

THE HISTORY OF THE PARKER RIVER NATIONAL WILDLIFE REFUGE

By Thomas R. Hamilton

The Parker River National Wildlife Refuge, located thirty-five miles north of Boston and six miles east of Newburyport, Massachusetts, is a popular area visited by over 250,000 birders, swimmers, and saltwater anglers each year. The refuge consists of over 4,000 acres of salt marsh and seven miles of sand dunes and barrier beach. As part of the National Wildlife Refuge System, the area is a major resting and feeding area for migrating ducks and geese; over 300 bird species have been seen in the refuge in the last twenty years. In this article I will describe some of the geological processes that formed the island, the various ways in which the land and adjacent salt marsh have been and are being used, and the political process which formed the current boundaries of the refuge.

Building a Barrier Beach and Salt Marsh

About 12,000 years ago, when New England was covered by the last glacier, the coastline was several hundred miles to the east of what is now Plum Island. As the glacier retreated and the sea rose, the shoreline became a compromise between the sea and the rebounding land. At what is now the southern end of Plum Island, the glacier left behind five low hills consisting of a mixture of loose boulders, gravel, and sand. Three of these hills (Bar Head, Stage Island, Cross Farm Hill) are part of the island, and another (Grape Hill) exists as a slight rise in the salt marsh. The fifth hill, Emerson's Rocks, has severely eroded and is now reduced to a strand of rocks that are visible on the ocean side of the southern end of the island during low tides (Ryan 1982). These landmarks can be located with a map available at the refuge headquarters. Over the years silt from the Merrimack River and sand from the glacial deposits on the coast of New Hampshire were transported by ocean currents that move in a southerly direction and deposit their loads around the drumlins. When Plum Island became established, it formed a barrier against powerful ocean waves, causing the development of a protected area between the island and the mainland. This quiet area accumulated silt transported by the Merrimack, Rowley, and Ipswich Rivers and developed into the 3,000 acres of salt marsh that are visible from the refuge road. The nutrient-rich waters of the marsh provide productive habitat for ducks, geese, wading birds, and fish.

Early Land Use

Before the arrival of English colonists, Native Americans traveled down the Merrimack River in the spring to establish seasonal fishing camps on Plum Island. In the 19th century, archaeologists excavated these sites and found many

stone and flint tools, fragments of pottery, and several middens consisting of large piles of shells. The sites of three camps were discovered in what are now the Newbury and Ipswich sections of the island (Moorehead 1931). The first recorded sighting of Plum Island by a European was by Samuel de Champlain in 1605. In 1614, Captain John Smith mapped Plum Island and described it as an area "fit for pastures, with many faire high groves of mulberrie trees and gardens; and there is also Pines and other wood to make this place an excellent habitation . . ." (quoted in Mulliken 1951). There is no evidence that mulberry trees ever grew on Plum Island; probably Smith was describing the beach plums from which the island's modern name is derived.

The early English colonists valued salt marsh grass (*Spartina*) because it is an excellent, nutritious fodder for cattle. In 1637 the newly incorporated town of Newbury petitioned the General Court of Massachusetts to have Plum Island and the adjacent salt marsh annexed by the town. Since the settlers in neighboring Rowley and Ipswich also valued the salt marsh grass, they were not about to give up their right to what was viewed as common land. Therefore, in 1646 the General Court, with the wisdom of a Puritan Solomon, divided the island and marsh among the three towns. Later, a portion of Newbury's share was transferred to Newburyport after that city was founded. In a few years the towns divided their portions into small parcels that were allotted to their respective residents; unfortunately, this started a period of uncontrolled grazing by horses, pigs, and cattle. Since fences were nonexistent, the animals were simply turned loose on the island and marsh, destroying much of the original vegetation and starting a period of serious erosion. In 1739 an attempt was made to save the remaining vegetation and reduce erosion by curtailing the free-roaming cattle and prohibiting the cutting of trees under six inches in diameter. Probably by this time, however, few large trees remained (Currier 1906, Coffin 1971).

Salt marsh grass is still harvested in some areas of the marsh outside the refuge. In the past, the cut grass was stacked on platforms built on two-foot-high posts to hold the drying grass well above the high-tide mark. The stacks of marsh grass were collected in the winter, when it was possible to drive horse-drawn wagons or sleds onto the marsh. Remnants of these platforms can still be seen in the marsh, especially in the area near the gatehouse. Another marsh grass, cordgrass, was used for roofing and as bedding for cattle. This coarse plant, which grows along the banks of the Ipswich and Parker rivers, was harvested by hand from shallow-draft boats during low tides.

By the beginning of the 19th century, many of the small holdings at the southern end of Plum Island had been consolidated into farms of approximately 100 acres. Two of these farms are remembered today in the place-names of Emerson's Rocks and Cross Farm Hill. At the northern end of the island, transport to the mainland was made easier when a toll road was built through the

marsh and a small bridge was built over the Plum Island River. This was soon followed by the construction of a small hotel. By the end of the 19th century, many summer cottages, some quite large, had been built, several hotels and business were operating, and public transportation along a horse-car railway (later replaced by an electric trolley) from Newburyport made Plum Island a popular destination for summer day trippers (Weare 1996).

In the early 20th century the Plum Island Beach Company secured title to most of the northern end of the island and quickly developed plans to create hundreds of small house lots to be offered for sale to the public. The paving of the Plum Island Turnpike and Northern Boulevard made the northern end of the island easily accessible by automobile. Although the southern end of Plum Island was most easily visited by boat, the Bar Island Realty Company, which owned approximately 400 acres on Sandy Point, had elaborate plans for creating roads and numerous small house lots (Weare 1996). Clearly, by the late 1930s rapid development on Plum Island was occurring. If development had been allowed to continue unchecked, in a few years the entire island would have been covered with small, seasonal dwellings, and the character of the island would have changed forever.

Creating a Wildlife Refuge

Plum Island and the adjacent salt marsh have long been famous as a gathering place for migratory birds. By the start of the 20th century, the area's importance was recognized by prominent ornithologists such as Charles W. Townsend and Edward Howe Forbush, who urged that Plum Island be secured as a bird sanctuary (Carson 1947). In 1928 Annie H. Brown, a long-time member of Massachusetts Audubon Society, bequeathed to The Federation of the Bird Clubs of New England a large part of her estate (\$25,000) for the establishment and maintenance of a wildlife sanctuary. After several months of negotiations, the executors of the estate and the officers of the Federation wisely selected a parcel of 300 acres of beach, dunes and salt marsh near the southern end of Plum Island as the core of the new bird sanctuary. Soon after the initial purchase two more tracts were added, bringing the total protected area to approximately 600 acres (Fletcher 1931). The officers of the Federation also secured options to purchase an additional contiguous 800 acres and immediately initiated plans to raise the necessary funds totaling \$10,000 (Floyd 1928). The Federation later merged with the Massachusetts Audubon Society, and by 1938 the Society had consolidated numerous small pieces of property to form the Annie H. Brown Sanctuary, which consisted of 1,115 acres. Part of Brown's bequest supported two wardens who patrolled the sanctuary to prevent trespassing by hunters.

Evidently, the presence of a bird sanctuary that set aside some prime hunting areas for the preservation of wildlife was not appreciated by local

hunters. The Essex County Sportsmen's Association protested the granting of tax-exempt status to the Massachusetts Audubon Society. In an article in the September 10, 1937, issue of the *Lawrence Tribune*, the Sportsmen's Association objected to the Society's "vast holdings . . . allowing vermin to get out of control besides limiting the land on which hunting may be done" (Anon. 1937a, Anon. 1937b). Judge Robert Walcott, president of Massachusetts Audubon Society, defended the expansion of the sanctuary by stating that it was established to provide "a safe resting, feeding and breeding ground for game and non-game species" (Walcott 1938). To both professional and amateur ornithologists it was obvious that Plum Island and the adjacent marsh were critical parts of the Atlantic flyway, allowing waterfowl a chance to rest and find food along their migration route. In the 1940s there was anecdotal evidence that Black Ducks, much prized by hunters, were in a serious population decline (Carson 1947).

The U.S. Fish and Wildlife Service sought to purchase the Brown Sanctuary in 1940 so that it could be a core part of a federal wildlife sanctuary. Initially the offer was declined; however, in 1942 the Society, under threat of the land being taken by eminent domain, sold their holdings on Plum Island for \$35,000 and the Parker River National Wildlife Refuge was established (Anon. 1942a). Funds from the sale of the Brown Sanctuary were later used to help establish the Ipswich River Audubon Sanctuary in 1951 (MacDougall 1993). The Society agreed to the sale only if the Brown Sanctuary were to become part of a substantially larger wildlife refuge and members of the Massachusetts Audubon Society were to have access to the refuge for the purpose of bird study (Anon. 1942a). Members of the Essex County Sportsmen's Association opposed the sale of the Brown Sanctuary because they believed that it would lead to the acquisition of even more of the island and salt marsh for the establishment of a much larger federal wildlife refuge (Anon. 1942b). Over the protests of local hunters, the U.S. Fish and Wildlife Service was authorized by Congress to acquire a total of 12,000 acres of marsh as well as all of Plum Island. Local opposition was very strong (1946a), resulting in a bill passed by Congress to eliminate the refuge; although President Truman pocket vetoed this bill (Anon. 1946b), vigorous opposition to the establishment of the refuge remained (1946c). Political pressure in Washington continued for two more years until a compromise bill was finally passed by Congress and signed by the President on June 4, 1948 (Anon. 1948a, Anon. 1948b). Most of the land that had been taken by eminent domain was returned to the previous owners. However, the heart of the original refuge was saved; and most of Plum Island, as well as a large area of marsh, survived as the Parker River National Wildlife Refuge.

Over the years since the passage of the compromise legislation in 1948, the Fish and Wildlife Service has, with revenue generated by the sale of Duck Stamps, regained some of the land that had been given up and all but one of the

private camps within the refuge boundaries have been acquired. Today the total area of the refuge is 4,662 acres — less than half of the size originally authorized by Congress in 1941. Hunters and landowners who wanted to regain their right to freely use the marsh and beaches regained much of what had been taken by the federal government. In the process, however, a large area which could have been preserved as a resting place for migratory birds was lost.

Goals of the Refuge

The refuge clearly means many things to many people, and the U.S. Fish and Wildlife Service has tried hard to accommodate as many demands as possible while also meeting their legal mandate to maintain a wildlife refuge. Shell-fishing in designated areas is permitted, as well as surf fishing between July 1 and October 31, provided the areas are not closed for nesting birds. Although it may seem contradictory, in some areas of the refuge waterfowl hunting for geese, ducks, American Coot, and sea ducks is permitted in accordance with refuge, state, and federal regulations. In 1997 a two-day deer hunt was permitted on December 1 and 2. And between Labor Day and the end of October, Beach Plum collecting occurs on the east side of the refuge road (Haydock, pers. comm.).

Other than banding waterfowl, refuge personnel are not directly involved in ongoing scientific research. However, the refuge is the site of several research studies that include the banding and surveying of land birds (Massachusetts Audubon Society), a survey of the Brown-tailed Moth (Massachusetts Department of Environmental Protection), an annual hawk survey (Eastern Hawk Watch Association), a survey of mammals and vegetation (University of Vermont), a study of the genetics of beach plums (University of Vermont), and the tagging of migratory monarch butterflies (University of Toronto) (Haydock, pers. comm.).

A large number of visitors to the refuge come to use the wide, beautiful beaches for swimming and sunbathing. In 1987, however, a large area of the beach was closed to protect the nesting area of a lone pair of Piping Plovers, an endangered species. Subsequently, following the federal mandate of the Endangered Species Act, the entire beach within the refuge boundary has been closed to all recreational activity from the first of April to early August. In 1995, twenty-one pairs of Piping Plovers nested on the beach and produced forty-four chicks; however, in 1997 the number of nesting plover pairs was down to sixteen, and only twenty chicks were produced. During the nesting season the refuge staff of eight employees, with the help of approximately forty-five volunteer "plover wardens," patrol the beach and access points. Often much of their time is spent patiently explaining to would-be beachgoers the necessity of keeping off the beach while the plovers are nesting (Haydock, pers. comm.).

Interestingly, 80 percent of the visitors between June, 1993, and May, 1994, supported the beach closure (Gilbert 1994).

The refuge staff have worked hard to protect the Piping Plovers, but they have had to work against many obstacles: severe erosion to the widest areas of beach destroyed some of the best plover nesting areas, uncontrolled dogs come into the refuge from homes in the residential part of the island and from Sandy Point State Reservation, predators such as foxes, skunks, and raccoons are difficult to control because of new live-trap regulations and, sadly, wanton vandalism resulted in the destruction of one nest in 1997 (Haydock, pers. comm.).

Since the establishment of the refuge, the dunes and salt marsh have gradually started to return to a more "primitive" condition, while the surrounding countryside has gone through a tremendous house-building boom, putting a higher premium on the remaining open spaces. Although people come to the refuge for many reasons, a survey of visitors suggests that 39 percent come for the purpose of wildlife observation (Gilbert 1994), helping to support the notion that Plum Island is the most heavily birded area in Massachusetts. Many visitor come simply to see the flocks of migrating geese or the astounding numbers of tree swallows that gather in late August. In the winter Snowy Owls, Rough-legged Hawks, and Northern Harriers are often seen flying over the marsh. In late November, Canada Geese and Black Ducks gather in large numbers in open water, and other migrants from the north such as Snow Buntings, Lapland Longspurs, and Horned Larks are often found in large flocks among the dunes.

The refuge checklist (available at the gatehouse) identifies 303 species that have been recorded on or near the refuge during the past ten years. Since the Parker River Refuge is thoroughly birded throughout the year, any unusual vagrants that visits the area are probably going to be sighted by someone. Using records published in *Bird Observer* and other sources (Steele 1993, Petersen 1993, 1997), I was able to compile the following brief list of interesting rarities sighted on or from Plum Island during the last ten years: "Eurasian" Green-Winged Teal (1988), Little Egret (1989), Terek Sandpiper (1990), Lark Bunting (1990), Gull-billed Tern (1991), Sandhill Crane (1992), Eurasian Wigeon (1993), Black-necked Stilt (1995), Ruff (1995), Vermilion Flycatcher (1995), Gyrfalcon (1996), Say's Phoebe (1996), Swainson's Hawk (1996), Long-billed Curlew (1996), Forster's Tern (1997), and American White Pelican (1997).

In 1985 the Fish and Wildlife Service took possession of a 12-acre parcel of land off Plum Island for the purpose of building a new headquarters and visitors' center. The Trust for Public Land purchased the property for \$526,000 and sold it to the Fish and Wildlife Service for \$430,000; the deficit was made up by a coalition consisting of the New England Chapter of the Sierra Club, The Conservation Law Foundation, and Massachusetts Audubon Society. At present,

the Fish and Wildlife Service and the State of Massachusetts have budgeted approximately \$2.1 million for construction on the site; however, the design of the facility is still in the early stage and construction may not start before the year 2000 (Connor 1985; Anon. 1985; Peach, pers. comm.).

The Parker River National Wildlife Refuge is a mosaic of compromises and uses. The U.S. Fish and Wildlife Service has had to balance the demands of the public for access to the refuge for recreational purposes against the service's mandate to maximize wildfowl management. Any human activity within the refuge can only be permitted if it is compatible with the overall mission of the refuge. In the words of John L. Fillio, Refuge Manager, "Our first objective is wildlife, not people. This is a wildlife refuge, not a park." As the population of northeastern Massachusetts continues to grow and open spaces become fewer, the value of the refuge as a place of sanctuary for wildlife will continue to increase. This beautiful and fragile environment must be protected.

References

- Anonymous. 1985. Refuge takes title on headquarters site. *The Newburyport Daily News*. March 27.
- Anonymous. 1948a. Bates Refuge Bill to be Referred to Full Committee. *The Newburyport Daily News*. March 17.
- Anonymous. 1948b. Truman Signs Bates Bill. *The Newburyport Daily News*. June 4.
- Anonymous. 1946a. Anti-refuge Bill Passed by U.S. Senate. *The Newburyport Daily News*. Aug. 3.
- Anonymous. 1946b. Truman Vetoes Bird Refuge Bill. *The Newburyport Daily News*. Aug.16.
- Anonymous. 1946c. Pocket Veto of Refuge Bill Stirs Widespread Indignation. *The Newburyport Daily News*. Aug.17.
- Anonymous. 1942a. U.S. Government Seeks Plum Island Sanctuary. *The Newburyport Daily News*. Nov.19.
- Anonymous. 1942b. Sportsmen are Opposed to Bird Sanctuary Sale. *The Newburyport Daily News*. Dec. 4. Anonymous. 1937a. Protest Exemption of Audubon Society, In Tax Payment. *The Salem News*. Sept.10.
- Anonymous. 1937b. Tax Exemption Law Draws County Fire. *The Lawrence Tribune*. Sept.10.
- Carson, R.L. 1947. Parker River - A New England Conservation Project. *The Bulletin of the Massachusetts Audubon Society*. March: 51-61.
- Coffin, J. 1971. *A Sketch of the History of Newbury, Newburyport and West Newbury*. Newbury, Massachusetts: Peter E. Randall.
- Connor, I. 1985. Mainland Headquarters-Visitor Center Acquired for Parker River National Wildlife Refuge. News Release.
- Currier, J. J. 1906. *History of Newburyport, Massachusetts. 1764-1905*. Newburyport.: self-published.
- Fletcher, L. B. 1931. Plum Island Wild Life Reservation. *The Bulletin of the Essex County Ornithological Club*: 54-55.

- Floyd, C. B. 1929. The Annie H. Brown Wild Life Sanctuary. *Massachusetts Audubon Society Bulletin* 6(7): 5.
- Gilbert, L. 1994. *Public Use Survey, Parker River National Wildlife Refuge*. Unpub. Master's Thesis, University of New Hampshire.
- Master Plan Parker River National Wildlife Refuge*, Essex County, Massachusetts. 1986. U.S. Department of the Interior, Fish and Wildlife Service.
- Moorehead, W. K. 1931. *The Merrimack Archaeological Survey, A Preliminary Paper*. Salem, Massachusetts: Peabody Museum.
- Mulliken, S. E. 1951. Plum Island. Essex Institute Historical Collections, Vol. LXXXVII.
- Petersen, W. R. 1997. Second Annual Report of the Massachusetts Avian Records Committee. *Bird Observer* 25(2): 187-194.
- Petersen, W. R. 1993. Best Birds in Massachusetts: 1973-1992. *Bird Observer* 21(1): 22-25.
- Ryan, D. A. 1982. *A Commemorative Guide to The Natural History of Plum Island, In Memory of Ralph H. Good*. Self-published.
- Steele, M. 1993. Fifty Years of Birding: An Interview With Margaret Argue. *Bird Observer* 21(1): 5-14.
- Walcott, R. 1938. Letter by Judge Robert Walcott expressing concern about local opposition to the Brown Refuge. Massachusetts Audubon Society Archives.
- Waters, T. R. 1918. Plum Island, Ipswich, Massachusetts. *The Ipswich Historical Society, Publication XXII*. (Repr. The Anundsen Publishing Company, Decorah, Iowa.)
- Weare, N. V. 1996. *Plum Island: The Way It Was*. Newbury, Massachusetts: Newburyport Press, Inc.

The author is grateful for the generous assistance of the following refuge personnel: Steve Haydock, Outdoor Recreation Planner; John Fillio, Refuge Manager; Bill Peach, Project Director for Visitor's Center. Assistance was also provided by the staff of the Newburyport Public Library, Erika Saunders, Librarian for Massachusetts Audubon and Christy Sorensen of the Peabody-Essex Museum. I am also grateful for the encouragement and support of Judy Hamilton and the Kenan Fund of Phillips Academy.

Thomas R. Hamilton is chairman of the Department of Biology at Phillips Academy in Andover, Massachusetts.