



U.S. Fish & Wildlife Service

Rachel Carson National Wildlife Refuge

Environmental Assessment
Management of Buildings and Other Infrastructure on Timber Point
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September 2014



Photo Credit: TTL Architects

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York County, Maine

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.



The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations.

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Chapter 1 – PURPOSE OF, AND NEED FOR, ACTION

1.1 Introduction

The U.S. Fish and Wildlife Service (Service, we, our) has prepared this environmental assessment (EA) to evaluate a range of alternatives for managing buildings and other infrastructure on Timber Point, a 157-acre tract on Rachel Carson National Wildlife Refuge (NWR, refuge), located in Biddeford, Maine. Most of the buildings and infrastructure are part of the former Ewing residential estate, built and designed by the renowned architect Charles Ewing and his family in the 1930s and 1940s. These estate buildings and structures are possibly eligible for listing on the National Register of Historic Places (National Register). Other infrastructure on Timber Point was constructed by the refuge to support public access, including the Timber Point Trail and an observation platform.

We are writing this EA to comply with the National Environmental Policy Act of 1969 (NEPA) and its Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500-1509). This act requires that we, as a Federal agency, consider a reasonable range of alternatives for a proposed Federal action and evaluate each alternative’s potential environmental impacts.

Our regional chief will use this EA to determine if the proposed action, or other alternatives evaluated, will cause a significant impact on the human environment and therefore require preparation of an environmental impact statement (EIS). If an EIS is not required, our regional chief may use this EA to support a decision for selecting one of the alternatives for implementation.

1.2 Document Organization

This EA is organized into five chapters:

- Chapter 1–“Purpose Of, and Need For, Action” provides background on the proposed project and describes the planning process.
- Chapter 2–“Affected Environment” describes the existing physical, biological, and socioeconomic resources of Timber Point and the surrounding area.
- Chapter 3–“Description of Alternatives” provides detailed description of the proposed action and four alternatives.
- Chapter 4 – “Environmental Consequences” analyzes and compares the impacts of the four alternatives of the resources described in chapter 2.
- Chapter 5 – “List of Preparers and Coordination” describes how we coordinated with partners and reached out to the public during this planning process. It also lists who helped prepare this document.

1.3 Rachel Carson NWR and Timber Point Background

Rachel Carson NWR

On December 16, 1966, Congress established the “Coastal Maine NWR” under the authority of the Migratory Bird Conservation Act. The refuge was established to preserve migratory bird habitat and waterfowl migration routes along southern Maine’s coastal estuaries. In a formal dedication ceremony on June 27, 1970, the refuge was renamed in honor of scientist and author Rachel Carson, who spent much of her life along the Maine Coast.

Rachel Carson NWR consists of 11 refuge divisions protecting approximately 5,600 acres of coastal wetlands and upland habitat. All divisions lie along 50 miles of the southern Maine coastline, encompassing the coastal communities of Kittery, York, Eliot, Ogunquit, Wells, Kennebunk, Kennebunkport, Biddeford, Saco, Old Orchard Beach, Scarborough, and Cape Elizabeth, within York and

Cumberland counties. For more detailed information on the refuge, please refer to the refuge’s comprehensive conservation plan (CCP) (USFWS 2007, available online at: http://www.fws.gov/refuge/Rachel_Carson/what_we_do/conservation.html).

Timber Point and Ewing Residential Estate

In 2011, the Service acquired in fee all but a 13-acre private inholding on Timber Point¹, including Timber Island and the Ewing residential estate, a former seasonal family estate. Our ownership extends to the mean low water mark. This acquisition added 157 acres to the refuge’s Little River Division. The property was acquired by the Service under the authority of the Migratory Bird Conservation Act with the purpose to protect important breeding, migration, and wintering habitat for waterfowl, wading birds, and shorebirds (Service memo to Maine Department of Inland Fisheries and Wildlife (MDIFW); 7/27/2011). It was one of the last large, relatively undeveloped properties under private ownership on the southern Maine coast. Timber Point has over 2.5 miles of rocky shore coastline, which is important for feeding and resting shorebirds. The tract also contains salt marsh, white pine stands, mixed deciduous forest, cattail marsh, and shrub wetland habitats that provide outstanding habitat for migratory birds.

Timber Point is open to the public year-round for wildlife observation, photography, and interpretation. In May 2012, the Service established a 1.4-mile public hiking trail on the property. It is referred to as the Timber Point Trail. This trail was designated as a National Recreation Trail in 2013 by Secretary of the Interior Sally Jewel. Beginning in the fall of 2014, we will also begin offering a fall archery hunting season for white-tailed deer and turkey.

The 1930s-era Ewing residential estate is located on the property. It was used by the Ewing family as a seasonal vacation home until the Service acquired it in 2011, but has not been used since. It is not currently open to the public. The estate includes a main house, garage/woodshop complex, laundry, seawall, and numerous other buildings and structures. In chapter 2, we describe the estate’s historical importance, provide some background on its architect, Charles Ewing, and provide a description of all buildings and structures.

The estate’s buildings and structures are possibly eligible for the National Register. The Service is currently working with the Maine Historic Preservation Commission (SHPO) to determine which buildings and structures will be nominated for listing on the National Register.

1.4 Purpose and Need

Purpose of EA

The purpose of the proposed action is to establish management direction for the Ewing residential estate buildings and other infrastructure on Timber Point that best meets the following criteria:

- 1) Supports refuge establishment purposes and refuge goals (see “Refuge Purposes and Goals” section below).
- 2) Supports the Service and National Wildlife Refuge System (Refuge System) missions (see “U.S. Fish and Wildlife Service and Refuge System Missions” section below).

¹ In this document, we use “Timber Point” to refer to the entire refuge ownership on the Timber Point peninsula and Timber Island, including all buildings, structures, and other infrastructure. We use “Ewing residential estate” to refer to the buildings and structures associated with the former Ewing family seasonal estate.

- 3) Ensures compliance with the National Historic Preservation Act (NHPA; see section 1.7 below).
- 4) Ensures safe conditions for refuge staff and the public.
- 5) Complies with Federal standards for facilities, including buildings, roads, and trails.
- 6) Reflects a strategic investment in a facility where its location is strategic and adaptable over the long-term, considering the potential future extent of the refuge land base, refuge office, storage, and maintenance needs, and given climate change predications.
- 7) Reflects reasonable expectations for long-term operational, maintenance, and staffing costs based on historic and projected future refuge budgets.
- 8) Fulfills Refuge System conservation and environmental education priorities in strategic locations, consistent with refuge purposes and other Service mandates.
- 9) Does not increase the Service’s facilities footprint (as per Office of Management and Budget Memorandum M-12-12 Section 3 “Freeze the Footprint”).
- 10) Would not result in developments or activities on the site contrary to the neighborhood and landscape setting.

The Service proposes to evaluate a range of reasonable alternatives for managing the buildings and other infrastructure on Timber Point. A “reasonable” alternative is one that is prudent, practical, and may be feasibly carried out based on technical, economic, environmental, and other factors, such as the criteria listed above.

Need for EA

No determination or commitment was made about the future use of the buildings and other infrastructure when it was acquired by the Service. In 2014, Oak Point Associates completed a comprehensive condition assessment (CCA) that describes what maintenance and repair work is needed to maintain current conditions for buildings and structures on the former estate. Many of those buildings and structures are possibly eligible for the National Register and we are currently working with SHPO to determine which will be nominated for that status. Also, we are aware of public interest in knowing what plans refuge staff have for managing those buildings and structures.

The range of alternatives we evaluate in this EA ranges from only stabilizing the historic structures, to their adaptive reuse, to removing them. In addition, we describe how wildlife habitat and public access would be affected under each alternative. We developed the alternatives to comply with applicable laws, regulations, and policies.

1.5 Service and National Wildlife Refuge System Missions

The management of national wildlife refuges is guided by the Service and Refuge System missions:

Service Mission

The Service mission is “Working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.”

Refuge System Mission

The mission of the Refuge System is: “... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (Refuge System Improvement Act of 1997, Public Law 105-57).

1.6 Rachel Carson NWR Purposes and Goals

The refuge’s management is also guided by its establishment purposes, as well as the goals established in its CCP:

Refuge Purposes

The refuge was established for the following purposes, under the authorities noted:

- 1) Migratory Bird Conservation Act (16 U.S.C. 715d): the purpose of the acquisition is for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.
- 2) Refuge Recreation Act (16 U.S.C. 460k-1): the purpose of the acquisition is... “suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” (16 U.S.C. 460k1).
- 3) Emergency Wetlands Resources Act of 1986 (16 U.S.C. 3901(b); 100 Stat. 3583): the purpose of the acquisition is for the conservation of the wetlands of the Nation in order to maintain the public benefits they provide to help fulfill international obligations contained in various migratory bird treaties and conventions.
- 4) Fish and Wildlife Act of 1956 (16 U.S.C. 742f (a)(1)): the purpose of the acquisition is for the development, advancement, management, conservation, and protection of fish and wildlife resources.
- 5) Fish and Wildlife Act of 1956 (16 U.S.C. 742f (b)(1)): the purpose of the acquisition is for the benefit of the Service in performing its activities and services.

Refuge Goals

The following refuge goals were established for Rachel Carson NWR during development of the CCP (USFWS 2007):

- 1) Perpetuate the biological integrity and diversity of coastal habitats to sustain native wildlife and plant communities, including species of conservation concern.
- 2) Perpetuate the biological integrity and diversity of freshwater habitats to sustain native wildlife and plant communities, including species of conservation concern.
- 3) Perpetuate the biological integrity and diversity of upland habitats to sustain native wildlife and plant communities, including species of conservation concern.
- 4) Develop the Rachel Carson NWR as an outstanding center for research and demonstration emphasizing land management techniques for restoring and sustaining healthy estuarine ecosystems in concert with the national Land Management Research Demonstration (LMRD) program.
- 5) Increase appreciation and stewardship of coastal Maine wildlife and their habitats by providing positive wildlife-dependent experiences for refuge visitors.
- 6) Foster off-refuge cooperative actions and partnerships to promote and further refuge goals.

1.7 Relevant Laws, Policies, and Mandates

The management of refuges must also comply with applicable Federal laws and Service and Refuge System policies and mandates. For more information on Federal natural resource laws that affect refuge

management, please consult the Rachel Carson NWR CCP or the online laws digest at: <http://www.fws.gov/laws/lawsdigest.html> (accessed July 2014).

Below we highlight one Federal law, the NHPA, because it directly influenced the development of this EA.

National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.)

Congress passed NHPA in 1966 to help preserve the nation's historical and archaeological sites by requiring the Federal government to consider the impacts of its actions on historic properties listed on, or eligible for listing on, the National Register. Section 106 of the act requires Federal agencies to consult with the respective SHPO, federally recognized Tribes, and other interested parties to ensure that Federal actions do not adversely impact listed or eligible historic properties. If the agency believes the project will not adversely affect eligible properties, it must provide supporting documentation. If a planned project may damage an eligible historic resource, the agency must consider alternative plans. If a project cannot avoid adverse impacts, the agency must work with the respective SHPO Preservation Office, interested parties, and the Advisory Council on Historic Preservation (ACHP) to develop a mitigation plan.

As mentioned before, the Ewing residential estate's buildings and structures are possibly eligible for the National Register. In compliance with NHPA, we will continue to work with SHPO and other interested parties to determine what buildings and structures are eligible and should be nominated to the National Register. However, for the purposes of this EA we treat all the buildings and structures as if they are eligible.

1.8 Issues, Concerns, and Opportunities

The Service conducted public scoping for Timber Point when we hosted a building tour on July 9, 2013, and an open house on July 11, 2013. We received about 70 comments at the open house, and 125 people participated on a building tour. In addition, we received comments on the refuge's Facebook page, refuge webpage, and through email correspondence at that time. There continues to be public interest about management of Timber Point, and we periodically get new comments. The public comments that we have received can be separated into five general categories:

1. Demolish or relocate buildings

Some commenters wanted to see the land solely conserved for wildlife and habitat and preferred that we demolish the buildings and restore the site to native habitat. A few people were concerned that the cost of maintaining the buildings would reduce our ability to conserve wildlife and habitats at the refuge and recommended that we demolish the buildings. More than one person suggested moving the buildings to another location and restoring the area to native habitat.

2. Maintain buildings, but do not open any to public use and access

We received some comments that the buildings should be maintained, and possibly used for refuge administrative space, but not for public use. A variety of reasons were offered. Several people were concerned that public use of the buildings would increase traffic on Granite Point Road and cause safety issues for pedestrians. Others were concerned that increased public access would negatively impact important wildlife habitat, the original reason for acquiring the lands. Others felt the buildings should be preserved for their historical and architectural importance, but we should not otherwise expend funds to open buildings up to public use. One commenter was fine with reusing the buildings as refuge administrative space, but felt that commercial or other non-wildlife related uses would be contrary to the refuge's purposes. Others felt that the buildings should be maintained, but only opened up to the public for guided tours a few times a year.

3. *Maintain buildings for public use and access*

Others felt the buildings could be a public community resource center or cooperatively managed with non-profit conservation institutions, agencies, or universities to engage in public outreach and education. Another suggested reusing the main house as a refuge visitor center. Some feel that the refuge should preserve the buildings, both their interior and exterior, for the public to enjoy and learn more about their historical and architectural significance.

4. *Manage in anticipation of climate change impacts*

We heard some concerns about how the buildings and wildlife habitat would withstand predicted impacts from climate change, and the commenters advised that we take these impacts into consideration as we plan Timber Point's future management.

5. *Other Suggestions*

The following suggestions for managing of Timber Point did not fit into the four categories above. We received comments on using the area as:

- A community garden.
- A wind farm.
- A coastal or estuarine research station.
- A golf course.
- Private events facility (e.g., for weddings or for corporate, artist, or yoga retreats).
- As an overnight meeting facility.

Chapter 2 – AFFECTED ENVIRONMENT

2.1 Introduction

This chapter focuses specifically on the physical, biological, and socioeconomic environment of Timber Point. For more information on the rest of the refuge’s physical, biological, and socioeconomic environment, please refer to chapter 3 in the Rachel Carson NWR CCP, available online at: http://www.fws.gov/refuge/rachel_carson/what_we_do/finalccp.html (accessed July 2014).

2.2 Timber Point Setting

The 157-acre Timber Point is in Biddeford, York County, Maine (maps 1 and 2). It is located on a heavily wooded promontory over the Atlantic Ocean at the mouth of the Little River. At low tide, the Timber Point peninsula is connected to Timber Island.

2.3 Physical Environment

2.3.1 Geology and Hydrology

The coast of Maine, including Timber Point, has been subjected to geological uplifting, weathering, and glaciations. The continental ice sheet of the most recent glaciation scoured and shaped the resistant bedrock depositing till well beyond the present-day shoreline of the Atlantic Ocean. When the ice sheet receded it created huge rivers of meltwater and deposited glacial silt and clay over most of the southern Maine Coast.

The southern Maine coastline contains the majority of the State’s salt marshes. Most of the coastal marshes are believed to have formed behind protective barrier beaches at the mouths of tidal waterways. Basins created at the entrances of tidal waterways eventually became freshwater ponds. Over time, the ponds filled with vegetation and the barrier islands were breached by the ocean. The tidal flows which then occurred created the present-day salt marshes.

Tidal streams and rivers around which the refuge marshes occur, serve as drainage basins for more than 250 square miles of land. One-half of the average annual precipitation becomes runoff settling in the upper reaches of the marshes. The marshes as well as rivers are influenced by mean tidal fluctuation of 8.7 feet. Spring tides average 11 feet with storm tides higher. Periodically tides greater than 12 feet completely flood all refuge salt marshes.

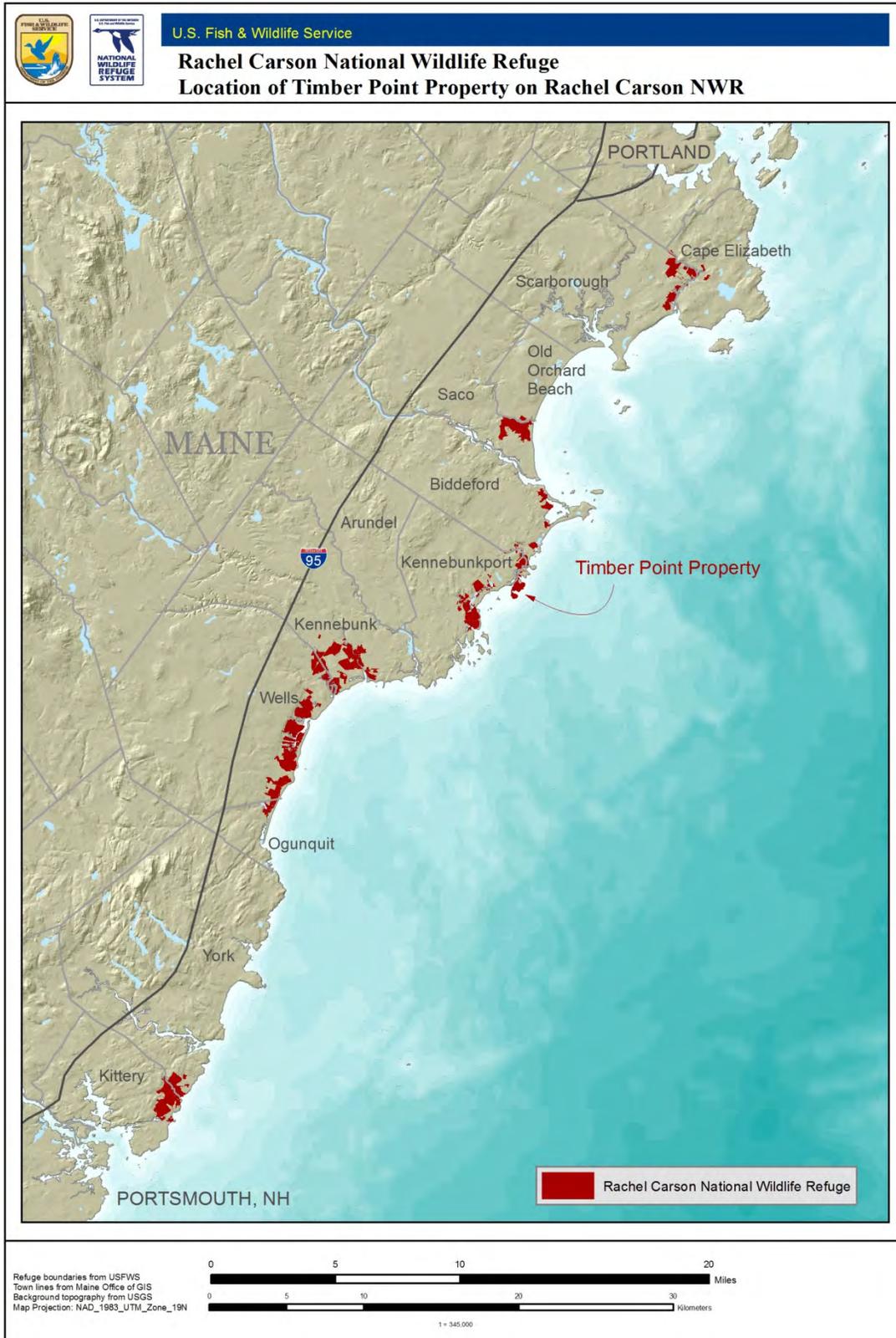
2.3.2 Topography and Soils

The topography of Timber Point ranges from about 0 feet to 20 feet above sea level. The three main types of soils on Timber Point are Lyman-rock outcrop, Chocura peat, and sulfihemist soils (table 1).

Table 1. Descriptions of Soil Types on Timber Point

Soil Type	Drainage	Slope	Soil Description
Lyman-rock outcrop	Somewhat excessively drained	3 to 8 percent	Shallow soils mixed with exposed bedrock. Occurs near seacoast along the tops of ridges, plains, and wooded hills.
Chocura peat	Very poorly drained	0 to 2 percent	Very deep, thick organic layer. Water table at or near surface. Extremely acidic. Generally occurs in swamps and bogs. Well-suited to wetland plants.
Sulfihemists, frequently flooded	Very poorly drained	0 to 1 percent	Very deep, organic deposits (90 to 100 percent). Generally derived from saltmarsh grasses. Subject to tidal inundation.

Map 1. Location of Timber Point Property on Rachel Carson NWR



Map 2. Timber Point - Current Setting



2.4 Biological Environment

2.4.1 Vegetation and Habitats

Map 3 and table 2 describe the current habitat types on Timber Point.

Table 2. Current Habitat Types on Timber Point

Habitat Type	Acres
Estuarine and marine wetlands	59
Freshwater cattail emergent wetlands	1
Freshwater shrubland wetlands	10
Coastal pond wetlands	2
Marine, subtidal wetlands	1
Uplands (grassy fields, mature oak-pine forest, spruce and red maple forest)	84
Total acres	157

Rare Plants or Plant Communities

A rare plant survey has not been conducted on Timber Point, although a black oak community occurs on the refuge which is relatively rare in Maine.

Invasive Species

Invasive plant control is a refuge priority at Timber Point. Species such as burning bush (*Euonymus alatus*), bittersweet (*Celastrus orbiculatus*), honeysuckle (*Lonicera japonica*), privet (*Ligustrum* spp.), Japanese barberry (*Berberis thunbergii*), and English ivy (*Hedera helix*) are all treated through hand pulling, moving, and brushing. No upland invasive animal or insect pests are known on Timber Point. Green crabs (*Carcinus maenas*) are an invasive species in the tidal waters, and refuge staff expect the Asian shore crab (*Hemigrapsus sanguineus*) will invade soon.

2.4.2 Wildlife Resources

Federally Threatened and Endangered Species

Two federally listed birds, the piping plover and roseate tern, and one State-listed species, the least tern, regularly occur near Timber Point. A fourth species, the northern long-eared bat may occur in the area and is proposed for Federal listing. None of these species is documented occurring at Timber Point.

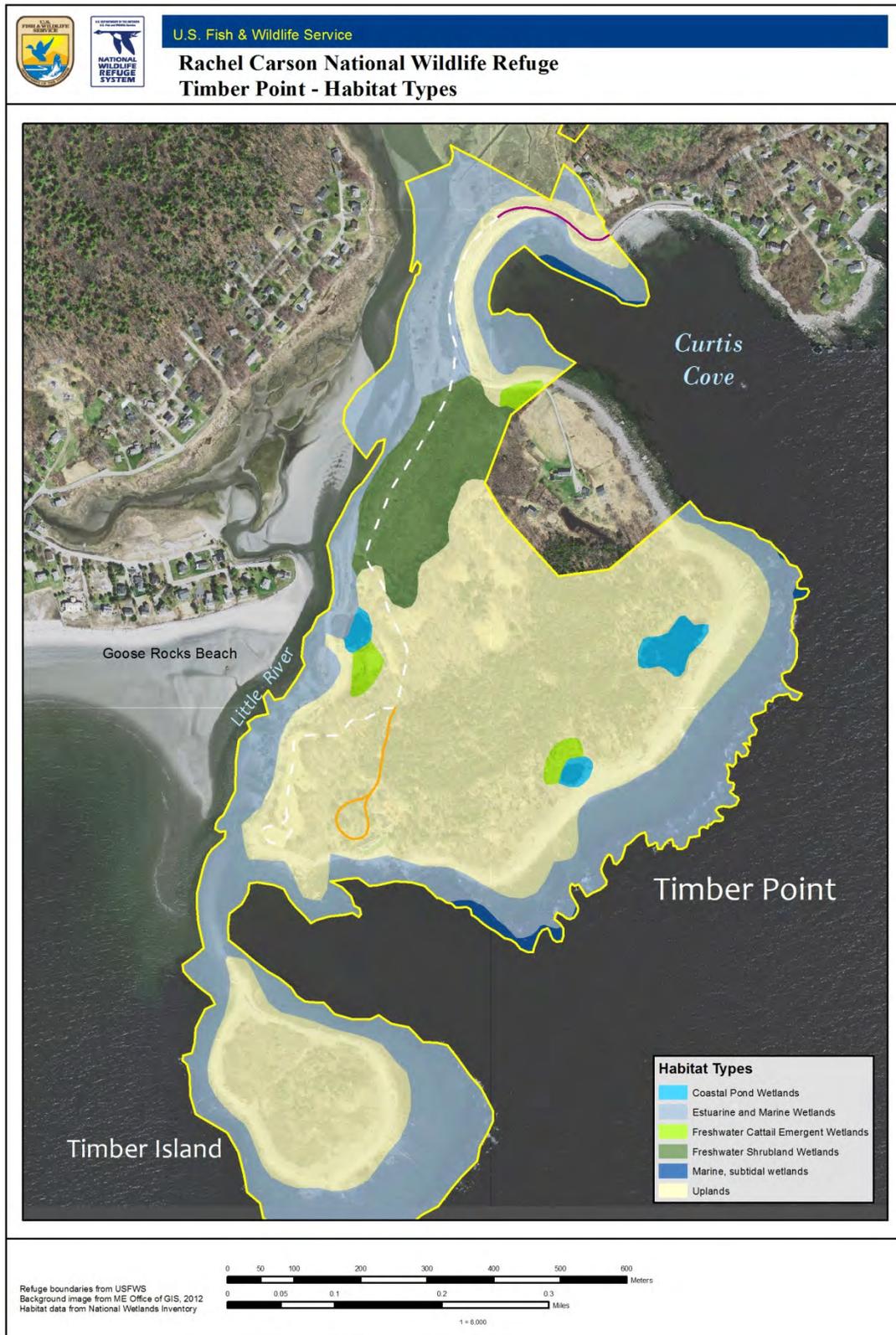
Piping Plover

The piping plover (*Charadrius melodus*) is federally listed as threatened and State-listed as endangered. Although piping plovers are not known to occur on Timber Point, they do occur on other nearby beaches and refuge divisions. Goose Rocks Beach, located just across the Little River from Timber Point, is home to numerous pairs of nesting plovers each year. Its extensive mudflats provide high quality foraging habitat.

Roseate Tern

The northeastern population of the roseate tern (*Sterna dougallii*) is listed as federally endangered, as well as State-endangered. In Maine, roseate terns nest on only three or four islands. Limited sites on which roseate terns currently nest make the northern population vulnerable to catastrophic events. Historically, roseate terns nested on two islands adjacent to refuge property and near Timber Point in both Biddeford and Kennebunkport. Currently these islands, along with refuge beaches, are mainly used by post-breeding and migrating birds for staging and foraging.

Map 3. Timber Point – Existing Habitat Types



Least Tern

Least terns (*Sternula antillarum*) are listed as endangered by the State of Maine. They regularly nest at Goose Rocks Beach, adjacent to Timber Point (Zitske et al. 2013). Maine's least tern population appears relatively stable at 205 pairs (slightly down from 211 in 2010). The years 2010 and 2011 were the first years to ever document over 200 pairs of terns in the State and expanded in 2013 with 229 pairs. Productivity estimates remain below the State recovery goal of 1.0 chick fledged per pair, but estimates may be confounded by asynchronous hatchings, fledgling residency time, and predation events.

Northern Long-eared Bat

The Service has proposed to list the northern long-eared bat (*Myotis septentrionalis*) as endangered species under the Federal Endangered Species Act. This species prefers mature forest with trees with crevices, peeling bark or cavities. In general, they prefer a complex forest structure with larger diameter snags. It is possible, although not documented, that the northern long-eared bat uses the forests and fields of Timber Point. We are conducting bat surveys when resources allow (see “*Mammals*” section below).

Other Native Wildlife

Birds

Surveys and incidental observations by refuge staff and volunteers have documented at least 203 species of birds using Timber Point, either seasonally or on a permanent basis (USFWS 2013). The area has been designated an eBird Hotspot, and numerous expert birders have reported 166 species to eBird. A great diversity of landbirds has been documented using Timber Point during spring and fall migration. The productive offshore and nearshore environment are also busy in the spring, with short-billed dowitchers (*Limnodromus griseus*), hundreds of common eiders (*Somateria mollissima*), and shearwater species being documented during the spring of 2013. The area from Sampson Cove in Kennebunkport north to the sandy beaches of Goose Rocks Beach adjacent to Timber Point was designated an Important Bird Area (IBA) of Maine in 2008 (Gallo et al. 2008). The surrounding shoreline and mudflats from Marshall Point towards the shores of Timber Point includes several additional State regulatory designations, including:

Tidal waterfowl and wading bird habitat: MDIFW has identified and rated certain intertidal areas along the coast as high or moderate value to waterfowl and wading birds. This high to moderate value tidal habitat is limited to the identified tidal habitat area and is located within the coastal wetland, which is already regulated as a protected natural resource pursuant to Maine's Natural Resource Protection Act (NRPA).

Shorebird feeding and roosting areas: MDIFW has identified essential staging area habitats where concentrations of shorebirds like plovers and sandpipers congregate during migration periods. These staging areas include areas where the birds feed and rest. Shorebirds feed constantly in the intertidal area to build up reserves for their long migration. When the tide is high, they rest (or roost) just above the high tide mark. Shorebird roosts are often stony or sandy beaches, sand/gravel bars, rock ledges, or islands with little or no vegetation. Buffers near these feeding and roosting areas are a critical part of the habitat because they protect the birds from disturbance, so they can prepare for their long migratory flights.

Essential habitat for piping plover and least terns: MDIFW has identified essential habitat for piping plovers and least terns on the flats adjacent to Timber Point. These are areas that currently or historically provided physical or biological features essential to the conservation of an endangered or threatened species in Maine, and which may require special management considerations.

Essential habitat for roseate tern: An offshore ledge approximately 0.6 miles to the south has been designated as essential habitat for roseate tern by MDIFW.

Waterbirds and Marsh Birds

Common loons (*Gavia immer*) frequent the lower reaches of tidal creeks from late fall through early spring and they are commonly observed at Timber Point. Great blue herons (*Ardea herodias*) and snowy egrets (*Egretta thula*) are the species most commonly observed feeding in salt pannes and tidal creeks along the southern Maine coast and are often seen in groups of 10 to 15 birds. It is likely that snowy egrets, great egrets (*A. alba*), little blue heron (*E. caerulea*), and glossy ibis (*Plegadis falcinellus*) nest on offshore islands and visit Timber Point to feed and roost. Virginia rails (*Rallus limicola*) breed in the marsh at Timber Point; in fact several pairs have been documented within one season.

Waterfowl

Twenty-six of waterfowl have been recorded at Timber Point. The most common species observed include common eider, scoters (*Melanitta* spp.), American black duck (*Anas rubripes*), Canada goose (*Branta canadensis*), mallard (*A. platyrhynchos*), long-tailed ducks (*Clangula hyemalis*), and red-breasted merganser (*Mergus serrator*).

Shorebirds

Southern coastal Maine is a migrating and staging area for many species of shorebirds that breed in North America, particularly during fall migration. Thousands of shorebirds feed along coastal beaches and mud flats as they migrate through the State. The species most commonly observed in the fall include the semipalmated plover (*Charadrius semipalmatus*), black-bellied plover (*Pluvialis squatarola*), least sandpiper (*Calidris minutilla*), greater yellowlegs (*Tringa melanoleuca*), short-billed dowitcher, and semipalmated sandpiper (*Calidris pusilla*). Those species and others typically feed in the mudflats at low tide.

Timber Point is one of the few places in southern Maine where purple sandpipers (*Calidris maritima*) regularly overwinter. Additional survey work on the refuge is needed to determine exact usage. Purple sandpipers are a species of high conservation concern in Maine. The Northeast Atlantic coast is recognized by the U.S. Shorebird Conservation Council as an area that is extremely important to the survival of wintering purple sandpipers in the Western Hemisphere with strong evidence that Maine supports a disproportionately large percentage of that wintering population. MDIFW is coordinating studies along the entire Maine coast to estimate distribution and abundance and map locations.

Gulls and Terns

Least terns nest at Goose Rocks Beach, Higgins Beach, and Reid State Park (see “Threatened and Endangered Wildlife Species” above for more on least terns). In the mid-1980s, common terns (*Sterna hirundo*) nested on the beaches of both the Lower Wells and Little River Divisions. During migration, large numbers of common terns, along with smaller numbers of roseate terns and least terns can be seen offshore of Timber Point.

Land Birds

Informal observations of landbirds at Timber Point include an abundance of migratory land birds, including gray catbird (*Dumetella carolinensis*), common yellowthroat (*Geothlypis trichas*), yellow warblers (*Setophaga petechial*), and American redstart (*Setophaga ruticilla*). Although formal migratory surveys have not been completed, this area appears to serve as an important migratory stopover site for landbirds.

Mammals

Fifty-three species of mammals occur on Rachel Carson NWR, many of which likely occur at Timber Point. Common mammals include red fox (*Vulpes vulpes*) and white-tailed deer (*Odocoileus virginianus*). Given the current conservation concerns for bat species, the refuge conducted a total of nine active surveys in 2012 at Timber Point, in two different locations—an open field and a more forested opening/corridor (though the main house area was also surveyed on one night). A total of 139 bat calls were recorded and of sufficient quality for species identification. The majority of species detected were large body or migratory bats including big brown bats (*Eptesicus fuscus*), red bats (*Lasiurus borealis*), hoary bats (*Lasiurus cinereus*), and silver-haired bats (*Lasionycteris noctivagans*). However, there were also some *Myotis* species detected; there were five little brown (*Myotis lucifugus*), two eastern small-footed (*Myotis leibii*), as well as one tri-colored bat (*Perimyotis subflavus*) call. There were also 3 calls that were questionable identification and 29 calls that could only be identified to as *Myotis* species, though were most likely little brown bats.

All of the *Myotis* species were detected in the forest opening/corridor area. Big brown bats and possibly silver-haired bats are using the main house area (likely to roost in the garage cupola) and only big browns and silver-haired bats were detected in the open field area as well, although there was also one questionable call from the field that could have been either a tri-colored or red bat (Fenderson 2014, unpublished refuge report).

Reptiles and Amphibians

A reptile and amphibian survey has not been completed for Timber Point, but we would expect to find many of the same species documented on other refuge units on Timber Point (e.g., garter snakes (*Thamnophis sirtalis sirtalis*), and northern leopard frogs (*Rana pipiens*)).

A female spotted turtle (*Clemmys guttata*), a State threatened species, was spotted along the Timber Point Trail in 2014. Based on this sighting, we plan to do a survey for spotted turtles with the State in spring 2015. There are several habitat types on Timber Point that are likely used by spotted turtles. These include the peninsula's small pockets of coastal wetlands and forested vernal pools (Degraaf and Yamaskai 2001). Although the turtles are mostly aquatic, upland habitats are also crucial for nesting, basking, estivating (late summer dormancy), and as travel corridors between small, isolated wetland areas (MDIFW 2003). Females often nest in upland fields and estivate in forested areas (Degraaf and Yamasaki 2001).

Fish

Coastal marshes, bays, tidal creeks, and rivers in southern Maine support generally diverse shellfish and finfish populations. Sunfish (*Lepomis* spp.), creek chub (*Semotilus atromaculatus*), cunner (*Tautoglabrus adspersus*), golden shiner (*Notemigonus crysoleucas*), common mummichog (*Fundulus heteroclitus*), American eel (*Anguilla rostrata*), and white sucker (*Catostomus commersoni*) abound. Brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*) are stocked in rivers and estuaries by the State each year.

The Little River, which is directly adjacent to Timber Point, is listed as habitat for brook trout. The National Marine Fisheries Service has designated this area as “essential fish habitat,” an area that provides habitat necessary for fish spawning, breeding, feeding, or growth to maturity.

2.4.3 Climate Change

There is consensus among the scientific community that global climate change is leading to significant impacts across the United States. This includes sea level rise adding stress to coastal communities and ecosystems (Wigley 2006) and changes in rainfall patterns, which for New England, includes an increase in the intensity and frequency in rainfall events (Madsen and Wilcox 2012). The effect of climate change

on wildlife and habitats is expected to be variable and species-specific, but with a general predicted trend of habitat ranges shifting northward. Vulnerability will be markedly increased for one-third of Maine's species of conservation concern (Whitman et al. 2013).

Increased sea level rise in conjunction with increased storm frequency will alter salt marsh and beach habitats. Climate change requires land managers to use adaptive management (e.g., adjusting regulations, shifts in active habitat management, or changing management objectives) to maintain healthy ecosystems in light of unpredictability (Inkley et al. 2004).

Refuge managers can plan and respond to changing climate conditions. A few recommendations include managing for diverse and extreme weather conditions (e.g., drought and flood); maintaining healthy, connected, genetically diverse wildlife populations; protecting coastal wetlands and associated uplands to accommodate sea level rise and to provide for the movement of salt marshes inland (see Inkley et al. 2004 for more recommendations).

Of particular importance is engaging local and State partners and work together to address the challenges climate change presents and to retain habitat connectivity to allow species to migrate as habitat suitability changes (Whitman et al. 2013). As Maine becomes increasingly warmer, wetter, and stormier, it is imperative that natural resource managers look for ways to conserve wildlife and their habitats, as well as promoting greater connectivity so organisms may move freely as the climate changes.

As stated in “Climate Change and Biodiversity in Maine: A Climate Change Exposure Summary for Species and Key Habitats,” published in 2013, there are several main impacts predicted for the Maine coast due to climate change. Over the next 100 years, predictions include:

- 1) An increase in average temperatures from 3 to 14 degrees Fahrenheit in winter and 3 to 11 degrees Fahrenheit in summer.
- 2) A 2 to 14 percent increase in average precipitation (mainly in winter, spring, and fall).
- 3) An increase in the frequency and severity of heavy precipitation events and other storms (up to greater than 10 percent increase in the number of annual extreme rainfall events).
- 4) The number of days of snow cover will decrease and the growing season will increase.
- 5) A 20 to 80 inch increase in sea level.
- 6) A dramatic increase in ocean acidification, changing the nature of coastal resources.

For southern Maine, it is estimated that average winter temperatures are already set to increase over the next 40 years from 24.7 degrees at the Portland Jetport to 26.5 to 28 degrees and could increase to an average of 32.7 to 36.7 degrees. Average summer temperatures at Portland are likely to go up from an average of 66.1 degrees to 67.6 to 69.6 degrees and could climb to an average between 72 and 80 degrees.

Current rates of sea level rise of 0.07 inches per a year (documented in Portland Harbor, since 1912) will continue to increase. It is anticipated that by 2100, sea levels will increase somewhere between 20 to 42 inches, with some estimates of 84 inches (Burkett and Davidson 2012). With an increasing sea level and storminess, it is predicted that by 2050 that the 100-year coastal storm and its associated storm surge and flooding will occur every 2 to 5 years (Frumhoff et al. 2008, Tebaldi et al. 2012).

As always, taking these anticipated climate change scenarios and bringing it to a specific locale, such as Timber Point, can be difficult. However, the Maine Natural Areas Program recently completed a spatial model of sea level rise, for the 2-foot and the 3-foot sea rise scenarios. These scenarios do not take into account increased storminess or flooding events, so actual changes in the natural environment are likely to be more significant. Both models predict a permanent flooding of the entrance road to the main house building, and a migration of salt marsh habitat landwards (map 4). As the main house has been damaged by previous coastal storms, it will continue to be vulnerable as the frequency and intensity of storm events

increases. The new salt marsh habitat may positively benefit several wildlife and fish species of conservation concern, such as the saltmarsh sparrow (*Ammodramus caudacutus*), (International Union for Conservation of Nature (IUCN) red listed 2014) and the eastern willet (*Tringa semipalmata*); however, unless there is a net gain in area and quality of new salt marsh habitat, overall this will have a negative effect on species. Locations where salt marsh habitat can migrate to in response to climate change are declining rapidly due to development along the Maine coast.

Map 4. Predicted Salt Marsh Migration with 1-meter Sea Level Rise by 2100



2.5 Human Environment

2.5.1 Cultural Resources

The Paleo Indians were the earliest inhabitants of Maine more than 10,000 years ago. A few Paleo-Indian sites have been discovered on the Kennebunk Plains not far from Timber Point. However, there is more evidence of later inhabitants during the Archaic and Ceramic periods on the Maine Coast. In the early 17th century, Europeans began occupying land adjacent to the ocean and along rivers. Farming, fishing, shipbuilding, fur trade and timber industry became their livelihoods. By the mid-19th century the ship building industry went into decline as the demand for larger ships closed small shipyards along the Maine coast. Farming also declined as small Maine farmsteads could not compete with large midwestern farms. Fishing became the principle business and successfully thrived despite the changing times. By the late 19th and early 20th century, tourism and recreation began to thrive and development quickly spread along the southern Maine coast. Timber Point has not been evaluated for the presence of archaeological resources. However, we expect due to its location along the ocean and Little River, Timber Point has the potential of yielding archaeological sites from Paleo-Indian through late Colonial times (USFWS 2007).

Background on the Ewing residential estate and architect Charles Ewing

The former Ewing residential estate is located on the Timber Point peninsula, overlooking the ocean. In 1929, Louise Parsons Ewing purchased Timber Point as a summer estate for her family. At that time, her husband and master architect Charles Ewing began to design a seasonal cottage for the estate. In 1931, the main house, garage, and laundry were built. A number of the outbuildings were subsequently built by members of the Ewing family, in a similar architecture style. The Ewing family used the estate as a seasonal residence until 2011 when Timber Point was acquired by the Service for the refuge (map 5).

The estate is historically important and possibly eligible for the National Register because it is an exceptional example of a Maine coastal summer estate. The estate is a coherent complex which fully represents coastal summer estates from this time period, with its extensive grounds, a greenhouse, numerous outbuildings, a swimming pool, and tennis courts. The estate's structures, particularly the main house, laundry, and garage buildings, retain most of their architectural integrity, and are relatively unaltered from their time of construction. The main house is particularly unique because it has retained its original distinctive properties, both inside and out, over a long period (over 80 years). Although some of the other outbuildings and structures are in poor condition, they help convey how the estate would have appeared during the 1930s and 1940s.

Ewing was an award-winning and regionally renowned architect. He was born on December 22, 1872, in Washington, D.C. His mother, Virginia Larwell Miller Ewing, was the daughter of Ohio Congressman John K. Miller. His father, Charles Ewing, was a prominent patent lawyer. Ewing studied architecture at the Massachusetts Institute of Technology and at the Ecole des Beaux-Arts in Paris. Ewing and his early partner George Shepard Chapell designed houses and estates for prominent families throughout New England. They also designed buildings for Connecticut College. In 1907, Ewing was nominated to as an Associate Member in the American Institute for Architects. With a later partner, Jerome Allen, he designed office and other buildings for the United States Navy. He also designed other coastal summer estates in southern Maine. In 1935, he received the medal for Excellence in Craftsmanship and Service from the Society of Arts and Crafts. After his death in 1954, Timber Point was passed on to his surviving sons.

Ewing took advantage of local materials and settings to create the estate's distinctive and eclectic designs. He also combined contemporary architectural trends with early European and American traditions. For example, the exterior of the 6,500-square foot, 14-bedroom main house is Colonial Revival-style, the dominant architectural style at the time of its construction. However, the interior is Arts and Crafts-style with inspiration from *Beaux-Arts* architecture.

Map 5. Timber Point – Ewing Residential Estate Buildings and Structures



Table 3 describes the estate’s 10 buildings and 6 structures. All are undergoing an evaluation of their eligibility for the National Register. In 2014, the refuge enlisted Oak Point Associates to conduct the CCA of the eight roofed structures. Their final report provides more detailed descriptions of those structures and their conditions (Oak Point Associates 2014). They also made recommendations on how to stabilize them to maintain their current condition (based on 2012 site visits). A listing of the buildings and structures from the original estate is provided in table 3 below. For those eight buildings that were evaluated by Oak Point Associates, we summarize their condition assessment in the table.

Table 3. Descriptions of Ewing Residential Estate Buildings and Structures of Historical Interest on Timber Point

Building/ Structure	Date Constructed	Building/ Structure Condition	Description
Main House	1931	Variable throughout building; poor to good ¹	A 6,500-square-foot, two-story, wood-shingled, slate-roofed house with 14 bedrooms and 5 bathrooms formerly used as a seasonal coastal cottage
Laundry	1931	Variable throughout building; fair to good ¹	A small, single-story wooden building with a slate roof
Garage/ Pat’s Room/ Workshop	1931 with 2 additions prior to 1941	Variable throughout building; poor to good ¹	One-story, wooden building with a five-bay garage, small chauffeur’s apartment, and a workshop
Paint Shed	1936	Good ¹	Small, windowless masonry structure with asphalt roof
Greenhouse/ Potting Shed	1935	Potting Shed: Poor ¹ Greenhouse: Only foundation remains ¹	A wooden shed with dirt floor attached to concrete foundation for former steel and glass greenhouse
Truck Garage	Between 1946 to 1949	Poor ¹	A wooden building formerly used for storing large truck
Boat House	1937	Poor ¹	Wooden building formerly used for storing boats
Bath House	Late 1930s	Poor ¹	Wooden structure which shifted off its piers, formerly used for changing for swimming
Alfred Shaker Village Barn Footings	Moved to site and reassembled in 1938	Building relocated offsite, only foundation remains	Only foundation piers remain, the structure was relocated to farmhouse property on north part of Timber Point.
Changing House	1937	Ruined ²	One-story wooden building; roof collapsed, described as “ruined”
Pump footings	1937	Structure no longer exists except for foundation	Only poured concrete foundation for electric pump remains
Swimming Pool	1937	Detriorated ²	A concrete swimming pool that used saltwater pumped from ocean; partially filled in, described as “deteriorated”
Tennis Court	1936, resurfaced in 1950s	Not assessed	Former clay tennis court, resurfaced with asphalt in 1950s, only faint tennis court lines remain
Seawall	1931, rebuilt	Not assessed	Formerly a stone seawall; it was rebuilt in

	1992		1992 after storm damage in 1991. The new wall is a stone-faced concrete wall that retains the view of the original vertical stone wall.
Fire Hose Shed	1947	Not assessed	Small wood-framed structure with painted wood shingles
Lifeboat	Unknown	Not assessed	27-foot-long, early 20th century, ship-borne lifeboat; slightly modified from original design

¹Condition description taken from CCA report by Oak Point Associates (2014).

²Condition not assessed by CCA, condition description taken from draft National Register nomination form (2014)

Impacts of Coastal Storms on Ewing Residential Estate and Timber Point Facilities

The main house has been damaged by coastal storms on at least two occasions. In 1991, a coastal storm threw a rock through one of the house’s windows and also caused extensive damage to the seawall. In 1992, the seawall was rebuilt and some of the main house’s windows, screens, exterior doors, and siding were replaced or repaired. A 2012 storm damaged the main house’s roof and had storm surge that overtopped the seawall. In 2014, the refuge received funding to make necessary repairs to the roof from this storm damage, including replacing damaged tiles and repairing leaks. These repairs will help better preserve the building by preventing further water damage to the house’s interior. We expect the roof repairs to begin in fall 2014.

Timber Point Road, which begins at the end of Granite Point Road, serves as the only road to the main house and other structures. It is primarily a native surface road, averaging approximately 10 feet wide, that is subject to occasional flooding. During the 2012 storm that damaged the main house roof, a large amount of ocean debris covered the road and scoured large potholes making it nearly impossible to traverse. The road also serves as the main walking path for approximately half of the existing Timber Point Trail.

2.5.2 Socioeconomic

Timber Point is located in the city of Biddeford, York County, Maine. York County has a total population of about 197,861, while Biddeford’s population is 21,297. The county’s population is 96 percent white with a median age of 44. The median household income is \$56,656 with 9.5 percent of individuals living below the poverty line (U.S. Census Bureau 2010). According to the 2010 U.S. Census, the education, health, and social services industry is the largest industry for employment in the county, followed by the retail trade and construction industries. However, tourism has the largest economic impact in this region of Maine, affecting several industries. In 2006, the State Planning Office reported that tourism generated roughly \$10 billion in sales of goods and services across the State, as well as 140,000 jobs and \$3 billion in earnings. According to the 2011 National Survey of Fishing, Hunting, and Wildlife-associated Recreation, over 1.1 million participated in wildlife-related recreation in Maine during 2011 (USFWS and USCB 2011). These participants spent nearly \$1.4 billion in Maine (e.g., trip-related expenditures, equipment purchases, licenses, etc.).

The characteristic land uses near Timber Point are strip commercial (e.g., along Route 1 in Wells) and extensive primary and secondary residential development. Other common land uses in the area includes rural with scattered development, as along sections of Route 9 in Kennebunkport, or a series of small towns or village centers, such as York Harbor, Ogunquit, Kennebunkport, and the historic resort village of Biddeford Pool. Other areas have extensive recreational land uses, theme attractions, as in Old Orchard Beach, and recreational beaches, as in Scarborough Beach and Ferry Beach. Suburban residential development characterizes areas near Portland and Biddeford/Saco. A series of visitor attractions ranges from York’s Wild Kingdom, Wells National Estuarine Research Reserve, and Rachel Carson NWR. Most

of those are outdoor attractions for both local and tourist populations. Other land uses include tourist and summer resident housing, which ranges from rustic cabins to luxury hotels and condominiums (USFWS 2007).

2.5.3 Public Access, Use, and Facilities

Public Access

Timber Point is open to the public year-round during daylight hours. Visitors arriving by car generally park at the small parking lot (six spaces) at the end of Granite Point Road (map 2). The parking lot and Granite Point Road is maintained by the city of Biddeford, Maine. No vehicle traffic is allowed on the refuge beyond this point, except for refuge staff use. Vehicles are prevented from traveling onto Timber Point Road by a gate. Many other visitors ride their bikes to the parking area and leave their bikes in the bike rack provided by the refuge. Bicycling is also not allowed on the Timber Point Trail or Timber Point Road. Near the parking lot, there is also a small access way for visitors to launch non-motorized boats into the Little River; however, no parking can occur here as it is a low point and becomes inundated at high tide. Pets are not permitted at Timber Point.

Recreational Opportunities

The Refuge Improvement Act defines six priority wildlife-dependent public uses for national wildlife refuges: wildlife observation and photography, interpretation, environmental education, hunting, and fishing. All are allowed on Timber Point, except fishing. Beginning in fall 2014, we will offer archery hunting for big game (wild turkey and white-tailed deer). These hunts will follow the State's fall bow seasons for those species. We will not be offering a spring bow turkey hunt. The hunt area includes the entire Timber Point peninsula—Timber Island is not open for hunting (map 6). We will evaluate opportunities for bank fishing in a separate NEPA-compliant document within the next 5 years.

Most visitors hike along the 1.4-mile Timber Point Trail. The trail is open year-round to foot traffic only. Timber Point Road serves as the trail bed for the first 0.5 miles of the trail, and then the trail turns off the road onto a wood-chip footpath for an additional 0.9 miles. A directional sign shows people where to turn off the roadbed. A cable across the road also signals to pedestrians not to continue down the road. The trail follows along salt marsh, cattail marshes, a mixed deciduous forest, mudflats, shrublands, and rocky shores. There is a universally accessible observation platform approximately 0.8 miles into the trail providing an overlook to the confluence of the Little River and the Gulf of Maine. Beyond the platform, the trail is no longer Americans with Disabilities Act (ADA)-accessible.

Wildlife observation and photography are the most popular activities along the trail. As the trail is not plowed in the winter, it provides opportunities for cross-country skiing and snowshoeing. From May to August each year, refuge volunteers lead guided nature walks about the areas wildlife and habitats along Timber Point Trail approximately twice a week. These walks are well-attended, especially during the peak of summer.

The existing Timber Point Trail does not allow for public viewing of much of the Ewing residential estate, including the main house. Only the boat house and changing shed can currently be seen from the trail. Additionally, we do not currently offer any interpretation of the estate, architect Charles Ewing, or their historical significance.

Map 6. Timber Point – Existing Hunt Zones (Alternatives A, B, and D)



Visitors can visit Timber Island, but only at low tide when there is a land bridge connecting the peninsula to the Island. There is a tide clock at the location of the land bridge to help visitors time their visit.

On occasion, the refuge receives requests for large groups to access the trail. Typically these requests are for birding activities. These requests are processed on a case-by-case basis and may require a special use permit (SUP).

Visitation

The majority of visitors to Timber Point come to walk the trail and view or photograph wildlife and nature. Visitation is greater on weekends with the greatest concentration of people visiting from July 4 to Labor Day. During that peak, the parking lot stays full all day with people rotating in and out. After Labor Day there are far fewer visitors. Numbers diminish significantly with colder temperatures.

In table 4 below we provide an estimate of visitation by month. Our resident volunteers, who have lived onsite from May to September for several years, estimated monthly visitation numbers for the main season. Refuge staff provided estimates of visitation for the other months based on their observations. A challenge to counting visitors is that many visitors (over 100 per day on weekends in peak season) walk onto the refuge from Goose Rocks Beach at low tide, walk from nearby neighborhoods, or access from boat moorings on the water. Overall, we estimate 10,100 visitors annually are currently visiting Timber Point, and we predict visitation will increase as more people discover the property.

Table 4. Estimated current visitation to Timber Point

Month	Number of visitors/month
January	200
February	200
March	200
April	200
May	1,000
June	1,500
July	2,600
August	2,600
September	1,000
October	200
November	200
December	200
Annual Total	10,100

Chapter 3 – DESCRIPTION OF ALTERNATIVES

3.1 Introduction

This chapter describes four alternatives for managing the buildings and structures at Timber Point. CEQ regulations require that we evaluate a range of “reasonable alternatives,” which we defined in chapter 1. The four alternatives we analyzed are based on information gained during internal agency scoping, consultation with other agencies, and public input. The refuge consulted with architects, engineers, and the FWS’s Northeast Regional Historic Preservation Officer. Other agency consultations included the National Park Service (NPS) and SHPO. Some actions are common to all alternatives, and we highlight those in Section 3.2 below.

In addition to the four alternatives evaluated in detail, we considered but eliminated from further consideration several other options because they were unlikely to comply with certain laws or conform to Service policies, or we otherwise determined they were not “reasonable.” A description of alternatives eliminated from further consideration follows.

3.2 Alternatives Development

3.2.1 Alternatives Eliminated from Detailed Study

Renovate Building(s) and Use as Refuge Headquarters/Administrative Facility

During public scoping, several members of the public suggested we use the main house as the headquarters and administrative building for Rachel Carson NWR. We considered converting the main house into a refuge headquarters/administrative facility, but ultimately eliminated this alternative. Although the existing headquarters could be larger to accommodate office space for seasonal staff, there is not currently funding available for a new refuge headquarters and it is a low regional priority. We also eliminated it because we did not feel that Timber Point was an appropriate location for a new refuge headquarters. When choosing a location for a new refuge headquarters, we look for:

- 1) **A location that is strategic and central to refuge properties for both refuge management and as a convenience for the public.** Timber Point is in a relatively isolated and inconvenient location for staff and the public. Also, given the volume of daily traffic associated with refuge headquarters, including the hauling of equipment, the road access through a residential neighborhood is problematic.
- 2) **A location that provides reliable year round access, with minimum maintenance requirements.** Access to Timber Point can be challenging at times because of occasional road flooding during extreme high tides or during storm events. The access road is a single lane with no turnouts. It would need to be upgraded and widened for emergency vehicle access, and to safely accommodate the traffic associated with refuge staff and visitor traffic. The current refuge headquarters accommodates 6 permanent and up to 30 seasonal staff, and up to 100,000 visitors annually.
- 3) **A building site that minimizes risk from weather events.** The main house on Timber Point is very exposed and has been damaged by coastal storms, most recently in 2012. Climate change predictions of increased storm intensity and frequency will exacerbate the potential for damage.

- 4) **A building site that can support the number of planned staff and the variety of administrative functions performed at refuge headquarters.** As noted above, there are currently 6 permanent refuge staff at headquarters. In the summer, the refuge’s staff can grow by more than 30 employees, and office space is needed for most of them. Additional permanent refuge staff are recommended in the refuge’s CCP. Further, long-range planning discussions within the Service have included the possibility of co-locating the Service’s Gulf of Maine Program with refuge staff. The main house on Timber Point would not be adequate to support this number of staff offices, and include equipment storage. Parking would also need to be extensively expanded to accommodate staff and visitor vehicles, as well as refuge vehicles and equipment (e.g., boats, trucks, etc.). The refuge does not need use of the main house as seasonal lodging, because a bunkhouse was recently built near the current refuge headquarters in Wells, Maine.
- 5) **A building and site where the extent of renovations is reasonable, including their anticipated costs, to bring them up to Federal standards.** The existing buildings on Timber Point would be very expensive to renovate and maintain as a refuge headquarters. The main house needs numerous upgrades before it could be used as an office, including costly repairs to the septic, electrical, plumbing, and security systems, and renovations to make sure the facility complies with the ADA (e.g., installing elevator). The Northeast Region has no dedicated funding for this renovation and it has not been identified as a priority.
- 6) **A location that conforms to the neighborhood and local community.** There would be a substantial increase in traffic through this residential neighborhood if we moved refuge headquarters to Timber Point. Staff and visitors would have to drive through a neighborhood with very narrow, sometimes twisting roads with poor visibility. The increased visitation would likely disturb neighborhood residents and could be a safety issue. Additionally, access along these narrow neighborhood roads in the winter might be difficult for staff and visitors alike.

We would also need to comply with the Service’s “Freeze the Footprint” directive. The Freeze the Footprint directive applies to office and warehouse space. The main house at Timber Point was entered into the Service’s real property as a “house” when it was acquired because that was its former use. Currently, the main house is not part of the Service’s regional existing base for office or warehouse space. Thus, using Timber Point as a new headquarters or administrative office would require that we demolish an equivalent sized (office or warehouse) space within the Northeast Region, or request space from another region.

When a new headquarters for Rachel Carson NWR becomes a high regional priority and funding becomes available, we will evaluate alternatives for either renovating the existing headquarters or constructing a new headquarters.

Renovate Building(s) For Use as a Research Station

We received several comments suggesting we use the main house and other outbuildings as a research station, with meeting space, offices, laboratories, and housing. We eliminated this alternative because we felt there were adequate and similar facilities nearby. The University of New England is also located in Biddeford and has extensive research facilities, including a Marine Science Center with saltwater laboratories. Also, the Wells National Estuarine Research Reserve at Laudholm Farm in Wells, Maine, is about 30 minutes from Timber Point and its facilities include offices, meeting space, interpretive exhibits, an auditorium, library, laboratories, indoor and outdoor classrooms, dormitories, and a maintenance and repair shop (<http://www.wellsreserve.org/>; accessed July 2014).

Allow Commercial Use of Buildings

Several people also suggested that we rent or turn over the buildings for commercial, for-profit uses such as weddings, corporate, yoga, or artist retreats, as a golf course, or for a wind farm. We eliminated this alternative because it is unlikely to comply with Federal laws and Refuge System and Service policies. According to 50 CFR 29.1, national wildlife refuges may only allow economic uses when we determine that the use contributes to the refuge's purposes and goals, or the Refuge System mission. In chapter 1, we list Rachel Carson NWRs purposes and the Refuge System mission. In order to comply with 50 CFR 29.1, any commercial use of the buildings at Timber Point would need to contribute to the protection and conservation of migratory birds, other native wildlife, wetlands, and habitats and/or support wildlife-dependent recreational opportunities. None of the uses suggested during scoping contribute to the refuge purposes or the Refuge System mission.

Convert Habitat to Accommodate Non-priority Public Uses

We received several suggestions that would require converting native habitat to support non-priority public uses (e.g., community garden). We eliminated this alternative because it would not support the refuge's purposes to provide habitat for migratory birds.

3.2.2 Alternatives Studied in Detail

Actions Common to all Alternatives

Compliance with Section 106 of the NHPA

Under Section 106 of the NHPA, the Federal government has the responsibility to evaluate the impact of Federal actions on historic buildings and structures eligible for the National Register. The Ewing residential estate's buildings and structures are possibly eligible for National Register listing. Under all alternatives, we will continue to work with the Maine SHPO to avoid, minimize, or mitigate adverse impacts on any of the buildings and structures from the Ewing residential estate that are eligible or listed on the National Register. If we determine any structures or buildings are a public safety hazard, we will work with SHPO to determine how to eliminate hazards in compliance with Section 106. We will not pursue any alternative without consultation with the SHPO.

Monitor and Inventory Wildlife and Maintain Wildlife Habitat

Under all alternatives, we would continue to conduct wildlife and vegetation surveys and monitor wildlife habitat on Timber Point throughout the year. Species inventories and surveys may vary from year to year depending of available resources. Treatment of invasive species would remain a priority.

Maintain Public Use Opportunities

Under all alternatives, we would continue to allow all existing public uses on Timber Point, including boating, hiking and wildlife observation along the Timber Point Trail, nature photography, and interpretive programs. Refuge staff would continue to maintain the trail, observation platform, and boardwalks. Starting in 2014, we will offer a fall archery hunting season for white-tailed deer and turkey. Under some alternatives, however, we may need to make adjustments to how these programs are implemented to ensure safety and a quality experience.

Continue Volunteer Program and Youth Conservation Corps (YCC) Partnerships

Under all alternatives, the refuge's volunteers and Youth Conservation Corps (YCC) crew will continue to complete important work on the refuge. In 2013, the two resident volunteers at Timber Point donated over 1,200 hours to the refuge. They helped out with all aspects of refuge management, from habitat and trail maintenance, to wildlife surveys, to leading guided interpretive walks. The YCC crew is comprised of five youth between the ages of 15 and 18. In 2013, the crew spent 300 hours at Timber Point helping to remove invasive plants, maintain trails, clean-up the beach, and working on other special projects.

Alternative A (Current Management – Stabilize Buildings)

CEQ regulations require a “no action” alternative, which we define as the continuation of our current management direction. This alternative provides a basis for comparing the management direction and environmental consequences of the other alternatives.

Ewing estate buildings and infrastructure

Under alternative A, refuge staff would continue limited maintenance of the roofed buildings with the objective to stabilize them and prevent them from further deterioration and becoming a fire or safety hazard. We would continue to maintain the structures in their current condition to meet minimal obligations under the Section 110 of the NHPA and would follow the Secretary of the Interior’s Standards for the Treatment of Historic Properties (<http://www.nps.gov/tps/standards.htm>; accessed July 2014). This maintenance includes repairing minor leaks and water infiltration problems, repointing (repairing joints) and caulking windows, mowing the yard and removing invasive plants, removing limbs and other tree debris impacting buildings, seasonally opening and closing certain windows for ventilation, opening and closing shutters as appropriate, installing locks on exterior doors, addressing pest problems when needed, and site monitoring to prevent vandalism. In addition, refuge staff would continue to follow the winterization plan performed by the Ewing family and outlined by Maine SHPO. As we previously mentioned, the chimneys and roof on the main house will be repaired in fall 2014. The Service would also continue to periodically maintain the one-lane access road, which is primarily a native surface.

It cost approximately \$6,000 in 2013 to stabilize and maintain the buildings, with focus on the main house. We would expect this to be the annual expense for maintenance under alternative A (2014 dollars). Special projects, such as the roof repair in 2014 (government estimate \$65,000 for repairs), would continue to occur periodically, but cannot be predicted. These costs were estimated by refuge staff and staff from the Service’s Division of Refuge Field Support.

Service Administrative Activities

Under alternative A, the buildings’ interiors would not be open the public, nor would they be used for administrative office space. Access to the inside of the buildings would remain limited to Service staff and designated contractors for the purpose of limited maintenance and to access items stored in the buildings. Refuge staff would continue to use the garage for tool storage. Only refuge staff and designated contractors would be allowed access to Timber Point by vehicle. The buildings would continue to be checked by refuge staff approximately seven times each week in summer and four times in winter. These include visits by refuge law enforcement and maintenance staff, refuge volunteers, and other refuge management staff. The approximate annual cost for these visits is \$19,000. During May to October, there would continue to be a resident volunteer couple who have an RV hook-up on Granite Point Road and provide support for refuge management needs 5 days a week. The couple’s activities range from providing nature walks, mowing around buildings, minor road and trail maintenance, and invasive plant management.

Wildlife and Habitat Management

We would conduct activities as identified under the section “Actions Common to All Alternatives.”

Public Use and Access

Although the buildings would not be open to the public, public use and access would continue to be allowed elsewhere on Timber Point as we indicate in the section “Actions Common to All,” including a new fall archery hunt for deer and turkey to begin in 2014. The entire Timber Point peninsula would be open to hunting (Timber Island is not open to hunting). All non-hunting public uses would remain open during the hunting season. Posted notifications that a hunt is in progress would be visible. Seasonal refuge volunteers would continue to lead approximately two interpretative nature walks along the trail each week. No interpretation of the Ewing estate buildings occurs in current programs since the buildings are not visible from the existing trail.

In chapter 2, we describe our current, estimated visitation. We expect visitation to remain the same under alternative A. Current peak visitation to Timber Point occurs during the summer from July 4 to Labor Day. Annual visitation is estimated to be 10,100 visitors.

Alternative B (Preserve Buildings with Enhanced Interpretation; Service-preferred Alternative)

Alternative B is the Service’s preferred alternative because it would ensure conservation of the wildlife and habitat, as well as provide opportunities for cultural and natural resource interpretation.

Ewing estate buildings and infrastructure

Under alternative B, we would initiate additional repairs and improvements to ensure long-term preservation of the buildings possibly eligible for the National Register. As a guide, we would review and prioritize the recommended repairs and improvements outlined in the 2014 CCA report by Oak Point Associates. This alternative would improve the condition of some of the structures, particularly the exterior and structural integrity of the main house and garage. As needed, we would complete a condition assessment for all possibly eligible buildings and structures not included in the CCA report. Repairs and improvements identified in the report include roof repair, chimney/flashing repair, window preservation, exterior siding repair and painting, selective foundation stabilization, structural repair, basement moisture maintenance, exterior drainage, masonry repairs, limited electrical rehabilitation, and limited site/grounds maintenance.

We estimate that the cost would be approximately \$390,000, including architectural and engineering fees, to ensure long-term preservation of the main house. After that, we expect that annual maintenance thereafter would cost approximately \$35,000 per year. These costs were estimated by staff from the Service’s Division of Refuge Field Support and are based on 2014 costs.

Service Administrative Activities

We would conduct activities as identified under alternative A, except that weekly refuge staff visits would increase to approximately 10 visits each week in summer and 7 times during winter in order to monitor more closely public activities around the buildings with new interpretive panels. The approximate annual cost for these visits is \$28,000. Except for storage in the garage, refuge staff would not use the inside of any buildings for regular administrative activities. The resident volunteers would continue to assist refuge staff as indicated in alternative A.

Wildlife and Habitat Management

We would conduct activities as identified under the section “Actions Common to All Alternatives.”

Public Use and Access

The public use and access activities described under alternative A would continue. In addition, under alternative B, we would open the remainder (0.2 miles) of the existing, native surface Timber Point Road (now blocked by a cable) to allow visitors to walk to the main house, laundry, and garage/woodshop complex (map 7). We would design and construct interpretive panels, located on the outside of the buildings, to provide information via a self-guided tour on the historical significance of the buildings, the architect Charles Ewing, as well as the importance of the area to wildlife. The inside of the buildings would remain closed to public access. The interpretive panels would also highlight the generosity of the many partners that enabled the Service to acquire Timber Point. Other outreach and interpretive materials would be developed for use off-site such as brochures, fact sheets, and a web site. Seasonal refuge volunteers would continue to lead approximately two interpretative walks along the trail each week and would incorporate walks to the main house.

The existing Timber Point Trail would continue to be used for wildlife observation, photography, environmental interpretation, and education. Visitors would continue to park in the small lot on Granite Point Road to access the trail and the proposed new section of trail to the main house.

The fall archery deer and turkey hunt would continue under alternative B, similar to alternative A. As with alternative A, the entire refuge property, excluding Timber Point Island, would be open to hunting. We would post signs at the trailhead and at all access points to alert trail users that hunting season is underway. The Timber Point Trail and new section to the historic buildings would remain open to the non-hunting public during hunting season.

We would expect visitors to access the refuge as they do currently and to follow the same seasonal trends (e.g. summer is peak season) that we describe for alternative A. However, we predict that daily visits could increase by 40 percent with the new opportunity to view the Ewing estate and the availability of interpretive information about its historical significance. Thus, annual visitation could potentially reach 14,140.

Map 7. Timber Point – Proposed Trail Expansion under Alternative B



Alternative C (Adaptive Reuse of the Buildings with Partner Support)

Alternative C proposes adaptive reuse of the former Ewing estate buildings for use by the public and local community. This alternative is predicated on the Service establishing a partnership with a non-profit conservation organization working under a long-term formal agreement where the partner is committed to working cooperatively to plan, design, cost-share, staff, and implement the proposed actions in this alternative. All non-Service led activities would adhere to Service appropriateness (603 FW 1) and compatibility standards (603 FWS 2) and may require a SUP.

Ewing estate buildings and infrastructure

We would rehabilitate the interior of the main house for year-round use as office space, visitor contact and exhibit space, and a classroom/meeting room to facilitate group programs and events of up to approximately 20 people. We estimate the need for up to six offices to accommodate use by refuge staff, other Service program staff, researchers, and partners. We would also create overnight accommodations for up to 14 people. These accommodations would be reserved for participants in environmental education programs, researchers, volunteers, and seasonal refuge staff.

Improvements to the main house would be extensive to meet Federal building standards and modern code to accommodate this level and type of year-round use, and to comply with Section 106 of the NHPA and the ADA. In addition, we would need to comply with Federal standards for public entry and egress to and from the site, including the entrance road and parking (see below), as well as within the buildings. Upgrades to the house would include the electrical, mechanical, structural, plumbing, septic, fire suppression, domestic water, and life safety components. Interior room finishes, and the building envelope and reconfiguration of interior spaces, would need to be improved or modified to accommodate the intended uses and occupancy.

We would need to improve the access road to accommodate year-round, two-way traffic and to allow vehicles to park near the house. Access upgrades to accommodate emergency vehicles would be a priority. We would convert the road to gravel and would bring the road up to Federal Class 1 standards with a gravel base, which includes widening it to 20 feet. The existing Timber Point Road occasionally floods at high tide and low spots would need to be raised. Road upgrades would likely include culverts, gravel, or crushed stone, and each would require periodic maintenance. We would also provide parking for approximately 30 vehicles by doubling the size of the existing parking area near the house (approximately 0.2 acres total for parking).

Other buildings and structures on site would need to be made safe and not a hazard to staff or visitors. We would work with SHPO through Section 106 consultation to address buildings that are a concern.

We estimate that it would cost approximately \$3,200,000, including architectural and engineering fees, to bring the main house up to standards for use as a visitor contact facility with meeting space, offices, and overnight accommodations, and to improve the access road for these activities. After the rehabilitation, we anticipate annual operations and maintenance costs to be approximately \$80,000 per year. This estimate includes janitorial cleaning, trash removal, utility bills, mechanical/heating and cooling service contracts, snow removal, security alarms, information technology needs, building office supplies, and grounds maintenance. These costs were estimated by staff from the Service's Division of Refuge Field Support and are based on 2014 costs.

Service Administrative Activities

We would dedicate one full-time position (GS-7 or -9) to coordinate the partnership and the year-round activities at Timber Point. A GS-7/9 position costs approximately \$130,000 per year (including salary, benefits, vehicle use, supplies, other support, etc.). This staff member would have an office in the rehabilitated main house. Additional staff visits to monitor and maintain the building would be about 11

visits per week year-round. The estimated annual costs of these visits would be about \$36,500. We would continue our resident volunteer program similar to alternative A.

Wildlife and Habitat Management

We would conduct activities as identified under the section “Actions Common to All Alternatives.” In addition, we would survey habitat areas expected to be impacted with road and new trail work (see below) once a tentative design is developed in order to ensure the final locations minimize impacts to wildlife and habitat.

Public Use and Access

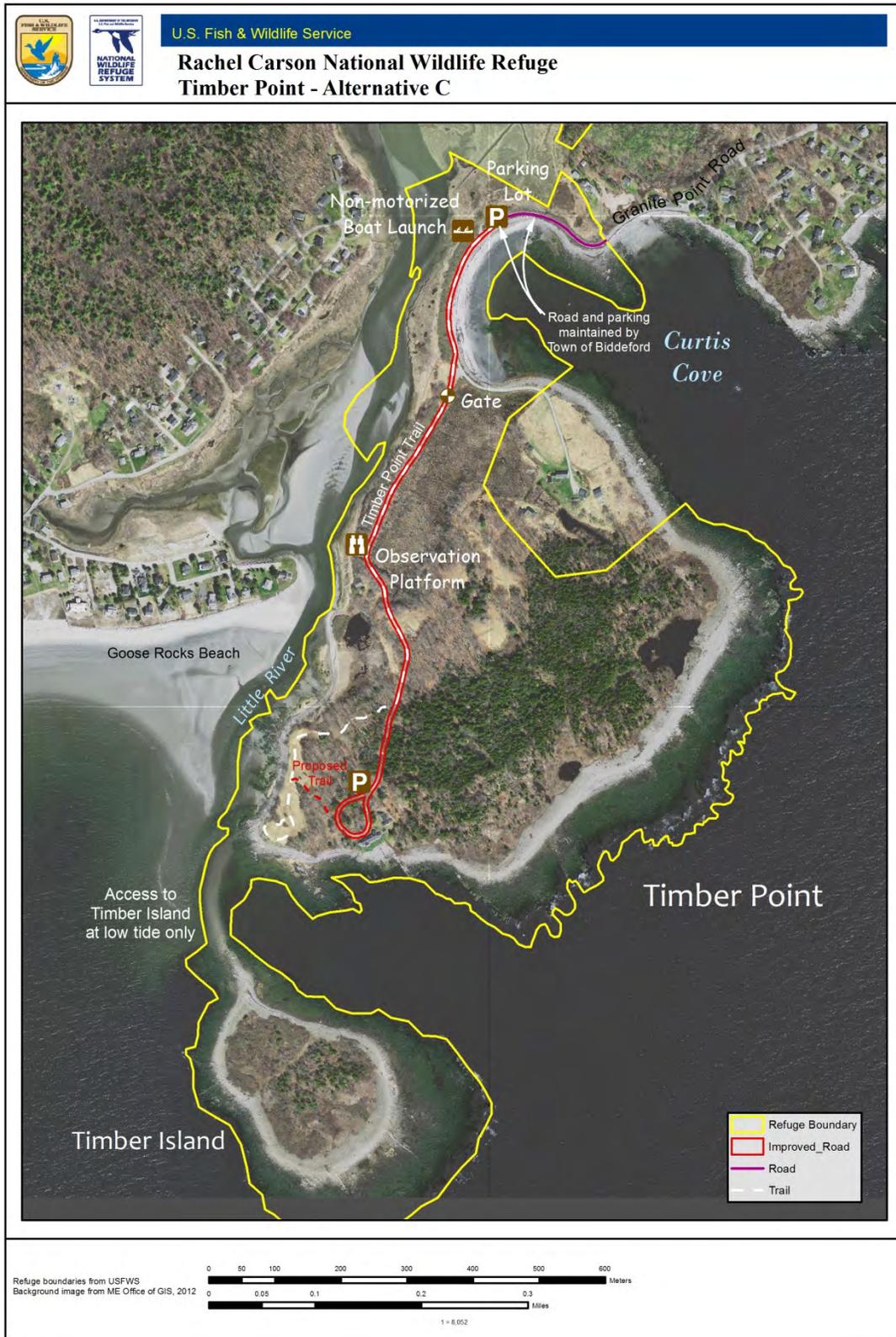
The existing Timber Point Trail location would remain as it is currently. We would also construct a new 300-foot trail connecting Timber Point Trail and Timber Point Road. This trail would provide access the main house and limit the mixing of pedestrians and vehicles on Timber Point Road (map 8). As described above, the main house would have an interior visitor contact facility with exhibits to interpret the natural and cultural resources on Timber Point.

Trail activities, including wildlife observation and photography, and interpretive nature walks, would be similar to alternative A.

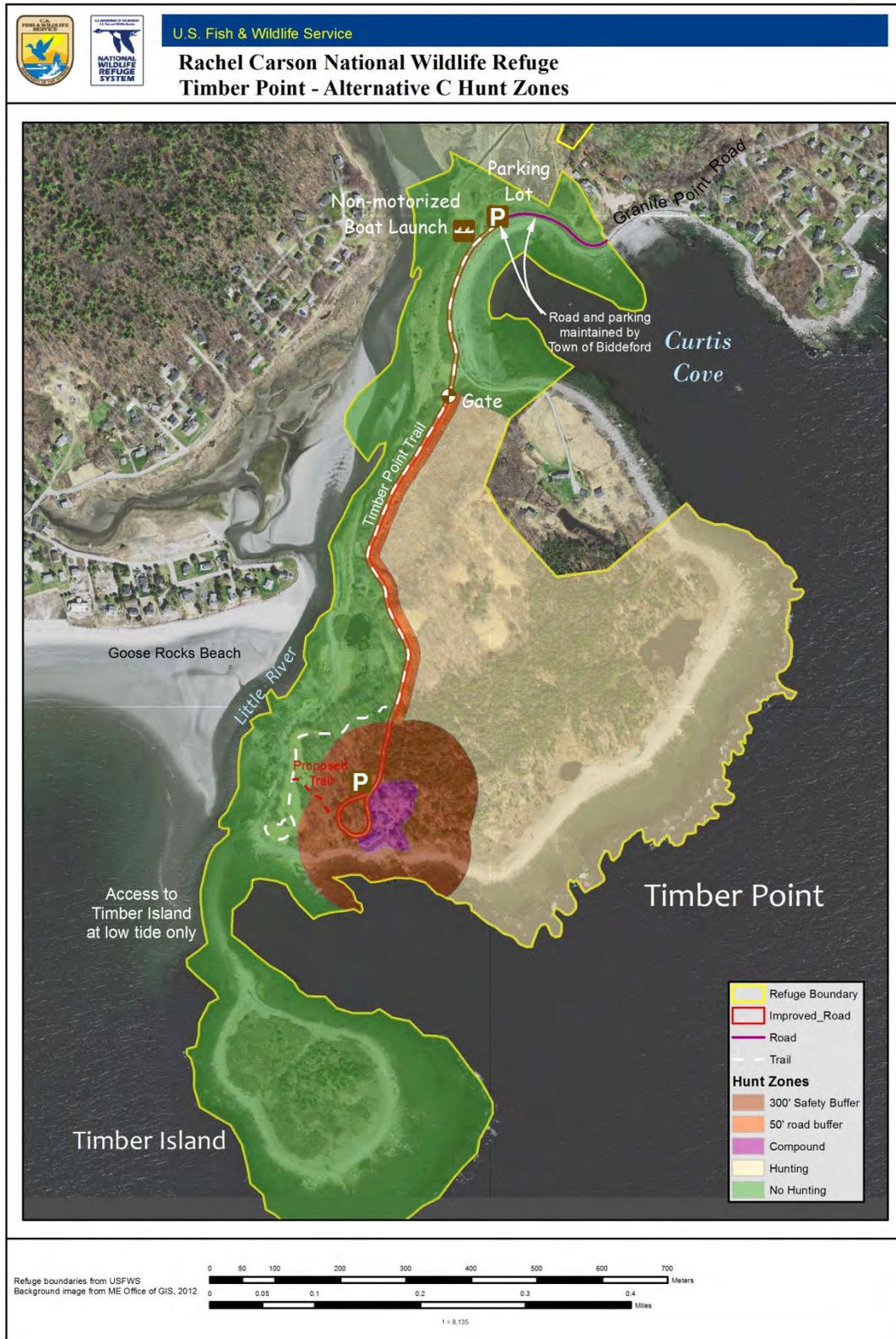
Fall archery hunting for deer and turkey would continue to be allowed, but the available hunting area would be reduced due to provisions for a safety zone around the main house and trails (map 9). There are currently 108 acres open to hunting; under alternative C this would be reduced by 36 percent to 69 acres.

With the addition of the visitor contact facility at the main house and programs to be offered there, we predict that daily visits to Timber Point could increase by 100 percent. Thus, annual visitation could potentially reach 20,200.

Map 8. Timber Point – Proposed Public Use under Alternative C



Map 9. Timber Point – Hunt Area under Alternative C



Alternative D (Removal of Buildings)

This alternative assumes that the Service removes the standing structures from the former estate and restores the area to native vegetation. “Removal” could be either demolition of all the large structures, or allowing an interested party to physically move them offsite. This alternative further assumes that removal would be in full compliance of Section 106 of the NHPA (i.e., we would complete the process described below) and that we have consulted with SHPO.

When a Federal agency plans to remove a structure that is either listed or eligible for listing on the National Register, the agency is required under 36 CFR Part 800.5(a)(2)(iii) to consult with SHPO and engage them in a six-step process to document why the “adverse action” on an historic property is necessary. Demolition or physically moving historic buildings off-site results in the same “adverse effect” because it is “removed” from its original location.

The six-step process includes the following requirements (36 CFR Part 800.11(e)):

- 1. Conducting a condition assessment of the structure.**
We would need to develop an assessment report which substantiates that moving/demolition is the preferred alternative. This assessment would provide a detailed description of the estate’s buildings and structures eligible for the National Register and their conditions, well-illustrated with maps and photographs. This would need to demonstrate that the building/structures in question are at least semi-derelict, in dangerous condition, and cannot feasibly be repaired or rehabilitated.
- 2. Providing evidence that alternatives to removal were considered.**
We would need to clearly document that other alternatives (e.g., rehabilitation, preservation, adaptive reuse) were thoroughly explored before moving/demolition was determined to be the preferred alternative. These alternatives would need to be neither prudent nor feasible.
- 3. Documenting public comments on the proposed removal.**
We would need to provide copies of any comments received from consulting parties, the public, and Tribes about the proposed removal.
- 4. Developing a Memorandum of Agreement covering the proposed removal.**
If moving/demolition cannot be avoided, we would need to develop a memorandum of agreement (MOA) with the SHPO and other interested parties in order to fulfill Section 106 requirements. This MOA likely would require a program of mitigation, including such as historic/interpretive materials about the estate (e.g., brochures, information posted on the refuge website, interpretive signs in areas open to the public).
- 5. Consulting with the Advisory Council on Historic Preservation.**
If there is no alternative to moving/demolition, we must notify the ACHP in writing that we would have an adverse effect on buildings/structures eligible for the National Register (36 CFR Part 800.11(e)) and invite them to participate in consultation (<http://www.achp.gov/regs-rev04.pdf>; accessed August 2014).
- 6. Significant documentation of the structure.**
We would need to develop comprehensive documentation about the structures and buildings (both inside and outside). This likely includes Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER) documentation, such as special archival photographs that conform to State standards, measured drawings

(elevations, site plans, sections, etc.), documentation of architectural and structural details, written historical reports, etc. The comprehensive documentation would meet the NPS Preservation Guidance for the removal of historic buildings and 36 CFR 800.

Ewing estate buildings and infrastructure

Assuming we complete the consultation process above and obtain concurrence from SHPO, all standing structures impacting wildlife habitat or considered a safety issue would be a priority for removal. As noted above, removal could include the demolition of the buildings/structures, or physically removing the buildings to an off-site location if there is an interested party. We are not aware of any interested party at this time. We would work with the Maine Preservation Society, city of Biddeford, SHPO, and adjacent towns to find an owner and location for the building. The new owner would be responsible for all costs associated with moving the structure including acquiring an off-site location, obtaining permits, and building a foundation at the new site, relocation of the building to the new foundation, any rehabilitation or adaptive reuse of the structure, and other agency coordination. We would pursue demolition if an interested party is not found in a reasonable amount of time (up to 3 years).

The estimated one-time cost to the Service for demolition of buildings and structures and restoring native habitat to the area is \$180,000. These costs were estimated by staff from the Service's Division of Refuge Field Support and are based on 2014 costs.

Service Administrative Activities

After coordinating removal of the buildings, administrative activities would include staff site visits approximately three times per week. The approximate annual cost of these visits is \$12,500. We would continue to support a resident volunteer opportunity similar to alternative A.

Wildlife and Habitat Management

In addition to activities under alternative A, we would restore native coastal maritime shrubland to the 1.6 acres presently covered by buildings. We would strive to establish native shrubland vegetation as soon as possible to prevent soil erosion and improve wildlife habitat.

Public Use and Access

Public use and access would be similar to alternative A. We would maintain the Timber Point Trail in its current location and would continue our schedule of nature walks. The fall deer and turkey hunting opportunities would be similar to current management, with a small increase in hunt area once the buildings are removed. As mentioned above, we would create interpretive information about the Ewing residential estate as part of the mitigation for removal of the buildings and structures. This could include interpretive brochures, information posted on the refuge website, and/or interpretive signs in areas open to the public.

We predict annual visitation would be similar to alternative A (approximately 10,100 visitors annually).

Table 5. Summary of Actions by Alternative

Evaluation Criteria	Alternative A (Current Management; Stabilize Buildings)	Alternative B (Preserve Buildings with Enhanced Interpretation; Service-preferred)	Alternative C (Adaptive Reuse of Buildings)	Alternative D (Remove Buildings)
Wildlife and Habitat	Continue to: <ul style="list-style-type: none"> • Mow around buildings. • Treat invasive plant species. • Conduct surveys. • Protect habitat. 	Same as alternative A.	In addition to alternative A, conduct additional wildlife surveys to ensure road upgrades/widening and new connecting trail (approximately 300 feet) are located to try to minimize impacts.	In addition to alternative A, restore all former building sites (approximately 1.6 acres) to native habitat.
Wetlands	Continue to protect all wetlands.	Same as alternative A.	Locate road upgrades to try to avoid or minimize impacts to wetlands.	Same as alternative A.
Priority public uses and infrastructure to support programs	Continue to: <ul style="list-style-type: none"> • Manage the 1.4-mile Timber Point Trail, including accessible viewing platform and boardwalks. • Provide nonmotorized boat launch. • Provide a fall archery hunt for deer and turkey. • Promote wildlife observation and photography opportunities. • Conduct two nature walks per week during peak season using resident volunteers as guides. 	In addition to alternative A: <ul style="list-style-type: none"> • Allow visitors access down existing Timber Point Road (0.2 miles) to provide viewing opportunities of historic buildings. • Provide interpretive signs about the Ewing residential estate and conduct tours from outside of buildings; create other interpretive materials for website, brochures, etc. 	In addition to alternative A: <ul style="list-style-type: none"> • Construct a new 300-foot connecting trail from existing Timber Point Trail to provide access to main house and minimize mixed pedestrian and vehicle traffic on Timber Point Road. • Conduct educational and interpretive programs at main house. • Reduce hunt area to ensure safety zone around main house and road. 	Same as alternative A.
Ewing estate buildings	Continue to: <ul style="list-style-type: none"> • Stabilize all buildings possibly eligible for National Register. 	<ul style="list-style-type: none"> • Increase maintenance and restoration of possibly eligible buildings and structures to ensure their long-term preservation. • Complete condition 	In addition to alternative B: <ul style="list-style-type: none"> • Rehabilitate main house to accommodate visitor contact facility, exhibit space, meeting rooms, and overnight lodging. • Establish partnership with 	<ul style="list-style-type: none"> • Pursue removal of buildings. • Complete justification and consultation with SHPO (re: 36

Evaluation Criteria	Alternative A (Current Management; Stabilize Buildings)	Alternative B (Preserve Buildings with Enhanced Interpretation; Service-preferred)	Alternative C (Adaptive Reuse of Buildings)	Alternative D (Remove Buildings)
		assessment of structures not evaluated in 2014 CCA report. <ul style="list-style-type: none"> • Provide interpretive viewing opportunities from outside historic buildings. 	non-profit conservation organization to develop, fund, implement, and maintain visitor facility and public community space in main house consistent with Refuge System mission, and compatible with refuge purpose/goals.	CFR 800) for all possibly eligible buildings before pursuing removal.
Administration, staffing, and budget needs	Continue to: <ul style="list-style-type: none"> • Restrict public vehicular access on Timber Point Road. • Restrict public access to buildings for public safety and building protection. • Use garage for storage (no other use of building’ interiors). • Maintain current refuge staffing. • Estimated annual maintenance \$23,000. 	Same as alternative A, except: <ul style="list-style-type: none"> • Increased maintenance needs to ensure better long-term preservation. • Estimated initial cost to bring buildings to preservation status is \$390,000. • Estimated annual maintenance budget thereafter is \$35,000. 	<ul style="list-style-type: none"> • Upgrade road to gravel to accommodate administrative and public access. • Double the existing parking area to provide about 30 spaces. • Create up to six offices for refuge and other Service program staff, and partner staff in the main house. • Dedicate one full-time position (GS-7 or 9) to coordinating activities and partnership on Timber Point. • Estimated initial cost for rehabilitation to visitor contact facility, meeting rooms, offices, and overnight accommodations is \$3.2 million. • Estimated annual maintenance budget thereafter is \$80,000. 	Same as alternative A, except: <ul style="list-style-type: none"> • No need for storage on site. • Estimated one-time Service cost to remove buildings is \$180,000.

Chapter 4 – ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This chapter discusses and analyzes the potential environmental effects or consequences that can reasonably be expected by the implementation of the alternatives described in Chapter 3, “Description of Alternatives.” Our analysis focuses on the effects of actions proposed in each alternative on the physical, biological, and human environments. We have organized by resource topic (e.g., soils, wildlife, public use access, etc.). Each topic discussion starts off with a description of the impacts that do not vary among the alternatives, and then describes the differences in the predicted impacts by alternative.

4.2 Method of Assessing Impacts

As required by NEPA, we describe potential impacts in terms of their type (beneficial or adverse, direct, or indirect), context (site-specific, local, or regional), duration (short-term or long-term), and level of intensity (negligible, minor, moderate, or major). We also provide a cumulative impacts summary. These terms are defined below.

We based our impact analysis and conclusions on a review of existing scientific literature and refuge-specific studies, refuge staff’s observations and best professional judgment, and information provided by onsite experts and others with technical expertise in the Service and other Federal and State agencies.

Impact Type

Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse: A change that moves the resource away from a desired condition or detracts from its appearance or condition.

Direct: An impact that is caused by an action and occurs at the same time and place.

Indirect: An impact that is caused by an action but is later in time or farther removed in distance, but still reasonably foreseeable.

Impact Context

Site-specific: The impact would affect the Timber Point property.

Local: The impact would affect Timber Point and the immediate neighborhood.

Regional: The impact would affect localities, cities, or towns surrounding Timber Point.

Impact Duration

Short-term: Impacts that last less than 1 year.

Long-term: Impacts that last longer than 1 year.

Level of Intensity

Negligible: The effect would be at the lower levels of detection.

Minor: The effect would be detectable, but still small.

Moderate: The effect would be readily apparent, and it would have the potential to become major.

Major: The effect would be severe, or, if beneficial, it would have exceptional beneficial effects.

Cumulative Impacts

We define and discuss cumulative impacts at the end of this chapter.

4.3 Impacts to Physical Environment

4.3.1 Impacts to Soils

Soil Impacts that do not vary by Alternative

Beneficial Impacts: Under all alternatives, we expect long-term benefits to refuge soils at Timber Point as we continue to protect native habitats with intact, productive soil.

Adverse Impacts: Under all alternatives, we anticipate continued site-specific, minor adverse impacts to refuge soils from visitors walking on the existing Timber Point Trail. Impacts would continue to be confined to the trail footprint. Foot traffic along trails can cause soil compaction and erosion and reduce soil permeability (Kuss 1986). To mitigate these impacts, we have constructed bog bridges along the trails in areas with sensitive wetland soils and we encourage hikers to stay on the trail.

We also anticipate continued minor adverse impacts from vehicle access to, and pedestrian use at, the refuge's nonmotorized boat launch site on the bank of the Little River. However, this impact is limited to less than 0.1 acre, and would be minor since the soil is primarily sand and it is inundated at high tide.

We also anticipate minor adverse impacts from hunters walking off trail during the fall hunt season. However, we expect fairly low numbers of hunters and therefore expect these impacts to be negligible.

Soil Impacts under Alternative A

Beneficial Impacts: Same as “Soil Impacts that do not vary by Alternative.”

Adverse Impacts: We expect that adverse impacts would be negligible to minor because we would continue to only allow pedestrian access to the property, and there would only be occasional use by refuge staff driving onto the property for management reasons (e.g., trail and building maintenance, invasive plant removal activities).

Soil Impacts under Alternative B

Beneficial Impacts: Same as “Soil Impacts that do not vary by Alternative.”

Adverse Impacts: Compared to alternative A, we expect slightly greater, but still minor, adverse impacts to soils due to an increase in visitation from converting the closed portion of the existing Timber Point Road into a trail. This additional section of trail (approximately 0.2 miles) would allow visitors to see the exterior of some of the buildings that are part of the historic Ewing estate. We do not anticipate additional soil impacts with the establishment of this section of trail because it would follow the existing dirt road and would not require any additional clearing. The portion of the trail around the main house would not disturb any additional soils and would be created using bark mulch.

Because of the new opportunity to view the estate's main house, we anticipate an approximately 40 percent increase in visitation to Timber Point under alternative B. Over the long term, this would increase the likelihood of soil compaction and erosion caused by visitors hiking on the property,

however overall we would still expect these impacts to be negligible and confined to the trail footprint.

Soil Impacts under Alternative C

Beneficial Impacts: Same as “Soil Impacts that do not vary by Alternative,” except alternative C would protect less native habitat compared to the other alternatives because it proposes more extensive ground-disturbing activities (see adverse impacts).

Adverse Impacts: In the short term, we would expect minor to moderate site-specific adverse impacts to soils from heavy equipment (e.g., trucks, backhoes, etc.) needed for major renovations to the main house. This includes updates to the main house to make it ADA-accessible, upgrades to the water, electric, and plumbing systems, and replacement of the septic system. We expect these repairs and upgrades would disturb up to 1 acre of soil. We would follow best management practices to minimize these impacts. After construction, these disturbed areas would be restored and revegetated.

Over the long term, we anticipate moderate to major long-term impacts to soils from widening the road (approximately 3,750 feet in length) from an average of 10 to 20 feet in order to allow two-way traffic and to safely accommodate pedestrians. This would require disturbing approximately 1.7 acres of soil, including 0.7 acres of wetland soils. We would also convert the road’s native surface sections to gravel to stabilize it for daily, year-round use. Since the road already exists, the soils in the area are already impacted. However, widening and changing the surface from dirt to gravel would increase these impacts. As noted under current management, much of the road is currently used as the Timber Point Trail, which is pedestrian access only. The end of the road is closed to public access and is only driven on by staff occasionally. Under alternative C, visitors would be allowed to drive along the entire length of the road. Because of this, we anticipate that impacts to soils would be greater than under other alternatives.

Roads can cause long-term soil impacts, which can persist long after the road is no longer used. These impacts include soil compaction, soil erosion, sedimentation, increases in surface temperature, and changes in soil density, pH, moisture content, and chemistry (Trombulak and Frissell 2000; Forman and Alexander 1998). Changes in soil properties may lead to changes in vegetative communities along the roadway. These impacts can impact areas up to 150 feet away from the road. To minimize these impacts to soils from road widening and upgrades, we would follow best management practices (Maine Department of Conservation 2004; Maine Department of Transportation 2008).

We predict a moderate, site-specific, long-term impact from doubling the size of the parking area (up to 0.2 acres total). The existing 0.1-acre parking area is asphalt. The expansion would either be gravel or asphalt. We anticipate that the parking area would receive daily use.

We also anticipate minor, site-specific, long-term soil impacts from creating an approximately 300-foot connecting trail between the existing Timber Point Trail and the main house area. However, this trail would follow an existing path through primarily grassland habitat and have a dirt or wood-chip surface. The use of trails can lead to soil and leaf litter compaction, leading to changes in the plant communities up to 6 feet away from trails (Kuss 1986). Overall, we expect the greatest amount of visitation under alternative C (estimate a 100 percent increase in visitation) and, therefore, the greatest potential for soil compaction and erosion caused by public use. To minimize these impacts,

we would encourage visitors to stay on designated trails and maintain the bog bridges in areas where sensitive wetland soils occur.

Soil Impacts Alternative D

Beneficial Impacts: Compared to the other alternatives, we would expect the greatest long-term benefits to soils under alternative D because we would restore the 1.6-acre area to native, early successional habitat by seeding or planting after the buildings and structures are removed.

Adverse Impacts: There would be site-specific, short-term, moderate adverse impacts to soils (e.g., soil disturbance, compaction, erosion) from heavy equipment necessary for relocating or demolishing the buildings and structures, which may include some below ground structures. In order to remove the house or leftover materials, the roads may also need to be widened and upgraded to a gravel road to accommodate truck traffic, similar to alternative C. To minimize these impacts to soils, we would use best management practices for preventing soil compaction and erosion (Maine Department of Conservation 2004; Maine Department of Transportation 2008). Over the long term, however, we expect removing the buildings and structures would benefit soils since all areas that formerly had buildings and structures on them would be restored and revegetated.

4.3.2 Impacts to Wetlands and Hydrology

Wetlands and Hydrology Impacts that do not vary by Alternative

Beneficial Impacts: Varies by alternative.

Adverse Impacts: Under all alternatives, we anticipate continued site-specific, negligible adverse impacts to wetlands and hydrology from visitors and refuge staff (e.g., sedimentation input caused by walking on existing Timber Point Trail, nonmotorized boat launch use, and the occasional staff visits for routine maintenance on structures.). To mitigate these impacts, we have constructed bog bridges along the trails in wetland areas and we encourage walkers to stay on the trail, and have a designated boat launch site.

Wetlands and Hydrology Impacts under Alternative A

Beneficial Impacts: Under alternative A, we would continue to protect all wetlands at Timber Point.

Adverse Impacts: Same as “Wetland and Hydrology Impacts that do not vary by Alternative.”

Wetlands and Hydrology Impacts under Alternative B

Beneficial Impacts: Same as alternative A.

Adverse Impacts: Same as “Wetland and Hydrology Impacts that do not vary by Alternative,” except there may be slightly greater, but still negligible, impacts to wetlands and hydrology from an anticipated increase in visitation (we predict an increase of 40 percent over current levels). However, this impact would be mitigated similar to alternative A by encouraging people stay on the trail footprint and requiring use of the designated boat launch site.

Wetlands and Hydrology Impacts under Alternative C

Beneficial Impacts: Under alternative C, some wetlands would be permanently disturbed to widen and upgrade Timber Point Road (see adverse impacts discussion below); however, we would continue to protect all other wetlands on Timber Point. Compared to other alternatives, alternative C would have the fewest benefits to wetlands and hydrology.

Adverse Impacts: We anticipate moderate, permanent, site-specific, adverse impacts to wetlands from widening Timber Point Road. Up to 0.7 acres of wetlands (5 percent of existing freshwater shrublands and 0.3 percent of existing estuarine and marine wetlands) would be lost from widening the road because the causeway to Timber Point is very narrow and is mostly wetlands (map 3).

Roads can negatively impact hydrology by altering surface and groundwater flows, particularly in wetland soils. Roads can increase rates of runoff, which can lead to increased erosion. These hydrological impacts can be felt up to 3,000 feet from roads (Forman and Alexander 1998). Since Timber Point Road is pre-existing, many of these impacts already occur at Timber Point. However, we anticipate widening the road by approximately 10 feet and converting the surface to gravel which would increase the magnitude of any existing impacts. We would also need to install one or more culverts to reduce the likelihood of road flooding, which may disrupt local hydrological conditions and alter water flows. Overall, compared to the other alternatives, we anticipate moderate adverse impacts to hydrology from road improvements.

The renovation of the main house would require the use of heavy machinery and equipment, which may cause short-term, minor, adverse impacts to hydrology (e.g., by causing rutting, minor leaks, etc.). The renovation would also require installing a new septic tank and leach field which could affect local hydrology and water quality. We would use best management practices and continued maintenance to reduce the likelihood of these impacts (e.g., proper siting and sizing of septic system and leach field, proper maintenance of septic system, etc.). Risks from oil leaks or spills from equipment would be mitigated with a spill prevention plan prior to operation.

We also anticipate additional impacts to hydrology from expanding the parking area (about 0.1-acre additional impervious surface).

We do not predict that the construction of the 300-foot connecting trail would cause any additional impacts to wetlands or hydrology because it would be built along an existing, relatively flat pathway through grassland habitat.

Compared to the other alternatives, we expect greater long-term impacts to wetlands and hydrology from visitors because we anticipate a 100 percent increase in visitation. However, as with alternatives A and B, we would attempt to mitigate this by encouraging people stay on the trails and by requiring use of the designated boat launch site. Overall, we anticipate these impacts would be negligible.

Wetlands and Hydrology Impacts under Alternative D

Beneficial Impacts: Impacts would be similar to alternatives A and B. Over the long term, we would remove buildings and structures and restore these areas to native shrubland habitat (approximately 1.6 acres). This would have localized beneficial impacts on hydrology by removing impervious surfaces and restoring native vegetation.

Adverse Impacts: Under alternative D, there would be short-term, site-specific, minor impacts to hydrology and wetlands from heavy equipment used to demolish or relocate structures such as the main house, and potentially including below ground structures. We would use best management practices to reduce the likelihood of these impacts. Risks from oil leaks or spills from this equipment would be mitigated with a spill prevention plan prior to operation.

If the main house is relocated offsite, it may be necessary to temporarily widen and upgrade the road to allow trucks access to remove the building. If this was necessary, the impacts would be similar to alternative C over the short term, and would be temporary. Over the long term, however, we expect removing the buildings and structures would benefit wetlands and hydrology soils since all areas that formerly had buildings and structures, including much that was impermeable to water flow, would be restored and revegetated.

4.4 Impacts to the Biological Environment

4.4.1 Impacts to Uplands Vegetation

Uplands Vegetation Impacts that do not vary by Alternative

Beneficial Impacts: Over the long term, we predict continued, long-term, localized benefits from permanently protecting native uplands vegetation from further development at Timber Point, although the amount of vegetation protected varies under each alternative. Also, under each alternative we would continue to have a minor benefit on native uplands vegetation from removing non-native, invasive plant species.

Adverse Impacts: Under all alternatives, there would continue to be a negligible adverse impact to uplands vegetation from visitors walking along the existing Timber Point Trail and hunters walking off trail. Potential impacts include trampling and removal of plants directly adjacent to the trail, and introducing invasive species (Kuss 1986, Benninger-Truax et al. 1992, Weaver and Daler 1978). To mitigate these impacts, we would continue to encourage walkers to stay on the existing trail footprint. We anticipate very low levels of hunting at Timber Point, and because it will occur during the fall when vegetation growth has slowed or stopped, we do not expect greater than negligible impacts to vegetation from hunters.

Routine maintenance by refuge staff may also have negligible adverse impacts on uplands vegetation (e.g., driving along Timber Point Road, trail and road clearing, and use of equipment for minor maintenance to historic structures), but these are short-term and site-specific impacts.

Uplands Vegetation Impacts under Alternative A

Beneficial Impacts: We expect moderate long-term benefits from continuing to permanently protect the existing 84 acres of upland habitat.

Adverse Impacts: Same as “Uplands Vegetation Impacts that do not vary by Alternative.”

Uplands Vegetation Impacts under Alternative B

Beneficial Impacts: Same as alternative A.

Adverse Impacts: Similar to “Uplands Vegetation Impacts that do not vary by Alternative,” except we anticipate slightly greater, but still negligible, adverse impacts to uplands vegetation. We expect this based on our prediction of a 40 percent increase in visitation because we are opening up the closed portion of Timber Point Road for use as a walking trail. However, the new section of trail (0.2 miles) uses a portion of the existing roadbed and no new construction is needed.

Uplands Vegetation Impacts under Alternative C

Beneficial Impacts: Same as “Uplands Vegetation Impacts that do not vary by Alternative,” except alternative C would protect less native vegetation compared to the other alternatives because it proposes more extensive ground-disturbing activities (see adverse impacts). Overall, we still predict a moderate benefit to uplands.

Adverse Impacts: In the short term, we predict minor to moderate site-specific adverse impacts to uplands vegetation from heavy equipment needed for major renovations to the main house, including updates to the main house to make it ADA-accessible, updating water, electric, and plumbing systems, and replacing the septic system. These impacts would include trampling vegetation and excavation. We expect these repairs and upgrades would disturb up to 1 acre; however, the majority of the buildings are in previously disturbed areas (e.g., they are within the residential estate setting) and are generally surrounded by mowed lawn. We would also follow best management practices to minimize these impacts. After construction, these disturbed areas would be restored and revegetated with native vegetation to the extent possible.

Over the long term, we anticipate moderate, site-specific impacts to uplands vegetation from widening the road (approximately 3,750 feet in length) from an average of 10 to 20 feet in order to allow two-way traffic and to safely accommodate pedestrians. This would require permanently removing approximately 1 acre of uplands vegetation. We would also permanently remove approximately 0.1 acre of upland habitat to expand the parking lot.

We also anticipate minor, site-specific long-term uplands vegetation impacts from creating an approximately 300-foot connecting trail between the existing Timber Point Trail and the main house area. This trail would further fragment uplands vegetation; however, we expect these impacts to be minor because it would follow an existing path through primarily grasslands that is occasionally used by refuge staff for trail maintenance.

We also expect an increase in adverse impacts to uplands vegetation from a projected 100 percent increase in visitation due to the increased trail system and use of the interior of the house as a visitor contact facility. Overall, we anticipate these impacts would be negligible.

Uplands Vegetation Impacts under Alternative D

Beneficial Impacts: Compared to the other alternatives, we would expect the greatest long-term benefits to uplands vegetation under alternative D because after the buildings and structures are removed, we would restore the area to native, early successional vegetation by seeding or planting. Overall, these impacts would still be moderate.

Adverse Impacts: There would be site-specific, short-term, moderate adverse impacts to uplands vegetation (e.g., trampling of vegetation, removal) from heavy equipment necessary for relocating or demolishing the buildings and structures. Removal of some of these structures may require removal of some vegetation and/or excavation. As mentioned above, over the long term we expect removing the buildings and structures would benefit uplands vegetation as we restore these sites.

In order to remove the house or leftover materials, the roads may also need to be temporarily widened and upgraded to a gravel road, with impacts similar to those described under alternative C. However, this would be a temporary impact, as we would restore the disturbed area to native vegetation upon completion of the work.

The impacts on uplands vegetation from public use would be the same as alternative A.

4.4.2 Impacts to Native Wildlife, Including Federally Threatened and Endangered Species

Native Wildlife Impacts that do not vary by Alternative

Beneficial Impacts: Under all alternatives, we predict a long-term, moderate benefit to a wide range of wildlife species from conserving and managing relatively undisturbed coastal habitats and over 2.5 miles of shoreline. In particular, we anticipate benefits to shorebirds, waterbirds, and other migratory birds, such as egrets and herons, Virginia rail, purple sandpipers, common loons, common eider, American woodcock (*Scolopax minor*), bobolink, northern flicker, willow flycatcher (*Empidonax traillii*), and chestnut-sided warbler.

Adverse Impacts: Under all alternatives, there would continue to be negligible adverse impacts to native wildlife from visitors walking along the existing 1.4-mile Timber Point Trail and hunters walking off trail. Potential impacts include avoidance or departure from the site (Owen 1973, Burger 1981, Kaiser and Fritzell 1984, Korschen et al. 1985, Kahl 1991, Klein 1993, Whittaker and Knight 1998), the use of suboptimal habitat (Erwin 1980, Williams and Forbes 1980), altered behavior or habituation to human disturbance (Burger 1981, Korschen et al. 1985, Morton et al. 1989, Ward and Stehn 1989, Havera et al. 1992, Klein 1993, Whittaker and Knight 1998), attraction (Whittaker and Knight 1998), and an increase in energy expenditure (Morton et al. 1989, Belanger and Bedard 1990). Miller et al. (2000) found that the area of disturbance for songbirds along hiking trails averaged 250 feet (75 meters). Disturbance from recreational activities vary with the wildlife species involved and the activity's type, level, frequency, duration, and the time of year it occurs. To mitigate these impacts, we would continue to encourage hikers to stay on the existing trail. Overall, we expect these impacts to be negligible at existing levels of use and because we encourage visitors to only visit designated areas. We anticipate very low levels of hunting at Timber Point, and therefore do not expect greater than negligible impacts from hunters.

Under all alternatives, we anticipate no to negligible adverse impacts on federally listed species because none occur on Timber Point. Several listed species, including piping plovers and roseate terns, occur nearby (within 0.5 miles), but are unlikely to be adversely impacted by activities at Timber Point.

Native Wildlife Impacts under Alternative A

Beneficial Impacts: Same as “Native Wildlife Impacts that do not vary by Alternative.”

Adverse Impacts: Refuge management activities under alternative A (e.g., driving along Timber Point Road and trail, road and historic building maintenance, invasive plant removal) may also disturb wildlife, but we do not anticipate any greater than negligible impacts because these activities are infrequent.

Native Wildlife Impacts under Alternative B

Beneficial Impacts: Same as “Native Wildlife Impacts that do not vary by Alternative.”

Adverse Impacts: Similar to alternative A, except we predict slightly greater, but still negligible, adverse impacts to wildlife from an estimated 40 percent increase in visitation. We also anticipate only negligible adverse impacts from opening 0.2 miles of the currently closed portion of Timber Point Road for use as a pedestrian trail because it is an existing dirt road that currently gets occasional use from refuge staff. Visitors would be encouraged to stay on the trail to minimize the potential for impacts to wildlife.

Native Wildlife Impacts under Alternative C

Beneficial Impacts: Same as “Native Wildlife Impacts that do not vary by Alternative,” except alternative C would have the least beneficial impacts to wildlife because it would require permanently disturbing 1.8 acres of wildlife habitat, including wetlands, in order to upgrade Timber Point Road and expand the parking lot (see adverse impacts).

Adverse Impacts: Compared to the other alternatives, we predict the greatest adverse impacts to wildlife under alternative C for the reasons below.

In the short term, we predict site-specific, adverse impacts to wildlife during renovations to the main house and replacing the septic system. These impacts include displacing and disturbing wildlife with loud noise from heavy equipment, trampling of habitat, and general disturbance from the presence of humans. Overall, we anticipate these impacts would only be minor to moderate because the renovation would occur over a relatively short-timeframe (less than 1 year), after which we would restore and revegetate disturbed areas. We would follow best management practices to minimize these impacts.

Over the long term, we anticipate moderate adverse impacts to wildlife from widening Timber Point Road and opening it to year-round vehicular traffic. Since Timber Point Road has existed for many decades, the wildlife in the area is already being impacted by the presence of the road. However, widening the road by 10 feet and changing its surface from dirt to gravel would increase these impacts. Widening the road would permanently remove 1 acre of uplands and 0.7 acres of wetlands habitat. Expanding the parking area would permanently remove another 0.1 acre of upland habitat. Under alternative C, we would also open Timber Point Road to the public, which would result in a large increase in vehicular traffic (an estimated total of 7,250 vehicles per year). Currently, Timber Point Road is being used as pedestrian-only trail and portions of it are only occasionally driven on by refuge staff.

The impacts to wildlife from roads include direct loss of habitat, mortality from vehicle collisions, further habitat fragmentation, modification of animal behavior (e.g., avoidance of road areas, declines in productivity), and barriers to terrestrial and aquatic species movement (Forman and Alexander 1998, Trombulak and Frisell 2000, Charry 2007). Road kill can be a significant cause of mortality for some species. Slow-moving species (e.g., reptiles and amphibians) and species that frequently cross roads (e.g., deer) are particularly prone to vehicle collisions. For example, expanding the road and opening it up to

frequent auto traffic may negatively impact State-threatened spotted turtles on Timber Point. According to MDFIW (2003), road kill is the major source of mortality for adult spotted turtles. They recommend avoiding building new roads or widening existing roads that could lead to increased traffic volume and speed in known turtle wetlands (MDFIW 2003).

To minimize road impacts, we would use best management practices when constructing and maintaining the road (e.g., avoiding the use of salt) and installing appropriately-designed culverts that allow species to pass under the road (Forman and Alexander 1998, Trombulak and Frisell 2000, Charry 2007).

We also anticipate negligible, site-specific, long-term wildlife impacts from creating an approximately 300-foot connecting trail between the existing Timber Point Trail and the main house area. This trail would further fragment wildlife habitat, however, we expect these impacts to be negligible because it would follow an existing path through primarily grassland habitat that is occasionally used by refuge staff for trail maintenance.

Compared to alternative A, we also expect an increase in adverse impacts to wildlife from a projected 100 percent increase in visitation. Overall, these impacts would still be negligible.

Native Wildlife Impacts under Alternative D

Beneficial Impacts: Over the long term, we anticipate the greatest benefits to wildlife under alternative D because once the buildings are removed, we would restore those areas (1.6 acres total) to native maritime shrubland habitat. In particular, we would expect species requiring early successional/shrub habitats to benefit, such as eastern towhee (*Pipilo erythrophthalmus*), willow flycatcher, American woodcock, gray catbird, brown thrasher (*Toxostoma rufum*), and common eider.

Adverse Impacts: In addition to “Native Wildlife Impacts that do not vary by Alternative,” we predict short-term, minor, site-specific disturbance to wildlife from demolition or relocation of the Ewing residential estate buildings. Over the long term, we would restore these areas to native habitat.

It may be necessary to widen and upgrade the road in order for trucks and heavy equipment to remove materials or buildings. If this is necessary, we expect the impacts to wildlife from the road upgrades to be the same as described under alternative C.

4.5 Impacts to the Human Environment

4.5.1 Cultural Resources Impacts

In accordance with the ACHP regulations implementing Section 106 of the NHPA (36 CFR Part 800, Protection of Historic Properties), we identified and evaluated impacts to archeological resources by: (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects for the building locations that were either listed in or eligible to be listed in the National Register; (3) applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the National Register; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

The Ewing residential estate at Timber Point is possibly eligible for the National Register. The estate includes 16 buildings and structures, which are historically important because of the unique architecture of the buildings and their significant place in local history. Please see Chapter 2: Affected Environment for more information on these structures and the estate’s historical significance. For the purposes of our analysis in this EA, we assumed that the estate is eligible for listing on the National Register.

Under the ACHP regulations, when a Federal agency is proposing a project, a determination of either *adverse effect* or *no adverse effect* must be made for affected National Register eligible cultural resources. An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register (e.g., diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association). Adverse effects also include reasonably foreseeable effects caused by the alternative that would occur later in time, be farther removed in distance or be cumulative (36 CFR Part 800.5, Assessment of Adverse Effects). A determination of *no adverse effect* means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register.

Impacts to Cultural Resources that do not vary by Alternative

Beneficial Impacts: Under all alternatives, we would only pursue actions that comply with Section 106 of the NHPA and would continue to consult with SHPO on all actions that may affect National Register eligible buildings and structures. We would also consult with our Regional Archeologist, and SHPO as warranted, on all ground-disturbing activities to ensure we do not disturb any historical or archaeological resources.

Adverse Impacts: Varies by alternative.

Impacts to Cultural Resources under Alternative A

Beneficial Impacts: Alternative A would result in a minor, long-term benefit to cultural resources from continuing our current management to conduct minimal maintenance and repairs on the buildings and structures, particularly the main house. These repairs would ensure that these historic resources are stabilized and conserved.

Adverse Impacts: Alternative A would have no adverse effects on the Ewing residential estate buildings, as defined by ACHP regulations. We would continue to not accommodate local interest in visiting and learning about the Ewing residential estate since we do not provide any on-site interpretive information on its historical significance.

Alternative B

Beneficial Impacts: Alternative B would result in a moderate benefit to cultural resources because we would increase the amount of maintenance and repairs to the estate's buildings, particularly the main house and garage. As resources allow, we would complete repairs recommended in the CCA by Oak Point Associates. Compared to alternative A, these additional repairs would ensure that the historic resources are better preserved over the long term. We also anticipate a moderate benefit to cultural resources by providing on-site interpretive materials along the Timber Point Trail, including around the main house (e.g., brochures, panels, and guided-walks), in order to inform and engage people about the Ewing residential estate and its historical significance.

Adverse Impacts: Alternative B would have no adverse effects on any possible National Register buildings or structures as defined by ACHP regulations. Our ability to interpret the historical significance of the estate is negligibly impacted by not allowing people to access the interior of the buildings; however, we would plan to have photos of the interior as part of on-site interpretation. Visitors may experience a minor frustration when they realize that they would not be able view the interior of the buildings. This may lessen the quality of experience for some.

Alternative C

Beneficial Impacts: Alternative C would have moderate, long-term, beneficial impacts on Timber Point’s cultural resources from conserving and adaptively reusing the Ewing residential estate. We would also have moderate benefits from increasing opportunities for cultural resource interpretation. We would interpret the historical significance of the estate through exhibits, occasional guided tours, and other materials (e.g., brochures, interpretive panels, etc.).

Adverse Impacts: Alternative C would have no adverse effects on the Ewing residential estate as defined by ACHP regulations; however, the renovations and upgrades necessary to reuse the estate as office, exhibit, lodging, and meeting space would change the character of the interior of the main house. Although visitors would now be able to tour portions of the inside of the house, portions of the interior would no longer fully reflect the estate’s historical use and significance. To minimize this, we would consult the Secretary of the Interior’s Standards for Rehabilitation for historic structures as we design the buildings’ rehabilitation (<http://www.nps.gov/tps/standards/rehabilitation/rehab/stand.htm>, accessed August 2014).

Minor changes to the buildings exteriors may be necessary, particular to comply with Federal requirements for accessibility, provide for emergency vehicles, and to ensure safety. However, we expect that these upgrades would result in negligible changes to the exterior.

By improving and widening the road, we would alter the character of the area around the estate, from a quiet, one-lane dirt road to a two-lane gravel road. This would result in a minor impact to visitor experience of the estate’s setting.

Alternative D

Beneficial Impacts: Under alternative D, we would have long-term benefits to cultural resources interpretation by being responsible for a detailed recording of the site and from developing interpretive materials about the estate, Charles Ewing, and their historic significance (e.g., panels, brochures, photographic history, and possibly an oral history) as part of the mitigation for removing or demolishing the estate’s structures.

Adverse Impacts: Alternative D would have a major adverse impact on cultural resources from removing or demolishing the historic Ewing residential estate’s historic buildings and structures. Under ACHP regulations, this would have an adverse effect. Under NHPA, both demolition and relocation incur similar adverse effects on the National Register eligibility (36 CFR 800.2[iii]). We would work with SHPO to develop a mitigation plan, likely including detailed documentation (e.g., photos, blueprints, diagrams, etc.) and interpretive materials as indicated above under beneficial impacts.

4.5.2 Socioeconomic Impacts

Socioeconomic Impacts that do not vary among Alternatives

Beneficial Impacts: Under all alternatives, we expect negligible to minor benefits to the local community and economy from continuing to provide recreational opportunities at Timber Point. In the southern coastal Maine area there is a great demand for these types of recreation, and the opportunities at Timber Point help to fulfill some of that demand. The existing 1.4-mile Timber Point Trail provides hiking and wildlife observation, photography, and interpretive opportunities for over 10,000 visitors annually. Boaters would also continue to launch from the refuge into the Little River from Timber Point. Under all

alternatives, we will also offer a fall archery hunt season for big game (deer and turkey) starting in fall 2014.

Wildlife-related recreation is also important to Maine's economy. As visitors come to the refuge and Timber Point, they help contribute to the economy by making purchases at local stores and restaurants and staying at local hotels and rental properties. Overall, Maine residents spent a total of \$1.4 billion dollars on wildlife recreation in 2011, including spending on trip-related expenses, equipment, licenses, and other items (USFWS and USCB 2013). In 2011, hunters in Maine spent over \$203 million dollars, while wildlife watchers in Maine spent nearly \$800 million dollars (USFWS and USCB 2013). Due to its relatively small size, Timber Point visitors likely only contribute a negligible to minor amount to the local economy; however, many visitors likely combine their visit to Timber Point with longer vacation stays or visits to other nearby attractions.

Under all alternatives, we would work with local or regional contractors for any repairs, renovations, demolition, and/or road upgrades whenever possible. By hiring local contractors, we anticipate negligible to minor benefits to the local community.

Adverse Impacts: A minor economic impact to local property taxes results from the fact Timber Point is under Federal ownership. Although the Federal government does not pay property taxes, the Service would continue to pay refuge revenue sharing payment, at levels authorized by Congress, to the city of Biddeford to help offset property tax losses. In 2013, the Service paid the city \$4,361.

Socioeconomic Impacts under Alternative A

Beneficial Impacts: Same as “Socioeconomic Impacts that do not vary among Alternatives.”

Adverse Impacts: We anticipate a continued minor, long-term, adverse impact to the local neighborhood from traffic from visitors to Timber Point (estimated 3,250 vehicles per year visiting refuge property). Refuge staff have heard occasional concerns from some residents about the level of traffic and speed of vehicles on Granite Point Road.

Socioeconomic Impacts under Alternative B

Beneficial Impacts: Compared to alternative A, alternative B would have slightly greater long-term benefits to the local economy, although overall, we predict these benefits would be negligible to minor. We predict a 40 percent increase in visitation to the refuge from opening the closed portion of Timber Point Road to pedestrian access and offering visitors an interpretive opportunity to view the exterior of some Ewing residential estate buildings, including the main house and garage. By providing this additional trail and developing interpretive materials about the estate, we would be able to meet slightly more of the demand for recreational and interpretive opportunities. Also, as visitation increases, we expect an associated increase in visitor spending in the local community (e.g., at local shops, restaurants, and lodging).

Adverse Impacts: The expected 40 percent increase in visitation would have a moderate, long-term, adverse impact on the residents along Granite Point Road (e.g., additional traffic and noise through the neighborhood; estimated 4,850 vehicles per year visiting refuge property). In addition, the Timber Point Trail parking area, maintained by the city of Biddeford, would remain its current size and may not meet visitor demand for parking. We anticipate the greatest impacts to both local residents and visitors during the peak summer season (July 4 through Labor Day).

Socioeconomic Impacts under Alternative C

Beneficial Impacts: Compared to alternatives A, B, and D, under alternative C, we anticipate the greatest increase in visitation (a 100 percent increase over current numbers). Because of this, we predict a minor benefit to the local economy from visitor expenditures.

The rehabilitated main house would help provide minor beneficial impacts to the local community by providing community meeting space. The improvements would also help to meet some of the demand for cultural and natural resource educational and interpretation opportunities through exhibits, environmental educational programs and workshops, and expanded interpretive walks on the Ewing residential estate and the wildlife and habitats of Timber Point.

By having a full-time employee stationed at Timber Point, we would majorly enhance the visibility of the Service and improve outreach in the local community.

Adverse Impacts: We anticipate moderate, short-term adverse impacts to the neighborhood during road improvements and rehabilitation of the main house (e.g., increased noise, traffic, large trucks).

Over the long term, the expected 100 percent increase in visitation would have a major adverse impact on the residents along Granite Point Road (e.g., additional traffic and noise through the neighborhood; estimated 7,250 vehicles per year from visitors and refuge staff to property). Similar to alternative B, we would expect the greatest adverse impacts to the local neighborhood would occur during the peak summer season. In addition, unlike the other alternatives, impacts from visitation would be extended throughout the year under alternative C since the main house would have refuge offices, visitor information and exhibits, and host meetings and environmental educations programs year-round. In addition to increased visitation by the public, the presence of Service staff offices would also increase traffic to the site because staff would report to their offices daily and delivery and other Service vehicles would also come through on a regular basis (estimated 1,500 vehicles per year for Service staff).

Socioeconomic Impacts under Alternative D

Beneficial Impacts: Same as “Socioeconomic Impacts that do not vary among Alternatives.”

Adverse Impacts: We also anticipate short-term, minor adverse impacts to the neighborhood during removal of the historic structures (e.g., increased noise, traffic, large trucks). This may require road upgrades similar to those described under alternative C.

Similar to alternative A, we anticipate a continued minor, long-term, adverse impact to the local neighborhood from traffic from visitors to Timber Point (estimated 3,250 vehicles per year visiting refuge property).

4.5.3 Impacts on Public Use and Access

Public Use and Access Impacts that do not vary by Alternative

Beneficial Impacts: Under all alternatives, we predict a moderate to major benefit to visitors from continuing to offer high-quality opportunities for wildlife observation, photography, interpretation, hunting (fall archery deer and turkey hunting, by refuge permit), and for launching non-motorized boats into the Little River. Timber Island would also continue to be open to public access (the island is only accessible at low tide). The parking area at the end of Granite Point Road (6 spaces) would continue to be maintained by the city of Biddeford.

Adverse Impacts: Varies by alternative.

Public Use and Access Impacts under Alternative A

Beneficial Impacts: Under alternative A, visitors would continue to benefit from the variety of the recreational opportunities offered at Timber Point. The 1.4-mile Timber Point Trail would continue to be open to pedestrians and maintained by refuge staff. The trail also offers an observation platform, affording a view of the mouth of the Little River and Goose Rocks Beach to the south. In the winter, this trail would continue to provide opportunities for cross-country skiing and snowshoeing.

During the summer, refuge volunteers would continue to offer guided interpretive walks at least twice per week. These interpretive walks give visitors the opportunity to learn more about the habitats and wildlife at Timber Point and along the southern Maine coast.

The entire Timber Point peninsula would remain open to fall archery hunting for deer and turkey, per State seasons.

Adverse Impacts: Under alternative A, the limited parking provided at the end of Granite Point Road would continue to fill to capacity during the peak summer season, which restricts the number of visitors to Timber Point. Some visitors would continue to get frustrated that other nearby parking is not available. This would continue to cause a minor adverse impact to visitors who are inconvenienced by either having to wait or park further away.

Some local residents and visitors are aware of the Ewing residential estate buildings on Timber Point, and given their interest, those people would continue to be frustrated that they do not have access to them. Not allowing public access makes it more difficult to interpret the estate's historical significance. This would cause a minor to moderate adverse impact to some individuals.

Public Use and Access Impacts under Alternative B

Beneficial Impacts: Implementation of alternative B would have moderate, beneficial impacts by enhancing and existing public use opportunities. In addition to the impacts discussed under alternative A, we would expand public use opportunities by converting the closed portion of Timber Point Road to a pedestrian trail. This would add an additional 0.3 miles of trails, and allow visitors to view some of the buildings and structures that are part of the historic Ewing residential estate. Environmental education and interpretation opportunities would increase as we provide interpretive materials and talks about the historic estate. Through on-site cultural and wildlife interpretation, visitor experience would be enriched. Implementation of alternative B would have long-term, moderate beneficial impacts on visitor services from the development of onsite interpretative materials about the estate (e.g., signs, brochures, and guided walks).

Adverse Impacts: Similar to alternative A, except we anticipate a 40 percent increase in visitation, which may lead to a minor to moderate increase in user conflicts, especially in the parking area. The small parking lot would more often be inadequate to accommodate everyone who tries to visit Timber Point, primarily during the peak season. Although visitors would be able to view the main house and associated structures from the outside under this alternative, some visitors may get frustrated that they are not getting a full cultural experience without being able to access the interior of the main house.

Public Use and Access Impacts under Alternative C

Beneficial Impacts: Under alternative C, reuse of the buildings would have a moderate beneficial impact to visitors interested in learning more about the history of Timber Point, including the historic Ewing residential estate buildings. Under C, opportunities for cultural resource and environmental interpretation would benefit through exhibits about Timber Point’s wildlife, habitats, and history. Visitors would be able to view the exterior of the buildings, and also tour the renovated interior of the main house. The reuse of the buildings would provide up to 6 offices, meeting space for up to 20 people, and lodging for up to 14 people. The lodging would be reserved for researchers, seasonal staff, volunteers, and individuals enrolled in approved environmental education programs. Also, local schools and conservation groups may use the site for environmental education and interpretation activities.

Walkers would have a minor benefit under alternative C as they would be able to walk along the Timber Point Road year-round, since the road would be plowed during the winter. However, these walkers would be walking along an active road shared by vehicles.

Adverse Impacts: Implementation of alternative C would have a moderate adverse impact to users on the Timber Point Trail by changing the user experience from a quiet nature trail to a road shared by pedestrians and vehicular traffic, including large delivery vehicles. Snow would be plowed in the winter along the Timber Point Road, thus eliminating the possibility of cross-country skiing and snowshoeing on the first 0.5 miles of the Timber Point Trail (before the trail branches off the road).

There would be a moderate adverse impact to hunting opportunities as the current hunt area would be reduced by 39 acres to create buffer zones around the road, buildings, and trails open to the public (map 8). This represents a 36 percent reduction from the existing area open to hunters. Fewer hunters would be able to be accommodated each day due to the reduced hunt area and increased human activity.

Public Use and Access Impacts under Alternative D

Beneficial Impacts: Similar to alternative A, except as part of the mitigation for removing the historical buildings and estates, we would likely be responsible for a detailed recording of the site, and for developing interpretative materials about the Ewing residential estate (e.g., brochures, information on the refuge’s website, or interpretive panels in an area open to the public). This would provide us with more historical information to enhance interpretive opportunities about Timber Point and the region’s history, which many local residents are very interested in.

Adverse Impacts: Similar to alternative A, except greater site-specific, short-term impacts due to trail and road closures during the demolition or relocation of the buildings and structures. After the buildings would be removed, the trail would be restored. The permanent loss of the historic Ewing residential estate’s buildings and structures would negatively impact visitors interested in viewing the buildings and structures. Overall, we expect the loss would have a moderate to major adverse impact to individuals interested in the estate’s history.

4.6 Cumulative Impacts

According to the CEQ’s regulations for implementing NEPA (40 CFR 1508.7), a "cumulative impact" results from the incremental impact of our proposed actions when added to other past, present, and reasonably foreseeable future actions occurring in, or influencing, the environment surrounding the project area. In this section, we consider actions occurring in the local regional setting, regardless of whether they are a Federal agency or non-Federal agency action. Cumulative impacts can also result from individually minor, but collectively significant, actions taking place over a period of time.

The cumulative impacts discussion below is not a repeat of the resource impacts we presented earlier in this chapter. Rather, this discussion considers the interaction of our proposed actions at Timber Point with other known or predictable actions occurring within the surrounding region.

Cumulative Impacts on the Physical Environment (e.g. Soils, Hydrology, Wetlands)

We predict no more than negligible adverse cumulative impacts to the physical environment with our management on Timber Point. The impacts range from none (alternatives A and B) to moderate (alternative C).

Timber Point lies in a relatively developed landscape along the southern Maine coast. Much of the surroundings are developed for residential housing with strip commercial uses along Route 1. The construction industry is one of the top five industries listed by the U.S. Census Bureau for this region of Maine. Thus, continual construction work, whether it is new construction or renovation work, is ongoing in the area. We estimate that this construction work, coupled with the adverse inputs into soils, hydrology, and wetlands from residential houses and associate landscaping, has by far the largest impact to soils, hydrology, and wetlands in this area of southern Maine.

Timber Point would continue to be managed primarily to protect its intact physical environment, although some activities are described under alternatives C and D that may result in minor, short-term, or site-specific impacts which we described in the section above for specific resources. Best management practices and erosion and sediment control measures would be used during project work to minimize or avoid soil disturbance and the potential to create erosion and run off. In all work, we would also attempt to avoid impacts to wetlands or impact natural hydrologic flows. All Federal and State permits required of national wildlife refuges would be secured before activities are initiated.

Cumulative Impacts on the Biological Environment (e.g. Vegetation, Wildlife, and Habitat)

We predict continued beneficial cumulative impacts under all alternatives with our management of vegetation, wildlife, and habitat on Timber Point.

As noted above under our discussion on physical impacts, the area surrounding Timber Point is fairly developed with residences and commercial businesses, and which includes U.S. Route 1 and Interstate 95. Each of these contributes to loss of vegetation, habitat fragmentation, and disturbance to, or loss of, wildlife. Even wildlife that can tolerate and exist in smaller patches of habitat are often disturbed by the level of activity associated with development. It is true that some wildlife “learn to adapt” to this setting, but their fitness and productivity is often impacted.

As we have described Timber Point previously, it is one of the largest, relatively undeveloped areas along the southern Maine coast. Thus, compared to other areas along the southern Maine coast, it provides habitat for wildlife requiring larger habitat blocks, and offers security and cover habitat to many wildlife, including large mammals such as deer.

The refuge would continue to lead by example in the protection and maintenance of the integrity, diversity and health of habitats that would potentially be lost or severely degraded over the long term given the level of development and pressures in the area. The habitats that we would protect on the refuge and maintain under the different alternatives would all contribute at least minimally to sustaining those habitats along the southern Maine coast and would be a long-term beneficial cumulative impact. However, as described previously, there is the potential under alternative C for some impacts to wildlife and habitat due to road upgrades, building renovations, and increased human presence.

The management priority on Timber Point is to protect wildlife and wildlife habitat in as secure and as natural a setting as possible. Vegetation is primarily managed to enhance habitat, including improving diversity and removing invasive plants. We would continue to protect regionally important migratory bird

habitat of conservation concern to the Service and State of Maine, and contribute to the body of information on those species through monitoring and inventories.

Cumulative Impacts on Climate Change

We predict that none of the alternatives would contribute an adverse cumulative impact to climate change in the region as a result of our management on Timber Point.

Global climate change and sea level have exceeded predictions since the first Intergovernmental Panel on Climate Change meeting in 1990. By any measure, the ocean is warming and rising faster than expected. The National Oceanic and Atmospheric Administration's (NOAA) sea level rise estimate for the U.S. Atlantic Coast ranges from a minimum of 8 inches and a maximum of 6.6 feet by 2100 (Parris et al. 2012). Increases in storm intensity and frequency are also predicted, with coastal areas most vulnerable due to the added factor of tidal storm surges. Since the main house has been previously damaged by coastal storms, it will continue to be vulnerable to future storms.

Salt marsh habitat, which would be threatened by sea level change, would likely shift landward to the extent that the landform accommodates the movement. Low-lying areas and freshwater wetlands would be particularly vulnerable to this potential for salt water inundation and the landward shift of saltmarsh. Portions of Timber Point, including the access road and much of Timber Point trail, would be inundated under even a 1-meter rise in sea level. One meter represents the middle range of NOAA's sea level rise estimates for the U.S. Atlantic coast in the next 100 years. The Maine Natural Areas Program estimates that approximately 25 acres of the Timber Point area would become salt marsh with a 1-meter rise in sea level (Cameron and Slovinsky 2012) (map 4).

We will continue to monitor and analyze the available information about sea level rise and potential effects in the Timber Point area recognizing that rising tidal levels over the long term would incrementally jeopardize current refuge habitats, and we would have to prepare to address, and adapt to, this eventuality.

Cumulative Impacts on Public Use and Access

We predict continued beneficial cumulative impacts under all alternatives with our management of public use and access on Timber Point.

People primarily come to the refuge to observe or photograph wildlife in natural surroundings, and in a quiet, relatively undeveloped setting. This is a unique niche of recreational opportunity provided by refuge lands for the region, since most of the surrounding landscape is developed. Other recreational opportunities on Timber Point that are limited in the surrounding region include hunting, which will be offered in fall 2014, and the potential opportunity to interpret the regionally historic buildings on site. When considered with other recreational opportunities in the region, Timber Point contributes to the diversity of those opportunities, and represents an important regional resource.

Cumulative Impacts on Cultural Resources

We predict continued beneficial cumulative impacts under alternatives A, B and C with our management of cultural (historical) resources on Timber Point. All alternatives would continue to protect archeological resources.

The opportunity to preserve and promote the rich, diverse cultural history of the region is very important to residents of the area as evidenced by Historical Societies in Biddeford, Kennebunkport, Wells, and Ogunquit, several historical museums, and numerous homes listed on the Historical Register. Kennebunkport also has a National Historic District. We also heard directly from local residents on this issue when we held a public meeting and on-site tour to discuss the Ewing summer residential estate

buildings on Timber Point. While not everyone agreed that protecting the buildings on Timber Point should be a priority, there were some who expressed interest in preserving, and/or adaptively reusing, them. For those expressing the latter, they view these buildings as historically significant and unique to the region and desire public access for education and interpretation of their cultural importance, including their representation of the life and work of renowned master architect Charles Ewing.

Alternative A would at least continue to stabilize the structures possibly eligible for the National Register, while alternatives B and C would preserve them. The removal of buildings under alternative D would represent a loss of existing physical structures, however, the level of documentation, recording, and photographing that would occur prior to removal would contribute to the permanent body of historical resource knowledge for the region. This could be advantageous in light of concerns with climate change increasing the intensity and severity of storms and the resulting increased risk to the historic buildings. A storm in 1991 damaged the main house and seawall—a boulder was thrown through one of the windows, the seawall needed to be rebuilt, and some windows, doors, screens, and siding had to be replaced). A 2012 storm also exacerbated the roof damage. Recent minor roof damage was also likely the result of a storm event. Regardless of alternative selected, we would seek concurrence from Maine SHPO on our management of buildings possibly eligible for the National Register, and to ensure our actions would have no adverse impacts to archeological resources.

Cumulative Impacts on the Socioeconomic Environment

We predict continued beneficial cumulative impacts under all alternatives to the socioeconomic environment with our management on Timber Point.

None of the alternatives for Timber Point would alter the local region's social, economic, or demographic characteristics. However, we predict some significant concerns by neighbors, who have already indicated that any alternative that increases traffic through their neighborhood would change the neighborhood's relatively quiet character and could potentially be a safety concern. The potential for this adverse impact is greatest with implementation of alternative C, where we predict a 100 percent increase in annual visitation.

Under all alternatives, we would expect that our management on Timber Point would continue to complement the surrounding socioeconomic landscape by providing a unique and alternative activity supporting tourism, the industry which provides the greatest economic impact in the surrounding area. In particular, spending by summer visitors generates major revenues in the local communities. Timber Point contributes to the enjoyment and satisfaction of summer visitors to the area. It offers an attractive alternative to summer beach activities, especially for families, by providing a relatively easy and short nature walk. Guided walks are offered twice each week, and these are very popular with summer residents and tourists. The popularity of Timber Point is evidenced by the more than 10,000 visitors each year, with most of that visitation occurring from July 4 to Labor Day. We would expect even greater visitation under alternatives B and C, resulting in a commensurate increase in the contribution to visitor spending in the local economy.

Chapter 5 - LIST OF PREPARERS AND COORDINATION

5.1 List of Preparers

U.S. Fish and Wildlife Service

Rachel Carson National Wildlife Refuge
Ward Feurt, Project Leader
Karrie Schwaab, Assistant Refuge Manager
Kathleen O'Brien, Wildlife Biologist

5.2 Planning Team Participants

U.S. Fish and Wildlife Service

Northeast Regional Office - National Wildlife Refuge System
Sharon Marino, Deputy Assistant Regional Director
Graham Taylor, Refuge Supervisor
Dean Rhine, Assistant Refuge Supervisor
Kevin Ortyl, Facility Management Specialist
John Wilson, Lead Regional Archaeologist (retired)
Eugene Marino, Archaeologist, Acting Regional Historic Preservation Officer
Tim Binzen, Regional Archaeologist
Nancy McGarigal, Lead Natural Resource Planner
Bill Perry, Natural Resource Planner
Meredith Bixby, Assistant Natural Resource Planner

5.3 Interagency and Public Coordination

The Service has been consulting with the Maine SHPO on Timber Point throughout 2013 and 2014. The agencies are working together to complete a National Register nomination form. Once an agreement is reached on the nomination, the Service's Northeast Regional Director signs as Regional representative of the Federal land managing agency and forwards the nomination to the Service's Historic Preservation Officer in Headquarters. After their review, the nomination goes to the National Park Service who decides on final eligibility.

In June 2013, we initiated this EA planning process to evaluate options for future uses of the buildings and structures at Timber Point. This planning process includes opportunities for public involvement and comment and is the means by which officials make informed decisions based on an understanding of the environmental consequences of actions. Initial scoping started in June 2013 and continued until August 31, 2013, with the intent to gather as much input as possible prior to developing alternatives.

Direct mail, newspaper media release (June 18, 2013), a direct appeal to neighbors and conservation organization, social media and on-site postings were used to collect input. A building tour was conducted on July 9, 2013, and an Open House was held on July 11, 2013, with individually staffed stations. The five stations or tables had maps, historical data, a video virtual tour, and acquisition history, blueprints of the main house building, Timber Point natural resources, and a CCA of all the buildings. Approximately 125 people toured the building and 60 attended the open house. The Service invited this scoping prior to developing alternatives to inform interested parties and solicit input on the future condition. Suggestions, comments, and ideas continued to be accepted until August 31, 2013. The city of Biddeford and Maine congressional offices were also notified and participated in the building tour and open house.

5.4 Elected Officials, Federal and State Agencies, and Organizations Contacted for Project

Elected Officials

Angus King, U.S. Senator (I-ME)
Susan Collins, U.S. Senator (R-ME)
Chellie Pingree, Representative (D-ME 1st District)

Federal Agencies

Advisory Council on Historic Preservation
National Park Service - Northeast Regional Office
U.S. Fish and Wildlife Service - Ecological Services (Field Office in Orono, Maine)

State and Local Government

Jim Connley, ME Department of Inland Fisheries and Wildlife
Alan Casavant, Mayor, City of Biddeford
State of Maine Historical Preservation Officer

Organizations

Kennebunkport Conservation Trust
Biddeford Conservation Commission
Friends of Rachel Carson NWR
Timber Point Center
Trust for Public Land
The Nature Conservancy
Biddeford Pool Improvement Association
Oak Point Associates
Maine Preservation

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