be said that lack of continuity and poor communications has exacerbated the failure to consider the needs and priorities of the Mexican Government. Although the criteria and perceptions of the NAWCC regarding the Mexico Program, based on the information reviewed and the interviews, have demonstrated an evolution, its central emphasis to conserve waterfowl of hunting interest has only slowly evolved to include other migratory birds, ecosystems and wetland dependent species and is only lately reflected in projects supported.

**❖ 6. Some partners lack even basic knowledge of the NAWCA Program in spite of having conducted NAWCA projects. (vertical communication)**

Lack of familiarity with the objectives, regulations, priorities and general mechanisms of the functioning of the NAWCA was evident in a large number of partners. Only 34% of the persons interviewed have had continuous communication and have interacted with the Program for a long period of time. The interaction of the other respondents varied, but two years is the period of interaction most frequently reported. But, the importance of frequency of contact

is borne out when we consider how much partners really don't know about the NAWCA.

In terms of who is familiar with NAWCA, 72% of those interviewed "know" the Act in general and 78% claim to have read it at sometime; the rest indicated that they "know" about it without specifying how well they "know" it or if the communities in which they work also "know" about it through their knowledge of the Program.

But, only 50% of the interviewees know the functions of the Council. The majority who mentioned having read the Act don't know the role of the Council. This demonstrates a contradiction to the 72% of the interviewees who said they are knowledgeable about the Program.

It is not surprising that 90% are aware that there is an application format for presenting a request for funding, and about the requirements for approval and the deadlines for beginning the process.

In terms of communication and feedback from the NAWCA/USFWS Program personnel and the DGVS, 84% maintain communication with both offices; 31% maintain more contact with the DGVS.

**❖ 7. For a long time, NAWCA has been identified in Mexico, for all intents and purposes, with only one person.**

From the perspective of some of the interviewees this situation provided some benefits, in particular that clearly there was an interlocutor at work on their behalf within the NAWCA Program. However, the drawback to this "personalization," in contrast to the recognition of NAWCA as an institution or organizational entity, was that it was believed to affect the decision-making processes, allowing for bias in program operations.

Expressions such as "why them and not us", referring to the actual selection of the projects submitted to Council, have been common in Mexico. People felt that personal contact, relative lobbying expertise and friendship accounted for many of the perceived biases in the selection of projects.

Thus, one of the operational deficiencies in the past was the enormous strength of personal relationships. Stated another way, friendships and personal relationships were believed to be the determining factors in the promotion and selection of proposals. The fact that this perception exists speaks to the need for improved communications and information dissemination.

## **4.- NAWCA Mexico Program Improvements**

### **4.1 Recommendations**

This section is currently under review and will be included in mid-2004.

## 4.2. Conclusions

The wetlands in Mexico merit the attention of four special interest groups: the aquacultural industry (mainly shrimp-farming); river fishermen; the tourism sector; and the community of hunters and sport fishermen. It is good to ask ourselves what would have become of the wetlands that are currently protected if another interest group and not the hunters and fishermen had promoted their interests in wetlands. Imagine for a minute that instead of the fishermen and hunters, the oil industry or even from the traditional tourism sector decided to do something about wetlands. Most probably, we wouldn't have the wetland resources that remain today.

In fact, keeping in mind the indispensable vision of integrity of the projects funded under NAWCA, concrete achievements can be gained in the short-term and other achievements harvested in a longer term. Perhaps a good example of that is the project "La Pesca", near Soto La Marina, in Tamaulipas State, in Northeastern Mexico, which began with very concrete restoration objectives and other administrative issues, and today the wetland has multiple uses and reports diverse benefits including tourism, sport and artisan fishing.

The lack of public understanding of the importance of biodiversity has recurrently been singled out as a major cause of biological diversity loss, not only in Mexico, but worldwide. In response, it seems logical to engage in Mexico in a major dissemination and education campaign on wetland systems and their biodiversity. We conclude, in agreement with the parties and individuals consulted, that NAWCA can add significantly to the almost negligible efforts in this regard underway in Mexico. The nature of these additions remains uncertain.

The Act has effectively promoted collaboration on a sub-continental scale, in favor of wetlands, waterfowl and other migratory birds as well as other species that share wetland habitat. But beyond the valuable funding that has strengthened the capacities of grant recipient organizations, the NAWCA Program in Mexico has conferred a form of empowerment, readily seen in the increased self-esteem and confidence demonstrated by project leaders. Simply having been granted the funding, especially knowing that the awards are competitive, is like a badge of honor.

NAWCA's objectives are so ambitious that meeting them is a process rather than an end, but it can be said that NAWCA's objectives are being successfully met. Of course some efforts conducted in wetlands in Mexico are not sponsored by NAWCA. But without NAWCA's involvement, most of the activities covered by the Program simply would not have been conducted.

Fiscal resources have indeed increased in Mexico for Wetland conservation, not only because of NAWCA, certainly, but because NAWCA's funds have catalyzed

matching grants and complementary funding from public and private sources. In both case studies the state governments have increased their level of fiscal funding matching NAWCA's investment.

Sheer statistics of the NAWCA Mexico Program show its impact:

- ❖ 25% of the Mexican priority areas for bird conservation are supported;
- ❖ 21 (68%) of all the States of Mexico have had projects;
- ❖ 7 RAMSAR sites are being supported; and,
- ❖ 61% of the registered Mexican priority hydrological areas have benefited from NAWCA's program support.

There is not another equivalent source of funding for conservation that can claim such success.

The quantity and quality of the partnerships established since NAWCA's first incursion in Mexico in 1991 is self-evident. The funds to which Mexico has access have been spent 100% since 1998. The rise from a baseline of only 4 partners in 1991 to over 47 organizations is a clear reflection of this. It is also clear that the number of partners can grow and must grow, but in retrospect the Program can rest assured of having chosen the right track to expand its partnerships. Currently 80% of the grantees are Mexican organizations. Perhaps in the future 100% of the grants will engage Mexican partners, if only to ascertain that institutional strengthening as a goal is being met.

Through NAWCA at least 11 protected wetlands have received funding that has enabled them to strengthen the prognosis for proper continuity. Matching and leverage of funding as a result of secure NAWCA funding has been critical for this. Naturally not all the efforts that the governments (state and federal) have undertaken to secure the sustainability of wetland habitats (protected and not protected) are related to NAWCA. Other bird habitat initiatives related to the Act's overall purpose are also being addressed in Mexico by both government authorities and the conservation community.

It is fair to say that the security of wetland habitats in Mexico, however, still has a long way to go. Threats are not disappearing, some are indeed increasing, and one could say that the only areas that are somehow being looked after are those that fall within any of the legally protected categories.

Maximizing the effectiveness of wetland conservation projects in Mexico means investing in the organizations and people that will meet all the challenges that long term conservation implies, even more so than investing in expensive infrastructure or major civil works on specific sites. NAWCA's support has effectively addressed some of the critical needs of its partners and the impact of this investment is evident in the enhanced profile and respectability of most of the long-term partners.

Without jeopardizing the relationships established with long-term partners,

perhaps broadening the array of recipients could render more benefits to the program. A slight shift to increase the investment in what is called social capital also would be appropriate. The percentage currently going for technical training could well be increased.

Based on what was learned from the documents reviewed, the interviews conducted and the sites visited, the conclusion is that the NAWCA Program in Mexico is indeed serving the needs of grant recipients and affected local communities as well as some others in the Mexican conservation community.

NAWCA and its future expansion are a great opportunity for Mexico. NAWCA has been a magnet that has attracted good people, good projects, complementary funding and it has derived diverse benefits. If the magnet is bigger and hence more powerful, its attraction potential will render even bigger benefits to wetland conservation in Mexico. The expansion will undoubtedly result in--eleven years of performance make it almost certain--more partners, more organizations, more projects, more complementary funds and more benefits to waterfowl, migratory birds, and other wetland dependent species in Mexico.



## APPENDIX I

### The North American Wetlands Conservation Act (Synopsis)

In 1989, the North American Wetlands Conservation Act (NAWCA or Act) was signed to accomplish the following:

- Encourage partnerships to conserve North American wetland ecosystems for waterfowl, other migratory birds, fish, and wildlife;
- Encourage the formation of public-private partnerships to develop and implement wetland conservation projects consistent with the North American Waterfowl Management Plan (NAWMP) and other North American migratory bird conservation agreements;
- Create the North American Wetlands Conservation Fund to support projects through a grants program.

The Act provides for Congressional Appropriations of up to \$55 million dollars through 2004 and up to \$75million in 2007 to support conservation projects in wetlands and associated uplands in the three countries of North America. In addition to Congressional appropriations, funds are derived from several other sources. These funds are combined into what is known as the North American Wetlands Conservation Fund (NAWCF). For Fiscal Year 2001 NAWCF (the combined total of funds available from all sources) was more than \$71 million. Given that roughly half this amount depends on congressional appropriation, funding may vary considerably from year to year. For more information regarding the Act visit website: <http://law2.house.gov/usc.htm>.

Under the NAWCA, states and private groups or individuals may receive matching grants for wetlands conservation projects if the projects further the goals of the North American Waterfowl Management Plan and international migratory bird treaties and if they entail public/private partnerships. In the U.S. and Canada grants are available for acquisition of land or water rights and for restoration, management, or enhancement of wetlands. The Act also lists proposal evaluation factors to be considered by the Council and specifically references goals of the NAWMP, thus providing a mechanism to support NAWMP objectives and those of other migratory bird recovery programs.

The Act established a nine-member North American Wetlands Conservation Council (Council) to review and recommend grant proposals to the Migratory Bird Conservation Commission (MBCC) for funding. Council membership includes the Director of the U.S. Fish and Wildlife Service, the Executive Secretary of the National Fish and Wildlife Foundation, four state fish and wildlife agency directors representing the four flyways, three non-profit conservation organizations and an alternate. Currently, several Ex Officio members are invited to participate including the Assistant Deputy Minister of Environment Canada and the Director of the Wildlife Division of Mexico's Secretariat of Environment and Natural Resources. Current membership includes:

Council Member

Duane Shroufe, Chairman  
Director, Arizona Department of Game and Fish

Council Staff Member

Sam Lawry

John Cooper, Vice Chairman  
South Dakota Game, Fish & Parks Dept

Kenneth Sambor

Steve Miller  
Wisconsin Dept of National Resources

Tim R. Grunewald

John Berry  
National Fish and Wildlife Foundation

Gary Kania

Wayne MacCallum  
Director, Massachusetts Division of Fisheries and Wildlife

Rob Deblinger

Jean Hocker  
Land Trust Alliance

Andrew Zepp

KiKu Hoagland Hanes  
The Conservation Fund, Board of Directors

David Sutherland

Dr. W. Alan Wentz  
Ducks Unlimited, Inc.

Dr. Keith McKnight

Steve Williams  
U S Fish and Wildlife Service  
Department of the Interior

David Buie

David Nomsen  
Pheasants Forever, Inc.

John Beall

Michael Dennis  
The Nature Conservancy

John Humke

*Ex Officio Council Members*

Karen Brown, Assistant Deputy Minister, Environmental Conservation Service,  
Environment Canada

Fernando Clemente Sanchez, Director, Wildlife Division  
Mexican Secretariat of the Environment and Natural Resources

*Other Participants*

Len Ugarenko, International Association of Fish and Wildlife Agencies  
David A. Smith, Council Coordinator, US Fish and Wildlife Service

The MBCC was established in 1929 under the Migratory Bird Conservation Act. Its purpose being to approve (in the United States of America) the areas recommended by the Secretary of the Interior to be become bird migratory refugia and to set the acquisition price for each area. The MBCC is comprised of representatives from the United States Government: the Secretary of the Interior, the Secretary of the Environmental Protection Agency, the Secretary of Agriculture, two Senators and two Members of the U.S. Congress.

Current membership includes:

Migratory Bird Conservation Commission

Honorable Gale A. Norton, Secretary of the Interior, Chairperson

Honorable John B. Breaux, Senator from Louisiana

Honorable Thad Cochran, Senator from Mississippi

Honorable John D. Dingell, Representative from Michigan

Honorable Curt Weldon, Representative from Pennsylvania

Honorable Christine Todd Whitman, Environmental Protection Agency

Honorable Ann M. Veneman, Secretary of Agriculture.

## APPENDIX 2

### THE MEXICAN CONTEXT FOR WETLAND CONSERVATION

In conformance with the RAMSAR Convention's definition, " wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres". In addition, the Convention (Article 2.1) provides that wetlands "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands" (RAMSAR, 2000).

It is necessary to consider that "wetlands" as a generic concept, and in more specific terms of what is understood in developed countries, has undergone a somewhat recent transformation. It is recognized that, for the purpose of management, protection and, ultimately, restoration, wetland areas (as coastal and oceanic habitats) are linked to a fundamental, non-aquatic, territorial component. This component is intimately associated to in-land or up-stream phenomena, and thus, to the human activities carried out on land (Meritt, A. 1994).

To better understand the implementation of the NAWCA Program in Mexico, it is important to briefly discuss the context of wetlands and coastal areas in Mexico. This context should be acknowledged if the NAWCA Program is to eventually have an influence on Mexico's national reality.

#### **Mexican Aquatic Resources**

Mexico has an estuarine surface area of approximately 16,000k m<sup>2</sup>. The extension of the coastline is close to the 11,000 km, of which about 68% correspond to the Pacific Ocean and Gulf of California side, whereas 32% correspond to the Gulf of Mexico and the Caribbean Sea side. There are approximately 130 coastal lagoons that cover a total surface area of 12,000 km<sup>2</sup> found along the coastlines (CONABIO, 1998).

As a result of the terrestrial biodiversity of our country (recognized as a megadiverse country), the coastal zone can also be considered highly diverse, but it has only recently begun to be considered in the national inventories of megadiversity. Mexico extends over 1,900,000Km<sup>2</sup> of land; but holds dominion over 2,900,000 Km<sup>2</sup> of marine and coastal areas (including the economic exclusion zone). If only by reason of this extension, Mexico should consider itself a marine nation (CONABIO, 1998; CONABIO 2000b).

Although not all wetlands are located in coastal areas, most of the wetland areas supported in Mexico through projects funded by the NAWCA Program are indeed in coastal areas. Only 11 projects (ca. 9.4%) from the 116 funded are not in coastal areas.

Today, basically none of the wetlands in coastal areas of the Gulf of Mexico can be considered safe from the pressures derived from various human activities. The Pacific coast, it appears, has been developed and exploited to a lesser extent. The rugged seashores in some states, the arid climate, with an associated lack of drinking water, and the isolation of certain areas have curtailed human presence on wide stretches along the Western coast of Mexico.

Numerous wetlands and bodies of superficial water are polluted with untreated sewage that limits their use for life in general. This is the case in the Lerma, Alto Panuco, Alto Balsas, San Jaun and Valley of Mexico watersheds. Along Mexico's coasts, pollution of marine and coastal ecosystems induced by the presence of oil and its derivatives is considered in some sectors as the major ecological problem of our day. Coastal pollution caused by domestic and urban waste is, in general, the most common Mexican coastal problem (CONABIO, 1998).

The contamination of the aquatic environment has many sources and varied effects. In the Gulf of Mexico, the main problems are caused by urban and industrial concentration, petroleum and petrochemical industrial waste and the waste from coffee and sugar processing, paper mills, textiles and chemicals from the states of Tamaulipas, Veracruz, Tabasco and Campeche, who empty their waste into the sea and contaminate the rivers, the marine and coastal ecosystems--critical habitats for the conservation of biodiversity. On the Pacific coast, other productive activities present serious problems. Such is the case of industrial ports, urban and touristic developments, the concentration of agro-industrial activity and the discharge of untreated wastewater, particularly in the northwest region (CONABIO, 1998).

As a consequence, many lake and estuarine systems in Mexico suffer hastened natural processes of degradation, which implies a decline in the biological productivity and as a consequence, in the dependent economic activities. In a few cases, these processes are accelerated directly or indirectly as a result of anthropogenic activities such as deforestation, agrochemical contamination and industrial and domestic sewage, the damming of rivers and the overexploitation of fishing resources, among others (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

Not too well recognized by the general public is the role that terrestrial ecosystems play in the health status of fresh water and estuarine systems. Changes in the introduction of nutrients, sediments and fresh water coastal runoff in large part determine the salinity and productivity of the coastal-marine environments, with a consequent impact on fisheries, and often an increase in the processes of coastal erosion.

It is important to note the high level of deterioration of the forests and wetlands as a whole throughout the country, a situation reflected in the above mentioned impacts, given that the alteration and the disappearance of these types of environments limits their role in the control of flooding, the replenishment of aquifers, the mitigation of impacts of global climate change and extreme climatic phenomena, the seasonal availability of water and, not any less important, the preservation of ecosystems and biological diversity (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

Eighty percent of the Mexican territory presents severe levels of erosion. The impact to coastal environments is considerable, not only because of the high-magnitude, devastating floods promoted by logging activities in the watersheds, and the decades-long mismanagement of these river basins by the National Waters Commission (CNA), with its ill-construed irrigation and extensive dam-building schemes. It is also due to the high social and environmental costs associated with the yearly deposition of thousands of tons of otherwise productive soils and sediments, which flow unhindered into the highly productive coastal lagoons, where hundreds of shrimp-harvesting cooperatives earn their daily sustenance (CONABIO, 1998; CNA, 2001).

Millions of pesos are spent each year in water-flow restoration programs in these systems. The final deposition of dredge materials constitutes a serious problem, as most of these materials end-up piled on top of mangroves or dumped into the lagoons, creating new water-flow disturbances and habitat alteration (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

The mismanagement of watersheds has deleterious consequences for sustainable development of the fishing industry because it affects the quality of life and the possibilities for economic development of millions of Mexicans who depend on these resources for their subsistence (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

### **Coastal Economics**

More than a hundred coastal and marine species are captured in our coastal and marine ecosystems, but only about a dozen are commonly available on the market. A similar situation exists with regard to tourism, which tends to be concentrated in a few selected locations and offers a limited spectrum of nature related recreation and entertainment options. But promising initiatives are steadily increasing, fueled mainly by the demand of European and American visitors (CONABIO, 1998; CONAPESCA, 2002).

The bulk of productive activities developed in coastal regions are characterized by a lack of networks or linkages between the main actors and their products. This has limited industrial activity, lack of specialization or diversification of products and their further processing, activities which in turn tend to concentrate the distribution and sale of shell fish and other fish species in the hands of a few intermediaries (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

The Mexican fisheries system is basically oriented to the export of a selected group of products, a fact that impacts negatively on the sustainability of our coastal and marine resources. For historic reasons, shrimp fisheries generate the largest income in Mexico as a fisheries export product. Similar stresses apply to lobster, abalone and sea-urchin harvests, and more recently, to sea-cucumber exports. All these species are considered at the limit of their exploitation potential and some researchers even consider them well beyond these limits (CONAPESCA, 2002).

The same sort of problems that afflict marine fisheries (tuna, shark, sailfish and Marlin, squid), affect coastal and estuary fisheries (oysters, abalone, lobster, and several fish species). They are subject to the “tragedy of the commons (coastal areas)”, which are freely available to everyone and thus under the pressure of multiple users (e.g., commercial and sports fishing of swordfish and related species), who do not follow spatial or seasonal restrictions (authorized fishing grounds or established off-seasons) (CONAPESCA, 2002).

Aquaculture contributes 10 to 12 % in volume to the national fisheries harvest. The state of Sinaloa is the major producer of aquaculture derived products, with 35% of the national production, with Sonora and Nayarit following (Herzig, M., C. Leon & R. Pérez-Gil, 2000, Conapesca, 2002).

There is a strong expansion effort to develop commercial aquaculture throughout the coasts of Mexico, mainly for shrimp production in coastal lagoons and adjacent inundated areas, including sand dunes and salt flats. It is still unclear just what long-

term environmental impacts this development will have. Although some experts feel that the mangroves in Mexico will not be affected as strongly as seems to have been the case in Ecuador, this would seem contrary to what history has demonstrated. A lack of deeper knowledge may be the reason for this optimism (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

### Information and Mass Communications

Mass media have relegated to an area of secondary concern or flatly ignored most matters related to the environment in general and to the wetland and coastal-marine component in particular. There is no apparent economic incentive to news media owners to deal with these subjects. Mexico's economic crisis and a cut in government subsidies to news media in general in terms of paid publicity also affected the newspapers.

By default, due to the poor interest of the media themselves, the government (in terms of the environment) tends to establish which aspects and issues should be covered and unless there is a strong economic, political or social component to environmental news, these items are just not considered newsworthy.

As in many places around the World, there is not a single newspaper in Mexico that can be regarded as THE most influential nor the one with the highest standards of excellence. Perhaps each one in its own style and for their own specific readers, there are few newspapers that are worth highlighting given their number of readers, reach and influence.

Just how much a source of information that can be trusted in terms of its accuracy and objectivity may contribute positively to solve Mexico's wetland conservation problems is an interesting matter for debate. In general, news and opinion media in Mexico have seen their work restricted by the interests and limitations set upon them by the government. The free press exists in Mexico as long as it does not significantly interfere with State (i.e., Party in office) interests. In recent years, the political aperture promoted by the government has seen itself also reflected in the public media, even though there is still remains some important ground to be covered.

In Mexico, people in general do not read. With the exception of news segments dedicated to politics, sports, comic strips, sex, romance and adventure novelettes, which are very sought after and read everywhere, radio and television programs constitute more popular means of information and communication. The simple acquisition of a newspaper exceeds the economic possibilities of most households.

Radio and television programs, on the other hand, can be viewed in many of the places in which people tend to socialize. Television and radio are the most optimal channels to establish communication links, with distinct advantages over newspapers and other publications, given the high rate of illiteracy in the country and the scant inclination to read in vast population sectors. However, in terms of exerting an influence on some decision makers or having an impact in the political arena, one should consider that it is in the written media where the largest amount of in-depth analysis generally takes place.

Several of the experts interviewed by Herzig, Leon and Pérez-Gil expressed the opinion that wetland, coastal and marine issues in Mexico are not covered because it costs money to maintain this specialized news source, and it produces no measurable

financial return. Journalists in general are not aware of environmental values and tend to have a rudimentary grasp of biological phenomena and ecological processes (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

There has been an increase in the number of journals and magazines (in Spanish editions) that deal with environmental subjects. Most of them are relatively expensive and reach a limited universe of educated readers attracted to these subjects. The information presented in publications produced by the research institutions themselves and some NGO's rarely transcends the local or specialized sphere of interest or becomes a first-page news item.

There are events which, by the magnitude of their impacts upon a certain ecosystem or species, reach the attention of mass communication media and are transformed into a "sellable" news product. This was the case for the recent massive die-off of several dozen whales on the coast of Campeche (mangrove areas) and Yucatan. The event was widely broadcast in early June of 2001, as was the current coverage (September 2002) of the destruction the hurricanes brought to the coastal areas of the Yucatan Peninsula for example (Chavez, J. & L. Chim, 2000; La Jornada, Junio del 2001).

Among those interviewed for the purpose of this evaluation, all agreed that the social perception of the wetlands in Mexico is very narrow, to say the least. As a result of the denial of the existence, let alone the importance of wetland and coastal systems, there is no permanent demand of information from the general public to the media, NGO's or to the government. Hence, in the case of the media, there is no specific interest in this type of information and, consequently, no specialization or specific expertise on their behalf to deal with this information and related issues.

### **Knowledge and Academia**

At present, one cannot recognize at the national level, the existence of a strategic plan that could orient the development of the research needed to address wetland conservation in Mexico. The research projects and studies performed by the academic sector produce and provide to a very limited degree the necessary information required by policy makers to establish adequate resource use policies linked to the coastal and marine environments. It could be stated that enough knowledge is at hand to develop true sustainable use and conservation policies and plans, but there is a lack of communication between the research community and the remaining sectors--the government and private sector (CONABIO, 2000 a).

The financial limitations for research development in Mexico are still very marked, the contributions notwithstanding of research funding entities and some large international foundations that have provided considerable financial support during the past 10 years for the conservation and sustainable development of natural resources in the country. The apparent bias of these funds lies in supporting efforts addressed mainly, though not exclusively, to terrestrial environments, in particular to regions associated with tropical forests (Castro, G. & I. Locker, 2000). Support from the North American Wetland Conservation Act naturally must be seen as an exception to this for the funds are clearly tagged for wetlands.

During the interview process in this evaluation some interesting impressions were found to exist, including the impression that professional wetland, coastal or marine oriented organizations in Mexico seem to play a limited role in terms of disclosing their studies



outside the academic sphere. Perhaps even more deficient is their participation in lobbying activities directed towards policy makers and mass communication media. This lack of involvement is in part a reflection of a group's lack of inner consensus, the prevailing feudalism, and the dispersion of efforts. Although it also has to do with a certain closed attitude, still present on the part of both the media and the government, to open up to the participation of society in the conduction of the course and destiny of the country.

Very recent exceptions are worth mentioning. Like the coalition of NGO's and activist groups established to combat the expansion of the salt works in San Ignacio Lagoon in Baja California, perceived as a threat. But also the case of the coordination efforts to protect the Sea of Cortez from a wide range of threats like construction on islands, fisheries in the Colorado Delta region or a recent ill-designed Shark Fisheries official norm that would practically legalize incidental catching of non target species (Pérez U. Matilde, 1999). These recent examples shed some light of hope to the increase in cooperation among NGO's and other sectors of society in favor of wetland, coastal and marine conservation.

As such, the development of real experts in wetland and bird habitat conservation is only slowly taking place in Mexico. Even though there are some experts, who by reason of their long academic trajectory and field experience, are able to provide instruction in these subject areas.

#### *Social and Cultural Heterogeneity, and Biodiversity*

The ethnic and cultural diversity of Mexico is very high. It is estimated that over 50 languages are spoken, with over 150 dialectal varieties. Many of these are today on the verge of disappearance with the extinction of the Indigenous speakers. The 2000 National Census informs us that 24% of Mexico's population lives in coastal areas (roughly 23 million people), with a higher population growth-rate than the rest of the country (which is around 3%) (Grijalbo Ed., 2000). Mexico's coastal population in general, when compared to the rest of the country, lies above the national mean and is not ranked among the poorest population segment.

Mexico's coastal areas can be thought of in terms of four well-differentiated regions: the Pacific Northwest (from Puerto Vallarta, Jalisco to Tijuana, Baja California), which exceeds by far the rest of the coastal regions in terms of income and services provided. The Pacific Southwest (Puerto Vallarta to Chiapas), considered extremely poor and among the poorest in the country, in particular the coastal areas of Oaxaca and Chiapas. The Gulf of Mexico (Tamaulipas to Yucatan), as a relatively poor area; and, the Caribbean region (Yucatan and Quintana Roo), which is considered a rather homogeneous region, with some fairly high income areas concentrated around beach tourism (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

There are strong identity contrasts between the populations that live in the central high plateaus and mountain regions of the country and their coastal counterparts. Historically, and perhaps by reason of the altitude and different climates, it is said that very few individuals know the beaches or the sea. No ready-available data were found to support this claim, but it would not be far-fetched to estimate that less than 20% of Mexicans have been to some place in the country where they have seen the ocean (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

Culturally and environmentally, Mexicans are practically unaware of all the different aspects of marine diversity or coastal environments, the ocean's dynamics or the relationships between humankind and other environments. Unlike other countries which also possess large coastal areas (even in Latin America), Mexicans in general have not appropriated or integrated the different aspects of the coasts or the sea into their daily lives and culture: nor their products, nor their history, nor the commercial value, not even to any significant degree into artistic or literary production (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

In contrast to Mexico's high environmental diversity, there are very few organizations or institutions concerned with coastal or marine issues, much less wetlands. A still limited number of non-governmental organizations are associated with the subject of wetlands, coastal and marine conservation in Mexico (FMCN, 2002).

It is fair to say that Mexico's biodiversity is, in general terms, undervalued in all its aspects. The recognition of wetland biodiversity is less still; even its economic value has been overlooked. This is true, not only for the analysis and decisions made with respect to the use of these resources, but also in the definition of policies and investment strategies, in information gathering and dissemination efforts, and in general, in the planning of the country's development (CONABIO -INE, 1998).

### Complementary Efforts

Mexico, as signatory and party to numerous treaties and international conventions has acquired after many years a great quantity of commitments in the environmental arena, and involvement to various degrees. Some of these international commitments that have particular relevance to the themes of water and wetlands are elaborated upon in the sections that follow (Cultura Ecológica, 1996).

Mexico was incorporated under the Ramsar Convention in 1986. The Ramsar Convention is an instrument complementary to the goals of NAWCA, as can be read in its general objective that states the need to further conservation and wise use of wetlands to provide habitat for waterfowl and other wildlife, in order to cover all aspects of conservation recognizing that these ecosystems are of extreme importance for the conservation of biological diversity and the well-being of communities (NAWCC, 1988).

After the so-called Earth Summit held in Rio de Janeiro, Brazil in 1992, our country assumed the moral obligation to adopt and adapt Agenda-21 and within it particular lines and actions relative to the theme of fresh water (Section II Chapter 18 ). SEMARNAT, as the agency responsible for the integrated management of water, has undertaken diverse initiatives pertinent to the application of Chapter XX of Agenda 21 and the four basic commitments of the Ramsar Convention, highlighting the sensible use of all wetlands in its territory, all of which should be consolidated, expanded and massively implemented throughout the country (CONABIO, 1998).

Similarly, Mexico became a party to the Convention on Biological Diversity (CBD) as well as to the United Nations Convention on Climatic Change and the Convention on the Fight Against Desertification. Mexico also is part of the Global Program of Action for the Protection of the Marine Environment from activities originating on land, of the SPAW protocol, of the Regional Initiative for the Protection of the International Reserve of the Coral Reefs of the Mesoamerican Caribbean and the Mesoamerican Biological Corridor Program.

In addition, Mexico is a member of an International Commission of Limits (Boundaries) and Waters. Mexico is also signatory to treaties, agreements and conventions of collaboration on both its borders--to the south with its nearest Central American neighbors, Belize and Guatemala, which include diverse environmental matters as with all the rest of the countries to Panama under the Comisión Centroamericana de Ambiente y Desarrollo (CCAD); the Sistema e Integración Centroamericana (SICA); as well as under the Plan Puebla-Panama promoted by Mexico. With our neighbors to the North (US and Canada) we are involved with agreements on the management of water around the border as well as bi- and tri-lateral agreements on migratory species and, of course, wetlands (Ojeda, Olga, Pers. Comm, 2002).

In the Conference of Parties (COP) of the international protocols and conventions related to the environment as well as in the secretariats and the subsidiary bodies, substantial advancements have been made in agreements of collaboration to develop synergies, encouraging national institutions responsible for applying said agreements to establish long-term working relations with their counterparts on a national level.

It is abundantly clear that it is necessary to rely on political instruments and policy that ensure an integrated focus that is effective and efficient. As well, each sector of society should take into account the possibilities that international cooperation offers to support national efforts and the principles of shared but differentiated responsibility. Integrated environmental policy as related to water in Mexico should be in accordance with the processes and synergies that can be developed at the international level, making national participation imperative in these treaties and instruments (Ojeda, Olga, Pers. Comm 2002).

Other efforts worth mentioning are the Regional Sustainable Development Programs promoted by CONANP, and the Sustainable Management Areas Projects promoted by the Wildlife Direction of SEMARNAT. The North American Waterfowl Management Plan (to which NAWCA funding is related); the Technical Subcommittee for the Conservation and Management of Waterfowl; Partners in Flight; the Commission on Environmental Cooperation's Biodiversity Program; national expressions of the Hemispheric Birds Network; and the North American Bird Conservation Initiative (NAWCC, 2000; CEC, 2002).

To obtain the best and the most complementary of all of these efforts is the major challenge that Mexico confronts in the matter of wetland conservation. The modalities of institutional attention to this topic at the federal government level are currently widely debated. All these commitments add to the legal and institutional framework within which the new environmental management should be developed and they are the context within which actions such as those of NAWCA could be expanded.

#### *Institutional Challenges that Affect Wetland Conservation in Mexico*

In Mexico, natural resources are considered a "public good" ("bienes nacionales"), as stated in Articles Three and 27 of the Mexican Constitution. Unlike in the United States (where the Coastal Zone Management Act was declared in 1972), in Mexico, an operative definition of the coastal zone does not exist. And, institutional responsibility for water related issues (potable water, fisheries, aquatic plants and animals, wetlands,

rivers and ponds, access rights, uses, quotas, norms, etc.) has always been a source of debate within the Mexican government (CONABIO, 1998).

The National Commission on Water (CNA) currently has principle responsibility, along with the Mexican Institute of Water Technology (IMTA) and the support of many other agencies, for the theme of water per se. Although its participation in wetlands is limited, the National Commission on Water (CNA) works on the administration and management of water, based on the knowledge of its availability, quality and location. It also participates in monitoring programs, in the control of sewage and in the attention to emergency meteorological and climatological phenomenon.

The National Commission for the Knowledge and Use of Biodiversity (CONABIO), which is the organization that coordinates national policy for the conservation of biological diversity and the Commission on Natural Protected Areas (CONANP) which is responsible for the Natural Protected Areas have longtime involvement with the actions of the National Institute of Ecology (INE). In fact, it is CONABIO, CONANP and Division of Wildlife (DGVN) who are the agencies who attend to, with different perspectives, wetlands, waterfowl, and other migratory species including other species that inhabit wetlands, which is to say, the themes of interest to NAWCA.

Other public entities with responsibilities for diverse aspects linked with the aquatic and marine environment are: the Secretariat of the Sea (SEMAR), the entity charged with the oversight, protection and safeguarding of the Exclusive Economic Zone; the Secretariat of Communications and Transportation (SCT); the Ministry of Agriculture, Cattle Ranching, Rural Development, Fisheries and Food (SAGARPA) and the Secretariats of Tourism (SECTUR), National Fund for Tourism (FONATUR) and the Ministry for Social Development (SEDESOL), who are, among others, responsible for the planning and regulation of the development, tourism and urban centers in the coastal areas.

But for all intents and purposes, the planning, management, use, conservation, preservation and restoration of wetland resources and ecosystems are currently the responsibility of SEMARNAT and its decentralized agencies. This includes the coordination, management and implementation of the limited policies developed for natural resource conservation in Mexico.

The change in functions or mandates of different institutions in our recent history reflect the varying perspectives the different administrations have had with regards to dealing with water related issues. For example, a Ministry of Water existed at one time, but it was merged with one in the Agency for Agriculture and Cattle ranching, thus showing that water was primarily seen as an integral part of food production. The fate of wetlands, in terms of governmental attention, has been linked to these changing jurisdictions.

The changes in responsibilities and functions from one administration to the next as well as within the same administration not only has not ceased but is a phenomenon which appears to be exacerbated today even as, world-wide, there is an increased recognition of the importance of water resources and of environmental services. The responsibilities and functions in terms of water and wetlands continue to be increasingly complex and shared. Each day there are more entities that intervene, transfers of responsibility from

central to local governments are taking place, as well as structural adjustments and the creation of new organizations or entities.

Therefore, water resources are not currently susceptible to administration in an integrated manner, or of being attended to with coordinated policies or planning. Any public policy event that takes place or is experienced with regard to water resources, is the result of sectoral programs or activities originating from different levels of government involvement (municipalities, State and Federal agencies), and are usually conducted without taking into account any of the other pertinent governing bodies (CNA 2000).

Each sector promotes or controls the coastal space under its mandate in an independent manner, commonly without taking into account the rest of society. All of this has promoted the deterioration of the natural resources and the accelerated degradation of coastal-marine biodiversity and its habitats. Sectoral accounting has not been integrated, even into the inner structure of each sector or sub-sector.

Noteworthy contradictions exist everywhere, to the extent, that it has been impossible to reach agreements over various common issues such as those which link the social and economic interests of high-seas fisheries, sport fishing, the so-called artisan fishing activities, aquaculture and fish-farming; bird habitat conservation and ecosystems protection, to mention few. Nor can one clearly differentiate mutual influences or relationships that exist in different areas throughout the country, related to marine, coastal and wetland environments (Herzig, M., C. Leon & R. Pérez-Gil, 2000). Even though there were some historical actions in terms of inter-ministerial coordination in coastal projects or localities, promoted by the former administration (primarily through the now extinct SEMARNAP), the previous statement is currently valid even for the ministry now in charge of environmental matters, SEMARNAT.

The present administration decided to take away from SEMARNAP, the former environment, natural resources and fisheries ministry, every responsibility having anything to do with aquatic species. Fisheries have become the responsibility of the SAGARPA. Marine and coastal resources under this new rationale are regarded simply as part, or not, of the diet (food items), whole new concept that has further complicated wetland, coastal and marine areas conservation.

To date, an adequate legal framework for carrying out coordinated government actions that attend, plan for, and offer long-term solutions for conservation, much less sustainable development in Mexico's wetlands, coastal and even marine regions still does not exist. Thus, conservation strategies such as those for wetlands, must be based on the premise that an operational institutional platform or even the knowledge of long lasting previous experiences on coordinating efforts in the governmental sector do not exist. The incipient or non-existent linkage between federal and state governments in relation to environmental themes in general, and to coastal matters in particular, is an important part of the problem.

Something else that presents serious roadblocks to wetland conservation is the fact that Mexico has not implemented definitive, systematic actions for the conservation and protection of its coastal resources, due in part to a lack of adequate legal instruments and to the aforementioned lack of coordination between different government levels (local, State and Federal). It is also due to the fact that there are enormous gaps in

knowledge and also because of the lack of public policies regarding coastal resources or other activities that will render the expected conservation results.

However, although Mexico has no wide-encompassing coastal zone management plan, the Organic Law for the Federal Public Administration (Ley Orgánica de la Administración Pública Federal LOAPF), in its Article 32, states that the Federal Government must promote ecological land use planning of the national territory (ordenamiento ecológico del territorio nacional), including the coastal zone, both land and sea (DOF, 1976).

A package of instruments exists, with force of law, which can be generically called "territorial ordering or zoning." These instruments may be considered regulation modalities for the use and destiny of land, including classic zoning schemes, for example, the declaration of protected areas of varying classifications, to temporary or transitory regulations; in other words, land use planning instruments (DOF, 1988).

For example, *The Ecological Land Use Plan (zoning) of the Marine Coast* (OECM) is an instrument (document) of federal jurisdiction whose objective is to establish the guidelines and precautionary measures to promote the preservation, restoration, protection and sustainable use of existing natural resources, which of course includes wetlands, in the marine and coastal zones under national jurisdiction. Considering the need to plan the human activities in an Exclusive Economic Zone and for its biodiversity, environmental conditions and socioeconomic importance, the first such study of Ordenamiento Ecológico Marino en la Región del Mar de Cortés (Golfo de California) was begun in 1998, but this is only the first of many land use plans that are needed if coastal conservation in general and wetlands conservation in particular are to be achieved (Herzig, M., C. Leon & R. Pérez-Gil, 2000).

102 Another form of management derived from the recognition of ecological land use planning is constituted by the recently implemented pilot projects on "Integrated Coastal Zone Management," which are related to actions of regional and international cooperation, and which will permit the advancement of integration of environmental policies oriented in particular to the marine environment of the country. Implementation is the responsibility of SEMARNAT and SAGARPA. In a similar manner, studies of coastal zoning in different regions of the country are being conducted with the goal of determining areas best suited for aquaculture with the least impact on the environment (CONAPESCA, 2002).

Another promising start on conservation policy development is part of a fundamental strategy for biodiversity conservation in marine and coastal zones throughout the country. The CONABIO completed regionalized coastal and oceanic priorities based on biodiversity. With assistance from the national academic sector, 70 marine priority areas were identified, of which 6 are oceanic (Arriaga, L., J.M. Espinoza, C. Aguilar, E. Martínez, L. Gomez y E. Loa, 2000).

Among these are areas utilized by some productive sector and others of biological importance and of high biodiversity with potential for conservation. A similar exercise was completed to identify priority hydrological regions, many of which coincide with the priority watersheds of CNA ( Arriaga Cabrera, L. , V. Aguilar Sierra, J. Alcocer Durán, R. Jiménez Rozenberg, E. Muñoz López y E. Vázquez Domínguez , 1998).

But, as the previous paragraphs indicate, policy development is in its earliest stages and in need of resources to continue the development of sorely needed information bases and country-wide land use management plans. There is however, an even brighter spot on the future of wetland conservation, alluded to in earlier sections--the National System of Protected Areas (SINAP).

The forests, jungles, arid zones and many other zones of the country such as the wetlands in the marine and coastal zones, experience problems of gradual biodiversity loss and deterioration of ecosystems and critical habitat, an impact that translates into the decrease of water capture and other effects resulting from the reduction in capacity of the ecosystems to provide invaluable environmental services. The main service, that is in fact a collection of complex and vital processes, is precisely that related to fresh water (CONABIO, 1998). It is for this reason that the system of declaring Natural Protected Areas has represented an appropriate model for confronting the problems of destruction and loss of ecosystems.

This has been the most effective way to pursue conservation of wetlands in Mexico. There are valuable recent efforts to further develop Mexico's national system of protected areas. Until recently aquatic ecosystems, whether lacustrine, marine or coastal, were being incorporated into the SINAP, although since 1986 some were protected under the designation of wetlands of international importance or Ramsar sites (Pérez Gil, R. & F. Jaramillo 1999).

These areas can be perceived as geographic points of departure to further develop conservation efforts in the wetlands of the country. Furthermore, important steps have been taken in terms of endangered species protection. Most have a limited geographic impact, like the reproduction sites for whales and marine birds and turtles, and existing legislation and international treaties protect these species even in the wider marine environment.

Most of the protected areas fall under the Biosphere Reserve Category. Mexico has legally instituted the Biosphere Reserve Category and has favored its expansion throughout the territory, aquatic and coastal areas included. Although not entirely equivalent to the concept as understood in other latitudes, this schema was born in association with the biosphere reserve concept (UNESCO-Man and the Biosphere). At present this system has provided some derivatives that prove to be more viable in poor or developing countries, where there are no uninhabited protected areas. In Biosphere Reserves conservation is oriented under the premise of wise use, sustainable use, or rational exploitation of natural resources (DOF, 1988; Pérez Gil, R. & F. Jaramillo 1999).

The recent strategy has been to increase the total area in the country and the ecosystems represented under some protection regime. Under the current Administration, the programmed budget for the management of the National System of Protected Areas (SINAP) has sextupled. But, the SINAP has little more than 120 protected areas of federal interest in the entire national territory, which makes up the core of the policy and practice of biodiversity conservation on the part of the public sector (SEMARNAT, 2001).

### **Mexican Contextual Summary**

In Mexico, as occurs at other latitudes, wetland benefits that humankind enjoy are still not adequately valued and serious dangers persist in terms of contamination,

degradation and overexploitation, that usually originate on interior lands. If continued, this will constitute a series of threats not only to the populations located on its shores but also for the economy and society in general. For this reason, the care, management and use of wetlands is a shared responsibility that demands from all Mexicans the maximum efforts possible.

The lack of care in the management of water resources, the failure to apply an integrated management vision, the inefficiency of its use coupled with its rarity, have caused a situation where the superficial and subterranean waters of various regions in the country are insufficient or lack the quality necessary to satisfy the environmental and human demand (CNA, 2000).

The present situation of Mexico's wetlands is of grave concern, and is a result of the historical paths of urban and industrial expansion, an increase in rural settlements and agriculture, and the unruly exploitation of natural resources. Because it is difficult to define the precise limits of an ecosystem, it is necessary for the public to recognize that fresh water ecosystems include all the environmental units associated with a watershed, that is, not only the length of a given river but as well, the lakes, ponds, floodplains, pastures and marshes and uplands that drain to and contribute to the flow of that river and beyond to the subterranean currents and deposits of water.

Subterranean water, as a basic resource, is very important for Mexico, since 75 percent of the population, a third of the land under irrigation and 61 percent of the resource for industry, depend on it. The role that ecosystems such as forests, jungles and different types of wetlands have in the quantity and quality of water that replenishes these underground sources is not to be neglected and requires appropriate valuation (CNA, 2000).

As long as the different sectors of Mexican society continue to ignore the importance of maintaining the functional structure and the biological diversity of ecosystems and its productive quality through integrated and sustainable management of the watersheds, not only will the well-springs of our natural resources and our productive development vanish, but also the sources of freshwater, without which existence is impossible (CNA, 2000).

The challenges facing conservation of coastal-marine or wetland areas in Mexico hinge upon an intricate web of culturally determined relationships, and a complex social and economic compound structure which, in contrast with other countries, is not yet too receptive or sympathetic with the overall purpose of conservation (Herzig, M., C.León and R. Pérez Gil 2002).



## **APPENDIX 3 METHODOLOGY**

### **I. Objectives and reach of the project**

The main purpose of this evaluation was to compile and analyze data and information to enable us to suggest recommendations to improve the strategic vision and the procedures around the operation of the NAWCA program in Mexico. The emphasis of this evaluation as stated in the original proposal, is centered in formulating alternatives and recommendations for the optimization of Program operations in Mexico.

The evaluation and analysis presented in this report is as complete as possible recognizing the complexity of the topic. However, the research was not exhaustive, due to limitations of information availability and time. The following are other limitations that must be considered by reviewers of this report:

a) Limited information is systematized.- Not only within the organizations that conduct the projects, but also by the majority of the organizations that somehow intervene in the project cycle of NAWCA. In fact, all stakeholders, in one way or another, handle a great deal of information, but in general are not used to gather, compile, orderly store information with purposes of monitoring and evaluation. For example, there is very little baseline information available.

b) Limited stakeholder and project universe – Information was collected with the cooperation of 64 stakeholders (direct and indirect) in Mexico (See pages 16-17 of this Appendix). About 66% of them are directly linked to the actual NAWCA projects. The case studies cover just 17.8% of the projects, of which only 3 are still active. We regret not to have been able to talk with certain individuals that we felt could also have provided valuable information and whom we planned to interview.

c) Limitation of Perspectives on NAWCA - The sample of people interviewed should have been significantly broader and not limited, as it was according to the terms of reference, to stakeholders that have or have had a direct or indirect relationship with the NAWCA program in Mexico. It would be valuable to interview others from other government entities, grass-root organizations, private enterprises, NGO's and international organizations that might not be related to the NAWCA program. Perhaps they would offer fresh perspectives and insight on the conservation of wetlands in Mexico and therefore on the scope and nature of NAWCA's interventions.

d) Source Limitations.- Neither the documents nor the people interviewed offer a complete information set regarding the NAWCA in Mexico.

e) Nature and quality of the information gathered - The quality, quantity and nature of the information gathered and received on NAWCA's Mexico Program operation as a whole and on specific projects, though stemming from the same basic interview guide, was not consistent given the heterogeneity of the projects, of the persons interviewed, of the organizations and of the interviewers.

f) Inclusion and interpretation of information- The set of questions that comprise the interview guide was designed in such a way that the answers provide elements that go beyond the basic response to a given question. This allows the inference of additional information that might not have been captured in asking a more direct and specific question. Information was included in the report if it could be verified and the origin of the data tracked to the source. Fortunately, in many cases the information from a variety of origins permitted data comparisons and avoidance of duplicates or errors.

## **II Methods**

### **A. Information Gathering**

The period of study was from 1991 to 2001. Work was conducted during the months from February to September of the 2002, with a second attempt to collect more interview information from January-March, 2003. Information for 100% of the financing and projects supported by NAWCA in Mexico during the period was reviewed (116 grants or financing episodes for a total of 73 projects).

The main sources of information were the documents of the NAWCA Mexico Program and the information obtained from the interviews with various stakeholders and in the field visits. As such it should be considered a first level information analysis. Data was compiled and processed. Like all evaluations of this type, the work can be divided into two major areas: information gathering and analysis. This evaluation included the following major activities:

- questionnaire development and application;
- case study selection and site visit research;
- database information and file analysis; and,
- integration of findings for development of recommendations and conclusions.

### **B. Questionnaire Development and Application**

To facilitate comparability of results we modeled the questions to be asked after the evaluation conducted for the NAWCA U.S. and Canadian Programs. Questionnaire development began with a review of the survey used in that evaluation work, and personal interviews with key stakeholders. These first two steps provided the basis for the questions that would be asked of stakeholders in Mexico.

A questionnaire guide was developed for use in the personal interviews. (See this guide on pages 5-10 of this Appendix). Not every question was pertinent to every interviewee, given the diversity of those interviewed. The questions asked

of each interviewee were at the discretion of the interviewer based on the interviewees function.

The focus areas of the questionnaire guide were the following;

1. Field operations of approved projects;
2. Accomplishment of Program goals;
3. Difficulties encountered in program implementation; and,
4. Suggestions for program improvement.

The interview guide was designed to capture comments from individuals responsible for carrying out projects as well as those at an upper levels considered to be decision-makers. The majority of the questions were "open-ended" as opposed to "forced choice or multiple choice." This is the typical questionnaire style for such research throughout Latin America. The nature of this approach is costly in terms of the time it takes to conduct each interview but the depth and richness in the responses encountered outweigh the drawbacks.

Personal interviews (both telephone and face-to-face), small group interviews, and an email questionnaire (for the difficult to locate) were administered involving NAWCA stakeholders identified by the U.S. F&WS, Division of Bird Habitat Conservation and the evaluation team. Interviewees included: individuals knowledgeable of the NAWCA, such as Mexican government officials (former and present administration); grantees; other partners participating in NAWCA projects; and a few other interested parties. More than 64 individuals responded to our request for information. The majority of information was collected through face to face interviews but some telephone and small group interviews were also conducted. An abbreviated email questionnaire was also developed and sent to 35 stakeholders. 15 completed questionnaires were received. (See this questionnaire on pages 11-15 of this Appendix).

Interviews were conducted by one or more of the 5 interviewers involved in this evaluation. To maintain the confidentiality of the interviewees in this report and as required by this type of research, names are not directly related to comments made. However, a list of all those interviewed is included at the end of this Appendix.

It is important to note that some interviews conducted were not included in the analysis as had been planned because the interviewees either had no knowledge of the Program or did not have any relation to it all. However, the interviews were conducted anyway and a few comments were useful in developing the recommendations.

### C. Case Study Selection and Site-Visit Research

Two regions were chosen as case studies for more in depth project analysis. Selection criteria were developed by the evaluation team with input from USFWS/DBHC. Eighteen criteria were used in the selection of projects for the

site-visits, including economic aspects and location in priority wetland areas in Mexico. (See Appendix 5) The final determination was made based on the number of projects in the area, the success of those projects and the continuity of NAWCA support, in an effort to utilize the evaluation budget efficiently. On that basis, the sites chosen were located in Yucatan state– the State Reserve “El Palmar” and in Chiapas state– in the Biosphere Reserves “La Encrucijada” and “La Sepultura”.

Site-visits were undertaken to visit grantee organizations to gather an appreciation "in person" of a few of the project areas (See Appendix 5). The site-visits provided a background for the physical, biological and socio-economic aspects of the projects selected, as well as their management, operational programs, strengths and weaknesses. In addition to information obtained directly during the site-visits, stakeholders were encouraged to offer additional information. As a result, a great deal of additional information was received.

#### D. Database information and File Analysis

This evaluation also includes an analysis of historic program information obtained from the U.S. Fish and Wildlife Service, Division of Bird Habitat Conservation database, as well as review of hardcopy grant file information such as project proposals and reports on individual projects.

#### E. Processing, Consolidation and Organization of Information Gathered from Questionnaires

The information obtained through the interviews and email survey was documented by the various interviewers. Then the information was subjected to a matrix analysis. This type of analysis permits the discovery of patterns and trends found only through aggregations of data, an analysis that goes beyond simple frequency analysis of responses typically done with interview data. Matrix analysis considers the interrelationships of interview responses in conjunction with findings from meetings, documents and observations.

To conduct this type of analysis, a matrix was developed to allow the linkage between the different topics within the questionnaire:

- A-Interviewee information
- B-level of familiarity with NAWCA Program
- C-NAWCA Program in general
- D-NAWCA Program Processes and Procedures
- E-NAWCA Program Operation
- F-Interventions
- G-NAWCA Project types
- H-Program/Project Linkages
- I-Perceptions of Impact
- J-Program/Project Limitations
- K-Perceptions of Conflicts or Problems

- L-Conduct and Efficiency of NAWCA Projects
- M-Lessons Learned
- N-Other suggestions

This information was utilized to identify accomplishments, conclusions and recommendations from each group of questions that seek to respond to the questions that were the basis of this evaluation. It is important to emphasize that the process of analysis, reflection and identification of conclusions and recommendations is not a mechanical or linear process. In this final stage of the evaluation all the information gathered was utilized in the analysis with the experience of each member of the evaluation team.

### **Interview Question Guide**

This guide is to be utilized by the team working on behalf of Faunam/PG7 consultants who will be conducting interviews with individuals at different organizations and in a variety of settings: face to face personal and group interviews, personal telephone interviews as well as through the use of email questionnaires. This is only a guide that serves to orient the questions that will be asked in the interviews. It is important to note that not all the questions will be asked in all the interviews; the intent is to ask all the questions that are pertinent to the subject interviewed. Many questions are similar, but with different emphasis, depending on the intent of each question. But as can be seen in review, many contribute to obtaining similar responses. The answers to most of the questions will be tabulated for analysis. Questions will be grouped with like questions within the themes of the evaluation. This will be the basis for a results matrix .

#### **Three Types of Questions**

**Type G:** General or overarching Program questions, developed for decision makers and persons not directly involved in the execution of a project.

**Type E:** Program/project specific questions, primarily for persons responsible for project execution.

**Type I:** General Program and Project questions, directed at persons responsible for project execution as well as to others as appropriate.

<b>A. Interviewee Information</b>
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- Date of interview
- Place of interview
- Name of interviewee
- Responsibility/Role of Interviewee
- Organization or institution creation date
- Length of relationship or interaction with NAWCA
- NAWCA projects involved with

<b>B. Level of Knowledge of/Familiarity with NAWCA</b>
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1-B-E Do people NAWCA'S role in the project?

2-B-G What are the requirements a proposal must meet for approval?

3-B-G How aware of NAWCA is the public?

4-B-G Is the level of funding invested in Mexico in accordance to the needs?

5-B-G Has any project been canceled/terminated by NAWCA?

6-B-G How would you describe communication between NAWCA your working group.

### **C. NAWCA Program in General**

1-C-G What is your opinion regarding major challenges to the NAWCA Program in Mexico? Is your/ Do you consider that your institution is capable to meet these challenges?

2-C-G What are the strengths of the NAWCA Program?

3-C-G What are its weaknesses?

4-C-G What does the NAWCA Program in Mexico do differently than other similar programs?

5-C-G Do you think that the goals of NAWCA are being met in Mexico?

6-C-G Currently 5% of the total of NAWCA funds are available to Mexico. Do you think that level is appropriate? Should it be increased, decreased or remain the same?

7-C-G How effective is NAWCA implementation in Mexico? Should it be increased? What is your opinion?

8-C-I Can communications within the Program be improved? How?

9-C-I Are the plans/projects developed with NAWCA being implemented?

### **D. Procedures**

1-D-E Do clear application and/or format processes for proposals to NAWCA for projects in Mexico exist? What would you change in the formats to make them more understandable?

2-D-G Have project results ever been submitted for analysis and feedback to a university or research center? What are the lessons learned?

3-D-G Are there any criteria for approval of each project? What are they?

4-D-G Would criteria be useful to you? Would they be not necessary for you?

5-D-G Who in Mexico determines which projects are selected for NAWCA?

6-D-I Has there ever been an evaluation to prioritize the importance of projects?

7-D-I Has NAWCA had anything to do with the prioritization?

### ***E. Operations***

1-E-E How does the Mexican government, federal, state or municipal, participate in NAWCA?

2-E-E What is required from the government, federal, state or municipal?

3-E-E Do NAWCA personnel ever visit projects? With what frequency? Are the visits timely? Useful? Do they visit before the project begins, during the project or post project?

4-E-I What would you not do again in a project?

5-E-I What would you do again?

6-E-I How are Mexican priorities implemented in Mexico with NAWCA funds for wetlands conservation projects?

7-E-E In terms of any equipment acquired with NAWCA funds; how is it used? After the project ends, what happens to equipment purchased with NAWCA funds?

8-E-E Could the projects be coordinated to maximize use of the equipment?

### ***F. Nature of Interventions***

1-F-I What is the Program's scope in terms of projects? Protected Areas, areas of influence or regions? How do you rate this?

2-F-I Does NAWCA have any responsibility related to the education, training and information provided to the communities?

3-F-E What is the education effect generated by NAWCA projects?

4-F-E Have community education objectives been completed satisfactorily?

5-F-G How has NAWCA demonstrated interest in the process of wetland reforestation?

6-F-E The operation of these projects and the commitments acquired require technical efficiency to help promote tangible benefits to the local residents. Have you been able to conduct wetland restoration without affecting other interests (social, economic, technical)?

7-F-I Does NAWCA influence the priorities of wetland restoration? Why?

8-F-I Does NAWCA support specific restoration projects that are inappropriate for the Mexican reality in wetland conservation and their affect on migratory bird populations?

### ***G. Project Types***

1-G-G What project activities have been most supported by NAWCA

2-G-E Describe any special protection of endemic, threatened or endangered species?

3-G-E How has NAWCA demonstrated interest in endemics, threatened and endangered species and restoration processes?

#### **H. Outreach**

1-H-E Is the participation of the community and their feedback discussed by the team to promote new projects? What has resulted? Does this process continue during project development? Is gender equity considered in the project proposal? Has anything new been learned in either part of the project?

2-H-E How are results communicated?

3-H-E What is the general opinion of the local community regarding the activities conducted by the team of each project?

4-H-E Does a plan exist for consciousness raising for the Reserve and it's importance for the local communities apart from the efforts of each project? (Reserve personnel only)

5-H-E Is there a way for the different communities to express their opinions about the projects and it's process (ideas, comments, opinions, doubts, discontent, observations)? If yes, is there a record of this participation? Is it necessary or useful?

6-H-E Would/might this be of interest to NAWCA? Is it Interesting or does it have value for you and your work?

7-H-I Describe your local and regional extension work?

8-H-I Do projects exist that influence the end outcome and objectives of other projects? Describe this relationship? Harmful or of mutual support?

9-H-I Is there free access to databases and information among projects?

#### **I. Perceived/Measured Impact**

1-I-E Is there an important impact of the conservation and development projects on the communities, their history and heritage? What is the nature of this impact?

2-I-E What tangible results of extension exist, of construction of capacities and of consciousness raising in the community?

3-I-E What impact has the information generated as a result of NAWCA projects had on the community, the region or at a national level?

4-I-E What impact have the NAWCA funded projects had?

5-I-E Could certain successful measures that encouraged interested social groups be extrapolated to other communities?



6-I-E Has there been any social group in the course of the project whose participation has been outstanding or more committed? (family, matrons, streets students, farmers or religious groups)

7-I-G Has there been improvement in any state or at the federal level in terms of wetland or migratory bird programs or in policies or legislative protection? Can we relate NAWCA to these achievements? Directly or indirectly, how and why?

8-I-G Have there been any important changes in wetland conservation planning and activities that were funded or stimulated by NAWCA?

9-I-I Are the persons trained under NAWCA funding still work with the project and do the still utilize the skills acquired?

10-I-I Today, how are the restored wetlands doing?

11-I-G Has the Mexican Government adequately/appropriately directed NAWCA funds to wetland conservation projects or have funds been directed to other priorities?

12-I-I What effect, if any, have the monitoring and inventory projects had on the goals of NAWCA in Mexico?

#### ***J. Limitations***

1-J-G What have been the principal obstacles, which have been encountered when initiating a project?

2-J-I What limitations at the legislation level have affected NAWCA funded projects?

#### ***K. Conflicts or Problems***

1-K-E Have there been cases of persons detained for conducting illegal activities such as extraction of mangrove or endangered species? Has the situation changed after that happened?

2-K-E Are there significant differences between the protected areas and the more distant areas that are not protected?

3-K-E What kinds of problems or conflicts have been encountered in the communities where projects are conducted? Do these problems transcend into the project?

4-K-E Are there persons or groups in opposition to the goals and objectives of the project(s)? Who are they?

5-K-E What do you think of NAWCA's response, if any, to conflicts and problems in the project(s)? Do you think the response is important to the NAWCA Program in Mexico?

#### ***L. Conduct, Efficiency and Efficacy, etc***

1-L-G Has the implementation of the NAWCA project(s) produced favorable results for wetlands conservation?

2-L-E Are resources managed efficiently? Are there setbacks? Have they affected project processes? Are projects administratively supervised? In detail?

3-L-E Are the economic resources obtained sufficient? Why or why not?

4-L-E In order to continue, expand or replicate project activities, how do you plan to continue once the funding has ceased?

5-L-E General opinions concerning the level of success that NAWCA has had in accomplishing its goals over the last 10 yrs to achieve an appropriate representation and distribution (through its projects) in Mexico:

- a) Distribution of wetland ecosystems.
- b) Distribution of different habitats for migratory birds.
- c) Diversity of ecosystems for migratory birds.
- d) Diversity of different habitats for migratory birds.
- e) Distribution of wetland ecosystems that protect wildlife.
- f) Distribution of other habitats for wildlife.
- g) Diversity of wetland ecosystems for wildlife.
- h) Diversity of habitats for other wildlife species.
- i) Sustainability in abundance of bodies of water.
- j) To promote in society and among institutions and other NGO's, the results of projects funded.
- k) Improve the quality of wetland habitat.
- l) Increase the quantity of protected wetlands
- m) Maximize efficiency in wetland conservation projects

6-L-E Was either your proposal or workplan modified in terms of activities? Why? In what way? What specifically was changed?

7-L-E Did your project meet its general and specific objectives?

### ***M. Lessons Learned***

1-M-E What is the main lesson learned from the NAWCA Mexico Program?  
What is still left to do?

2-M-E Is there any way to compare results with other NAWCA project beneficiaries? What has been derived? What has been obtained from exchanges of this type? How has this exchange of information taken place?

3-M-I What has been learned from these interactions?

4-M-1 Do you have a relationship with NAWCA that permits learning or the deriving of lessons from what you have done well or poorly? Is there anyone in the NAWCA Program who provides this information?

5-M-1 Have attitudes towards conservation improved?

***N. Other***

1-N-G If there were increases in funding, what steps are necessary to authorize more resources/\$ for Mexico?

2-N-1 What objectives need attention?

3-N-1 Any suggestions?

**PROGRAMMATIC EVALUATION OF THE NORTH AMERICAN WETLANDS  
CONSERVATION ACT MEXICO PROGRAM**

E-Mail Questionnaire

(An email letter preceded the questionnaire with deadline and submission instructions.)

**Definitions of Acronyms:**

NAWCA, The North American Wetlands Conservation Act

NAWCC, The North American Wetlands Conservation Council

DGVS, Dirección General de Vida Silvestre, SEMARNAT

**DBHC, Division of Bird Habitat Conservation**

USFWS, U.S. Fish and Wildlife Service

INE, Instituto Nacional de Ecología

**INSTRUCTIONS:** In the pages that follow please indicate/Mark with an X, your response for each of the following. Please provide only one answer for each question unless otherwise indicated.

- 1) When you worked on a project funded by NAWCA, where did you carry out your work?  
 In an office in a city with a population greater than 300,000 people  
 In an office in a city of average or small population  
 Directly in the field.
  
- 2) How would you classify your work?  
 Management  
 Technical  
 Other
  
- 3) During the course of the project funded by NAWCA, how often did you communicate or interact with the NAWCA Program Office (DBHC) of the USFWS in the U.S.?  
 Monthly or more frequently  
 Every 3 months  
 Every 6 months  
 Every year  
 Don't remember, don't know
  
- 4) During the course of the project funded by NAWCA, how often did you communicate or interact with the DGVS?  
 Monthly or more frequently  
 Every 3 months  
 Every 6 months  
 Every year  
 Don't remember, don't know
  
- 5) How long have you had a relationship with NAWCA, that is, have you been conducting projects with NAWCA funding?  
 Less than 2 years  
 2-4 years  
 4-6 years

\_\_\_\_ More than 6 years

6) Are you familiar with the The North American Wetlands Conservation Act (NAWCA)?

\_\_\_\_ Yes            \_\_\_\_ No

7) Have you ever read The North American Wetlands Conservation Act (NAWCA)?

\_\_\_\_ Yes            \_\_\_\_ No

8) Are you familiar with the role of the North American Wetlands Conservation Council (NAWCC)?

\_\_\_\_ Yes            \_\_\_\_ No

9) Name the three principal functions of the NAWCC:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_ Don't know

10) What are the criteria for presenting project proposals that you are familiar with?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11) Who reviews your project proposal before it is approved?

\_\_\_\_\_

12) Do you know who reviews your project during its course and after it ends?

\_\_\_\_\_

13) Please tell us your level of agreement with the following statement: The priority for wetland conservation in Mexico is to work with people in community workshops, in organization, training, and consciousness-raising, and in environmental education activities in the field."

\_\_\_\_ Completely agree  
\_\_\_\_ Agree more than disagree  
\_\_\_\_ Disagree more than agree  
\_\_\_\_ Completely disagree  
\_\_\_\_ Don't know

14) Please tell us your level of agreement with the following statement: In the short term, NAWCA funding is directed exclusively at concrete projects like hydraulic works, acquisition of land, earth moving projects, signage, and other similar actions, for the conservation of wetlands.

\_\_\_\_ Completely agree  
\_\_\_\_ Agree more than disagree

- Disagree more than agree
- Completely disagree
- Don't know

15) Please tell us your level of agreement with the following statement: Mexican conservation organizations are in no condition, nor do they have the training to work in such concrete projects as hydraulic works, acquisition of land, earth moving projects, signage, and other similar actions, for the conservation of wetlands.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

16) Was a calendar setup by the DGVS or DBHC for routine monitoring and evaluation visits prior to the beginning of the project?

- Yes
- No
- Don't know

17) Please list the 3 main strengths of the NAWCA Mexico Program:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- Don't know

18) Please list the 3 main weaknesses of the NAWCA Mexico Program:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- Don't know

19) Please list the 3 main problems you encountered with the NAWCA funded project:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- Don't know

20) Please list the 3 main lessons learned with the NAWCA funded project:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- Don't know

21) Please tell us your level of agreement with the following statements:

a. NAWCA has brought about the development of new wetland management methodologies in Mexico.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

b. NAWCA has brought about the development of innovative environmental education programs related to wetlands in Mexico.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

c. NAWCA has brought about favorable changes in attitudes and behavior in the communities that live in and around the wetlands in Mexico.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

d. Even though 11 years have passed since Mexico began its participation in the NAWCA for wetland conservation in Mexico, the results of the Program are not yet visible.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

e. There are not enough good projects to justify an increase in the level of funding directed to Mexico under the NAWCA.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

f. Mexican organizations have not demonstrated the ability to utilize more funding from the NAWCA.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

22) Is the funding that NAWCA provides to wetland conservation in Mexico:

- Excessive
- Adequate
- Barely sufficient
- Insufficient
- Don't know

23) Please tell us your level of agreement with the following statements:

NAWCA has achieved the following objectives in Mexico:

a. Promotes alliances among public agencies and other sectors.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

b. Protects, foments, restores and manages the diversity and adequate distribution of wetlands and other ecosystems that are habitat for migratory birds and other species of fish and wildlife of North America.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

c. Maintains or improves the distribution and existence of migratory bird populations.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

d. Maintains abundance of waterfowl and other migratory bird populations as prescribed in the North American Waterfowl Management Plan and other agreements and international treaties signed by Mexico, Canada, and the U.S.

- Completely agree
- Agree more than disagree
- Disagree more than agree
- Completely disagree
- Don't know

Thank you for your responses.



# PROGRAMMATIC EVALUATION OF THE NAWCA MEXICO PROGRAM

## PERSONS INTERVIEWED

(Face to face; by telephone; email questionnaire)

- 1.- Abarca, Francisco (Project Staff).
- 2.- Aguilar López, Edmundo (Project Staff).
- 3.- Alcerreca Aguirre, Carlos (Project Staff).
- 4.- Baldassere, Guy (Project Staff)
- 5.- Barrera, Juan Carlos (Project Staff).
- 6.- Benítez, Hesiquio (Mexican Government Employee).
- 7.- Bezaury, Juan (Project Staff)
- 8.- Berlanga, Humberto (Ex-DGVS Staff).
- 9.- Cannan Vicab, Alvaro (Project Staff).
- 10.- Cannan Vicab, Demesio (Project Staff).
- 11.- Carrera, Eduardo (Project Staff)
- 12.- Carvajal, María de los Ángeles (Project Staff).
- 13.- Chavarría Correa, Elena (Project Staff).
- 14.- Chuc Quintil, Nazareo (Project Staff).
- 15.- Clemente Sánchez, Fernando (Director, DGVS).
- 16.- Contreras, Francisco (Academic, wetlands specialist).
- 17.- Corvin, James (Project Staff)
- 18.- Cruz Mondragón, Sandra (ExDGVS Staff).
- 19.- Cruz Nieto, Miguel Ángel (Project Staff).
- 20.- de la Garza, Meredith (Project Staff)
- 21.- Díaz de León, Antonio (Ex-Mexican Federal Employee, academic).
- 22.- Duhne Backhauss, Enrique (Project Staff).
- 23.- Esquinca Cano, Froilan (Project Staff).
- 24.- Esquivel Coello, Carlos (Project Staff).
- 25.- Ferriz, Norma (Project Staff)
- 26.- Flores Moreno, Ramón (Project Staff).
- 27.- Gómez López, Patricia (Academic).
- 28.- Gustafson Ceder, Eric (Project Staff).
- 29.- Hernández Martínez, Pedro Javier (Project Staff).
- 30.- Herzig Zürcher, Mónica (Program Advisor, academic).
- 31.- Jenks, Brett (Project Staff)
- 32.- Jiménez González, Francisco Javier (Project Staff).
- 33.- Lelo de la Rea, Amelia (Mexican Federal Employee).
- 34.- Loa Loza, Eleazar (DGVS Staff).
- 35.- Martínez Ríos del Río, Laura (Project Staff).
- 36.- Merediz, Gonzalo (Project Staff)
- 37.- Moreno Casasola, Patricia (Project Staff).
- 38.- Muñoz Viveros, Manuel (Project Staff).
- 39.- Murphy, Ellen (NAWCA/DBHC Staff).
- 40.- Nocedal, Jorge (Project Staff).
- 41.- Palacios Castro, Eduardo
- 42.- Padrón Tovar, Teofilo (Project Staff).
- 43.- Pani Can, Francisco Javier (Project Staff).

- 44.- Pizaña Soto, José Carlos (Project Staff).
- 45.- Portilla Ochoa, Enrique (Project Staff).
- 46.- Puc Cavich, Victor (Project Staff).
- 47.- Ramírez Ruiz de Velasco, Felipe (Ex-Director, DGVS)
- 48.- Reyes Gómez, José María (DGVS Staff).
- 49.- Reyna, Mauro (DGVS Staff).
- 50.- Robles, Alejandro (Ex-Project Staff).
- 51.- Robles de Benito, Rafael (Ex-Mexican Federal Employee).
- 52.- Rojas González, Susana (Project Staff)
- 53.- Rubio, Ramiro (Mexican Federal Employee).
- 54.- Ryan, Douglas A. (NAWCA/DBHC Staff).
- 55.- Sánchez Arjona, Manuel J. (Project Staff).
- 56.- Saad, Georgina (Project Staff)
- 57.- Smith, David (NAWCA/DBHC Staff).
- 58.- Soberón Mainero, Jorge (Mexican Federal Employee).
- 59.- Tershey, Bernie (Project Staff)
- 60.- Toledo, Alejandro (Academic).
- 61.- Torres Lara, Ricardo (Project Staff).
- 62.- Valdez, Carlos (Project Staff)
- 63.- Valdez González, Claudia (Project Staff)
- 64.- Vega Picos, Xicotencatl (Project Staff).

## **Additional Interviewee Comments**

### **Comments Regarding Problems of Partner Organizations**

246 Conflicts internal to partner organizations or between organizations

- Problems with permits and other legal processes
- Problems with internal coordination of groups or organizations
- Shrinking participant groups
- Short term planning horizon due to the urge to satisfy pressing needs
- When projects are of a lengthy duration, there is a tendency to ignore the passage of time and not reach the objectives or produce the products planned
- Some organizations have not sufficiently demonstrated their capabilities for action and administration
- Counterparts are incapable or unable to match financial contributions.

### **247 Comments Regarding General Program Problems**

- In practical terms, Mexico has little voice in the final selection of projects because its priorities are potentially invalid against those adopted by the Council who has the final word.
- Centralized decision-making, from Mexico City.
- Decision-making biased by lobbying of skillfull, major NGOs and those closer to the DGVS or Government.
- Some proponents by-pass the DGVS when they submit their proposals.
- Unbalanced representation on the NAWCC.
- Mexico's voice has gone unheard by the Council.
- Difficulty of Mexican Officials in conducting meetings and/or attending them.
- There is a perceived lack of familiarity or knowledge with respect to Mexico among NAWCC members.
- Rigidity of the global rules of the Program; it is like a forced march for Mexico in terms of some of the thematic interests in NAWCA.
- Unrealistic mutual expectations of NAWCC in relation to the types of projects in Mexico and of Mexico in relation to the type of projects that can be funded under NAWCA.
- In Mexico, operational support for the NAWCA program is lacking; for closer and regular supervision of projects that could improve the timing and procedures for review of proposals.
- There is insufficient feedback sharing among the projects and none for the rejected proposals; learning and opportunities for mutual strengthening is lost.
- National level strategy planning for wetlands and the role of NAWCA is lacking.
- Institutional processes that are not discretionary are lacking.

### **248 Comments Regarding Risks or Threats to the NAWCA Program in Mexico:**

- Lack of project continuity.
- Lack of Program information dissemination impedes new partnerships.
- Dependence upon NAWCA resources may be generated.
- Projects might distance themselves from national and continental priorities.
- That the impact of the wetland conservation interventions in Mexico might not be sufficient or diluted.
- For lack of funds, abandonment of support of priority projects (for Mexico) or of continental interest (North American priorities).
- That the interest in conservation of wetlands could fall if those wetlands do not contain important duck populations, or worse still, of wetlands in general.

**APPENDIX 4**  
**NAWCA MEXICO PROGRAM PARTNERS, 1991-2001**

AES Merida III  
AFEGUA, A.C.  
Amigos de Hampolol  
Amigos de Sian Ka'an  
Arizona State Department of Game & Fish  
Arizona State University  
Asocios, A.C.  
Atlantic College Maine  
Audobon Society of Mexico  
Bay Foundation  
Biocenosis, A.C.  
Breton Outfitters  
Business Council for Sustainable Development  
Calizas Industriales, S.A.  
Camara Nacional de la Industria Pesquera (CANANPES)  
Campeche State Government  
Campo Mosqueda  
Canadian Wildlife Service  
Cante, A.C.  
CASA  
Center for Deserts and Oceans  
Center for the Study of Tropical Birds, Inc.  
Centro de Estudios Technologicos del Mar  
Centro de Investigacion y Desarrollo de los Recursos Naturales  
Centro Ecologico de Sonora  
Centro Ecologico de UNAM  
Chase Wildlife  
CICESE  
CICIMAR (Marine Science Center)  
CIDESON  
CIMEX  
CINESTAV  
Coahuila State Government  
Colegio de Postgraduados  
Comision Nacional del Agua  
Comision Nacional para Areas Naturales Protegidas  
Comision Oaxacana de Defensa Ecologica  
Comite Femenil  
Commission for Environmental Cooperation/NAFEC  
CONABIO  
CONACYT  
Conservation Mexico, A.C.  
Cuerpos de Conservacion Mexicanos, A.C.  
Defenders of Wildlife  
Ducks Unlimited of Mexico, A.C.

Ducks Unlimited, Inc.  
Durango State Government  
Earthsat  
Ecological Movement of Southern Sonora  
Ejido San Crisanto  
El Tobari Management Unit  
Environment Canada  
Environmental Defense Fund  
Environmental Flying Services  
Environmental Systems Research Institute  
Fermata, Inc.  
Fideicomiso Para el Desarrollo Rural  
Fondo Mexicano Para la Conservacion de Naturaleza  
Ford Foundation  
Friends of Pronatura  
Fundacion del Refugio de San Bernardino, A.C.  
Fundamat  
Geotecnica International  
Golden Rule Foundation  
Grupo Televisora  
Guanajuato State Government  
Homeland Foundation  
IMADES  
Industria Salinera de Yucatan  
Institute of Oceanic Technology (ITMAR)  
Instituto de Ciencias del Mar y Limnologia  
Instituto de Ecologia de Guanajuato  
Instituto de Ecologia de Xalapa, A.C.  
Instituto de Historia Natural (del Estado de Chiapas)  
Instituto de la Naturaleza y la Sociedad, S.C. (INSO)  
Instituto de Recursos Bioticos (REBIT)  
Instituto Nacional de Ecologia (INE)  
Instituto Nacional de la Indigena  
Instituto Nacional de la Pesca  
Instituto para el Desarrollo Sustentable de Mesoamerica, A.C.  
Instituto Polytecnico Nacional  
Instituto Tecnologico de Sonora (ITSON)  
International Sonoran Desert Alliance (ISDA)  
Island Conservation and Ecology Group  
ITESM-Guaymas  
ITESM-Monterrey  
Lannan Foundation  
Los Caminos del Rio de Mexico, A.C.  
Los Caminos del Rio of Texas, Inc.  
Manomet Center for Conservation Science  
Maritech, S.A. de C.V.  
Mexican National Fisheries Institute  
Municipios (numerous)

National Fish and Wildlife Foundation  
Nayarit State Government  
Oregon International Internship Program  
Oregon State University  
Organizacion Vida Silvestre, A.C.  
Pacific Institute  
Packard Foundation  
Patolandia Hunting Club  
Patronato El Palmar  
Patronato Laguna Guerrero  
Petroleos Mexicanos (PEMEX)  
Pichiguila Club  
Prairie Pothole Joint Venture  
Pro Sian Ka'an  
Procuraduria Federal de Proteccion al Ambiente  
Proesteros  
Profauna, A.C.  
Programa Regional para La Maestria en Vida Silvestre  
Pronatura Baja California  
Pronatura Guaymas  
Pronatura Mexico  
Pronatura Noreste  
Pronatura Noroeste  
Pronatura Peninsula de Yucatan  
Pronatura Sonora  
Pronatura Veracruz  
Rare Center for Tropical Studies  
Regional Fishing Cooperative of Sinaloa  
Research Center for Food and Development (CIAD)  
Reserva de la Biosfera Alto Golfo y Delta Rio Colorado  
Rice Growers Association  
Salvemos al Rio Laja, A.C.  
Saskatchewan Wetlands Conservation Corporation  
Save the Children (FAI)  
School Districts of Washington, California  
Secretaria de Desarrollo Social, Medio Ambiente y Pesca  
Secretaria de Desarrollo Urbano y Ecologia  
SEMARNAP State Offices  
SEMARNAT State Offices  
Sierra Mar Ecotourism  
Sinaloa Foundation for Conservation of Biodiversity  
Sistema Regional de Investigacion del Golfo de Mexico  
Sonora State Government  
Sonoran Institute  
Southwest Center for Biological Diversity  
Special Expeditions  
SSS Flamingos  
State of New York Research Foundation

State of Yucatan Communications and Transportation Secretariat  
State University of New York (SUNY)  
Summit Foundation  
Tabasco State Government  
Terra Nostra  
Texas A&M University  
The Nature Conservancy  
The Nature Conservancy-Texas  
Theodore Roosevelt Sanctuary  
Tinker Foundation  
Tomlinson Associates, G.I.S.  
Turner Foundation  
U.S./Mexico Chamber of Commerce-Monterrey Chapter  
UNESCO  
Unidos para la Conservacion, A.C.  
Union de Ejidos "10 de Abril"  
Union de Lancheros Flamingos  
United Nations Development Programme (UNDP)  
Universidad Autonoma de Baja California Sur  
Universidad Autonoma de Baja California-Museo  
Universidad Autonoma de Chihuahua  
Universidad Autonoma de Mexico  
Universidad Autonoma de Nayarit  
Universidad Autonoma de Nuevo Leon  
Universidad Autonoma de Sinaloa  
Universidad Autonoma de Tamaulipas  
University of Alaska  
University of Arizona  
University of Colorado  
University of Houston  
University of Rhode Island, Coastal Research Center  
University of Sonora-CICTUS  
University of Veracruz, Biological Research Institute  
University of Waterloo, Ontario Canada , Ontario, Canada  
UNNAMED  
Valley Proud, E.C.  
Virginia Polytechnic Institute and State University  
Washington State Department of Fish & Wildlife  
Weeden Foundation  
Wetlands for the Americas  
Wetlands International  
Wetlands Research Center  
Wild Coast  
World Teach  
World Wildlife Fund  
Wray Trust  
Yucatan State Government  
Yucatan Water Company

Zoologico Culiacan  
Numerous Mexican State Government Agencies  
Numerous Private Landowners



## APPENDIX 5

### CASE STUDIES

(Complete Reports are Available in Spanish Only)

#### **Summary of the El Palmar State Reserve, Yucatan, Case Study**

The “El Palmar State Reserve,” located between the Biosphere Reserves Celestun and Ria Lagartos, was created by the Yucatan State Governor with notification in the *Diario Oficial del Estado* on January 29, 1990. The Reserve encompasses 50,177 hectares of which 52% is coastal wetland.

The team visited the Yucatan July 29-August 2, 2002. During this visit, the evaluators traveled through the reserve area and its buffer zone and interviewed the following people: Biol. Rafael Robles de Benito, former Secretary of Ecology of Yucatan State and former State level SEMARNAT Delegate; Biol. Enrique Duhne B., former director of the Reserve, now a staff member of Biocenosis, A.C.; Biol. Carlos Alcerreca Aguirre, Biocenosis; Dr. Ricardo Torres Lara, Director of the Reserve; Biol. Ramiro Rubio, State SEMARNAT Delegate and former director of the Celestun Reserve; and, Agronomist Javier Pani Can, Deputy Director of the Reserve.

In addition, six nursery workers and members of the reforestation team were interviewed: Teofilo Padron Tovar, Victor Puc Cavich, Nazareo Chuc Quintil, Demesio Cannan Vicab, Carlos Esquivel Coello, and Alvaro Cannan Vicab. Agronomists Javier Pani Can and Alvaro Rodriguez accompanied the team’s travel in the area.

#### **Site Visit Activities**

1-Visit to the mangrove nursery at Sisal where 6 people were interviewed, facilities observed, and reforested areas were visited as well. The facilities are rented to the Patronato by the local ejido for approximately \$600.00USD per month.

2-Eight areas of reforestation were visited inside and outside the Reserve where mangroves had been reforested (about 2500/ha) and were in varying stages of growth. These plantings dated back to 1997 when 3000 sap/rings were planted. In 1998-99 another 49,000 saplings were planted and during 2000-2001, 51,000 saplings were planted. The majority of this reforestation work was funded by the NAWCA with collaboration with PRONARE, DEDENA, CONAFOR and local populations. Initially an area of 150 hectares was involved and more than 60 hectares have been reforested with a 60-70% survival rate.

3-A spring, Canal del Borbollon de Sisal, was also observed. This spring was unplugged and the natural revegetation process has occurred along with the return of wildlife to make use of it.

4-Restoration of canals and banks in various areas of mangrove reforestation was observed, within and outside the Reserve, along with the regeneration effects of the natural and induced vegetation.

# NAWCA Supported Seven Projects at El Palmar State Reserve, 1996-2001

These seven projects, were pioneering efforts in the restoration of the cenotes (sinkholes) and petenes that are unique in Mexico, provided a glimpse of major success. In addition, the projects generated a unique method in the process of hydrological management in wetlands including the regeneration of the three species of mangrove, increasing the possibility of promoting the process of restoration of the areas damaged by Hurricane Gilbert more rapidly and in less time. They also generated the interest and participation of local communities and other organizations in the protection of not only this reserve, but of other federal reserves and wetland areas in the Yucatan. All of this was achieved, to a great extent, as a result of the support that the NAWCA has provided.

Year	Name of Project	NAWCA/ Match	Objectives
1996	Restoration of Coastal Wetlands At El Palmar State Reserve	\$52,572/ \$59,697	Unplugging of Cenotes, construction of drains, planting mangrove
1998	Restoration -Phase II	\$99,827/ \$140,000	Same
1998	Bridges & Culverts, Coastal Roads	\$247,182/ \$625,000	Construction
1999	Bridges & Culverts – Phase II	\$498,429/ \$500,000	Same
1999	Restoration - Phase III	\$338,828/ \$470,590	Unplugging of Cenotes, construction of drains, planting mangrove
2001	Restoration of Vegetal Cover	\$153,543/ \$156,000	Restoration
2001	Concession of Federal Maritime Terrestrial Zone	\$16,498/ \$16,750	
	<b>Total NAWCA/Partner Funding</b>	<b>\$1,406,879 + \$1,968,077 = \$3,374,916</b>	

## Challenges

During our visit in the Reserve area and in becoming familiar with the many activities conducted by the Patronato's working team, we encountered a few issues that the Reserve's management must confront including:

1. NAWCA fund did not arrive in time to perform the field work during the appropriate season. This then had the affect of delaying certain phases of the administration of the budget.
2. Various legal and administrative actions need to be taken to regulate the actions of the State Reserve, in order for it to be managed and operated in a proper legal manner, including the revision, agreements with respect to, and publication of,

- the management plan, preparation of official plans for the reserve, the recording of the executive order establishing the Reserve and its official map in Public Property Registry, the development of a map of land ownership and the validation thereof by agricultural authorities, and taking procedural steps before such authorities to obtain public and surplus land by the Board of Trustees of the Reserve.
3. There are some activities that have been financed by NAWCA but have not been carried out, such as the delineation of the Reserve's boundaries.
  4. With Changes in the state government administration, resulted in the appointment of a new Reserve Director. It is too soon to tell whether these changes will impact the Reserve team or the Patronato itself in a negative manner. Certainly any interruption in the stability of the personal that works in the Reserve can have a negative affect.
  5. With the recent changes in the management of the Board of Trustees and the Reserve. It has not clear whether the work that has been done in developing the nursery, and the reforestation work, will continue.
  6. There is uncertainty among the operational personnel of the Reserve regarding their future and the continuity of the work that they have been doing.
  7. An administrative audit is being conducted through the Comptroller of the state government regarding the internal management of the Board of Trustees.
  8. The issue of whether the management of NAWCA funds will continue, and with regard to which projects, has not been defined or clarified.
  9. It has not been determined how the new state government administration is going to support and coordinate the work involved in the operation of the Reserve. A financing strategy for the Reserve needs to be prepared and implemented.
  10. The personnel who were in charge of the Board of Trustees and the Reserve in the past are of the opinion that, generally speaking, both the Board of Trustees and the Reserve were properly managed, and that the work that was performed, especially in the management of water, the nursery and the reforestation, was not only significant and exemplary for the management of the wetlands area and other wetlands areas on the Peninsula, but should be continued, for environmental, social, and reserve-management reasons.
  11. Everyone (the current and previous managers of the reserve) agrees that the support provided by NAWCA has been essential and that without it, it would not have been possible to establish and give continuity to the management of the Reserve, and that there is now a risk that the operation of the Reserve will not continue if its proper management does not also continue.

**Recommendations:** There could be various alternatives for responding to the current situation of the management of the reserve, but it is felt that the most advisable thing to do at this time is for NAWCA representatives to talk with the new management of the

Board of Trustees, the Managers of the Reserve and with state authorities (Secretary of the Environment), in order to have a clear idea of their outlook for the future with regard to interaction with NAWCA and the possibility of continuing support for the preservation of this Reserve.

## **Summary of the Case Study of La Encrucijada Biosphere Reserve, Chiapas**

“La Encrucijada Biosphere Reserve,” located on the southwestern coast of Chiapas, was created by Federal Decree in June of 1995. The Reserve encompasses 144,868 hectares of coastal wetlands. The La Encrucijada Biosphere Reserve supports a great biotic richness due to its privileged geographic location as the natural bridge between Nearctic and Neotropical regions. The nearby La Sepultura Reserve, also a NAWCA grantee, was also visited.

The site-visit was conducted between August 7-11, 2002. During that time the team traveled through La Encrucijada and its sister Biosphere Reserve, La Sepultura (167,309 hectares). The following people were interviewed at La Encrucijada and La Sepultura: Agronomist Prospero Eleazar and Ramon Flores Moreno, Reserve Technicians; Biol. Edmundo Aguilar López, Reserve Deputy Director; Biol. Francisco Javier Jiménez González, Reserve Director; Biol. Carlos Pizafña Soto, Director of the La Sepultura Reserve; José Dolores Méndez, Nueva Flor Community Leader; Don Luis, Secretary of Rio Coapa Watershed Commission; Rodolfo Cruz, Santiago Cruz, and Hedilberto López, Members of the Technical Aquaculture Fishing Cooperative from Pijijapan; and, Pedro Martinez Hernandez, Technical Coordinator of La Sepultura Biosphere Reserve.

## **Site Visit Activities**

1-In Pijijapan the team visited the shrimp farming zone and the mangrove areas impacted by Hurricane Paulina, where estuary cleanup efforts have taken place. Two other communities were also visited: Nueva Flor and Guanajuato, located on the banks of the Coapa River.

2- The agro-forestry activities at three different sites were observed; reforestation the length of the River with different types of trees (cedar among others). This work has been underway since 1999. In 2000 they planted one kilometer with a density of 1000 saplings per hectare. As part of the project, nurseries involve the local communities, who form the watershed commission under which watershed conservation workshops are conducted. Work along the rivers and wetlands was verified.

3-Opinions of the workers in these Reserves and of the local inhabitants was gathered regarding the actions conducted and the benefits gained.

4- At the La Sepultura Biosphere Reserve, Agronomist Pedro Martinez Hernandez, the Deputy Director of the Reserve guided the team through the area including a visit to the Rio Zanatenco watershed, where a Phase II NAWCA project is underway. In other watersheds of the Ocuilapa and Orcones Rivers, construction activities are underway to mitigate erosion from rainwater complicated by the lack of vegetation and the steep inclines. The construction of two sites where a type of terraces have been constructed, were observed.

# NAWCA Supported Four Projects at La Encrucijada Reserve, 1991-2001

Four projects have supported strengthening the management not only of the Reserves per se, but also the generation of a strategy for watershed management, considered now as a model for the entire state of Chiapas. The evolution of Reserve management brought about watershed management, within and around the Reserve, where there are 9 watersheds; 3 shared with the Biosphere Reserve El Triunfo and 3 shared with La Sepultura, which carry freshwater to La Encrucijada.

Year	Project	NAWCA/ Match	Objectives
1991	Evaluation, Operation & Management of La Encrucijada Reserve	\$48,550/ \$153,064	Management and Operation of the Reserve
1997	Conservation & Integrated Watershed Management- Flow of Water Research Study	\$108,779/ \$113,111	Same plus research
1998	Project Phase II	\$90,251/ \$96,853	Same
2001	Project Phase III	\$121,375/ \$151,640	Fishing Regulation & Watershed Management
<b>Total NAWCA/Partner Funding</b>		<b>\$368,955 + \$514,398 = \$883,353</b>	

### Project Activities

- 1- Work with waterfowl, developing the bird list and location of nesting areas;
- 2-Seven community zoning plans have been developed and as a result, an ecological restoration decree exists between two of the communities, Araguaya and Tonalá. The community zoning plans are also socio-economic assessments as well territorial maps. They are developed in workshops after which the participants are organized in small communities to coordinate action/activities with the Reserves.
- 3-The work in the Reserve for the future is to continue w/Phase II of the project and to solicit additional support to implement Phase III in other watered areas of the Reserve. To date the activities or objectives of the future proposal remain unclear. The communities higher in the watershed have expressed interest in continuing with the activities, but not with developing a fishing zone plan.
- 4- A series of workshops were conducted to share information with the communities; evaluations were conducted and presented to the communities where all of the actors within the wetland were recognized and that eventually formed a Commission. There is a strong relationship with local academic institutions that are interested in working in the Reserve.

## Challenges

1. The Reserve management has been evolving toward the management of the watersheds of the 22 rivers that contribute water to the Reserve. However, faced with such an ambitious goal, the workers in the Reserve have preferred to advance step by step, since there are not enough personnel to cover more areas or a budget to accomplish this feat, although, in view of the level of deterioration, and the increase of the human population, there is a need to establish a growth strategy, and this is a matter of concern for the reserve personnel.
2. The evolution of the Reserve management as well as the results of various workshops have favored increasing the awareness of the need for the management of the watersheds. The Ría Coapa Basin was the one in which the work was most necessary, because of the deterioration and other problems linked to the impact of Hurricane Paulina in 1998. Within the Coapa basin, its middle portion is the most important, in part, so as to stop the erosion, which was calculated at 20 tons annually of sedimentation and a regeneration rate of 50 years to restore the previous conditions of the wetland.
3. Although it may appear that the project has been evolving in a haphazard manner, in reality, the need for knowledge and the existence of an interest on the part of the scientific community of the Autonomous University of Mexico (UAM)-Xochimilco, has resulted in a series of projects in which various institutions participated, such as The Autonomous University of Chapingo, UAM-Iztapalapa, with barymetrical and hydrological studies, ECOSUR and UAM; they are now the promoters of projects that are financed at their expense and that benefit the operation of the reserve.
4. Unfortunately, a tense relationship exists between the National Commission for Protected Natural Areas (CONANP) that manages the Reserve and the Institute of Natural History and Ecology of Chiapas (IHN, the NAWCA grantee). This relationship, however, must be maintained in order to continue utilizing the NAWCA grant funds. Although the management has always been plagued by bureaucratic problems, this has been an especially difficult year, since they began to use funds from The Nature Conservancy (TNC) for their own purposes.
5. The Reserve has two principal financiers, The Nature Conservancy and the NAWCA, but there has been a reduction of financing from TNC, which has led to serious financial repercussions. Also, with regard to management, obstacles have been created for the Reserve, but the combination of both resources has allowed continuation of activities.
6. Another source of financing was Philip Morris (Marlboro cigarettes) which decided to cancel its support to the Reserve due to internal politics.
7. Progress has been slow and involves short-term projects, in the attempt to create and operate a single watershed model.
8. Finally, our conclusion is that, over the short term, financial problems might be encountered, especially when the support from NAWCA terminates. The narrowness of the vision of the coordination with TNC, and the problems with the IHN, might lead to the reduction of activities with regard to its watershed model.

Also, it will be difficult to expand into other basins, where an interdisciplinary team will be needed, whose aspects are not worked on by the universities or other local institutions.

*Summary of the La Sepultura Biosphere Reserve,  
Chiapas, Case Study*

**NAWCA Supported Projects at La  
Sepultura Reserve, 1998-2001**

Year	Project	NAWCA/ Match	Objectives
1998	Conservation & Integrated Watershed Management	\$86,720/ \$114,155	Bird surveys, zoning, mapping
2000	Project Phase II	\$90,251/ \$96,853	Same
<b>Total NAWCA/Partner Funding</b>		<b>\$176,971 + \$211,008 = \$387,979</b>	

Phase I - Project Activities

1. In November 1997, the first Threat Analysis workshop was conducted, in order to identify the activities that have serious impacts on natural resources (of man-made or natural origin) in the La Sepultura Biosphere Reserve and its area of influence; four environmental systems were analyzed: temperate deciduous forests, mesophyllous montane forests, tropical forests and hydrological systems.
2. With this as the background, and because of the heavy rainfall caused by tropical storm Javier on the coast and mountains of Chiapas in 1988, an analysis was conducted of the hydrographic basins located in the La Sepultura reserve. As a result of this study, it was determined that the basins (Las Arenas and Zanatenco) that are located in the Isthmus - Coastal region of Chiapas suffered



serious damage due to landslides, rockfalls in the mountains, the loss of primary plant cover in some areas and of wildlife, principally in the higher parts of the mountains.

3. Another activity has been the work with waterfowl, with the list of birds and the locating of nests. Another activity conducted was to establish 7 ordinances in the La Providencia, Las Palmas, Sierra Morena, Estación Mojarras, 20 de Noviembre, Nuevo Progreso and Punta Flor ranching communities.
4. From the methodology realized in adopting community ordinances, we know that, to perform the environmental and socioeconomic analyses, inventories were made of reference data and field data. Three workshops were conducted for the description and analysis of the data, one on Evaluation and data analysis, the second on Evaluation and Vulnerability of hydrographic basins (Las Arenas and Zanatenco) and the third on planning and restoration in vulnerable and at-risk areas.

### **Phase II - Project Activities**

1. The Rio Zanatenco basin is located in the central part of the Reserve. It has a surface area of 193,994 km<sup>2</sup>, of which 38,370 km<sup>2</sup> belong to a core area of the Reserve and 161,383 km<sup>2</sup> to a buffer zone, and, therefore, it can be considered to be representative of the closed (basin) productive systems that make up the reserve. It should also be said that it is a coastal basin typical of southwestern Mexico.
2. A study underway made a hydrological classification of the Rio Zanatenco basin as a first step in the evaluation of the productive capacity of the system. This study was made based on the physical characteristics of the system; the objective was to identify the hydrological and agricultural management actions taken in the basin as well as the natural hydrological patterns, and to establish the cause-and-effect relationship of the currently-existing degradation processes and their spatial distribution that will permit the sustainability of the population settled therein and the continued provision of environmental services to cities such as Tonalá and Arriaga.
3. The basin is composed of 11 communities. The towns are the Miguel Hidalgo 1 and Piedra Ancha (Nueva Costa Rica) cooperatives and the La Providencia, San José, El Zapote and Las Guacamayas ranching communities, although the latter 3 are included within La Providencia for administrative purposes; El Naranjo, Santa Rosa, Calzada Huachipilin and La Laguna, which have a total population of 2643 inhabitants. The socioeconomic characteristics of the population are presented in detail in the diagnosis section.
4. The principal problem in the area is the use and extraction of water, as we know that the rate of return of water to the basin is 63%. In other words, the city of Tonalá extracts more water than it returns, with a billed volume of 123,265 Mm<sup>3</sup>/year and an estimate of an additional 10% shared between leaks and illegal taking; only 63% of this water returns to the basin through the dumping of wastewater. This phenomenon, when combined with the natural system of seepage on the plain, causes the runoff to the lagoonal system to be very sparse, resulting in a prevailing influence by the sea, the result of which is a

reduction in the catch of shrimp and fish due to the high salinity level, which negatively impacts the fishing industry and increases the lack of control of fishing activity.

5. Up to this date, 3 community ordinances have been established, as part of Phase I, and, with regard to Phase II, ordinances will be established in ten communities closest to the Rio Ocuilpa and Rio Horcones.
6. As a result of the threat workshop in 1997, the expansion of the reserve, by the incorporation of part of the basin, was considered, and, therefore, a series of diagnostic workshops was begun, and, subsequently, in the projects financed by NAWCA, the community diagnoses were performed, which have a territorial regulatory process, in which the community participates. In Phase I, 3 community diagnoses were performed. For Phase II, ten communities from the two basins were incorporated, and the avifauna studies and a hydrographic study of the Rio Zanatenco were continued.

### **Challenges**

1. The Sierra Madre de Chiapas has been subjected to various pressures characteristic of the different ecosystems of the country, such as extensive ranching, slash-and-burn clearing of land for farming and ranching expansion and logging operations. The La Sepultura Biosphere Reserve is located in the northwest portion of the sierra, where a series of watersheds begin, which connect to form lagoonal systems, such as Mar Muerto ("Dead Sea") and the Joya Buena Vista, in the municipalities of Arriaga and Tonalá, respectively.
2. These wetlands have been classified as some of the most important in the country, due to their high primary productivity. However, they are suffering obvious eutrophication and sedimentation processes due to the reduction of the inflow of fresh water from the upper basins and the low flow of salt water. According to comments made by personnel in the reserve, it is calculated that in 5 years there will be severe water shortage problems in the cities of Arriaga and Tonalá (Interview with Carlos Pizaña S. and Pedro Martínez Hernández. August 9, 2002).
3. Construction of ditches and terraces has taken place with participation of the Mexican army. However there was very little participation by the community. An evaluation needs to be made of their effect on soil conservation.
4. The major environmental problem in the Reserve and its adjacent areas is the recharge of aquifers, the lack of water and the effect thereof on the fishing industry.
5. The fishing ordinance has not been implemented, despite having been an objective of Phase I.
6. The bird study activities have made it possible to delineate areas of special protection for species and it is expected that in the future actions will be taken to implement them.
7. There is a natural technical dependency upon La Encrucijada, with both positive and negative effects.

### **Conclusions Regarding Both Reserves.**

The difference of approximately 7 years in the creation of watershed management, between one reserve and the other, makes obvious the lack of a comprehensive strategy for the preservation of Protected Natural Areas in the State, and actions necessary for the preservation of biodiversity have not been planned. Instead, more routine work has been done than work aimed at preventing ecological disasters.

La Sepultura definitely confronts more difficult man-made problems than La Encrucijada. The lack of freshwater in the near future threatens the basin, and no actions have been planned by the municipal government or CONANP to exert pressure for resolving this problem.

With regard to the actions taken by La Encrucijada, due to the large area of the 9 basins, action has been restricted to specific areas involving only a few hectares in one basin.

The resources provided by NAWCA have been optimally managed by the managers of the two Reserves. They have been able to provide continuity, despite delays in the receipt of the funds.

### *Recommendations*

To continue to provide NAWCA funds to projects in both reserves. However, it is necessary for them to clarify their plans, and how they will achieve the conservation (Biodiversity Strategy) of these important wetlands in Mexico. It is also necessary to expand the projects and, therefore, it is necessary to establish a funding plan, in order to achieve the objectives. The role of NAWCA will be essential in future work at these Reserves.

## APPENDIX 6

### Resume

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Areas of Expertise: Planning and management of protected areas and wildlife; development of research and evaluation projects, technical assistance, training, consulting and orientation, principally in the area of ecology and conservation of natural resources; publications and organization of training courses and workshops.

#### Projects and Publications

- 1) "*The Economic Importance of Wild Vertebrates in Mexico*" 1995 Published by CONABIO & PG7; 170 pp.
- 2) "Activities of the Secretariat of the Mexican IUCN Committee" (Responsible: current) and associated liaison and support for the Mesoamerican National Committees of the IUCN.
- 3) "Up-dates of the Information on Natural Protected Areas in Mexico" for the World Conservation Monitoring Centre (Responsible: several years until 1996)
- 4) " Incremental Costs Analysis for the Sierra Gorda Biosphere Reserve, Queretaro" for the Ecological Group Sierra Gorda I.A.P. and the UNDP (Responsible) 2000
- 5) "*Natural Protected Areas of Mexico*" Report for the IUCN& InterAmerican Development Bank (Responsible). 1991
- 6) "Technical Assistance to the Government of the State of Tabasco for the Creation of a Foundation and the Center for Endangered Species Studies" (Responsible) 1994
- 7) "Coordination of the Elaboration of the Mexican Biodiversity Strategy" for CONABIO (Responsible)1996- 1998

- 8) "Development of a Strategic Analysis for the Eventual Operation of SEAWEB in Mexico" (1999-2000) generating the final report "*Marine Conservation in Mexico, A Strategic Evaluation*" (Coauthor) for Sea Web
- 9) "Description of the ecological conditions prevailing in the region called the Mayan Rainforest Corridor" (Responsible) For the Government of the State of Chiapas. 1992
- 10) "Proposed Management Plan for the Montes Azules Biosphere Reserve, Lacandon Forest Chiapas" (Responsible) For the Government of the State of Chiapas 1991
- 11) "Development of a Methodological Guide to conduct public consultation workshops" (on conservation of natural resources) for UNDP (Responsible) 1998
- 12) "Feasibility Study of the creation of the Centre for Strategic Studies for Sustainable Development" currently CESPEDES for Mexico's Business Coordinating Council (CCE) (Responsible) 1994
- 13) "Study for Recharge of the Aquifer in the Ecological Conservation Area of the Federal District" for the Ministry of Environment of the City's Government (Participant) 1998-1999
- 14) "Financing and Obtaining Support and Funding for the Natural Protected Areas in Mexico: 31 case studies of selected areas" (Responsible) for the National Protected Areas Council (CONANP) and the Mexican Fund-for the Protection of Nature. 1999
- 15) "Development of the Natural Man Strategic Program " (Co-Responsible) 1998
- 16) "Development and Initiation of a Strategy for the Protection and Conservation of the Biodiversity Present in the Insular Territory of Mexico" (Responsible) for the Mexican Government. 1993-1994
- 17) "Listing of the Wild Floral and Faunal Species of Mexico" for the independent NGO Agrupación Sierra Madre, S. C. (Responsible) 1993
- 18) "Organization and Conduct of Training Courses for Natural Protected Areas Personnel" (Responsible) for people belonging to State and Municipal Governments. Fundación Xochitla & FUNDEA A.C: 1990-1992
- 19) "Organization and Development of Certificate Programs (Diplomates), Round Tables and Diverse Fora for Discussion on Sustainable Use, Biodiversity, Conservation, and Natural Protected Areas" (Co-Responsible) with different entities like IUCN, Mexican IUCN Committee, Universalía, UAM-X, Opciones, Reuters Foundation, etc.
- 20) "Proposal for an Evaluation and Monitoring Methodology for the Management of Natural Protected Areas for Mexico" for World Wildlife Fund-Mexico" (Responsible) 2000
- 21) "Proposal for the Establishment and Management of a Natural Protected Area in the Monte Negro y Las Trincheras Sierra, State of Morelos" for the State Morelos Government (Responsible) 1995-1996

- 22) "Integration of Information System on the Wildlife Traffic and violations / transgressions of Natural Protection Legislation for the PROFEPA (Law Enforcement Agency and Federal Environment's General Attorney) (Responsible) 1995-1996
- 23) "Independent External Evaluation of Natural Protected Areas. GEF, World Bank, Mexican Government, Mexican Fund for Conservation of Nature- " (Co-Responsible) 2000
- 24) "Signage Project for the Chajul Biological Station, Montes Azules Biosphere Reserve its immediate surroundings and accesses, Selva Lacandona, Chiapas. For Conservation International (Responsible) 1993
- 25) "Project: Integration of an Information System on Legislation Relative to Taking Advantage of Elements of Wildlife in Protected Natural Areas of South Eastern Mexico" for Pronatura, A.C. (Responsible) 1996-1997
- 26) "Project for the Commission for Environmental Cooperation: Assuring the Biological Richness of the Continent: Towards the Effective Conservation of the Biodiversity of North America" (Co-Responsible) 2000
- 27) "Pilot Project for Training for Rural Communities Living in the Wintering Area of the Monarch Butterfly" (Co-Responsible) with Consejo Nacional de la Fauna, later with IMERNAR A.C. with the support of the USF&WS 1996-1998
- 28) Regular contributor of articles and notes for TO2 "With Science and Conscience" (Ecology section, weekly entries, internet information service, and WWW site (Responsible) 1999-2000
- 29) "Conduct of the Pre-feasibility Study and the Feasibility Study for the Establishment of a Network for Sustainable Development" for United Nations Development Program (Responsible) 1993-1996
- 30) Review and analysis of the proposed wildlife legislation submitted by SEMARNAP to the Congress. For Ecology Commission of Senate(Co-Responsible) 2000
- 31) "Training Workshops on Monitoring and Evaluation of Projects and Organizations in Latin America and the Caribbean" in coordination with Universalia, the Inter-American Development Bank and the IUCN (Co-Responsible; Vigente) 1998-
- 32) "The Red Book. The Extinction Crisis Face to Face" for CEMEX, with SSC-IUCN and Agrupación Sierra Madre on endangered species of the world (Co-Responsible) 2001
- 33) "Critical Evaluation of the Small Grant Program in Mexico" for the United Nations Development Program" (Responsible) 2001
- 34) "Notebooks on the Integration of Environmental Policies. Towards an Integrated Environmental Policy on Water" for the Secretariat for the Environment and Natural Resources (Responsible) 2002

35) "Development of the Strategy for the Biodiversity of Morelos State" (Participant; Current) with the State of Morelos', Congressional Commission on Ecology, CONABIO and other actors 2001-2003

36) "CITES Gap Analysis" for TRAFFIC North America (Responsible; Vigente) 2002-2003