

Peregrines Return to Acadia

By Carroll Schell and Ann Kozak

Acadia National Park is one of several national parks east of the Mississippi River where peregrine falcons (*Falco peregrinus*) nested historically. Peregrines have been sighted on at least two cliff faces in Acadia – Champlain Mountain and St. Sauveur Mountain. The last documented nesting effort occurred in 1956, and this 28-year lapse in active nesting sparked our interest in participating in the captive breeding and release efforts of the Peregrine Fund.

The Peregrine Fund was established in 1970 and has facilities at Cornell University in Ithaca, NY; at Fort Collins, Colo., and at Santa Cruz, Calif. Although the peregrine falcon at one time nested extensively on cliffs throughout North America, by the 1960s the birds were virtually extinct. DDT, ingested through their food, caused the falcons to lay eggs with thin, weak shells. Before the eggs were ready to hatch, the shells broke. When the U.S. Government finally banned DDT, not a single peregrine falcon remained in the eastern United States. By contacting individual falconers and asking them to donate peregrine eggs and by developing successful techniques for raising the birds in captivity, Peregrine Fund biologists were able to begin releasing young falcons at approved sites. Slowly the peregrine falcon is being reestablished. In 1984, 124 falcons were released in the eastern United States by the Cornell program. Only four were lost to great horned owls or impact injuries.

With the cooperation of the North Atlantic Region's Office of Scientific Studies, the State of Maine, the U.S. Coast Guard, the College of the Atlantic (Bar Harbor, Maine), the U.S. Fish and Wildlife Service, and the Peregrine Fund, we successfully launched our project. During the spring of 1983, Dr. William Drury of the College of the Atlantic was commissioned to conduct a feasibility study of releasing peregrine falcons in Acadia NP. In addition to providing an historical overview of falcon nesting on Mount Desert Island, the study assessed the feasibility of establishing, or "hacking," peregrines at five sites within the Park's boundaries.

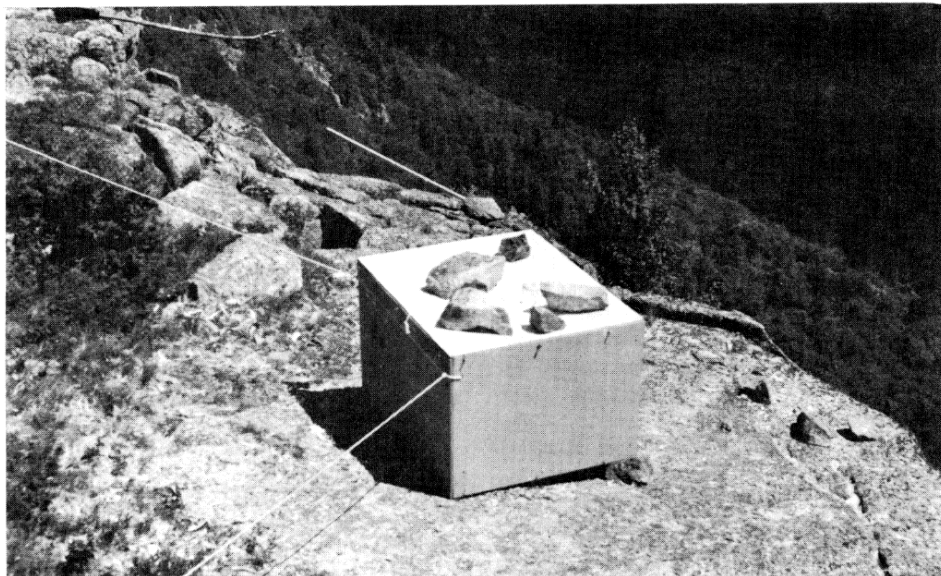
The two historical eyries were immediately dropped from the list due to concern for conflicts with visitors and the low potential for natural nesting in both areas. To determine which of the three remaining sites would be the safest and most appropriate, Peter Duley, a student at the College of the Atlantic, began to call for great horned owls, a major predator of young falcons and the principal concern of the Peregrine Fund. Using a tape adapted by Drury from the Peterson field guide records and a commercially obtained tape by Johnny Stewart, we continued to call through March and had only one positive response from owls. At the preferred site – Jordan Cliffs on Penobscot Mountain – no response was elicited.

Following a meeting in Sept. 1983 with State and University of Maine officials as well as representatives from the U.S. Fish and Wildlife Service and the Peregrine Fund, Acadia was designated the best site in the state. Two additional sites in Maine – Horse Mountain in Baxter State Park and Fletcher Bluff near East Eddington – also were agreed upon. In reciprocation for state cooperation, the Park agreed to construct hack boxes for the other sites from materials furnished by the State. In all, Park personnel built four boxes.

We estimated that to transport the hack box (3' x



The view from Jordan Cliffs, site of the "hacking" operation at Acadia National Park.



The hack box, held in place by ropes and weighted with stones.



Peregrine attendants maintain their vigil on Jordan Cliffs

4' x 5') and camping and monitoring gear to the cliff site in Acadia would take approximately 30 man-days. The Coast Guard, however, had to deliver an air compressor to Egg Rock, an island two miles off the coast of Mount Desert Island and five miles from Jordan Cliffs, and agreed to transport all our gear free of charge. Because of the size of the Coast Guard's helicopter and the physical features of the cliff ledge, our gear could not be delivered directly to the site. Instead, it was brought to the summit of Penobscot Mountain, and five men transported all the gear to the cliff site in one and a half days.

On May 25, 1985, Duley, one of two students from the College of the Atlantic who would care for the peregrine chicks, prepared the site and set up camp for the seven chicks, which had been driven to Acadia from Cornell by Dr. Jack Barclay, Peregrine Fund field biologist. Accompanied by reporters and photographers from the *Bangor Daily News*, the Associated Press and the local press, the seven chicks—5 female and 2 male—bred in captivity, were carried to the site in canine transport cages by Park and Peregrine Fund personnel. One week later, Marty Gilroy, a Peregrine Fund assistant, arrived at Acadia to supervise the release of the chicks and to monitor their progress as well as our own performance with the project.

On June 7, the chicks were released from the hack box for the first time. One chick immediately flew from the box and was not seen again for a day and a half, and by the end of the second day all seven birds were flying. Six weeks after the chicks were delivered to the Jordan Cliffs site, the attendants began the weaning process. Prior to that date, each falcon chick received one frozen cockerel per day, dropped to the hacking ledge from another ledge above the hack box. When gulls and other larger birds began taking some of the food, the cockerels were tied down by the attendants. After the sixth week, the birds were fed every other day. Park personnel supplied the attendants with ice, supplies and feed for the falcons every three days.

In addition to feeding the chicks and monitoring their progress, the hack site attendants acted as interpreters to hikers who approached the site and also watched for climbers interested in testing their skills on the cliff. Although the Jordan Cliffs hack site was chosen because of its 500-foot cliffs and relative isolation, an occasional hiker did visit the area. The attendants explained that the Park was participating in the Peregrine Fund's release project, and that the birds are an endangered species and somewhat fearful of humans. Frequently they explained what had already occurred in the hacking process, what the chicks ate and how often, and, if the birds were in the vicinity, what their flying skills and techniques were and where one could best view their aerial display.

The young falcons spent approximately one month developing flying and hunting skills, mostly in the vicinity of the hack location. Gradually, their time away from the hack site lengthened and as early as July 3, Maggie, the first chick to fly, was seen for the last time. July 26 marked the last day that any of the seven peregrines were observed at the hack location. After sighting no birds for three days, Duley and David North, the other attendant, broke camp for the 1984 season.

Although releasing the peregrine falcons in Acadia was successful, whether the Park will continue to participate in the program depends on a number of factors. The difficulty in obtaining peregrine chicks is one obvious obstacle. Should a pair of great horned owls move into the nesting area, the Park would either have to find another site or not participate, since the

Two NPS Scientists Speak on Science Role in Parks

The National Park Service's science program will come under scrutiny at two national meetings this spring. Attendants at the 50th North American Wildlife and Natural Resources Conference in Washington, D.C. (March 15-20) will have the opportunity to hear Clifford J. Martinka, senior scientist at Glacier NP, discuss "A New Role for Science in the National Parks." On May 28, as part of the annual meeting in Los Angeles of the American Association for the Advancement of Science, NPS Resource Management Specialist John Dennis will speak on "Building a Science Program for the National Park System."

Dennis will be appearing as part of a panel on "How can science be used more effectively to manage natural resources in national parks?" Phyllis Myers, senior associate of the Conservation Foundation, will moderate the panel.

Also slated to appear on the AAAS panel are Bob Barbee, Yellowstone NP superintendent, and Dave Graber, research scientist at Sequoia/Kings Canyon NPs. Barbee's assigned topic is "From Grizzlies to Geysers: Science Challenges Tradition;" Graber's is "What the Visitor Doesn't See: Restoring Scientific Integrity to Natural Resource Management."

James Teer and Michael Mantell round out the AAAS panel. Teer is director of the Welder Wildlife Foundation and will describe "Why We Recommend a Million Dollars to Study Grazing in Capitol Reef NP." Mantell is a senior associate of the Conservation Foundation; his topic is "The Limitations of Science:

Peregrine Fund biologists consider the owl a major threat to the success of the reintroduction program. Another problem involves the effect the reintroduction of peregrine falcons will have upon the tern population. Approximately 175 pairs of common terns nest on Egg Rock, as well as occasional arctic and roseate terns, and terns are common prey of falcons. A dramatic decline in Maine's coastal tern population already has occurred due to the invasion of tern habitat by gulls, and a further decline in the tern population could be triggered by the falcon reintroduction. In any event, a continuation of the falcon release program undoubtedly will require additional monitoring of the tern population.

The principal factor preventing Acadia's participation, however, involves the peregrine falcons themselves. According to Barclay, the whole purpose of the hacking program is to imprint the nesting site on the young birds. The falcons raised in 1984 on Jordan Cliffs may have imprinted that site, and in two years when they are ready to mate, they could threaten any young chicks being hacked there, since these young chicks would be infringing on their territory.

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Uncertainty, Politics and Values in Managing Park Resources."

Abstracts of Martinka's and Dennis's presentations follow:

Building a Science Program

National Park System resources are preserved for use of current and future generations of people. National Park Service experience in preserving while providing for use demonstrates the value of scientific information for decision-making. The NPS natural and social science program began in the 1930s from private funding. After a period of minimal effort, the NPS rejuvenated this program in the late 1960s, decentralized it in the early 1970s and slowly expanded it. Today, the NPS allocates 2.4 percent of its budget and 2 percent of its personnel to natural and social science activities conducted by park, cooperative university unit, central office, other government, or contracted scientists. These activities provide extension services, informal reports and formal research papers on topics ranging from applied, specific resource component questions to long-term, ecosystem questions.

The integration of science with park management through park resource management plans and the linkage of scientists with resource managers provides the program's strength (because science is directly part of decision-making) and its potential weakness (because scientific independence is at risk). The building of NPS science for the future seeks to maintain the strengths and minimize the weaknesses so that the NPS can respond to the ever-increasing human ability to manipulate natural ecosystems and the increasing pressure that the sea of human development exerts on the islands of naturalness that are the parks.

John G. Dennis

New Role for Science

Conservation of natural ecosystems is generally considered to be a primary mission of national parks. Scientific knowledge has played an increasingly important role in the management of natural resources within parks. Science programs expanded rapidly during recent decades and are currently integral to many national park organizations. Descriptive studies and management experimentation have been primarily related to park missions. Results have pointed to solutions for many park problems but also have emphasized a need for research that includes adjacent lands.

An improved understanding and potential for mitigation of external influences are distinct benefits of regional research packages. In turn, regional resources benefit through the availability of baseline information against which exploitive practices can be compared. Parks are thus in a position to provide a rationale for wise use of natural resources on a regional basis.

This emerging role for park science may be expected to elevate the value of parks, with science ultimately assuming a position commensurate with resource conservation and visitor enjoyment in park missions. The new role will require an emphasis on research design, interagency teamwork and long-term continuity of data collection.

Clifford J. Martinka