

Strategic planning for fisheries management in Puerto Rico

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The Puerto Rico Department of Natural and Environmental Resources (DNER) consists of approximately 1800 full-time employees, of which some 400 are directly or indirectly involved in fisheries and wildlife resource activities. The organization and its responsibilities grew to the point that its operations required a Strategic Planning effort to focus on the agency's mission and harmonize its organizational goals and objectives toward effective fisheries and wildlife resources management. The planning process that began in March, 1996 has resulted in a Management Plan comprised of a ten-year Strategic Plan for the Bureau of Fisheries and Wildlife (BFW), an Operational Plan to guide implementation, and a Monitoring Plan to track and assess implementation progress. Planning was conducted consistent with U.S. Fish and Wildlife Service guidelines. This paper describes the process for developing the plan and a brief summary of results.

As conceived by the BFW, this process was to fulfill several purposes:

1. Providing a Road Map to guide management decisions consistent with stated goals over the moderate-term future;
2. Providing a focus for consensus building among DNER staff, leading to unified notions of purpose and practice;
3. Incorporating alternative perspectives, rather than relying only on management staff operating in a planning vacuum;
4. Providing a mechanism for facilitating internal communication; and
5. Assisting DNER external communications with the public, other governmental agencies, and interested stakeholders.

A previous Strategic Planning effort failed to meet these objectives, because it was developed in a non-participatory small group atmosphere. It therefore failed to develop an agency consensus, was restricted by the limited perspectives of the small planning group, and developed no constituency of support. Support for its provisions was therefore limited within the agency, and virtually nonexistent outside the agency. Clearly, a new approach was required.

The planning process used to develop the new Strategic Plan was process oriented in recognition that for developing group consensus, the process of Strategic Planning is often more important than the final document produced. The process was designed to respond to basic questions, it was participatory, and utilized an iterative decision-making process. It was founded on three basic questions, namely:

Where are we?
Where do we want to be?
How do we get there?

It was expected that the plan would provide a definition of organizational purpose, with clarification of individual, organization-

al, and support structure roles and responsibilities. It would incorporate an estimation of public expectations concerning functioning of the BFW, and specific steps for achieving its purposes.

THE PLANNING PROCESS

The planning process involved numerous steps, each of which is discussed individually below:

Step 1: Planning meetings: Kick off meetings were held between the consultants and BFW staff to organize the planning effort. Agreement was reached concerning procedures, schedule, logistics, and individual roles and responsibilities. Cities for holding public meetings were selected, and staff assignments were made. These meetings assured that the process was agreed by all parties, and that it would be implemented efficiently.

Step 2: Advisory council meeting I: An Advisory Council was established consisting of approximately 35 representatives from all other relevant government agencies, user groups, NGOs, academia, and interested public. Whenever possible, the representatives were senior members of the groups represented; when this was not possible, delegates were assigned by senior staff.

After explanation of the planning process, charette groups were formed for each of three subject areas: inland fisheries, marine fisheries, and wildlife. The groups separated into individual rooms for their two-day working sessions, which consisted of free ranging discussions led by group facilitators; each had a group recorder. All individuals were encouraged to contribute and to participate in discussions.

These sessions emphasized the definition of issues relevant to the group's area, followed by discussion concerning what the group regarded as the preferred condition relative to each issue. That is, the group defined what it believed were current issues or problems, and then defined

what the goals should be in response to those issues. Once the group decided the list of major issues was complete, emphasis was placed on prioritizing these issues according to criteria developed by the group.

After definition of the prioritized list of issues and goals, group discussions defined what obstacles exist to reaching the goals established for each priority issue, and then discussed what actions could be implemented to overcome these obstacles. Finally, potential actions for each issue were prioritized to produce an agenda of high priority actions that should be undertaken in response to each priority issue in order to reach the goals defined by the group.

These first Advisory Council meetings were crucial to the program's success, because it was a test of the group members' willingness to participate in this consensus-building effort. Without such participation, a key goal of the process would not have been met. Therefore, care had to be taken to respect all opinions and input, and to allow group deliberations to resolve conflicts. This was successfully achieved, and even when individuals disagreed about specific group conclusions, they clearly understood the reasons for the group decision and understood that their individual viewpoints were fairly presented, but in some cases failed to carry the day.

Deliberations of these groups provided a foundation for the Strategic Plan; they provided a draft situational overview, priority goals and objectives, and strategies for achieving objectives. In order to validate the Advisory Council's conclusions, however, additional information was needed and other stakeholders remained to be consulted.

Step 3. Data gathering: In order to provide needed input information, a facilities inventory was conducted. It was not possible to visit all facilities on the island, but 16 considered representative of DNER fish and wildlife management activities were visited. These included 4 refuges and reserves, 2 aviaries for propagation of endangered bird species, 1 fish hatchery, 1

research laboratory, 2 recreational areas, and 6 sites either under construction, planned, or proposed for future development. For each, information was gathered concerning the facility's resources, purpose, staffing, management, and procurement and regulatory enforcement procedures. Facility staff were encouraged to discuss additional issues they considered important.

Concurrently, a regulatory review was conducted to identify all laws, regulations, and government policies pertinent to the management of fisheries and wildlife in Puerto Rico. It was recognized that Strategic Plan provisions would have to either comply with existing regulatory vehicles, or would have to include steps for amending them. .

In addition, an inventory was made of all ongoing and planned fish and wildlife projects, and their level and sources of funding. These projects were categorized to identify programmatic patterns.

Step 4. Public meetings: Public meetings were held in three cities: San Juan, Ponce, and Mayaguez, in order to obtain public input concerning resource user preferences, complaints, compliments, and concerns. These were pre-publicized in newspapers, and using circulars and letters to known regional stakeholders (e.g. fishing and nature clubs) and NGO's. Meetings were held during evening hours to maximize attendance.

The primary format for these meetings was the use of small discussion groups with identified areas of interest. Participants were free to visit from group to group as they wished. All were given an opportunity to speak if they wished, which was more manageable in the small group format than would have been with a single large group. Each group included a representative from the BFW or the consultant team, and records of discussions were kept. In addition, a formal recreational facility user survey was conducted, and participants were allowed to submit written comments after the meetings. The latter provision was particularly important for NGO representatives who wished to discuss issues with their members before submitting comments.

Step 5. Draft Strategic Plan: At this point, the consultant team withdrew from the process to construct a draft Strategic Plan incorporating all information gathered. Conflicts of data or opinions were resolved during this process to the best of the team's ability. This draft Strategic Plan was submitted to the BFW and to all members of the Advisory Committee for their review and evaluation.

Step 6. Advisory Council Meeting II: Two weeks following submission of the draft Strategic Plan, the second advisory council meeting was held. The same charette format was used as at the first meeting, and group members were encouraged to comment on the draft. They were also led through a revisitation of priority issues, goals and actions, and discussions were extended to definition of individuals and organizations that should be responsible for implementation of actions. Each action was also evaluated for its feasibility and anticipated effectiveness. This meeting achieved two important objectives:

1. It assured the incorporation of a multitude of individual perspectives into the Strategic Plan; and
2. It developed a conceptual consensus among all participants, leading to future cooperation and unity of effort in implementing the plan.

Step 7. Finalization of the Strategic Plan: The Strategic Plan was then finalized by the consultant team by incorporating all comments into the final deliberations.

Step 8. Draft Operational and Monitoring Plans: Using information gathered during the second advisory committee meeting and from BFW staff, the consultant team then developed draft Operational and Monitoring Plans. The Operational Plan specified a schedule of actions to initiate the Strategic Plan, including roles and responsibilities. It also included a logical sequence of steps needed to implement all actions agreed to in previous deliberations, with a schedule of

individuals and organizations primarily responsible for each task and the individuals and agencies required to provide support. The Monitoring Plan included schedules and tools for periodically evaluating progress of the Operational Plan, to allow performance evaluations and mid-course corrections as needed.

Step 9. Advisory Council Meeting III:

The third and final advisory council meeting lasted one day, and was utilized to review the draft Operational and Monitoring Plans prepared by the consultant team. The advisory council provided input to the logic imposed in the plans, and validated their provisions. The result of this meeting was unified consensus among all participants that the final Management Plan was important, feasible, reasonable, and should be implemented.

Step 10. Finalization of Management

Plan: The final Management Plan, consisting of the Strategic Plan, the Operational Plan, and the Monitoring Plan was then produced by the consultant team for submission to senior government officials by the BFW.

RESULTS

The Management Plan developed using this exercise was far too extensive and comprehensive to discuss all results in this present format, but several examples may be briefly presented here.

Administrative issues

Mission statement: Prior to this strategic planning effort, the Bureau of Fisheries and Wildlife had no universally accepted Mission Statement. When asked, various staff provided far differing views of what the Bureau should be doing relative to habitat protection *versus* recreational and commercial resource use, leading to confusion and disagreement regarding fundamental priorities. The following Mission Statement was developed

It is the mission of the ANR/BFW to conserve, protect, and improve the fisheries and wildlife resources and their habitats, promoting rational, sustainable use for the enjoyment of present and future generations.

Organizational structure: Three of the most fundamental organizational problems faced during this exercise were (1) the Bureau's short-term project based approach to management, (2) a seriously dispersed authority for management functions, and (3) inefficient use of personnel, equipment, and financial resources.

The first issue resulted from an annual project-based proposal system that relied on project-specific proposals generated by project managers. Projects evolved largely based upon personal interests and probability of funding, without effective consideration of longer-term programmatic goals. The Strategic Plan includes provisions for development of a program-oriented approach and philosophy that will lead to greatly improved achievement of resource management aims.

The ability of the Bureau to function is presently seriously hampered by the dispersal of management authorities over which the Bureau has no control. These include, for example, control over funds for short-term operating needs, procurement difficulties resulting in year-long delays in acquiring needed purchases, and personnel office review procedures rendering the Bureau incapable of hiring needed staff. The Strategic Plan calls for establishment of an Executive Coordination and Support Division with responsibility for supporting technical staff's bureaucratic needs.

Inefficient use of resources was assured by the existence of independent projects, wholly responsible for their own activities and none other. The program management approach called for by the Strategic Plan allows sharing of resources on an as-needed basis, thereby making their multiple use an integral part of the Bureau's operating system.

Operational planning: The Strategic Plan specifies implementation of a program management approach for identifying specific long term management objectives and development of specific programs to achieve these objectives. All proposals for project funding are to be evaluated based on their correspondence with program guidelines and contribution to achieving programmatic goals. It is anticipated that this process will substantially reduce the probability of funding irrelevant projects with only tangential relevance to the BFW's management objectives.

Funding Issues: At present, the BFW is completely dependent on a very low level of state funding plus project funding from the U.S. Fish & Wildlife Service. While these funds are appreciated by the BFW, they are inadequate to fulfilling its legitimate responsibilities as defined by its Mission Statement. Additional independent funding sources are urgently required.

The Strategic Plan stipulates development of a system of user fees and licenses for acquiring such funds. It is conservatively estimated that more than \$570,000 can be raised annually by sale of hunting and fishing licenses, special hunting and fishing stamps, boat launching ramp fees, and recreational facility entrance fees. The Strategic and Operational Plans specify tasks and responsibilities for changing government policy to allow the earmarking of such fees for fisheries and wildlife management needs, and for implementing their collection and management.

Public awareness: The BFW's effectiveness suffers from the lack of a significant public constituency familiar with and supporting its objectives and activities. This constituency is important to promote individual and public behavior consistent with effective resource management, and for supporting the Bureau's activities within the political forum, where funding, authorities, and major policies are decided.

The Strategic Plan specifies several actions for promotion of public awareness, including

strengthening of public school programs, a news release program, a speakers' bureau, public instructional programs, and related approaches.

Legislator awareness: Fisheries and wildlife management also has a small legislator constituency in Puerto Rico; natural resources management appears to be a rather low priority relative to other state needs. The BFW must take corrective measures. The Strategic Plan calls for implementation of a legislator awareness program including white papers, legislative briefings, and legislator field days.

Management of resources

Habitat parcels: In the current system, the assignment of management responsibility for habitat parcels is inconsistent, leading to uncertainty of management objectives and waste of management resources. For example, a fish hatchery was managed very significantly as a public and tourism attraction, thereby diluting the staff's ability to optimize production of fish. Similarly, some hunting and fishing areas are managed by refuge authorities, and some refuges are managed by forestry authorities. Few if any of these facilities are regulated by master plans, and facility development is left largely to the will of the resident manager. As a result, several parcels include contradictory facilities and management approaches. For example, a large visitor center and picnic area has been built at one habitat refuge, which is somewhat contradictory, but these expensive facilities are seldom used by the public because they are closed to the public on weekends. The process of allocating responsibility and for developing management objectives must be improved.

The Strategic Plan advocates that new parcels should be assigned to agencies on the basis of "primary management use". That is, if it is intended to serve hunters or fishermen, it should be assigned to the BFW. Conversely, if a parcel is intended primarily for habitat preservation, it should be assigned to refuge authorities. Organizational provisions for such decision making were recommended.

Fisheries management: Fisheries management requires an integrated approach including habitat protection and enhancement, regulation of fisheries, and enforcement. For this reason, the programmatic approach discussed above is recommended in the Strategic Plan. Several organizational resources must be focused on the same and related objectives in order to achieve successful resource management. In addition, resources outside the BFW must be recruited to the effort, such as environmental protection authorities. These complex efforts cannot be achieved by small scale project-oriented expenditures of resources.

Fisheries in Puerto Rico are currently virtually unregulated, a circumstance attributed to "tradition". With the exception of prohibiting the taking of sea turtles, dolphins (mammal), manatees, and undersized and berried lobsters, no marine recreational fisheries regulations exist, and recreational fishermen are not required to be licensed. Approximately 95 % of fish consumed in Puerto Rico are imported, clearly indicating that the fisheries are in poor condition and that management priorities and practices must change. Fisheries are seriously depleted and the stocks required for replenishment are being overfished. The Strategic Plan includes evaluation of these fisheries and serious consideration of realistic and effective commercial and recreational fishery regulation.

Enforcement of regulations: Even the few fishing regulations concerning inland fisheries that exist in Puerto Rico are inconsistently and ineffectively enforced. The ranger corps responsible for such enforcement leaves a great deal of personal discretion to its officers, and responses to violators are therefore highly variable. In addition, Puerto Rican law requires violators to be tried in criminal court, where cases are generally not treated seriously in comparison to serious criminal cases; judges tend to dismiss charges in virtually every case of illegal fishing.

The Strategic Plan recommends several responsive measures, including:

1. Establishment of an enforcement liaison position within the BFW;
2. Specific training for the ranger corps, including consistency of enforcement action;
3. Attachment of ranger staff to specific facilities, with primary responsibility for enforcement of regulations within such facilities; and
4. Establishment of an administrative court for processing fish and wildlife violations, thereby removing these actions from the criminal courts.

User facilities: User trend information was compiled from previous surveys and existing data, population forecasts, the facilities inventory, three public meetings, and a public survey. It is abundantly clear that the people of Puerto Rico use the available facilities extensively, and that more are required. Freshwater fishery recreation areas have been developed over the past decade and are very popular, but supply does not meet demand, nor are potential sites for facilities saturated. Coastal fishery recreational facilities have not been developed, and virtually all of the few that exist are primitive, without currently acceptable amenities.

The Strategic Plan endorses development of additional freshwater recreational facilities and added emphasis on coastal facilities. As an added benefit, user fees will not only render such facilities self sustainable, but will provide additional funding for other management activities.

Data sufficiency: The current understanding of fisheries biology is inadequate for development of definitive protective policy for most marine fish species in Puerto Rico. For example, spawning seasons or areas are not always known, fish population statistics have not been developed, and inter-species relationships and dependencies are not clearly appreciated. Emphasis in commercial fishery development has in the past been concerned with the increase of commercial landings, and has dealt with improvement of fishing methods and support of local fishermen through provision of

gear and landing facilities. On the other hand, little effort has been expended to understand the ecology of commercial species or the impacts of commercial fisheries on these populations. The single government marine research laboratory has, as its primary, charge the monitoring of commercial landings.

The Strategic Plan specifies that the marine research laboratory should be subordinated to

the Fisheries Division of the BFW, thereby making its facilities and resources available to the fisheries resource managers. By this means, it is intended that research projects at the laboratory be incorporated into the programmatic management planning procedures of the division, so that its efforts may be redirected toward providing data and information required for fisheries resource management needs.

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