Case Study on the Consolidation of El Pinacate y Gran Desierto del Altar Biosphere Reserve, Mexico

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Background

The El Pinacate y Gran Desierto del Altar Biosphere Reserve, better known as the El Pinacate Reserve, was decreed by the Mexican Government on June 10, 1993. Located in the heart of the Sonora Desert, one of the world's most biodiverse deserts, it has an extension of 714,556 ha, distributed among two core areas and a buffer zone. The reserve includes geological remnants reflecting what was once intense volcanic activity, a large volcanic shield, 10 large craters, and more than 400 ash cones. Surrounding this volcanic area is the largest active dune zone in North America, with some dunes reaching a height of 200 meters or more. The reserve shelters around 560 species of vascular plants, 41 species of mammals, 237 species of birds, 42 species of reptiles, 4 species of amphibians, and 2 native species of freshwater fish.

The main threats to the reserve are the introduction of exotic species, poorly planned highway infrastructure, poaching, extraction of water from the subsoil, and the illegal extraction of petrous materials.

Within the reserve there are from 150 to 200 inhabitants distributed among six human settlements, representing a population density of less than 0.02 inhabitants per square kilometer. Inside the core area of the reserve there is only one settlement consisting of four persons. The main productive activities in the reserve are concentrated in the primary sector; these include farming, raising livestock, selling firewood, and mining rocks and minerals (morusa, stones, and sand). It should be mentioned that these activities occur on a reduced scale, due to the low population density and limited potential for sustaining them, with the exception of rock and mineral extraction (not occurring at this moment, but with high potential given the availability of this resource.) In addition, some places within the reserve have great cultural significance for the Tohono O'otham indigenous group.

Presently, the reserve is being managed by the National Commission of Natural Protected Areas (Comisión Nacional de Areas Naturales Protegidas - CONANP), an office of the Secretariat of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales - SEMARNAT). At the state level, since 1994 the reserve has maintained close relations with the Institute of Environment and Sustainable Development of the State of Sonora (Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora - IMADES- formerly the Sonora Ecological Center) through the Parks in Peril Program (PiP), administered by The Nature Conservancy (TNC) with funding from the U.S. Agency for International Development (USAID.) Currently the reserve maintains collaborative relationships with an important number of organizations in Mexico and the United States.

The PIP program was launched in 1994, providing funds for basic management of the area. The Mexican Government allocated additional financial resources at the end of

1995, and currently more than 90% of management funding for the reserve comes directly from the Mexican Government.

The Parks in Peril Program at the Site

From 1994 to 2000, the PiP Program financed activities to consolidate the reserve. Between 2001 and 2003, funding focused on the development of conservation models specifically aimed at management and control of invasive species and monitoring that could be shared and applied to other priority sites in the Sonora Desert.

When the program first started, goals centered on basic management activities at the reserve since it had just been decreed in 1993, right before the PiP Program began. In general, goals related to obtaining the maximum score on the Site Consolidation Scorecard.

When the PiP Program was initiated in 1994 and until 1995, the reserve was managed directly by the Sonora Ecological Center under the authorization of the Mexican Government. However, the Coordinating Unit of Natural Protected Areas (today CONANP) assumed direct management of the site in 1995. This fact provided long range security for the reserve as resources from the Mexican Government were added to PiP funds, a permanent staff was established and administrative capacity increased at the federal level.

The Site Consolidation Scorecard

The Scorecard was applied during the preparation of evaluations and annual work plans. Reserve staff (director and deputy director) participated in the process, along with IMADES staff and TNC specialists. Scorecard application was used as a tool to redefine the activities of the next annual work plan.

Regarding complementary conservation tools, one of the tools of great utility within the PiP Program was the Site Conservation Planning methodology (developed by TNC), which made it possible to focus the strategies and activities envisioned in the annual work plans toward improvement of biodiversity health and threat abatement. These tools did not, in themselves, improve the effectiveness of the Scorecard, but they did help to produce consolidation outcomes having greater linkage with biodiversity conservation and mitigation of main threats, as was the case with the management program, the monitoring and science needs assessment program, zoning, assessment of training needs and the policy agenda.

With respect to PiP tools and procedures other than the Scorecard, during the Program's beginnings in the El Pinacate Reserve, the Coordinating Unit of Natural Protected Areas adopted the processes for annual evaluation and preparation of the annual work plans, resulting in their multiplication at other sites not included in the PiP Program. Some of these processes are still continued and have been complemented with objectives-oriented project planning methodology (ZOPP).

Results of the Parks in Peril Program

Basic Protection Activities

The most significant results in terms of basic protection activities were the restoration and outfitting of the reserve biological station, training for the staff and design and implementation of the Operation and Protection Program. As a consequence, institutional presence at the site was strengthened and the frequency and magnitude of illegal activities decreased by more than 60%. However, although there is a permanent corps of basic staff at the site, which is a very important achievement, it is not large enough given the size of the reserve. At this moment, the only way to increase staff is to obtain other sources of external financing.

Long-Term Management

A series of achievements were obtained for the long-term management of the El Pinacate Reserve. First, the management program was prepared in 1994 and then updated in 2000 when zoning was incorporated, and reviewed by the academic sector and community representatives. In addition, the monitoring and science needs assessment program was formulated and implemented, based on the Measuring Conservation Success methodology. However, although a monitoring program exists and is being implemented, we are not yet able to monitor all the indicators identified due to lack of funds.

On the other hand, it is important to mention that the long-term management of this site has lent greater viability to adjacent reserves, such as the Alto Golfo de California y Delta del Río Colorado Biosphere Reserve, in Mexico, and the Organ Pipe, Cabeza Prieta, and Gold Water reserves, in the United States. Together these reserves form the heart of the Sonora Desert.

Long-Term Financing

One of the main achievements in this area was the Mexican Government's allocation of a permanent annual budget for the reserve. However, since this is still not enough to improve management, a long-term financing program was formulated. One of its strategies was to promote the creation of a local nongovernmental organization (NGO) to raise funds for basic operations. Although the ONG was formed in 1999, it is not functioning right now due to its inability to cover basic operational needs.

In the case of IMADES (the partner organization of the reserve and TNC in the PiP Program), although it did not prepare a long-term financial plan, it does receive operating resources from the Sonora state government as a dependent but decentralized agency of that government. As such, IMADES was a support organization for the reserve, making it possible to apply most of the financial resources directly to strengthening of the reserve.

Site Constituency

The main achievement with respect to community participation in the reserve's management was the establishment of the Technical Advisory Council (TAC), comprised of representatives of the different sectors involved with the reserve. The TAC forms part of the reserve's organizational structure and is a permanent entity providing opportunity for the community to participate in consultations related to the different processes of the reserve, such as review and updating of the Management Program, to cite just one example. Nevertheless, the functioning of the TAC has not

been consistent over time, in many cases due to a lack of resources enabling local inhabitants to attend the meetings. Strengthening of support from local groups has also been hindered by the long distances of up to 300 km between villages, the lack of effective communication mechanisms, the sparse population in the area, and residents' loss of interest due to the difficulty of finding productive alternatives because of the reserve's extreme physical and climatic conditions.

Lessons Learned and Recommendations

The PiP Program definitely played an important role in the reserve management process, not only contributing to its consolidation, but also providing the initial boost right after it was decreed to keep it from becoming a paper park. Some of the lessons learned during this process and recommendations that might improve the PiP Program are the following.

The Scorecard Application Process
Although the application of the Scorecard genuinely functioned as a strategic guide for the reserve, orienting programming and directing efforts to consolidate conservation capacity, the Scorecard application process was not used in discussion meetings. Instead, each participant reviewed the annual evaluation document prepared beforehand by the project official. Furthermore, discussion of the Scorecard by reserve staff was generally limited to the director and deputy director. This may have resulted in a fragmented vision concerning the progress of the consolidation process, shared by few members of the staff. We recommend that a section on the application process be included in the manual on "Measuring Success in the Parks in Peril Consolidation Scorecard" (scoring table), stating the need for this process to be highly participatory.

How to Improve Scorecard Indicators
The Scorecard may not reflect the consolidation of the site even if many of the indicators reach level "4", since some benchmarks involve having a particular product and beginning certain implementation activities. A qualitative leap required to move from level "4" to site consolidation may or may not be achieved. In general, Scorecard benchmarks focus on progress in the planning processes related to those indicators more than on their implementation. We recommend revising the benchmarks so that the higher levels between "3" and "5" reflect a stage of implementation more than planning. For example, the benchmark for a score of "4" in the "Monitoring plan development and implementation" indicator is "monitoring plan is completed; accurate, threat-related monitoring variables being monitored." In this case, a score of "4" means that the site is considered to be consolidated just because there is a monitoring program and some threat-related variables are being monitored. It may be advisable to assign a score of "3" to this level rather than a "4", which should represent a higher level of implementation.

Some indicators do not fit the actual situation of the reserves. For example, in El Pinacate Reserve, the potential for compatible use activities by communities is low (due to its natural environmental condition, or fragility), making it very difficult to obtain a score of "4" or "5". This means that, in terms of this indicator, a site may be consolidated even with a score from "1" to "3". Another example, related to long-term financing, is that certain protected areas such as El Pinacate Reserve are located within ecoregions important at a global level, and in turn have important biodiversity within

the ecoregion, but in comparative terms cannot compete with the biodiversity of other reserves, such as those found in tropical zones. This makes them comparatively less charismatic, and thus with fewer opportunities for funding.

A point to consider is that the Scorecard is designed to measure site consolidation in terms of its capacity for conservation, not the impact of conservation. It is possible to have conservation capacity but nonetheless not progress toward the conservation goals of improving or maintaining biodiversity health or mitigating threats to that biodiversity. It would be important to include some indicators aimed at measuring conservation success based on conservation objects and threats. Presently, TNC uses the methodology of Measures of Success in Site Conservation Planning (which was applied at the El Pinacate Reserve) to measure the success of conservation actions at the site, which could be used to evaluate this type of indicator.

Key Factors for Sustainability
In addition, there are several factors that can contribute positively or hinder the achievement of sustainable impact over time. Putting to one side the availability of funds as a key aspect, below is a list of factors whose presence or absence can promote or hinder sustainable long-term achievements:

- On occasion, the very situation of a reserve can facilitate or hinder long-term achievements. For example, in El Pinacate Reserve, the extreme climatic conditions and little availability of natural resources for inhabitants limit the number of potential low-impact production alternatives. In the face of this absence of alternatives, inhabitants tend to continue carrying out traditional activities. Paradoxically, these extreme conditions also limit the growth of traditional activities, thus keeping many threats to biodiversity at a relatively low level.

- Constraints of a legal and administrative nature at the federal or state level that complicate the implementation of certain management actions. There are also cases where management actions conflict with the development plans of the different levels of government. Similarly, there are legal restrictions that make it impossible for the site to develop and implement actions for generating and raising funds. Some of these constraints have already been detected and legal mechanisms are being sought to eliminate them.

- Because of excessive federal government bureaucracy and regulations regarding the release of economic resources to reserves, use of the funds as programmed is delayed and spending is rushed through at the end of the fiscal period. Funding from the PiP Program was a great support in buffering these effects and facilitating a flow of management activities throughout the year.

- Uncertainty about the continuity of policies and financial and administrative aspects affecting the administrative units of the protected areas, due to changes in the government on which these units depend. Such changes can lead to budget cutbacks or increases, changes in organizational structures, changes in high-level staff and changes of vision and conceptualization

regarding the natural protected areas. These changes can have a positive or negative effect on achievements previously obtained by reserve staff. No matter what, this uncertainty makes it impossible to ensure the continuity of programs beyond a six-year threshold.

- Staff turnover at middle and lower levels (project coordinators, park rangers, administrators) is sometimes high, which signifies lost training investments and staff that never gets beyond the earliest stages of the learning curve.

The Multiplier Effect of Results and Impact on Other Sites and Systems
The positive influence of the PiP Program on planning and management processes for natural protected areas in Mexico extended beyond the sites included in the program.

This basically occurred because PiP methodologies (threat analysis, evaluation systems and preparation of annual work plans) applied at program sites were exported by the staff to other reserves in Mexico, and then adapted and complemented with other methodologies over time. Another way in which the PIP Program influenced these processes was through the training provided for a significant number of people who now hold managerial positions at many of the country's protected areas.

The Parks in Peril (PiP) Program began in 1990 as an emergency effort to safeguard the most imperiled natural ecosystems, ecological communities and species in the Latin American and Caribbean region. With U.S. Agency for International Development (USAID) funding administered by The Nature Conservancy (TNC), PiP has worked through 30 non-governmental partner organizations to shepherd a collaborative effort with government agencies and stakeholders to consolidate the technical, human and financial resources necessary to sustain conservation of these sites into the future. By 2002, PiP had fostered protection, management, financing, and local support of 37 protected areas in 15 countries, covering 11.4 million hectares.

To substantiate and illustrate lessons learned and recommendations about the progress made towards consolidation of PiP sites from 1990 to 2002, ten case studies were developed by TNC staff and partners. This document presents one of these case studies.

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