

The Process of Developing a Management Plan for the Luis Peña Channel No-Take Natural Reserve in Culebra, Puerto Rico: Lessons Learned



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INTRODUCTION:

At the October 2, 2002 U.S. Coral Reef Task Force meeting, NOAA and Puerto Rico's Department of Natural and Environmental Resources (DNER) announced five initiatives to strengthen Coral Reef Management in Puerto Rico. One of these initiatives included advancing coral reef management in Puerto Rico's Natural Reserves system. To contribute to this initiative, NOAA and DNER agreed on two specific objectives to strengthen management of coral reefs in the Natural Reserve system. One of these objectives was to develop the Luis Peña Channel No-Take Natural Reserve as a Best Management Practice model for cooperative protected area management by utilizing a collaborative process involving various local stakeholder groups to develop a management plan for the Luis Peña Channel No-Take Natural Reserve. This no-take reserve was established after many years of community support for its designation and is located on the island of Culebra (See map 1) which is 27 km east of Puerto Rico and is 11 x 5 km.

In 1990, the Asociación de Pescadores de la Isla de Culebra (Fisher's Association of Culebra Island), proposed the establishment of small no-take fishery reserves as a tool for recovery of depleted fisheries stocks. After a site selection process and negotiations led by the community, the Puerto Rico Planning Board designated the Luis Peña Channel Natural Reserve in July 1999. Through an administrative order, the DNER Secretary further designated it as a no-take fishery reserve in September 30, 1999 prohibiting the extraction of marine resources within the Natural Reserve's boundaries.

Hernández, et al, described the status of the reserve (See map 2) as of 2000:

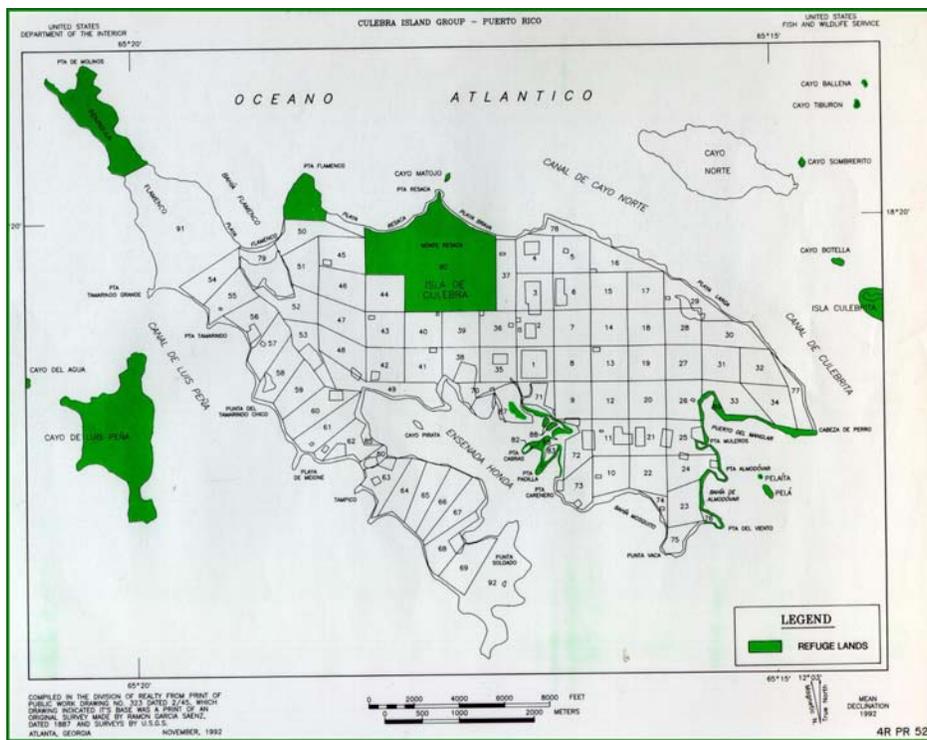
The proposed MFR (Marine Fisheries Reserve) of Culebra Island is dominated by seagrass beds and coral reef communities, which present a high biological diversity representative of northeastern Caribbean coral reefs. Coral reefs still support a relatively healthy epibenthic community characterized by a high percentage of living coral cover, colony abundance and species richness. However, we detected what could be considered a possible early sign of degradation, including a decline in the percentage of living coral cover in Carlos Rosario Beach between 1997 and 1998, and lower values in parameters such as fish abundance, total biomass, standing stock biomass, and in the target fish species biomass and density in parameters such as fish abundance, total biomass, standing stock biomass, and in the target fish species biomass and density in Carlos Rosario Beach than in Cayo de Luis Peña. These results suggest that overfishing seems to be a major factor affecting fish communities at easily accessible sites, such as Carlos Rosario Beach, and requires the establishment of management measures.¹

Hernandez continued monitoring studies and determined that populations of reef fish have increased dramatically since the naming of the reserve but coral cover has decreased significantly due to bleaching and coral disease. Hernández, et al. further described the status in 2003:

¹ Hernández, E., Alicea-Rodríguez, L. and Sabat, A. *Baseline Characterization of Coral Reefs and Fish Communities Within the Proposed Culebra Island Marine Fishery Reserve, Puerto Rico*. University of Puerto Rico, Dept. Biology, Coral Reef Research Group. *Proceedings Gulf Caribbean Fisheries Institute*. 51:537-555 (2000)

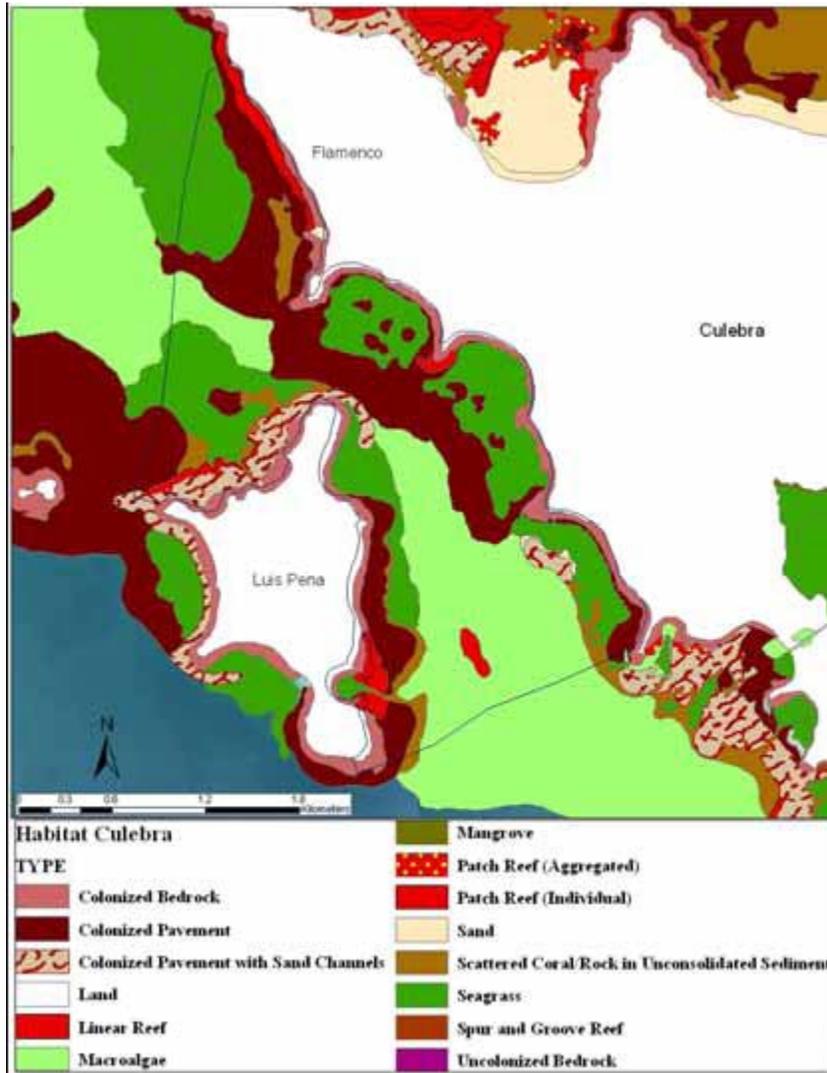
Coral reef communities within the LPCNR in Culebra Island are showing unequivocal signs of a severe rapid decline from a coral-dominated stage to a macroalgal dominated stage. Such coral reef decline rate is among the highest ever documented through the entire Caribbean region and is the highest ever documented in the northeastern Caribbean sub-region. Multivariate analysis showed that the major cause of changes in the structure of coral reef communities have been produced by shifts in the stucture macroalgae, total algae, filamentous algae and cyanobacteria. This study suggests that we are starting to face the early results of a combination of adverse effects associated to Caribbean-wide natural acute factors, such as recurrent White Plague Type II disease outbreaks, and the long-term local chronic anthropogenic effects of ecosystem overfishing, and sedimented and nutrient-loaded runoff pulses, which could accelerate this phase shift through different simultaneous top-down and down-top cascade pathways which will require further investigation.²

Map 1 Culebra Island including U.S. Fish and Wildlife Refuge areas



² Hernández, E. *Coral Reef Ecological Change Long-Term Monitoring Program of the Luis Peña Channel No-Take Natural Reserve, Culebra Island, Puerto Rico: I. Status of the coral reef epibenthic communities (1997-2003)*. Puerto Rico Department of Natural and Environmental Resources, Coastal Zone Management Program.

Map 2 – Luis Peña Channel Marine Reserve Benthic Habitat



MANAGEMENT PLAN DEVELOPMENT:

In July 2003, the National Fish and Wildlife Foundation granted funds to the Authority for the Conservation and Development of Culebra (ACDEC), a Commonwealth of Puerto Rico agency under the administration of the Culebra Mayor’s office, to support the implementation of a collaborative process in conjunction with DNER and the local community to write a management plan for the Luis Peña Channel Natural Reserve. This would be the first approved management plan for a Natural Reserve³ in Puerto Rico and also the first one to be developed through a multi-stakeholder process and with extensive public participation. This plan would address issues affecting the Reserve and include goals and objectives for target areas such as enforcement, research needs, public awareness and education, and habitat protection and restoration among others

³ The Natural Reserve System of Puerto Rico includes both terrestrial and marine protected areas and the title does not imply no-take areas. Only four of 33 Natural Reserves in Puerto Rico have no-take areas.

chosen by a multidisciplinary working group. To contribute to this initiative, ACDEC and the National Oceanographic and Atmospheric Administration (NOAA) sponsored a workshop on the 13th-14th August 2003 titled *Leadership Workshop for the Collaborative Development of a Process for the Luis Peña Channel Reserve Management Plan (MP)*. A public meeting was also held in August 2003 to introduce the opportunity to participate in the process. A draft process for the development of the management plan and a draft list of issues were established at this kick off workshop for the proposed working group. Examples of subsequent workshops and meetings are as follows:

- 1) *Working Group Meeting for the Joint Development of the Culebra Marine Reserve Management Plan Process* (11-12th August 2004);
- 2) *Special Meeting of the Steering Committee* (17 March 2005);
- 3) *Meeting for the Working Group of the Marine Reserve Management Plan* (16-18 August 2005).
- 4) *Public meeting to inform on possibilities of public involvement in the NR activities* (Oportunidades socioeconómicas comunitarias relacionadas a la Reserva Natural Canal Luis Peña (12-22 August 2007)

CULEBRA PARTNERS

- The *Authority for the Conservation and Development of Culebra* (ACDEC) is a territory agency managed by the Culebra Mayor's office and the recipient of a National Fish and Wildlife Foundation grant to develop the management plan with the Puerto Rico Department of Natural and Environmental Resources (DNER). ACDEC also co-sponsors other coral reef conservation and restoration projects.
- The *Puerto Rico Sea Grant College Program* and the *Centro Interdisciplinario de Estudios del Litoral (CIEL)* served as the last selected coordinators who compiled all the information necessary and facilitated the multi-stakeholder process used to complete the writing of the Management Plan.
- The *Asociación de Pescadores de la Isla de Culebra, Inc.* (Fishers' Association) originally proposed the establishment of the no-take reserve and has developed different coral reef conservation, restoration and educational activities.
- The *PR DNER* is the commonwealth government agency with management authority over the Reserve and collaborated by preparing a habitat characterization and zoning schemes study as well as providing input and guidance on management plan content and format.
- *NOAA's Coral Reef Conservation Program* and *Coastal Programs Division of the Office of Ocean and Coastal Resource Management*
- *CORALations, Inc.* is a local NGO that has developed educational activities focused on the conservation of Culebra Island's coral reefs. They have collaborated in coral reef restoration and educational activities.

- The *Department of Biology of the University of Puerto Rico*, at Río Piedras, has been carrying out a long-term coral reef monitoring project since year 1996.
- The *Office of the Special Commissioner for Vieques and Culebra Islands* provided logistical support regarding coordination and dissemination efforts.
- *Environmental Defense*, a conservation NGO has extensively collaborated with fishermen communities through the Wider Caribbean in the development of management plans for marine fishery reserves and provided their technical and logistical expertise in this project.
- The *USFWS Culebra Island Wildlife Refuge* manager collaborated and provided advice on management issues.
- The *Foundation for the Marine Conservation of Culebra* is a group of Culebra property owners that supports education about Culebra's natural resources and they provided a consultant to provide advice on management issues.
- Other participating organizations and agencies were: The *Puerto Rico Tourism Company*, the *Mayor's Office*, the *Culebra Chamber of Commerce*, the *Culebra Commission for Eco-tourism in Culebra*, the *Puerto Rico Planning Board*, the *U.S. Environmental Protection Agency*, and the *PR Environmental Quality Board*.

LESSONS LEARNED:

A. Beginning Stages:

- 1) *Good coordination between grant recipient and responsible management authority required* - An entity that plans to apply for a grant to achieve the development of a management plan in Puerto Rico should hold detailed discussions with a chosen project coordinator and DNER before the grant proposal is submitted. The grant applicant should be an entity that is willing and able to collaborate with DNER planning and natural reserve management staff, the local community and other involved stakeholder groups. This team should develop the proposal jointly and agree on the general process for the plan development. If the proposal is accepted, the coordinator should secure a contract with the applicant before any work begins.
- 2) *Need transparent processes for working group participant selection* - During the initial meetings, the Culebra working group recommended that it would be more effective to let the public decide who among them wanted to work closely with the working group instead of the working group bringing nominations of representatives of the general public for the process. From that point, it was understood that those interested persons would continue attending the meetings to contribute to the work. This would create less friction among public members who believed that Culebra leaders may just be looking for approval of pre-selected participants.
- 3) *Outreach required to increase public interest and participation* - Efforts were made to involve the local schools and to include them in the process, following lessons learned at the Tres Palmas Marine Reserve in Rincón, another process conducted by Centro Interdisciplinario de Estudios del Litoral (CIEL). Again, distance and collaboration from local institutions made this component more difficult. To obtain better public participation and acceptance, it might be beneficial to prepare and distribute informative bulletins (Ex.

“What is a Management Plan”) and questionnaires addressing problems along with their possible causes and solutions. Meetings should also be advertised throughout the town. Person to person invitations were also recommended for future projects. A formal project to administer questionnaires about reserve issues or focus groups to discuss such issues should be implemented. This method of public participation was expected to work well since the working group would be able to consider the results in their own issue analysis.

- 4) *Develop a steering committee* - To facilitate the process and produce faster decision making, it was useful to form a steering committee of the primary stakeholders of the reserve: ACDEC, DNER, and the Culebra Fisher’s Association. This group was the primary decision maker in most decisions while the working group provided input.
- 5) *Target specific partners within local agencies* - Whenever invitations are sent directly to the DNER Secretary, they should suggest, not request, specific names of DNER personnel to be members of committees that will contribute to the management plans.
- 6) *External funding is most effective* - NOAA funding was crucial to the process of writing the first management plan for a no-take fishing area. This support included a National Fish and Wildlife Foundation Grant to a local government agency of Culebra and direct NOAA support for facilitation and coordination of communication among the stakeholders and coordination of workshops.
- 7) *Workshop Methodology*. The workshop method to be implemented should be modified to focus more on substantive input on issues and possible solutions and less on the details of how a management plan is written. This input should then be incorporated into the plan outline by the writing process coordinators including DNER staff.
- 8) *External Facilitation*: Any process involving the public, communities and resource users should have a neutral facilitator to gather information on the issues, define problems, canvas the stakeholders, organize the process and set the rules on how to proceed. In the case of Culebra, the lack of presence of a neutral facilitator from the beginning caused a number of difficulties and inconveniences. When the CIEL team took over the process, the community was already reluctant to participate in the development of the plan, and there was a lack of “commitment” to work on the process. It was rather late to reach a consensus on how to proceed, what rules should be in place, or the nature of the process.
- 9) *Provide advance and repetitive notice of meetings* - It was best to set dates for meetings with advance notice and continue sending reminders, including in person, in the local community.
- 10) *Provide any new materials to participants for review and comment before meetings* - Caution should be taken when planning meetings designed to report on any results so that they don’t appear to be top down by design leaving the public believing that they had no participation. Before meetings on results are held, the invitees should have had a mechanism to participate in the content of what will be reported. That would entail first gathering information on perceptions and myths through participatory processes from the beginning and then holding the information meeting.

B. Intermediate and Final Stages:

- 1) *Obtain support from a professional coordinator* - During the management plan development process, the local and state government decided that a professional planner would be the best person to coordinate the work of the working group. The group thought that the plan coordinator should be a neutral party who understands DNER natural reserve and planning policy but does not have vested interests in Culebra. The primary responsibility of writing management plans in DNER lies in the Planning Department. A group that plans to initiate a process for their Natural Reserve should have this practice in mind and obtain the guidance of an experienced coordinator, preferably a certified planner, to guide the working group or choose a coordinator in conjunction with DNER who will work closely with the DNER Planning Dept.
- 2) *Synchronizing agendas and interests*: Facilitation makes possible the synchronization of the stakeholders' agendas, time and effort commitment, and investment in the process. In Culebra, the stakeholders were out of sync due to the lack of facilitation. For example, at the end of the process, DNER was interested and willing to collaborate with the process, while the community was not.
- 3) *Work to build consensus* – Any changes in the process including changes in coordination should be done by consensus of the working group and not independently by the grantee or the entity that is leading the process with DNER. All major decisions should be brought to the working group including any other subcontracts needed to accomplish the project.
- 4) *Complexity of government agencies*: Different components of a government agency, such as the DNER, may be at odds with each other or with certain aspects of the process. The DNER Rangers, the enforcement body at the local level, was viewed by the people of Culebra, as an uncooperative; a perception that tainted the efforts to produce the plan.
- 5) *Keep working group members informed* - The working group should remain informed about all independent projects that can benefit the reserve or that can provide essential information for the management plan (E.g., Socioeconomic assessments, updated scientific information). This should be done in the form of presentations for the working group.
- 6) *Size matters in committees*: Work groups and committees involving key personnel from agencies, universities and NGO require huge amounts of time and effort to plan and to implement. The logistics of the process increase in complexity with the number of stakeholders involved. A large number of stakeholders assure greater participation and involvement, but at the expense of complexity. A reduced number of participants, or a large number of stakeholders divided in smaller groups and committees may provide a better solution.
- 7) *Strong local institutions*: Development of a management plan requires the strengthening of local institutions to participate effectively in achieving the goals and objectives. It also requires leadership from at least one institution or organization involved. In Culebra, the local NGOs did not want to participate in the final segment of the process (when there was stability in the consultants-partners contracted to finalize the plan) and the local governmental institutions (the municipality and ACDEC) did not participate to the full

extent of their potential in the review of plan drafts. During this period, ACDEC had turnovers in the point of contact to liaise with CIEL (three persons) and that made communication more challenging. They did participate in the administrative requirements of the NFWF grant with NOAA assistance.

- 8) *Acknowledge authority of local management agency* - No decisions should be made without the approval of PRDNER.

Conclusion:

The Canal Luis Peña Marine Reserve management plan writing process was the first process in Puerto Rico led by an external entity (a NFWF grantee) that attempted to involve all sectors of the public that were interested in the resources of the reserve. It was a challenging situation that brought many lessons learned from the beginning for all sectors involved. CIEL participation in Culebra was as a neutral broker, and as a partner helping those involved in achieving the goal of producing a management plan that incorporates the public in its design. However, CIEL was physically removed from the site (at the other end of the Puerto Rican archipelago) and had difficulties in communicating with other partners in Culebra, who felt displaced by CIEL's participation. Selection of a partner to organize, implement, facilitate, investigate and finalize the management plan should be a priority item in the process. The "partner" should have the following characteristics: (a) Experience in coastal and marine issues, management and conservation, (b) A network of partners and collaborators, (c) Respect and trust from other participants, (d) Coordination, planning and implementation experience, (e) Ability to assemble an interdisciplinary team, and (f) Social and physical proximity to the site. This last characteristic also translates in commitment (of time and effort) to the process. CIEL had all the traits, except for the last one. Although the center had a commitment to the process, the long distance, and lack of support on behalf of the local groups added difficulties to the process.

Many practices can now be revised and adapted to future management plan writing efforts. However, as challenging as the Culebra experience was, all participants agreed on the main concept: it is essential to involve the public at some level during the development of a management plan if the authorities expect the public to comply with the plan after its implementation.