APPENDIX B

ENVIRONMENTAL ASSESSMENT FOR RECREATIONAL FISHING AT RACHEL CARSON NWR

Environmental Assessment for Recreational Fishing at Rachel Carson NWR

This Environmental Assessment (EA) is being prepared to evaluate the effects associated with this proposed action and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (43 CFR 46; 516 DM 8) and U.S. Fish and Wildlife Service (Service) (550 FW 3) regulations and policies. NEPA requires examination of the effects of proposed actions on the natural and human environment.

Proposed Action

The Service is proposing to expand fishing opportunities for fresh- and salt-water finfish on the Rachel Carson National Wildlife Refuge (NWR, refuge) in accordance with the refuge's Comprehensive Conservation Plan (CCP) (USFWS 2007). Rachel Carson NWR consists of 11 refuge divisions along 50 miles of the southern Maine coastline protecting approximately 5,700 acres of coastal wetlands, and upland habitat. We also propose to provide new access opportunities by opening the Little River at Timber Point to fishing.

Background

National wildlife refuges are guided by the mission and goals of the National Wildlife Refuge System (Refuge System), the purposes of an individual refuge, Service policy, and laws and international treaties. Relevant guidance includes the Refuge System Administration Act of 1966, as amended by the Refuge System Improvement Act of 1997, Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations and Service Manual.

The refuge was established:

- For lands acquired under the Migratory Bird Conservation Act (16 U.S.C. §715-715r), as amended, "…for use as an inviolate sanctuary, or for any other management purpose, for migratory birds…." (16 U.S.C. §715d).

- " ...suitable for - - - 1) incidental fish and wildlife oriented recreational development, 2) protection of natural resources, 3) conservation of endangered or threatened species ..." 16 U.S.C. section 460k-1 Refuge Recreation Act.

- " …conservation of 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…" 16 U.S.C. Section 13901(b) 100 Stat 3583 Emergency Wetlands Resources Act of 1986.

- "…for the development, advancement, management, conservation and protection of fish and wildlife resources ..." 16 U.S.C. Section 742f(a)(1) Fish and Wildlife Act of 1956.

- " ... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services" 16 U.S.C. Section 742f(b)(1) Fish and Wildlife Act of 1956.

The mission of the Refuge System, as outlined by the Refuge System Administration Act (NWRSAA), as amended by the Refuge System Improvement Act (16 U.S.C. 668dd et seq.), 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"*

The NWRSAA mandates the Secretary of the Interior in administering the System to (16 U.S.C. 668dd(a)(4):

- Provide for the conservation of fish, wildlife, and plants, and their habitats within the Refuge System;

- Ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present and future generations of Americans;

- Ensure that the mission of the Refuge System described at 16 U.S.C. 668dd(a)(2) and the purposes of each refuge are carried out;

- Ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges and the fish and wildlife agency of the States in which the units of the Refuge System are located;

- Assist in the maintenance of adequate water quantity and water quality to fulfill the mission of the Refuge System and the purposes of each refuge;

- Recognize compatible wildlife-dependent recreational uses as the priority general public uses of the Refuge System through which the American public can develop an appreciation for fish and wildlife;

- Ensure that opportunities are provided within the Refuge System for compatible wildlife-dependent recreational uses; and

- Monitor the status and trends of fish, wildlife, and plants in each refuge.

Therefore, it is a priority of the Service to provide for wildlife-dependent recreation opportunities, including hunting and fishing, when those opportunities are compatible with the purposes for which the refuge was established and the mission of the Refuge System.

Currently, nine of the refuge's rivers are accessible for recreational fishing and seasonally support one or more of the targeted recreational fisheries. Chauncey Creek, Brave Boat Tidal Creek, Ogunquit River, Stevens Brook, Webhannet River, Merriland River/Skinner Mill, Mousam River, Goosefare Brook, and Spurwink River have supported fishing activities for hundreds of years and were incorporated into the previous Refuge Fish Plan in 2000.

Purpose and Need for the Proposed Action

Fishing is identified as one of the six priority public uses by Executive Order 12996 (March 25, 1996), and legislatively mandated by the NWRSAA of 1966, as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57) and reinforced as priority uses by Department of the Interior Secretarial Order 3356 (September 15, 2017). The need for action revolves around recreational fishing as a priority use and the requirement to allow fishing that is compatible with the purpose of the refuge and consistency with State regulations. Additionally, fishing is a healthy, traditional recreational use of renewable natural resources deeply rooted in America's heritage, and it can be an important wildlife management tool.

Department of the Interior Secretarial Order 3356, signed in 2017, directs the Service to enhance and expand public access to lands and waters on national wildlife refuges for hunting, fishing, recreational shooting, and other forms of outdoor recreation. The proposed action will also promote one of the priority public uses of the Refuge System, and will promote stewardship of our natural resources and increase public appreciation and support for the refuge by providing additional opportunities for visitors to fish. To address the needs stated above, the purpose of the proposed action will bring the refuge into compliance with the management guidance detailed in the orders, policy, and Federal law to "recognize compatible wildlife-dependent recreational uses as the priority general uses of the Refuge System" and "ensure that opportunities are provided within the Refuge System for compatible wildlife-dependent recreational uses" 16 U.S.C. 668dd (a)(4). Finally, the proposed action will help to meet the statement of objectives detailed in the Recreational Fishing Plan, including opening an additional area–specifically the Little River at Timber Point–of Rachel Carson NWR for recreational fishing. This change will provide the public with additional recreational opportunities, and give managers added flexibility in managing wildlife populations on refuge lands.

The refuge's CCP was approved on June 9, 2007, and is intended to provide guidance for the planning process to address long-term management goals. Through this process, it was determined that fishing is compatible with refuge purposes. The CCP specifically identifies opening additional refuge lands that can biologically, ecologically, and safely accommodate fishing.

This EA serves as the NEPA document which analyzes the impacts on environmental, cultural, and historical resources of expanding fishing opportunities on the refuge.

Alternatives Considered

A. Alternative A: No Action/Current Management

Under this alternative, coastal and freshwater fishing will remain available at the Moody, Upper and Lower Wells, Mousam River and Spurwink River divisions. State

and Federal and refuge specific regulations will apply to any fishing at these locales. The Recreational Fishing Plan and refuge specific regulations will continue to be evaluated annually and modified when necessary.

B. Alternative B: Expanded Fishing Opportunities, Limited Shore Access (Preferred Alternative)

Under the preferred alternative, the Service proposes expanding the annual fishing program at Rachel Carson NWR to include two shoreline sites along the Little River at Timber Point. These areas are approximately 275 meters from the parking lot, and 2,165 meters from the trail overlook south including the land bridge and around Timber Island.

C. Alternative C: Expanded Fishing Opportunities, Full Shore Access

Under this alternative, the Service would expand the annual fishing program at Rachel Carson NWR to include shoreline fishing on the Little River at Timber Point. This action would open the entire shoreline of the Little River at Timber Point including the land bridge and Timber Island, approximately 3,000 meters.

Affected Environment

The refuge consists of approximately 5,700 acres within York and Cumberland Counties, Maine. Rachel Carson NWR is primarily coastal wetland and upland habitat (Table 1a). Table 1b shows the Statewide General Daily Bag, Possession and Length Limits for Fish Species (South Zone). Tables 2 through 7 provide additional, brief descriptions of each resource affected by the proposed action. For more information regarding the affected environment, please see Chapter 3 of the refuge's CCP, which can be found here: https://www.fws.gov/northeast/planning/Rachel%20Carson/FinalCCP/3_CHAPTER_3.pdf.

TABLE 1A. PRIMARY REFUGE HABITAT TYPES

Habitat Type	Description
Uplands	Mixed oak and pine forest compose the majority of upland tree communities; however, stands of hemlock (*Tsuga canadensis*), spruce (*Picea spp.*), pitch pine (*Pinus rigida*), hickory (*Carya spp.*) and maple (*Acer spp.*) also occur. Shrub understory is composed mainly of viburnums, winterberry (*Ilex verticillata*), blueberry (*Vaccinium corymbosum*), serviceberry (*Amelanchier arborea*), and Virginia rose (*Rosa virginiana*). Other upland habitats include grasslands and thickets (USFWS 2007).
Tidal	Tidal habitats include beach, dune, dune grassland, river, rocky shore, estuarine, bay and salt marsh. Regularly flooded salt marshes are predominantly saltmarsh cordgrass (*Spartina alternaflora*), while irregularly flooded saltmarshes are dominated by salt meadow cordgrass (*Spartina patens*), salt grass (*Distichlis spicata*) and black grass (*Juncus*

	gerardi) (USFWS 2007).
Freshwater Wetlands	Comprised of cattail marsh (*Typha spp.*), bog, emergent scrub-shrub wetland, pocket swamp, red maple swamp (*Acer rubrum*), and floodplain forests (USFWS 2007).

TABLE 1B. STATEWIDE GENERAL DAILY BAG, POSSESSION AND LENGTH LIMITS (SOUTH ZONE)

Species	Daily Bag & Possession Limits		Length Limit	
	Lakes/Ponds	Rivers, Streams, Brooks	Lakes/Ponds	Rivers, Streams, Brooks
Brook Trout	2 fish	5 fish	6 inches minimum	6 inches minimum
Brown Trout	2 fish	2 fish	14 inches minimum	6" min & 25" max
Rainbow Trout	2 fish	2 fish	12 inches minimum	6 inches minimum
Landlocked Salmon	2 fish	2 fish	14 inches minimum	14" min & 25" max
Togue (Lake Trout)	2 fish	2 fish	18 inches minimum	18 inches minimum
Species	**Daily Bag & Possession Limits**		**Length Limit**	
Bass (Largemouth & Smallmouth)	2 fish		No minimum length. Only 1 may exceed 14 inches.	
Whitefish	3 fish		None	
Smelts	2 quarts		None	
Sea-run Atlantic Salmon	**Federally Endangered Species - No Fishing Permitted for this Species**			
Inland Species not listed above	**Unlimited**		**None**	
Striped Bass, Shad, River Herring, American Eel, Sturgeon	See Recreational Angling for Migratory Fish			
Inland species not listed above	Unlimited		None	

Environmental Consequences of the Action

This section analyzes the environmental consequences of the action on each affected resource, including direct and indirect effects. This Environmental Assessment (EA) focuses primarily on analyses of the environmental consequences on a resource when the impacts on that resource could be more than negligible and therefore considered an "affected resource." Resources that will not be more than negligibly impacted by the action have been dismissed from further analyses.

Impact Types

- ***Direct effects*** are those which are caused by the action and occur at the same time and place.

- ***Indirect effects*** are those which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

- ***Cumulative impacts*** result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions.

TABLE 2. AFFECTED NATURAL RESOURCES AND ANTICIPATED IMPACTS

AFFECTED RESOURCE	ANTICPATED DIRECT AND INDIRECT IMPACTS
Target Fish Species The refuge contains saltwater and brackish sites that support fish populations. Species including alewife, pollock, brook trout, brown trout, Atlantic mackerel and striped bass were found in the Ogunquit River, the Webhannet River, the Merriland River, the Mousan River, the Spurwink River, and the Little River. Fish populations on the refuge are seasonally plentiful and are	**Alternative A: No Action** Under this alternative, fishing would occur on nine sites of the refuge. The current fishing plan has been in effect since 2000, and has been found compatible with refuge objectives and other public use programs. The State of Maine sets bag limits to ensure that fishing does not impact sustainable populations of fish species, and all fishing on the refuge is regulated by these State regulations on bag limits. The areas open to fishing would not expand, eliminating additional mortality to fish species in these areas. Under this scenario, approximately 615 fishing visits occur on the refuge each year.

present in numbers sufficient to sustain population levels for priority refuge objectives other than fishing. There have not been biological concerns of unacceptable levels of predation and competition for habitat from recreational fish species. The Statewide general daily bag, possession and length limits for fish in the South Zone of Maine can be found in Table 1b.	**Alternative B: Open Areas Shore Access** Under this alternative, fishing would occur on 11 sites of the refuge. Designated areas previously closed on the Little River at Timber Point would be open to the public for hook and line shoreline fishing. We anticipate approximately 5 more anglers per day, with fishing visits increasing about 200 per year, up to 800 total each year. Additional mortality of fish species (striped bass, Atlantic mackerel, bluefish, alewife, shad, pollock, menhaden, winter flounder, brown trout, and brook trout) could occur in the newly opened area. While fishing does remove individuals from the population, we do not anticipate that projected fishing pressure will affect the refuge's fish population as a whole. Anglers must abide by the State's seasons, catch limits, and regulations to protect the State's fish populations. The refuge's fishing pressure is projected to be sustainable. Other fishing opportunities also exist nearby in the southeastern part of Maine and adjacent areas. The practice and popularity of catch-and-release fishing would also minimize impacts on the fish populations. **Alternative C: Full Shore Access** Under this alternative, impacts to target fish species would be nearly identical to Alternative B: Open Areas Shore Access. We anticipate approximately 7 more anglers per day than the No Action Alternative, with fishing visits increasing by 400 per year, up to 1,000 total each year.
Non-Target Fish Species Non-target fish species would include mummichog, sticklebacks, and Atlantic silverside. The mummichog (*Fundulus heteroclitus*) is a small killifish found along the Atlantic coast of the United States and Canada. Also known as Atlantic killifish, mummies,	**Alternative A: No Action** Minimal disturbance to non-target fish species would occur under the fish plan. New areas would not be opened and fishing would only occur on the nine sites where it has in the past. Disturbance to non-target fish species would be minimal in duration and localized. All non-target fish species that are not permitted for recreational catch by State or Federal regulations, or fish incidentally caught, must be released immediately, alive and uninjured. **Alternative B: Open Areas Shore Access** Under the preferred action alternative, increased

gudgeons, and mud minnows, these fish inhabit brackish and coastal waters including estuaries and salt marshes. The species is noted for its hardiness and ability to tolerate highly variable salinity, temperature fluctuations from 6 to 35 °C (43 to 95 °F), very low oxygen levels (down to 1 mg/L), and heavily polluted ecosystems. Sticklebacks are small, scaleless fish with spines along their back in front of their dorsal fin. Three-spined sticklebacks are quite plentiful in the Gulf of Maine. Sticklebacks are bottom-feeders that mainly eat tiny crustaceans. The Atlantic silverside (*Menidia menidia*), also known as spearing in the northeast of the United States, are a common subject of scientific research because of their sensitivity to environmental changes. The fish are often found swimming in brackish waters, such as near the mouths of rivers and streams that connect with the sea. The Atlantic silverside's predators are larger predatory fish – striped bass, blue fish, Atlantic mackerel – and many shore birds, including egrets, terns, cormorants, and gulls.	disturbance to non-target fish species in the Little River, tidal waters, and associated saltmarsh pannes and pools would be minimal. Similar disturbances to non-target fish species are expected as described in the No Action Alternative. Specific saltmarsh areas with sensitive panne and pool habitats would be posted and closed to fishing and public access. Removal of top predators (i.e. striped bass) by anglers has the potential to increase local abundance of prey species; however, this impact is expected to be minimal due to the low anticipated number of anglers, and that they are dispersed over a large area of the refuge. **Alternative C: Full Shore Access** Under the full shore access alternative, increased disturbance to non-target fish species in the main channel of the Little River and tidal waters would be minimal. Fish species, common mummichogs (*Fundulus heteroclitus),* sticklebacks (*Gasterosteidae*), or Atlantic silverside (*Menidia menidi*), that reside in marsh pannes and pools may experience disturbance and increased mortality under this alternative. Public use of this area is expected to be low. However, continual and unregulated foot traffic around specific marsh areas could eventually lead to habitat degradation, increased erosion, soil compaction, and destruction of the panne habitat, potentially causing a decline in these localized fish populations. Conversely, removal of top predators (i.e. striped bass) by anglers has the potential to increase local abundance of prey species; however, this impact is expected to be minimal as noted for Alternative B.

Other Wildlife Species The refuge supports a diversity of wildlife species of coastal Maine including reptiles, amphibians, and invertebrates, which are important contributors to the overall biodiversity on the refuge. Songbirds, raptors, and waterbirds utilize the refuge for breeding and feeding, whereas shorebirds and waterfowl primarily utilize the refuge as wintering and migratory habitat.	**Alternative A: No Action** 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. Potential impacts from anglers on native wildlife include avoidance or departure from the site, altered behavior or habituation due to human disturbance, and potential negative impacts from angling litter. (Asoh et al. 2004). **Alternative B: Open Areas Shore Access** Under the preferred alternative, we anticipate low levels of fishing at Timber Point relative to other refuge fishing locations, and therefore do not expect greater than negligible impacts from anglers. We anticipate an increase of approximately 5 anglers per day restricted to two sites along the Little River shoreline, which would create a "sanctuary" for shorebirds and waterfowl along the middle section of the river adjacent to the freshwater-shrub-wetland habitat, and on the south and east side of the Timber Point shoreline. Shorebirds and waterfowl may experience minor, short term, and localized disturbance from anglers as discussed above, but the restricted area along the Little River should provide asylum for these species. **Alternative C: Full Shore Access** Under Alternative C, we would expect similar impacts as under Alternative A and B. Anglers (up to 7 additional anglers per day) using the entire shoreline may cause greater disturbance to shorebirds and waterfowl using the area for staging and feeding, as an increased number of encounters would likely cause shorebirds to alter behavior. Undisturbed shoreline is rare in southern Maine and opening the entire shoreline area may have a greater impact on localized shorebird populations than Alternative B.
Threatened and Endangered Species and Other Special Status Species Two federally listed species of birds, the piping plover and roseate tern, and one State listed species the least tern, regularly occur on the refuge during summer months. The	**Alternative A: No Action** No significant impacts would occur to threatened and endangered species under this alternative. Three species of birds protected under State and Federal laws regularly occur on the refuge during spring and summer months: roseate terns (federally and State endangered), piping plovers (federally threatened and State endangered), and least terns (State endangered). Piping plovers and least terns nest on sandy beaches and dunes from late March

Northern long-eared bat has been acoustically detected on two refuge divisions. The New England cottontail occurs on the refuge and was a candidate species for Federal listing; however, it is no longer on the candidate species list. The spotted turtle (*Clemmys guttata*) is listed by the State of Maine as threatened and have been documented at Timber Point. Spotted turtles are associated with acidic wetlands, vernal pools in large forests, shrub swamps, wet meadows, bogs, forested swamps, and stream habitats. Three species of federally protected anadromous fish occur in Maine waters and potentially on the refuge. Shortnose sturgeon (federally endangered), Atlantic sturgeon (federally threatened), and Atlantic salmon (federally endangered) are prohibited from fishing in Maine.	through July. Roseate terns do not nest on the refuge but use its beaches in late July and August as staging grounds before migration. These nesting beaches are not open to fishing; neither the birds nor their nesting habitat would be adversely impacted by fishing on the refuge. Northern long-eared bats (federally threatened) occur on the refuge. They prefer mature forest with a complex structure. Roost and maternity trees will not be damaged or disturbed by fishing activities. We do not see any adverse impacts to the Northern long-eared bat populations. Little brown bats (*Myotis lucifugus*, State endangered), and Eastern small-footed bat (*Myotis leibii*, State threatened), occur on the refuge. Fishing activities are not expected to have any adverse impacts on roost trees or buildings. The refuge is also closed from dusk to dawn, when bats are most active. We do not see fishing activities causing any adverse impacts on little brown or Eastern small-footed bats. The New England cottontail is listed by the State of Maine as endangered. Under the historic fishing plan, disturbances to this species have been minimal during the fishing season. Its preferred habitat is early successional forests and thickets. A limited number of brief and localized disturbances could occur as anglers walk near thickets by fishing areas. Although, these disturbances are unlikely since know rabbit locations are generally far away from fishing areas. Dogs are also prohibited on all open areas of fishing, which would further minimize impacts on the New England cottontail. The spotted turtle (*Clemmys guttata*) is listed by the State of Maine as threatened and have been documented at Timber Point. Spotted turtles are associated with acidic wetlands, vernal pools in large forests, shrub swamps, wet meadows, bogs, forested swamps, and stream habitats. Refuge visitors may encounter spotted turtles when walking the trails or heading into fishing areas. Refuge visitors are encouraged to leave no trace, respect wildlife, and must not touch, move, or harass wildlife at any refuge location. Three species of federally protected anadromous fish occur in Maine waters. Shortnose sturgeon (federally endangered), Atlantic sturgeon (federally threatened), and

	Atlantic salmon (federally endangered) are prohibited from fishing in Maine. Any listed fish that are incidentally caught, must be released immediately, alive, uninjured and without removing from the water. Under this alternative we anticipate no negative impacts on these fish species. **Alternative B: Open Areas Shore Access** Disturbances to threatened and endangered species would be very similar under this alternative as they are under the No Action Alternative A. Nesting beaches would be closed to all fishing and there would be no impact on the birds or their nesting habitat. Small numbers of roseate terns have occasionally been seen loafing on the rocky areas near Timber Point. Anglers using the area may cause some disturbance to roseate terns using the area for staging and feeding. These disturbances would be minor, short-term, and localized, resulting in an insignificant impact on roseate tern populations. Large areas of the shoreline at Timber Point are closed to public use and provide undisturbed loafing areas. If threatened or endangered shorebirds expanded their nesting or staging habitats into the proposed fishing areas, signs and symbolic fencing would be erected to prohibit foot traffic and human disturbance during the nesting season. The signage and symbolic fencing have been proven to be effective tools to prevent human disturbance around shorebird nest and staging areas. New England cottontails have not been documented at Timber Point and fishing would have no impact on their population. Shortnose sturgeon, Atlantic sturgeon, and Atlantic salmon have not been documented in the Little River and are prohibited from fishing in Maine. Spotted turtles have been documented at Timber Point. Fishing activities are guided towards the tidal waters of the Little River and generally away from prime spotted turtle habitat. Vehicle traffic through Timber Point is limited to refuge staff, which will minimize turtle road mortality. Other brief disturbances could occur as visitors walking to fishing locations may encounter turtles moving across land, but these disturbances by anglers should be similar to any other public use area on the refuge. Refuge visitors are encouraged to respect wildlife and must not touch, move, or harass any wildlife. We do not

	anticipate any adverse impacts to any State or federally protected species. **Alternative C: Full Shore Access** Under Alternative C, we would expect similar impacts as under Alternative A and B.
Vegetation (including vegetation of special management concern) Vegetation varies throughout refuge; see Table 1a for full habitat descriptions.	**Alternative A: No Action** Under this alternative, the nine sites currently open for fishing, located between Kittery and Scarborough, would remain open as per the original fish plan. No additional access points would be opened at Timber Point. Anglers can park on roads near access sites, or can reach these sites via boardwalk, minimizing soil erosion and adverse effects. **Alternative B: Open Areas Shore Access** Under the preferred alternative, the refuge fish program would expand to include limited access to the Little River at Timber Point. The number of anglers would increase by approximately 5 per day. More anglers using the refuge could lead to a slight increase in incidental littering and vehicular traffic. However, angler density is expected to remain manageably low, and damage to refuge habitats should be minimal. Under this option, the large marsh habitat with numerous pannes would be closed to fishing and foot traffic, preventing erosion and negative impacts to these sensitive habitats. The closed area is adjacent to the largest parcel of freshwater-shrubland-wetland habitat on the refuge. Existing refuge parking at Timber Point may limit the number of visitors, including anglers, at any given time. There are no current plans to expand parking availability at Timber Point. Limited parking as compared to unlimited parking, may serve as visitor control mechanism to further reduce damage to vegetation and soils from overuse. **Alternative C: Full Shore Access** Under the Alternative C, the refuge fish program would expand to include full shore access to the Little River at Timber Point. The number of anglers could increase to approximately 7 per day. More anglers using the refuge could lead to an increase in incidental littering and vehicle traffic, although angler density is expected to remain

	manageably low. There is potential for an increase in localized soil erosion, marsh compaction, and damage to vegetation with the increased foot traffic along the shore of the Little River, particularly along large marsh areas with sensitive panne habitat. Annual review of the program would allow managers to amend the fishing plan if it is found to cause excessive damage to refuge habitat.
Water Resources Water resources on the refuge include marshes, tidal creeks and rivers. Fishing is available at the Ogunquit River, the Webhannet River, the Merriland River, the Mousan River, the Spurwink River, and the Little River.	**Alternative A: No Action** Under this alternative, the nine sites currently open for fishing, located between Kittery and Scarborough, would remain open as per the original plan. No significant impacts to water resources would occur under this alternative. **Alternative B: Open Areas Shore Access** Disturbances to water resources would be very similar as they are under the No Action Alternative. **Alternative C: Full Shore Access** Under the Alternative C, the refuge fish program would expand to include full shore access to the Little River at Timber Point. The number of anglers would increase as the additional angling opportunities are utilized. More anglers using the refuge could lead to an increase in incidental littering, trampling of vegetation and vehicle traffic. These effects have the potential, when excessive, to lead to denudation of the soil surface and soil erosion which can negatively effect water quality through runoff causing an increase in turbidity and nutrients in the water column. However, angler density is expected to remain manageably low, and these adverse impacts are not expected.

TABLE 3. AFFECTED CULTURAL RESOURCES AND ANTICIPATED IMPACTS

AFFECTED RESOURCE	ANTICPATED DIRECT AND INDIRECT IMPACTS
The refuge contains 50 known archaeological sites, 13 of which are eligible for inclusion in the National Register of Historic Places. In 2016, Timber Point in Biddeford,	The implementation of any alternative will pose no threat to historically significant areas on the refuge. Locations of historically significant structures are described in the Timber Point EA and all buildings are designated for long-term preservation under the National Register of Historic Places (USFWS 2014).

Maine was registered as a Historic District in the National Register of Historic Places (NPS, 2016). Only a small percentage (less than 1 percent) of refuge lands has been evaluated for the presence of archaeological resources.	Current and new fishing areas and access routes are geographically separated from historic structures, and fishing activities will cause no adverse impacts to these structures. "Area Closed" signs are used throughout the refuge to protect cultural resources from anglers and other visitors.

TABLE 4. AFFECTED VISITOR USE AND ANTICIPATED IMPACTS

AFFECTED ENVIRONMENT	ANTICIPATED DIRECT AND INDIRECT IMPACTS
Under each alternative, additional members of the public will be exposed to the refuge, fostering increased support for stewardship of the land and the refuge's conservation goals. Data collected from the FY2019 RAPP suggests that of the 276,100 annual refuge visits, only 615 of those visits (or 0.22 percent) were for the purpose of recreational fishing. Additionally, the majority of fishing-accessible areas are closed to other public uses. In areas where both fishing and other uses coincide, the refuge is clearly marked with signs.	**Alternative A: No Action Alternative** Fishing is a popular recreational activity enjoyed by many Maine residents and visitors alike. In 2011, 341,000 residents and non-residents participated in fishing in Maine (USFWS, USCB 2011). Rachel Carson NWR continues to be an important provider of public fishing lands along the coast of southern Maine. This alternative continues to provide anglers with a quality wildlife oriented experience. Conflicts with other priority public uses have not been a problem in the past. Under this scenario, approximately 615 fishing visits would be expected to the refuge each year. **Alternative B: Open Areas Shore Access** Impacts to other public uses would be similar to those under Alternative A. The proposed alternative would promote a wildlife-dependent recreational opportunity on the refuge. This alternative would open an additional access site capable of ecologically sustaining fishing along the Little River at Timber Point. This alternative would meet the growing public demand for fishing on the refuge, and would be compatible with goals developed in the CCP and in line with the purposes for which the refuge was established. More people would be introduced to the mission and goals of the Refuge System, giving them a greater appreciation for environmental stewardship and conservation. Under this alternative, fishing visits might increase by 200 per year, up to 800 total each year. Expanding fishing opportunities to encompass more land has the potential to increase conflicts between anglers and

	other refuge visitors/private property owners. Conflicts between anglers and other public users have been limited in the past and we anticipate to remain minimal in the future. Site-specific conflict between different recreational user groups may occur over limited parking at Timber Point. Parking is on a first-come basis to be fair to all user groups. However, should significantly more conflicts occur, managers will evaluate solutions to resolve them, and maintain a high quality public use program for all user groups. **Alternative C: Full Shore Access** Under Alternative C, impact to wildlife-dependent recreation would be similar to the impacts under alternative B. Under this alternative, fishing visits might increase by 400 per year, up to 1,000 total each year. Expanding fishing opportunities has the potential to increase conflicts between anglers and other refuge visitors/private property owners, but conflicts between anglers and other public users have been limited in the past and we anticipate to remain minimal in the future. Angler density is expected to remain manageably low, and these adverse impacts are not expected.

TABLE 5. AFFECTED REFUGE MANAGEMENT AND OPERATIONS AND ANTICIPATED IMPACTS

AFFECTED RESOURCE	ANTICPATED DIRECT AND INDIRECT IMPACTS
Implementation of any alternative will be conducted within the capabilities of existing facilities (i.e., parking areas, roads, trails). Maintenance of these facilities in the future may cause short-term disturbances to soils and vegetation; however, these impacts will be minimal. Annual fishing administration costs for Rachel Carson NWR would include salary, law enforcement, maintenance of	**Alternative A: No Action Alternative** Current impacts on refuge facilities have been negligible. There is no impact to refuge-maintained roads as all fishing areas are accessed by public roads. The refuge provides sufficient parking areas near each access site allowing anglers to park legally and safely, without interfering with traffic. Parking in non-designated areas will be enforced by local and refuge Law Enforcement. In the past, periodic maintenance to parking areas represents a minimal cost to the overall refuge budget. **Alternative B: Open Areas Shore Access** Sufficient resources are available to expand the fishing program. Existing staff and refuge budget have provided sufficient resources to continue with proposed management, although the refuge anticipates some

sites, and communication with the public.	increased capacity necessitated by the addition of new lands for hunting and fishing access. These activities are within the projected budget and staffing capabilities of the refuge to manage. Annual administrative costs for the refuge fishing program total $5,000. Parking is limited at Timber Point and there may be times when the parking lot is filled to capacity. Parking in non-designated areas will be enforced by local and refuge law enforcement, which will help minimize damage around the parking lot. Angler foot traffic will also be monitored and access trails may be established in the future to mitigate any widespread trampling of vegetation. **Alternative C: Full Shore Access** Under the preferred alternative, impacts to refuge facilities will be similar to Alternative B. Expanding fishing opportunities has the potential to increase administrative costs, but we anticipate that the relative angler density to remain manageably low, and the costs to remain mostly unchanged.

TABLE 6. AFFECTED SOCIOECONOMICS AND ANTICIPATED IMPACTS

AFFECTED ENVIRONMENT	ANTICIPATED DIRECT AND INDIRECT IMPACTS
Local and regional economies The refuge lies along 50 miles of coastline in York and Cumberland Counties, Maine, and these counties are the most populous in the State, with a combined population of approximately 488,000 (www.maine.gov). Tourism is an important driver of the economy in these counties, both of which have very high visitation, particularly during the summer months. Fishing and other outdoor activities are very popular with residents of Maine and visitors	**Alternative A: No Action Alternative** The current program has a minor, long-term beneficial impact to the local economy. **Alternative B: Open Areas Shore Access** Fishing use of the refuge would only slightly increase as a result of the proposed action of increasing the number of areas open to fishing from 9 to 11. The 200 additional annual visits would have slight long-term economic benefits to local communities and thus local and regional economies as new anglers spend more in the area through a multiplier effect. **Alternative C: Full Shore Access** Under the preferred alternative, impacts to refuge facilities will be similar to Alternative B.

to the coast alike. The refuge averages around 280,000 visitors per year.	
Environmental Justice Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.	The Service has not identified any potential high and adverse environmental or human health impacts from this proposed action or any of the alternatives. The Service has identified no minority or low-income communities within the impact area. Minority or low-income communities will not be disproportionately affected by any impacts from this proposed action or any of the alternatives.

Cumulative Impact Analysis

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7).

For more information on the national cumulative impacts of the Service's hunting and fishing program on the National Wildlife Refuge System, see "U.S. Fish and Wildlife Service, Cumulative Impacts Report *2020-2021 National Wildlife Refuge and National Fish Hatchery Proposed Hunting and Sport Fishing Openings (2020)*."

TABLE 7. ANTICIPATED CUMULATIVE IMPACTS OF THE PROPOSED ACTION AND ANY ALTERNATIVES

Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment	Descriptions of Anticipated Cumulative Impacts
Fishing The refuge will continue to provide a small but important access opportunity to sites that support migratory fish	Continued fishing on the refuge through any of the alternatives will provide increased opportunity and access for the public, but the Service believes this will not have a significant impact on the fisheries as a whole. Fishing opportunities for these migratory fish extends far beyond the refuge borders, and many opportunities to fish for these

populations in the southern Maine and New England. Maine has over 32,000 miles of rivers and streams and 6,000 lakes and ponds. Maine's 3,400 miles of rocky coastline comprise innumerable bays, coves, and tidal rivers, thousands of islands and ledges, and a sprinkling of sandy beaches. The number of Maine's licensed resident and non-resident angler population was 289,000 in 2013.	species within the same waterways exists from the ocean side, by boat, or upstream of refuge borders. The Service believes that the percentage of fish likely to be taken on the refuge from an additional 5 to 7 anglers per day, though possibly additive to existing fish takes, would be a tiny fraction of the estimated populations. In addition, overall populations will continue to be monitored and future catch limits will be adjusted as needed under the existing fisheries and State regulatory processes. Several points support this conclusion: (1) the proportion of the refuge in a small fraction of the areas open to fishing in southern Maine; (2) there are no fish populations that exist wholly and exclusively on the refuge; (3) annual fishing regulations within the United States are established at levels consistent with the current population status; and (4) the refuge does not permit more liberal seasons than provided for in Federal and State frameworks.
Development and Population Increase Maine's population is projected to increase from 1,330,232 in 2016 to 1,335,260 in 2021, and further increase to 1,340,462 in 2026. Seven counties are projected to see slight population increases from 2016 to 2026.	The refuge uses an adaptive management approach for its fishing program, reviewing the fishing plan annually and revising annually, if necessary. The Recreational Fishing Plan can be adjusted to ensure that it does not contribute further to any cumulative impacts of population growth.
Use of lead ammunition/tackle Lead tackle over 2.5 inches in length or over 1 ounce is permitted in Maine but not on the refuge for fishing.	Although lead sinkers over 2.5 inches in length or over 1 ounce are legal to use in Maine, they are not allowed on refuge waters. Anglers may use non-lead alternatives such as tin, steel, or ceramic sinkers. This can reduce the harmful impacts of lead to wildlife and the environment.
Climate Change Ecological stressors are expected to affect a variety of natural processes and associated resources into the future. Temperatures have risen about 3°F in Maine since the beginning of the 20th century.	A primary concern at the refuge is sea level rise and the impact on marsh elevation. This is already causing marsh migration, marsh inundation, and increased mortality in forests adjacent to saltmarshes. Finfish species are likely being impacted by shifting habitat through changes in water temperature, currents, and loss of marsh for nurseries due to prolonged inundation that leads to die-off.

Winter temperatures have been increasing about twice as fast as summer temperatures. Under a higher emissions pathway, historically unprecedented warming is projected by the end of the 21st century. Precipitation has increased during the last century. Increases in the frequency and intensity of extreme precipitation events have already occurred and are projected to continue. Sea level at Portland has risen by about 8 inches since 1912. It is projected to rise another 1 to 4 feet by 2100 (Runkle 2017).	The Service adjusts management based on changing environmental conditions. Under this alternative, the refuge would work with the State of Maine's Department of Inland Fisheries and Wildlife of Fish and Wildlife and use an adaptive management approach for its fishing program, reviewing the program regularly and revising if necessary. The Service's fishing program can be adjusted to ensure that it does not contribute further to the cumulative impacts of climate change on finfish.

Summary of Findings and Conclusions:

The purpose of this EA is to briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). The term "significantly" as used in NEPA requires consideration of both the context of the action and the intensity of effects.

The Service considered three alternatives, Alternative A, No Action/Current Management, Alternative B: Expanded Fishing Opportunities, Open Areas Shore Access and Alternative C: Expanded Fishing Opportunities, Full Shore Access. The impacts of these three alternatives are expected to be very similar on refuge resources and the human and physical environments with the exception that the impact to vegetation (particularly the sensitive refuge salt marsh habitat) would be expected to be greater as more areas are potentially opened to fishing.

Under the No Action Alternative (Alternative A), fishing would continue to take place on 9 sites on the refuge and impact on all resources (including vegetation) would be minimal. Under the Open Areas Shore Access (Alternative B), fishing would be open on 11 sites on the refuge – but not on sensitive salt marsh habitat at the Little River Biddeford (Timber Point) site and the expected impact on vegetation would be expected to be minor. Under the Full Shore Access Alternative (Alternative C), the entire shoreline of the Little River at Timber Point would be open to fishing and the expected impact on vegetation would be expected to be greater than Alternative A or B. The number of anglers would increase as additional angling opportunities are utilized. More anglers using the refuge could lead to an increase in incidental littering, trampling of vegetation and vehicle traffic. These effects have the potential, when excessive, to lead to denudation of the soil surface and soil erosion, which can negatively affect water quality through runoff, causing an increase in turbidity and nutrients in the water column. However, angler density is expected to remain manageably low, and such adverse impacts are not expected.

List of Sources, Agencies and Persons Consulted

During the preparation of this Environmental Assessment, Service personnel requested information from several representatives of the Maine Department of Inland Fisheries, James Pellerin, Asst. Regional Biologist, and the Maine Department of Marine Resources, Bruce Joule, Marine recreational fisheries group leader, regarding the proposed fishing program at Rachel Carson NWR. Service staff, including refuge and Regional Office personnel, also reviewed the fishing plan and Environmental Assessment and provided ideas and comments during their development.

List of Preparers

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Tribal Consultation

The Fish Plan, Compatibility Determination, and Environmental Assessment will be sent to the Tribal Nations in Maine for comment on the proposed action.

Public Outreach

The Service will make available the Recreational Fishing Plan, Compatibility Determination, and Environmental Assessment for public review and comment. Press releases will be sent to local newspapers for public notification, and a copy of the document will be available on the refuge website and at refuge headquarters for the public to review. The public will have a 30-day period to comment on the proposed action. Additionally, the Recreational Fishing Plan, Compatibility Determination, and Environmental Assessment will be sent to the Tribal Nations in Maine for comment on the proposed action.

Determination

This section will be filled out upon completion of any public comment period and at the time of finalization of the Environmental Assessment.

- ☐ The Service's action will not result in a significant impact on the quality of the human environment. See the attached **"Finding of No Significant Impact".**

- ☐ The Service's action **may significantly affect** the quality of the human environment and the Service will prepare an Environmental Impact Statement.

Preparer Signature: _____Date:_____

Name/Title/Organization: _____

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Reviewer Signature: _____Date:_____

Name/Title: _____

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OTHER APPLICABLE STATUTES, EXECUTIVE ORDERS AND REGULATIONS

Cultural Resources

- American Indian Religious Freedom Act, as amended, 42 U.S.C. 1996 – 1996a; 43 CFR Part 7
- Antiquities Act of 1906, 16 U.S.C. 431-433; 43 CFR Part 3
- Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa – 470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7
- National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470-470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810
- Paleontological Resources Protection Act, 16 U.S.C. 470aaa – 470aaa-11
- Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001-3013; 43 CFR Part 10
- Executive Order 11593 – Protection and Enhancement of the Cultural Environment, 36 Fed. Reg. 8921 (1971)
- Executive Order 13007 – Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)

Fish and Wildlife

- Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. 668-668c, 50 CFR 22

- Endangered Species Act of 1973, as amended, 16 U.S.C. 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450
- Fish and Wildlife Act of 1956, 16 U.S.C. 742 a-m
- Lacey Act, as amended, 16 U.S.C. 3371 et seq.; 15 CFR Parts 10, 11, 12, 14, 300, and 904
- Migratory Bird Treaty Act, as amended, 16 U.S.C. 703-712; 50 CFR Parts 10, 12, 20, and 21
- Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)

Natural Resources

- Clean Air Act, as amended, 42 U.S.C. 7401-7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23
- Wilderness Act, 16 U.S.C. 1131 et seq.
- Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq.
- Executive Order 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)

Water Resources

- Coastal Zone Management Act of 1972, 16 U.S.C.1451 et seq.; 15 CFR Parts 923, 930, 933
- Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. 1251 et seq.; 33 CFR Parts 320-330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328
- Rivers and Harbors Act of 1899, as amended, 33 U.S.C. 401 et seq.; 33 CFR Parts 114, 115, 116, 321, 322, and 333.Safe Drinking Water Act of 1974, 42 U.S.C. 300f et seq.; 40 CFR Parts 141-148
- Executive Order 11988 – Floodplain Management, 42 Fed. Reg. 26951 (1977)
- Executive Order 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977)