# Egg Rock Update

1981 Report

*Stephen W. Kress*
*Director*

Newsletter of the Fratercula Fund of the National Audubon Society


## Puffins Nest at Eastern Egg Rock!

Excessive hunting for food and feathers a century ago eliminated puffins from Eastern Egg Rock and at least four other Maine islands. Now, after nine years of working to re-establish the Egg Rock colony, puffins are once again rearing their young at this historic nesting site.

The Puffin Project began during the summer of 1973 when a feasibility study proved that two week old puffin chicks could survive the 1000 mile journey from Great Island in Newfoundland to Eastern Egg Rock in outer Muscongus Bay. Since 1973 a total of 728 puffins (96% of those collected) have fledged from Egg Rock. Collected with the assistance of the Canadian Wildlife Service, the nestling puffins were reared to fledging age in artificial burrows by National Audubon staff on Eastern Egg Rock.

Transplanted puffin chicks were approximately two weeks old on arrival at Egg Rock and were fed a diet of frozen smelt with vitamin supplements for the next month before they fledged into the North Atlantic at six weeks of age.

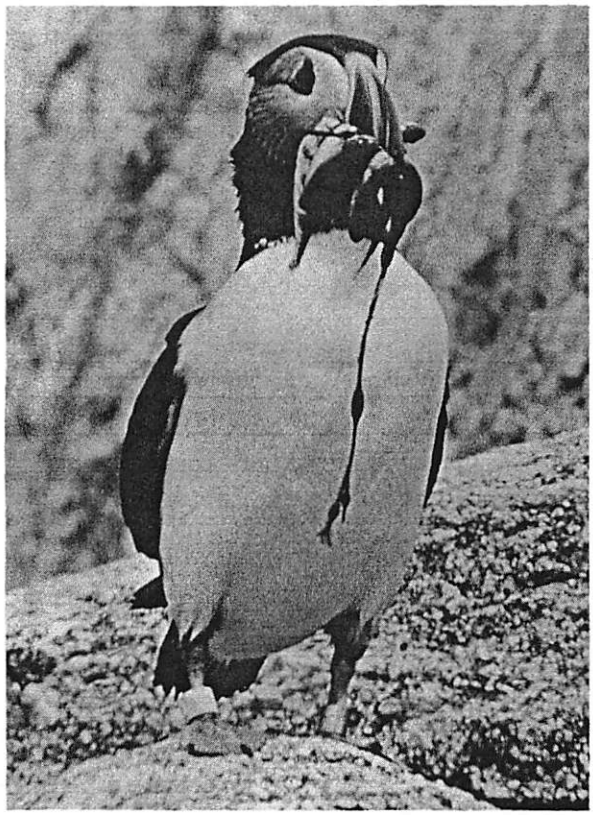

Photo by Stephen W. Kress

*Dripping wet with its beak crammed full of herring and a strand of seaweed, four year old transplanted puffin #95 pauses for an instant before delivering fish to its young hidden deep under the granite boulders of Eastern Egg Rock.*

Puffins usually spend their first two years at sea and then begin to return to the vicinity of their natal island during late June of their third summer. They may visit nearby puffin colonies when they are two and three years old, but usually return to breed at their own natal colony when they are about four or five years old. The Puffin Project is based on the hypothesis that the tendency to breed at the natal island is learned and that if young birds are transferred early enough in their development, the homing instinct could be shifted to permit colonization of vacant breeding habitat within the puffin's extensive range.

Since puffins are now protected in North America by international and state laws, Eastern Egg Rock is safe from the hunting pressure that eliminated puffins on most Maine islands 100 years ago. The island is further protected by its status as a Maine Critical Area and by a cooperative leasing agreement between the Maine Bureau of Public Lands and the National Audubon Society. In 1976 this agreement led to the dedication of the island as Audubon's Allan D. Cruickshank Wildlife Sanctuary.

Transplanted puffins began to return to Eastern Egg Rock in 1977 and each summer there has been a dramatic increase in activity as subsequent age groups join the survivors from previous years. Transplanted puffins have also been making frequent visits to the two remaining puffin colonies in the Gulf of Maine - Machias Seal Island and Matinicus rock. Although Machias Seal Island and Matinicus Rock are located 116 miles and 26 miles respectively east of Egg Rock, many of the transplanted puffins freely move from island to island over the course of the summer. With approximately 700 pair of puffins breeding at Machias Seal and about 75 pair breeding at Matinicus Rock, it remains unclear to what extent these thriving colonies will lure the transplanted puffins away from Egg Rock. Of the 530 puffins old enough to have come home, 112 or 21% have been sighted at one or more of the islands.

This summer project biologists identified 50 different transplanted puffins at Matinicus Rock and after only 12 days of observation, 13 transplant birds were observed at Machias Seal Island. The travels of two year old puffin #27 show how quickly puffins can make the interisland circuit. On July 16th this bird was observed at Machias Seal Island, but then appeared at Egg Rock ten days later on July 26th. It was last observed at Egg Rock at 9AM on July 31st, but reappeared 2 hours and 20 minutes later at Matinicus Rock!

It is now clear that at least some of the transplanted puffins are making more than casual visits to Matinicus Rock. In 1980 a five year old transplanted puffin bred at Matinicus Rock and this past summer at least two additional members of this same age group, now six years old, and two four year old transplant birds joined the Matinicus colony, all breeding with unbanded birds that are most likely Matinicus natives.

It was therefore a spectacular 4th of July when just at dusk a puffin whipped into sight off the south end of Eastern Egg Rock with its beak packed full of glistening herring! Without hesitation, it slipped into a crack among the huge granite boulders and soon emerged without the fish. Proof at last that puffins were breeding at Egg Rock and that at least some of the transplanted puffins had learned their navigation well enough to settle on Eastern Egg Rock as home. Evidence from other puffin colonies suggests that once a nest site and mate are selected, puffins usually remain faithful to their nesting island, burrow and mate for a breeding life that may span 10 years or more.

Five pair of puffins bred at Eastern Egg Rock this summer. Both members of three pairs were four years old transplanted birds, one additional pair consisted of a four and five year old transplanted puffin and, surprisingly, both members of the remaining pair were unbanded. Most likely these unbanded birds are either from Matinicus Rock or Machias Seal and were attracted by the increasing puffin activity at Egg Rock. In addition to the 10 breeding puffins, 57 other individuals were identified over the course of the summer, with as many as 31 puffins in sight at the same time.

On July 27, to further build puffin numbers at Egg Rock, 100 puffin nestlings were transplanted from Great Island. While previously most puffins were only two weeks old when transplanted, the chicks moved this year were approximately four weeks old. Older birds were selected to better identify the critical age when puffin chicks learn the location of their natal home. If month old puffin chicks later show the same return rates as younger birds, this shortcut will prove a useful streamlining of the transplant technique. Of the 100 puffins relocated, 98 successfully fledged.

While the project team reared the newly transplanted chicks in artificial sod burrows, there was great satisfaction in knowing that for the first time in 100 years adult puffins were rearing their own young under the island's long vacant granite boulders.

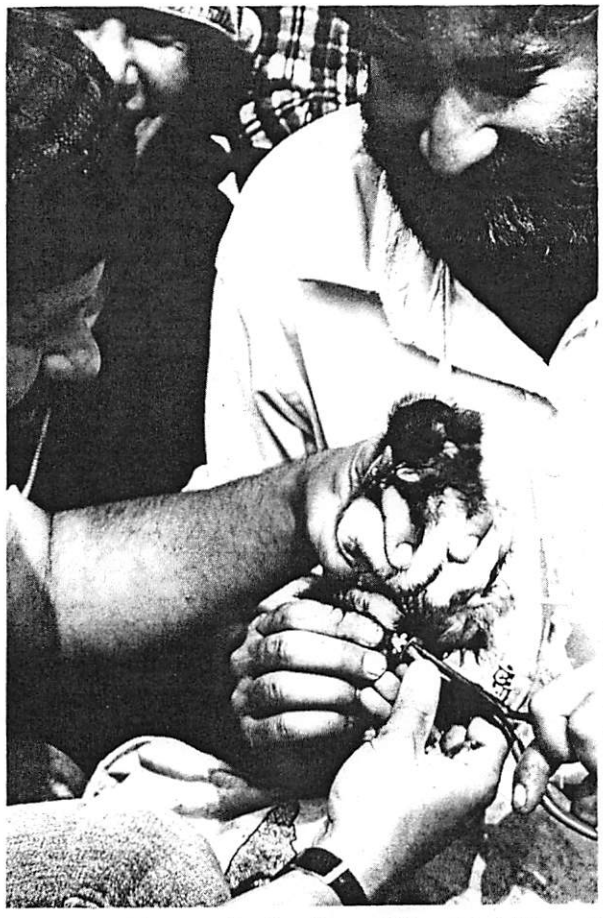

*Photo by Evelyn H. Weinstein*

***With due celebration, Stephen Kress, Richard Podolsky and Diane DeLuca place a plastic band with the engraved letter - A- on the leg of the first native puffin chick produced at Eastern Egg Rock in 100 years.***

# Tern Numbers Double at Eastern Egg Rock

While at least two of Maine's remaining large tern colonies dispersed from traditional nesting islands this summer, the terns at Eastern Egg Rock doubled in number and had a very successful breeding season. In 1980, after a 43 year absence, eighty pair of terns nested at the island in apparent response to tern decoys, playback of tern vocalizations and elimination of breeding Herring and Greater Black-backed Gulls whose growing numbers crowded terns off the island some forty years ago.

This year the terns appeared at Egg Rock about one month earlier than in 1980 and by late July numbers had increased to at least 164 pair as determined by a nest count. The first arrivals nested in the same region where nesting occurred in 1980, but numbers soon spred to suitable habitat nearby. Most were Common Terns but several pair of Arctic Terns also nested in the growing colony. At least six adult Roseate Terns frequented the island throughout the summer and one pair successfully fledged two young which represents a first breeding record in Muscongus Bay. The 164 nests contained 372 eggs and at least 137 chicks reached fledging age.

To better understand the effects of decoys and courtship vocalization playbacks in attracting and stimulating terns to breed, a controlled experiment was conducted at Matinicus Rock. Two decoy designs, a realistic model and a stylized model (constructed from 2x4 inch lumber with painted black cap and a red stick beak) were placed in unoccupied tern habitat at the edge of the colony. The decoys and sounds of an active colony were presented in a random sequence as an observer carefully noted the number of landings and behaviors expressed toward the decoys and recorded calls.

The results demonstrate that study plots with decoys received nearly twice as many landings as occurred in the same plots without decoys. Playback of tern calls also attracted birds to land in the study plots, but decoys proved to be by far the greatest attractant. It is interesting that the crude, stylized models proved as attractive to the terns as the realistic decoys. This suggests that wildlife managers interested in using tern models in restoration projects can have equally high success with inexpensive models.

# Petrels Return to Old Hump and Nest at Ross Island

Leach's Storm-Petrel is a burrow-digging, robin-sized member of the albatross order. Like many burrowing seabirds, they have colonial nesting habits and usually first breeding pairs occupy vacant burrows or dig a new burrow near established pairs.

To examine the role of vocalizations and available burrows in luring prospecting petrels to make a breeding commitment, petrel calls were broadcast from an automatic tape recorder over 32 artificial burrows at Old Hump Ledge during summer nights in 1980. That year, after approximately 40 years of absence, four burrows were occupied by breeding adults while nine additional burrows showed signs of burrowing activity.

To see if the petrels would continue nesting at Old Hump without artificial stimulation, no recordings were played in 1981. As predicted, petrels returned to breed in five of the 32 burrows and showed signs of activity in seven other burrows. The fact that ten of the thirteen burrows active in 1980 were active again this year suggests that once started by vocal playbacks and artificial burrows, the colony will persist because the adults soon develope a strong bond to their new nesting island.

To further isolate the factors important in starting a new petrel colony, 80 artificial burrows were tunneled into the soil in late May at National Audubon's Edgar T. Mulford Wildlife Sanctuary on Ross Island, located four miles west of Old Hump Ledge. Like Old Hump, Ross Island had no breeding petrels before experiments began, but there were large numbers of nonbreeders flying over the island on most summer nights. The eighty burrows were divided into four isolated sets, each with 20 burrows organized in a circular pattern around an outdoor PA speaker. By random assignment, one set of burrows received no sound, while automatic tape recorders played purring calls only, chuckle calls only, and a combination recording of purring and chuckling calls each night in the other three areas.

Results of the experiment demonstrate that the purring call when played near artificial burrows stimulates petrels to breed. No signs of activity were found in either the burrow set that received no sound or the set that received the chuckle only recording. Active burrows were found in both sets where purring calls were played, five in the purring only set and adults with eggs were found in three of the seven active burrows in the purring plus chuckle set.

Although Leach's Storm-Petrels are not a threatened species, the application of sound stimulation to related endangered species shows great promise. Several kinds of endangered petrels and shearwaters breed in only a few isolated parts of formerly extensive range. Several are threatened by introduced predators on their last breeding places. The potential to initiate new colonies on safe breeding sites could help to save these species from extinction.

# ACKNOWLEDGEMENTS

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I also extend my thanks to the Maine Bureau of Public Lands for their cooperation and lease of Eastern Egg Rock to the National Audubon Society and acknowledge the Maine Department of Inland Fisheries and Wildlife for their continued cooperation and interest in our various research projects.

Certainly without the long term cooperation of David Nettleship of the Canadian Wildlife Service, the Puffin Project would have never become a reality. To him I extend my deepest thanks. I also thank the Canadian Wildlife Service for permission to place an assistant on Machias Seal Island.

I am especially grateful to Carl W. Buchheister, the U.S. Fish and Wildlife Service and the U.S. Coast Guard Service for permission to place an Audubon warden/biologist on Matinicus Rock. Work at Little Duck Island was again assisted by David Miller and Ronald Butler of the Mount Desert Island Biological Laboratory.

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My deepest thanks go to the 1981 research team who spent so many hours cramped in tiny blinds monitoring puffin returns at Eastern Egg Rock, Matinicus Rock and Machias Seal Island. Without their dedicated assistance there would be little to report. I thank Diane DeLuca, David Enstrom, Jim McKenna, Randy Mohn, Doug Nelson, Rona Stein, Richard Podolsky, Evelyn Weinstein and Joanne Young.

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