

## THE BALD EAGLE IN MASSACHUSETTS: A PERSPECTIVE

by William J. Davis

The Bald Eagle (*Haliaeetus leucocephalus*) is arguably the best known and most highly regarded wild animal in North America. Not only is it the national symbol of the United States, it is also featured as an emblem for countless organizations, businesses, and agencies. Few animals are as immediately recognizable as an adult Bald Eagle with its bright white head and tail, bright yellow beak and feet, and dark brown wing and body plumage. The six-and-a-half to seven foot wingspan only adds to the awe-inspiring appearance of the bird. Up close, the piercing eyes, furrowed brow, menacingly hooked beak, and talons instantly command attention and respect. Small wonder that in 1782 the Founding Fathers selected the Bald Eagle as our national bird. Its size and appearance personify the qualities of strength, tenacity, and independence, all of which were important values for a new nation.

Sadly, the Bald Eagle fell victim to a combination of America's growing pains and ignorance. As the colonies expanded and grew, the eagle's habitat was destroyed to make way for increasing agricultural demands. With the farmland came people and livestock. Eagles were shot on sight, bounties were paid, and the regal birds were driven out of their once native haunts, following the eastern mountain lion and timber wolf toward extinction. In Massachusetts the scenario was much the same. Colonization was followed by westward expansion, land-clearing, and exploitation of wildlife resources. Gone were the Wild Turkey and beaver, while Bald Eagles maintained a tenuous hold to the land, saved, in part, by their fondness for remote and inaccessible places. Eighty-five percent of the land area in Massachusetts was cleared for farming, with only steeper slopes and poorer soils spared by the plow.

The Civil War interrupted the human progress and expansion that had occurred over nearly 100 years. Attention shifted from agriculture to industry, and many farms were abandoned for wage-paying jobs in city factories. Nature began reclaiming much of the agricultural land, and wildlife received a reprieve from human encroachment. Eagles were still persecuted, however, and many birds were shot in the interest of "protecting" animals and small children.

In the early 1900s suburban expansion encroached again into existing wildlife habitat. A swelling human population and more interest in outdoor recreation put increased pressure on waterfront property, driving wetlands-dependent animals away from many of the larger drainages and water bodies in the state. The last suspected eagle nesting, suspected because none of the historic nesting reports were ever properly documented, is believed to have occurred at Snake Pond in Sandwich in 1905. After that time, the Bald Eagle

was considered extirpated from Massachusetts as a breeding bird.

As the saying goes, what followed next was "some good news, and some bad news" for the Bald Eagle. The good news was the creation of Quabbin Reservoir, 25,000 acres of water surrounded and interspersed with 55,000 acres of watershed lands and islands. This man-made reservoir represented the largest unbroken tract of wildlife habitat in southern New England and should have been naturally occupied by Bald Eagles seeking new nesting territories.

Unfortunately, the bad news was the advent and widespread use of organochlorine pesticides, most infamous among them dichloro-diphenyl-trichloroethane, or DDT. The post-World War II era saw extensive aerial spraying of pesticides to control agricultural and forestry insects and for mosquito control in populated areas. As the chemicals entered the food chain, they quickly built up to dangerous levels in the tissues of larger animals and top-of-the-food-chain predators.

In the Bald Eagle, DDT was ingested after having accumulated in the tissues of fish and other prey that the eagle fed upon. DDT was metabolized within the eagle's system, and the resulting metabolite interfered with the eagle's ability to produce calcium, a main ingredient in the formation of eggshells. The resulting eggs, therefore, were thin-shelled and brittle, unable to withstand the rigors of incubation. The eggs broke under the weight of the incubating adult birds, killing the developing chick within. Bald Eagles are naturally slow breeders, producing an average of one chick per nesting pair annually. In many areas of the eagle's range, the introduction of DDT reduced chick production to zero, as no young were being successfully fledged from traditionally active nests. With no young eagles being recruited into the population and with the established adults aging beyond their reproductively viable years, overall populations began to decline. Eagles became absent or their numbers greatly reduced in some areas, resulting in endangered status being declared over the southern U.S. range (below the 40th parallel) of the eagle in 1967.

DDT was banned from use in the United States on December 31, 1972. The Endangered Species Act was passed in 1973. The Act allowed certain distinct populations of a species to be listed as Endangered or Threatened. Surveys in the early 1970s revealed critically low populations of eagles in areas over much of the northern part of the bird's range. In 1978 the U.S. Fish and Wildlife Service (USFWS) listed the Bald Eagle as Endangered in forty-three of the lower forty-eight states and Threatened in the remaining five (Michigan, Minnesota, Wisconsin, Washington, and Oregon).

With the Endangered Species Act in place, the goal of restoring Endangered populations of animals and plants became a priority with the USFWS. In 1976 the nation's Bicentennial Year, the New York State Department of Environmental Conservation (NYSDEC) began the first Bald Eagle reintroduction project in the country using the technique of hacking. Hacking,

adopted from the sport of falconry, is a process of releasing birds of prey to the wild. As applied by the NYSDEC, hacking involved bringing young Bald Eagles to New York from active nests in Alaska and raising the birds on a man-made platform, in man-made nests, overlooking an area of suitable habitat. The birds would be cared for by human attendants, who would have minimal contact with their charges. When able to fly, at the age of ten to twelve weeks, the eagles would be released to the wild; presumably at this point they would have an attachment to their new home. The NYSDEC project reached a preliminary goal when in 1982 the first two eagles, which had been released in 1976, were found nesting in New York.

Following this early success, other states, in cooperation with the USFWS, began hacking projects of their own. The Massachusetts Division of Fisheries and Wildlife actively hacked eagles at Quabbin Reservoir from 1982 through 1988, receiving single chicks from two-chick nests in Michigan, Manitoba, and Nova Scotia. A total of forty-one young birds were released to the wild from a tower situated on the Prescott Peninsula. The Massachusetts project had its first success in 1989, when two pairs of nesting eagles at Quabbin produced a total of three chicks. Since that time the Massachusetts nesting eagle population has grown to nine pairs, five of which are found at Quabbin, three on the Connecticut River, and one at the Assawompsett Pond system in Plymouth County. A total of thirty-six wild chicks have fledged from these nests and represent the next generation of eagles in Massachusetts, a generation that we hope will mature, pair off, establish territories, and nest on their own. The goal is to achieve a self-sustaining population of Bald Eagles in Massachusetts, throughout the Northeast, and across the bird's entire range.

This goal is being realized as witnessed by the growing Massachusetts eagle population and increases in numbers of nesting eagles in Maine, New York, and in the Great Lakes states. Connecticut and New Hampshire have benefited from eagle restoration projects, and each has recently established nesting pairs. The Connecticut eagles are believed to have originated from the Massachusetts hacking effort, and the New Hampshire pair comprises a New York hacked bird and a bird produced from a wild nest in Maine.

On the national level the Bald Eagle population has recovered dramatically. A 1963 survey of the lower forty-eight states revealed 417 pairs of Bald Eagles. A similar survey conducted in 1993 counted 4016 pairs, indicating that the Bald Eagle is doubling its breeding population every six to seven years! Here in the northern states region, of which Massachusetts is a part, the numbers are equally encouraging. As recently as 1984, there were 682 known pairs of eagles. That number has jumped to 1602 pairs as of 1993.

As of this writing, eight of the nine known Massachusetts pairs of nesting Bald Eagles are tending their nests and incubating their clutch of eggs. Mechanisms are in place to protect and monitor each site in cooperation with the

respective landowners and managers. When chicks are approximately five weeks of age, each nest will be visited, and the nest tree climbed so that the young can be banded and given a brief physical exam by veterinarians from the Tufts University School of Veterinary Medicine. This is the only human contact the young eagles should have over a lifetime that could span thirty years.

Problems persist in the environment: heavy metals and chemicals are present, habitat is at a premium, and thoughtless and unknowing people still shoot and harass eagles and other protected species of wildlife. Fortunately, however, there is a growing environmental awareness, and with it, growing support for the conservation of wildlife and the habitat that sustains it. People realize that we too are a part of the environment, and while we are the most adaptable inhabitant on earth and have the greatest ability to alter the land, water, and air that surround us, we are no less dependent on these resources for our very existence than are less highly evolved forms of life. The Bald Eagle shows us what can happen when we display careless disregard for the environment and shows us that we have the ability to make amends for past mistakes. The lesson of the Bald Eagle should be passed on and well remembered.

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***Pelagic Trip***  ***September 8-9, 1995***

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***Shearwaters, storm-petrels, jaegers, others.***

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