



Egg Rock Update

1983 Report

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Director

Newsletter of the Fratercula Fund of the National Audubon Society

RAIN, HERRING AND PUFFINS

It was raining on May 28 when the 1983 puffin monitoring began at Eastern Egg Rock. It proved a very typical day for the season as it was the wettest spring in Maine's 112 years of recorded history. The U.S. Weather Bureau in Portland, Maine recorded 22.55 inches of rain for the months March through May. This is more than twice the normal 11.15 inches usually received during this period. Data from the Maine Dept. of Marine Resources shows that the heavy rains greatly increased river runoff into the Gulf of Maine, resulting in the lowest salinity and coolest waters in 15 years. The movement of Atlantic Herring from deep, offshore waters toward shallow, coastal areas may be affected by water temperature and salinity, and the herring is the puffin's principle summer food in Maine.

Small herring usually appear near puffin nesting islands in early June, just when puffin chicks are beginning to hatch. Herring numbers peak during July and August, as puffins have their greatest food demands from their growing chicks. Preliminary data from the Maine Dept. of Maine Resources shows that only twice in the past 43 years has the coastal Maine herring catch dipped as low as the 1983 catch. In central Maine, August catches of small herring have varied from 23 to 9,051 metric tons with an average of 2,850 metric tons for the past 36 years. In 1983, this usually fertile fishing region produced only 36 metric tons. The absence of herring for fishermen and puffins resulted from either a decrease in herring abundance or a change in their usual distribution.

This food shortage apparently affected both the numbers of puffins spending time on islands and their breeding success. Puffin numbers decreased at both Eastern Egg Rock and Matinicus Rock by one-third over the previous year. In 1982, 60 different transplanted puffins were observed at Egg Rock, but only 40 were identified in 1983. Likewise, the number of banded puffins declined at Matinicus Rock from 54 in 1982 to 33 in 1983. Puffin counts from the top of the Machias Seal Island lighthouse reveal the lowest puffin numbers in three years of observation.

Puffin breeding effort and success were also lower in 1983. At Eastern Egg Rock ten pairs of puffins bred in contrast with 14 breeding pairs in 1982. One of these was a new pair, but the remainder were birds that had bred in 1982. Counting the days from first to last feeding, it's likely that six of the pairs fledged chicks in 1983. The remaining four apparently either abandoned their chicks prematurely or their young starved when the parents could not bring in enough food. At Matinicus Rock five nestling puffins were found dead near burrow entrances, apparently from starvation.

Further evidence of a food shortage comes from the various foods that parent puffins were delivering to their young. At Eastern Egg Rock, puffins delivered herring to their young for approximately 95% of the feedings, but they also used less nutritious emergency foods such as euphasid shrimp and squid on 5% of the feedings. At Matinicus Rock and Machias Seal Island, puffins fed herring on only 70% and 32% of their feedings respectively and resorted to euphasid shrimp and squid for the remainder of their food.

This year at Machias Seal Island, a sample of 68 fledglings had a body weight 7% lower than the average for Machias puffins fledged during the previous three summers. Some of the herring brought to young puffins were definitely oversized and probably too large for puffin chicks to swallow. One puffin returned to its burrow with a herring so large that it tripped over the fish's tail as it walked! Less nutritious or oversized foods could result in lower body weights for fledglings and this could effect their chances for survival.

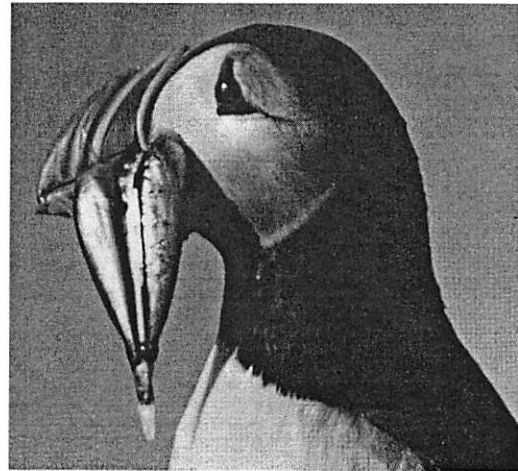


Photo by Evelyn H. Weinstein

"The breeding success of Maine puffins is intimately linked to the abundance and availability of herring."

Egg Rock Update

Eastern Egg Rock Tern Colony Increases to Over 1000 Pairs

In 1980, after an absence of 43 years, eighty pairs of Common and Arctic Terns recolonized Eastern Egg Rock. In 1981, several pairs of Roseate Terns joined the colony bringing numbers to 160 pairs. The colony increased in 1982 to 424 pairs and this past summer a nest count found another dramatic increase bringing the count to 1004 pairs. Approximately 95% were Common Terns with about 2% Arctic and 3% Roseate Terns. In just four summers, the Egg Rock colony has become by far the largest Common Tern colony in the state and one of only about 15 colonies of Arctic terns in the Gulf of Maine. Roseate Terns are even rarer, with only about five colonies in Maine.

Common and Arctic Terns have declined in Maine since about 1940 as Herring and Great Black-backed Gulls increased due to expanding food supplies from garbage and fishing activities. Increasing gull populations have displaced terns from many historic nesting islands, leaving the terns few alternate nesting sites.

Approximately 8,000 pairs of Arctic Terns were nesting on coastal Maine islands in 1945, but these numbers have dropped to alarming levels. This summer, William Drury and students from the College of the Atlantic, censused Arctic tern colonies in Maine and found only about 3,105 pairs. Of these, 2,200 pairs were nesting on only two islands, Machias Seal Island (approx. 1,200 pairs) and Matinicus Rock (approx. 1,000 pairs). This could represent up to a 60% decline in the Gulf of Maine Arctic Tern population since 1945. Common Terns have shown a similar long-term decline in Maine. In 1940, there were approximately 8,000 pairs nesting on Maine Islands, but only about 2,095 pairs were present in 1977.



Photo by Stephen W. Kress

"In just four years, Eastern Egg Rock has become the largest Common Tern colony in Maine. Some recruits have come from as far as Cape Cod and Long Island Sound."

The re-establishment of the Eastern Egg Rock colony vividly demonstrates the potential for managing tern populations. At Eastern Egg Rock, our effort to displace gulls began in 1974, when the nests of about 200 pairs of Great Black-backed Gulls were destroyed and staff from the U.S. Fish and Wildlife Service poisoned 70 adults with a selective bait. Gulls no longer nested on the island by 1976, but terns only circled before moving on to other islands. In 1978, we began using tern decoys and playing tape recordings of nonaggressive Arctic Tern calls. In this year, tern landings doubled, but first breeding did not occur until 1980, probably due to too few prospecting birds in the early years of the effort.

The value of the decoys in attracting terns is apparent because the first breeders nested in the immediate vicinity of the models and sound speakers. The colony has since expanded from the original nesting site and in 1983 totally surrounded the island. Models and speakers have not been used since 1981. This past summer, bands on two Egg Rock Common Terns revealed that they were banded as young in Plymouth, Massachusetts and Great Gull Island in Long Island Sound! Future band recoveries will likely show that Egg Rock Tern numbers are building from many adjacent states and provinces.

Laughing Gulls Recolonize Eastern Egg Rock

Laughing Gulls nested at Eastern Egg Rock this summer after a 69 year absence. The Laughing Gull is at its northern limit in Maine, and while never abundant in the state, its numbers have fluctuated and declined similar to those of the Common and Arctic Terns. Laughing Gulls last nested at Eastern Egg Rock in 1914, but they were apparently displaced during following years by increasing numbers of Herring Gulls. In 1977 there were only about 231 pairs nesting on six Maine islands.

In Maine, Laughing Gulls usually nest compatibly with terns and seldom illicit aggression. They usually avoid competing for nesting habitat by nesting in vegetation that is too high and dense for the smaller terns. Laughing Gulls have visited Eastern Egg Rock regularly since 1978, but have not nested until this year. In 1983, at least three pairs nested on the island's southern end and as many as 109 birds associated with the colony.



Egg Rock Update

Return of the First Native Egg Rock Puffin!

In 1981, after a 100 year absence, five pairs of puffins nested at Eastern Egg Rock. Of the five native young produced that year, two were pulled from their nests and banded. These received black bands with white engraved letters reading "A" and "B". On the morning of July 28th, Jim McKenna, one of the project assistants, scanned the puffin loafing ledges at Matinicus Rock, looking for banded puffins. It was certainly a highpoint for the 1983 season at Matinicus, because not only were there more puffins present than any other day all summer (132), but Jim spotted a young puffin with a black band. At first he couldn't read the engraving on the band, but then the bird turned, flashing its bold white letter. It was "B", the first return of a native Egg Rock chick!

The odds that one out of two banded chicks would survive are remarkable, but even more surprising is that this is the only two-year-old puffin from Egg Rock sighted all summer. All of the 98 Newfoundland transplanted puffins reared and released at Egg rock the same summer that "B" fledged are missing. Hopefully, the general low numbers and poor food supply near islands in 1983 holds the answer and this missing group will return as three-year-olds next summer.

Razorbill Decoys

The Razorbill, a stout, 14 inch member of the auk family, currently nests on only four islands in the Gulf of Maine. Approximately 20 pairs presently nest at Matinicus Rock, the southern outpost of the species, 20 miles south of Rockland, Maine.

In 1982, Razorbills frequented the shoreline of Wooden Ball Island, six miles northeast of Matinicus Rock, but none landed. In 1983, 17 Razorbill decoys were placed atop boulders near suitable nesting habitat to see if Razorbills would land on the island. The project rests on the hypothesis that insufficient social stimulation might be the principle limitation keeping Razorbills from breeding on the island. If the decoys would attract and hold the attention of a few Razorbills, others might join the assemblage and this could eventually lead to a new colony.

Much to the excitement of observers, a Razorbill landed with the decoys during the first three days of observations. Razorbills also landed with decoys on five other days. Most landings were by single birds, but one pair landed and briefly explored rock crevices near the decoys. Considering that puffin landings with decoys at Wooden Ball declined from 73% to only 3% of observation days between 1982 and 1983, perhaps in a more normal herring year, Razorbills would have spent even more time on the island.

Matinicus Rock Becomes New Audubon Field Station

The Matinicus Rock Light Station, located approximately 20 miles off Rockland, Maine has been a manned light station operated by the U.S. Coast Guard since 1827. That status will change this December as the last stationed crew leaves this outermost rock. With automation, the Coast Guard licensed National Audubon Society to use the 137 year-old National Landmark Light Station as a field station for its warden-biologists.

Cooperation between the Coast Guard and National Audubon Society dates back to the early 1900's. In 1900, William Dutcher, then Chairman of the American Ornithologists' Union Bird Protection Committee, appointed Captain William Grant, keeper of the Matinicus Light, to protect the island's terns, puffins and other seabirds from the millinery hunters. Grant thus became one of the first wardens to protect birds in North America. When Dutcher founded and became President of the National Audubon Society in 1905, the Society continued to appoint Matinicus Light Keepers as wardens until 1916. This cooperation continued from the early 1950's to 1979 as Dr. Carl W. Buchheister (President Emeritus of National Audubon Society) and Mrs. Buchheister served as volunteer Audubon wardens. Since 1979 warden-biologists from the Puffin Project have studied puffins, terns and petrels on the island and have supervised visitors. The island is now cooperatively maintained as a Seabird Nesting Refuge by the U.S. Fish & Wildlife Service, U.S. Coast Guard, and the National Audubon Society.

Matinicus Rock remains very significant to Maine seabirds as the largest colony of Arctic Terns in U.S. waters (~ 1000 pairs), the southernmost colony of Razorbills (~ 20 pairs), largest Maine colony of Laughing Gulls (~ 115 pairs) and the largest U.S. colony of Atlantic Puffins (~ 75 pairs).

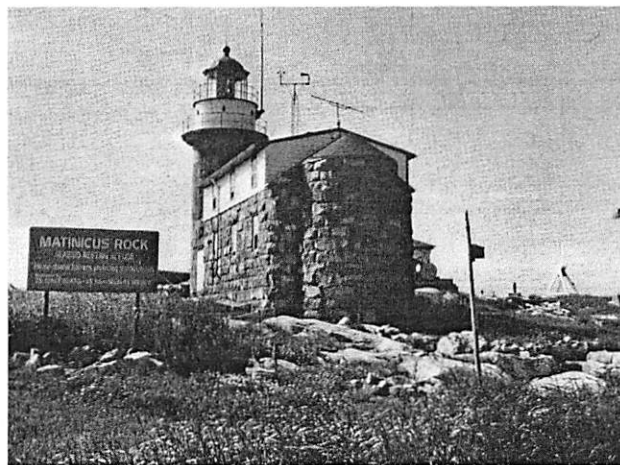


Photo by Stephen W. Kress

"Matinicus Rock Light Station"

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