

Long-term Monitoring on a Shoestring at Apostle Islands

By Julie Van Stappen

At Apostle Islands National Lakeshore (APIS), an effective, low-cost, long-term monitoring program has been developed over the past few years. This article describes how resource managers in small to medium sized parks can undertake long-term monitoring despite very limited resources.

APIS is a 42,000 acre park with 21 islands and a small mainland unit lying along the Lake Superior coast in Wisconsin. The islands range in size from 3 to 10,000 acres; the mainland unit is approximately 12 miles long and less than 1 mile wide. The lakeshore is near the northwestern edge of the hemlock hardwood forest and the southern fringe of the boreal forest. The most dominant forest type is northern hardwood, most of which is >50 year old second growth. The lakeshore also has aspen/birch, oak, upland conifer, and pine forest. Special habitats include a wide variety of dunal features, bogs, sandstone cliffs, clay banks, old-growth forest, colonial bird nesting sites, migratory bird concentration areas, and bald eagle nesting sites.

When I transferred to the park in 1988, a park goal was to establish a long-term monitoring program. Some such projects already were occurring in the park, but they were spearheaded by University researchers and personnel from other agencies without NPS funding so there was no guarantee they would continue. At the time, only part-time assistance from a seasonal biological technician was available. I started by looking at existing projects for their appropriateness and identified important gaps.

Following the lead of Channel Islands National Seashore, we wrote monitoring guidelines for each existing or proposed project. The guidelines included an introduction describing what needed to be monitored and why, and a history of past research and monitoring; objectives; methods; equipment needed; areas to be monitored and frequency of monitoring; number of personnel required/hours or days/FTE; and references. Some of the first guidelines written included bald eagles, colonial birds, ruffed grouse, woodcock, merlins, piping plovers, sandscapes (dunal features), bluff erosion, and campsites.

The primary objective of most monitoring projects is to determine the status and trends of a resource and/or to monitor visitor im-



Karin Kozle and Mark Mackey collect a bald eagle blood sample for toxic analysis (Photo by J. Van Stappen)

part. Projects that monitor visitor impact are specifically designed to gather data for making management decisions; however, both types of monitoring provide important information for management decision-making.

The 1989 field season was the first year for the fledgling monitoring program. Many new and on-going projects were formalized. It was an important year to test methods and to determine the time needed per project, the appropriate frequency of monitoring, and the general feasibility of each project. Following the 1989 field season, all monitoring guidelines were reviewed and revised to reflect lessons learned.

Prior to the 1990 field season, the biological technician position was extended to six months and its description re-written to include, as a primary job element, assistance with monitoring. Projects added in 1990 included breeding birds, migratory birds, frogs and toads, and purple loosestrife. In 1991, mollusc monitoring was added and repeat monitoring had begun. By the end of the 1992 field season, many of the projects had been repeated and data from previous years could be compared, beaver monitoring was started, and a fairly large loosestrife control program was begun. Need for loosestrife control was based on monitoring results. Rare plant and forest vegetation monitoring are planned.

Guidelines are an important tool; they force you to evaluate each monitoring project. If you can't justify a given project, it should be reconsidered. Guidelines provide important institutional memory. They should be written so that someone unfamiliar with the project can repeat it and obtain data compa-

table to past results. They also should contain information on time and personnel needs, facilitating scheduling. Having all the information in one place that is needed to conduct a monitoring project provides critically needed organization during the hectic field season.

Quality control and assurance should be part of each monitoring project, and data management is an important consideration. Ideally, data should be entered into a park database immediately following completion of each monitoring project, but no later than the end of the field season. Monitoring reports should be written annually. Some of our reports are simply memos stating the results of gener-

al surveys, such as ruffed grouse or woodcock. Other reports require considerable data analysis and are many pages longer. Finally, monitoring guidelines should be considered dynamic documents and be reviewed and revised on a regular basis.

Long-term monitoring programs need to be institutionalized. Staff come and go, so the success of such programs depends on their being set up in such a way as to continue over the long run. Steps we have taken to institutionalize APIS's program include monitoring guidelines, incorporation of monitoring projects into the park's Resource Management Plan, and incorporation of monitoring duties into position descriptions and performance elements.

APIS's monitoring program covers a wide variety of projects that are skill rather than funding intensive. Without additional funding, the program focus has been on high priority projects that can be done by well-trained biologists, and that do not require outside expertise or expensive equipment. Although there are high priority inventory and monitoring projects that do require additional funding and personnel, much has been done using our own limited resources and assistance from highly qualified volunteers.

If you are a Resource Manager in a small or medium sized park, don't wait for additional funding or personnel. Start with what you have, check around with others as to how to put it to best use, and then build on it as you can.

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