

Chapter 2



USFWS

Pelican

The Planning Process

- 2.1 Plans and Initiatives Guiding the Project
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Chapter 2: Planning Process

2.1 Plans and Initiatives Guiding the Project

USFWS manages and administers the Chincoteague NWR and Wallops Island NWR as part of the Refuge System. In addition to the purposes, mandates, and policies that are discussed relative to the purpose of this CCP, as discussed in chapter 1, a variety of international, national, state, regional, and local plans and initiatives affect the context and setting of refuge and therefore, the CCP. These plans and initiatives are related to conservation, public use, climate change, and land use. They are listed below and described in more detail in Appendix B.

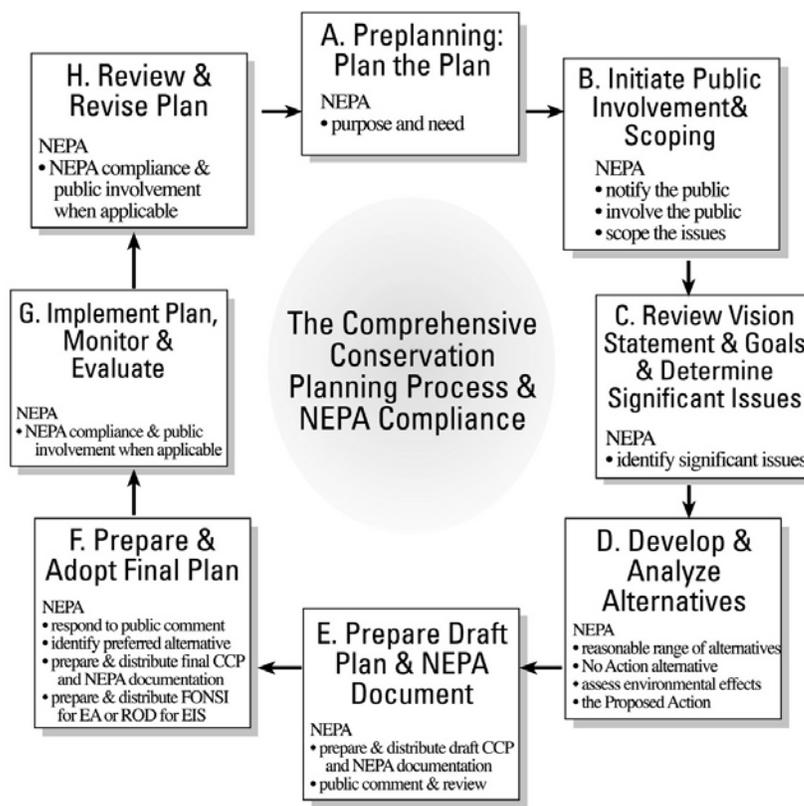
The Refuge System Planning Policy

The Refuge System Planning Policy (Service Manual 602 FW 1,2,3) establishes guidance, systematic direction, and minimum requirements for Refuge System planning, including CCPs, and stipulates a systematic decision-making process that fulfills those requirements. The purposes of this CCP mirror those listed in the Service Manual, which states that we will manage all refuges in accordance with an approved CCP which, when implemented, will achieve refuge purposes; help fulfill the Refuge System mission; maintain and, where appropriate, restore the ecological integrity of each refuge and the Refuge System; help achieve the goals of the NWPS; and meet other mandates.

The policy establishes an eight-step planning process that facilitates compliance with NEPA (Figure 2-1). Each of the individual steps is described in detail in the Service Manual and CCP training materials (Service Manual 602 FW 3).

Figure 2-1.

Steps in the Comprehensive Conservation Planning Process and its relationship to the National Environmental Policy Act of 1969 (Service Manual 602 FW 1,2,3)



2.1.1 **International and National Conservation Plans and Initiatives**

The plans and initiatives listed below, in chronological order, provide guidance for CCP development and for development of refuge management policies, goals, and objectives with regard to the significance of the refuge's natural environment and considerations for its protection and management.

- *North American Breeding Bird Survey* (BBS; 1966-present).
<https://www.pwrc.usgs.gov/BBS/index.cfm?CFID=9765136&CFTOKEN=20581228>
- *North American Waterfowl Management Plan* (NAWMP; 1986, 2004, and 2012).
<http://www.fws.gov/birdhabitat/NAWMP/index.shtm>
- *Partners in Flight: Mid-Atlantic Coastal Plain Bird Conservation Plan (PIF; Watts, 1999)*.
http://www.researchgate.net/publication/237521057_Evaluating_Partners_in_Flight_Partnership_Lands_in_the_Mid-Atlantic_Region_Converting_Conservation_Plans_into_Conservation_Actions
- *Regional Wetland Concept Plan, Northeast Region* (USFWS; 1990).
<http://nctc.fws.gov/resources/knowledge-resources/wetland-publications.html>
- *North American Bird Conservation Initiative* (NABCI, 1998). <http://www.nabci-us.org/>
- *U.S. Shorebird Conservation and North Atlantic Regional Shorebird Plans*
 - The USSCP is available online at: <http://www.shorebirdplan.org/regional-shorebird-conservation-plans>
 - The North Atlantic Regional Shorebird Plan can be viewed online at: <http://acjv.org/planning/national-regional-planning/>
- *North American Waterbird Conservation Plan* (NAWCP; Version 1, 2002).
<http://www.waterbirdconservation.org/>
- *Birds of Conservation Concern (BCC)*.
<http://www.fws.gov/migratorybirds/currentbirdissues/management/bcc.html>
- *New England/Mid-Atlantic Coast Bird Conservation Region (BCR 30) Implementation Plan*. <http://acjv.org/planning/bird-conservation-regions/bcr-30/>
- *A Blueprint for the Future of Migratory Birds: A Strategic Plan 2004-2014*.
<http://www.fws.gov/Migratorybirds/Aboutus/Mbstratplan/Mbstratplantoc.html>
- *Conserving the Future: Wildlife Refuges and the Next Generation* (USFWS 2011).
http://www.fws.gov/refuges/news/ConservingtheFuture_11052010.html
- *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines (2012)*.
<http://www.stoel.com/us-fish-and-wildlife-service-issues-land-based>

2.1.2 **National Public Use Plans and Initiatives**

- *America's Great Outdoors: A Promise to Future Generations* (AGO; 2011).
<http://americasgreatoutdoors.gov/files/2011/02/AGO-Report-With-All-Appendices-3-1-11.pdf/>
- *Let's Move! And Let's Move Outside*. <http://www.letsmove.gov/>

- Youth in the Great Outdoors. <https://youthgo.gov/>
- Connecting People with Nature. <http://www.fws.gov/northeast/cpwn/index.html>

2.1.3 Climate Change and Sea Level Rise Studies

USFWS is concerned with the potential effects of climate change on Assateague Island and the Virginia Eastern Shore, and the potential impact on refuge facilities, infrastructure, and access. We, therefore, consider climate change to be a key consideration for this CCP. These concerns are further described in section 2.2, Issues, Concerns and Opportunities.

The most relevant climate change plans are the following:

- *Rising to the Urgent Challenge: Strategic Plan for Responding to Accelerating Climate Change* (USFWS 2009). <http://www.fws.gov/home/climatechange/pdf/CCStrategicPlan.pdf>.
- *The National Fish, Wildlife and Plants Climate Adaptation Strategy* (2012). <http://www.wildlifeadaptationstrategy.gov/pdf/NFWPCAS-Final.pdf>.
- *Planning for Climate Change on the National Wildlife Refuge System* (USFWS 2014). <http://www.fws.gov/refuges/vision/pdfs/PlanningforClimateChangeontheNWRs.pdf>.

The relevant work on climate change for the refuge includes the following studies and plans, presented in chronological order:

- *Refuges at Risk: the Threat of Global Warming* (Schlyer 2006). http://www.defenders.org/publications/refuges_at_risk_2006.pdf.
- *The Virginia Climate Change Action Plan* (Governor's Commission on Climate Change 2008). http://www.sealevelrisevirginia.net/docs/homepage/CCC_Final_Report-Final_12152008.pdf.
- *Sea Level Rise and Coastal Habitats in the Chesapeake Bay Region, Sea Level Affecting Marshes Model (SLAMM)*¹ (Glick 2008). http://www.nwf.org/~media/PDFs/Global-Warming/Reports/SeaLevelRiseandCoastalHabitats_ChesapeakeRegion.ashx.
- *A Case Study on Chesapeake Bay and Assateague Island* (EPA, NPS, USFWS 2009). http://www.nwf.org/~media/PDFs/Global-Warming/Reports/SeaLevelRiseandCoastalHabitats_ChesapeakeRegion.pdf?dmc=1&ts=20130325T1459161406
- *Application of the SLAMM 5.0.2 in the Lower Delmarva Peninsula* (Nieves 2009). http://www.slamview.org/slamview2/reports/LDP_ChincoteagueFinal.pdf.

¹ SLAMM is one of the models used to study the impact of coastal processes, such as sea level rise, on an area and simulate the dominant processes and forecast long-term effects. SLAMM takes into account five processes that determine the impact of sea level rise impact on wetlands: inundation (the rise of water levels and the salt boundary); erosion; overwash (beach migration and transport of sediments); saturation (migration of coastal swamps and fresh marshes onto adjacent uplands due to the water table responding to rising sea level); and accretion (vertical rise due to buildup of organic and inorganic matter).

- *National Parks in Peril: The Threats of Climate Change Disruption* (Saunders 2009). <http://rockymountainclimate.org/website%20pictures/National-Parks-In-Peril-final.pdf>
- *Marshes on the Move. A Manager's Guide to Understanding and Using Model Results Depicting Potential Impacts of Sea level Rise on Coastal wetlands.* (TNC and NOAA 2011). http://coast.noaa.gov/digitalcoast/sites/default/files/files/1366313090/marshes_on_the_move.pdf.
- *Global Sea Level Rise Scenarios for the US National Climate Assessment.* (Parris et al. 2012). http://scenarios.globalchange.gov/sites/default/files/NOAA_SLR_r3_0.pdf.
- *Recurrent Flooding Study for Tidewater Virginia.* (Mitchell et al. 2013). http://ccrm.vims.edu/recurrent_flooding/Recurrent_Flooding_Study_web.pdf.
- *Intergovernmental Panel on Climate Change. Contribution of Working Groups I, II, and III to the Fifth Assessment Report, Climate Change 2014.* <http://www.ipcc.ch/report/ar5/syr/>.
- *Climate Change Impacts in the United States: The Third National Climate Assessment.* <http://nca2014.globalchange.gov/report>.

2.1.4 State, Regional, and Local Plans

- *Virginia's Comprehensive Wildlife Conservation Strategy and Wildlife Action Plan* (Virginia Department of Game and Inland Fisheries 2005). <http://www.bewildvirginia.org/wildlifeplan/>.
- *State Comprehensive Outdoor Recreation Plan* (Virginia Department of Conservation & Recreation 2007). http://www.dcr.virginia.gov/recreational_planning/vop.shtml.
- *Accomack County Comprehensive Plan* (County of Accomack 2008). http://www.co.accomack.va.us/Planning/2008_comprehensive_plan_update.html.
- *Town of Chincoteague Comprehensive Plan* (Town of Chincoteague 2010). <http://www.chincoteague-va.gov/pdf/ComprehensivePlan201001.04.10.pdf>.

2.2 Issues, Concerns and Opportunities

Interest in the future management of the refuge is widespread. The concerns and interests of citizens, local and state officials, and non-governmental organizations are diverse. We heard from businesses and full-time and part-time residents from the town of Chincoteague and neighboring communities; hunters and harvesters of waterfowl, fish, and shellfish, and upland game species; visitors who come to observe birds, the Chincoteague ponies, monarch butterflies, and other wildlife, or who seek solitude and respite in the natural world; beachgoers, horseback riders, and other non-wildlife-dependent recreation users; and State agencies and other programs and organizations concerned about the role and contributions the refuge can play in a larger network of natural areas across the Delmarva Peninsula, the mid-Atlantic region, and the migratory bird flyway of the Atlantic coast.

Based on input we received and our professional judgment in incorporating the best available scientific and technical information, we identified several key concerns which this CCP addresses. They are:

- Climate change/sea level rise

- Regional conservation
- Balance between public use and habitat and wildlife conservation
- Public access to the refuge, in particular to the recreational beach, and impact on visitor experience and the local economy
- Public safety and community resilience to storm damage and flooding

We identified the first two concerns based on the policies and initiatives of the USFWS and the DOI, as well as feedback from other resource management agencies. The next two concerns were the most consistently and strongly voiced themes from public comments received during scoping. The last concern arose primarily during the public comment period with release of the draft CCP/EIS.

As part of the planning process, we developed a list of issues and opportunities based on input from public meetings, stakeholder feedback, refuge staff, and planning team meetings. While the list of issues and opportunities below is a comprehensive list of those raised during the planning process, it should be recognized that it does not represent every issue which faces the refuge. Furthermore, although all of these issues are recognized here equally, the public commented on beach access, beach parking, and Chincoteague pony management the most during public review of the alternatives during the planning process. The issues and opportunities below are not listed in any priority order, but rather are organized by goal area, with those in the first four goal areas again corresponding to habitat, and those in the last three goals drawing from various other plans and initiatives. These issues and opportunities are not all relevant to Wallops Island NWR.

2.2.1 *Climate Change/Sea Level Rise*

Climate change and sea level rise are a growing concern for the refuge and the nation. Rising air and water temperatures, intense precipitation events, drought, sea level rise, strong coastal storms, and intense wind events are all concerns identified by the scientific community for the mid-Atlantic region. Since the current Master Plan was signed, our awareness and understanding of the impacts of climate change and sea level rise on barrier islands has increased.

Recent repeated coastal flooding and over wash caused by nor'easters and tropical hurricanes have resulted in damage to beach access and parking. Impacts on habitat and wildlife have been either beneficial or negative depending upon the timing and severity of the weather event. We are committed to working with partners to continue research and assessment of future climate change impacts on the Delmarva Peninsula.

2.2.2 *Regional Conservation*

We are committed to a landscape-level approach to conserve, manage, and restore refuge lands and waters, as well as to facilitate such conservation actions beyond our boundaries. We recognize the conservation importance of the southern Delmarva Peninsula and the regional challenges it faces, including those related to climate change and land use. We are committed to working with partners to examine opportunities to address these challenges, such as improving connectivity between protected lands and providing lands for multiple recreational activities to support the tourism economy, while also providing ecological, educational, and other benefits.

2.2.3 *Balance Between Public Use and Habitat and Wildlife Conservation*

We received many comments requesting that the refuge maintain a balance between people and nature, or recreation and wildlife management. Federal land management agencies often allow

multiple uses to occur on their lands, and some agencies, like national forests and the Bureau of Land Management (BLM) have a multiple use mandate and structure. However, statutory and policy framework of the Refuge System clearly defines that wildlife and wildlife conservation must come first on refuge lands and waters. Many of our policies and goals aim to achieve this balance, through allowing for public uses that are deemed appropriate and compatible for each refuge. A balanced approach that upholds that wildlife comes first is reflected throughout the discussion of visitor service issues and concerns.

2.2.4 Public Access to the Refuge, in Particular to the Recreational Beach, and Impact on Visitor Experience and the Local Economy

Access to the refuge, in particular to the recreational beach, was the most commonly cited issue by the public. We are committed to preserving access to the refuge, including by personal vehicle, and to continuing to provide a recreational beach. We considered impacts on visitor experience and the local economy throughout this CCP.

2.2.5 Public Safety and Community Resilience to Storm Damage and Flooding

A number of comments were received during the public comment period that community resiliency and potential catastrophic flooding in the town of Chincoteague should be primarily considered in any action (or inaction) taken by the refuge, especially as pertaining to dunes, breaches, and emergency repairs. In response to coastal resiliency for all alternatives considered, as stated on page 2-10 of the Final CCP/EIS, *“the refuge would work with the town of Chincoteague to explore potential impacts and identify protective methods to address hazard mitigation, in coordination with others, such as Accomack County, Commonwealth of Virginia, NPS, NASA, FEMA, and USACE. The refuge would also work with partners to explore how best to advance the study, information exchange, and project resources for adaptive management practices that sustain the resiliency of this unique barrier island system including but not limited to Assateague, Wallops, Assawoman, and Metompkin islands in the face of dynamic coastal processes and climate change.”*

2.2.6 Coastal Habitat

Coastal habitats include beach/dune habitat within Chincoteague NWR for nesting, migrating, and wintering shorebirds as well as turtles and seabeach amaranth, and salt marsh and other habitats within the entire refuge that serve a variety of functions.

Beach/Dune Habitat for Coastal Nesting Birds

Currently, our management goal for the piping plover, as outlined in the Biological Opinion (2008), is a fledge rate goal of 1.2 chicks per pair. The fledge rate needed to keep the population stable is 0.83. The least tern is another high priority BCR 30 species and Tier II species in the Virginia Wildlife Action Plan. American oystercatcher, Wilson’s plover, gull-billed tern, and black skimmer are other species of concern with high rankings that nest on refuge beaches that would benefit from management actions for piping plover and least tern.

Beach/Dune Habitat for Migrating and Wintering Shorebirds and Migrating Monarch Butterflies

In 1990, the Virginia and Maryland barrier islands were designated as a Western Hemisphere Shorebird Network Site due to the number of shorebirds using the area during migration, with tens of thousands of shorebirds stopping at Assateague Island between the months of April and September. Since Chincoteague NWR is a high public use refuge, we must continually manage

activities with consideration of migrating shorebirds. Shorebirds are susceptible to human disturbances during their breeding season, and management policies that limit this disturbance are of a high priority for the refuge. Assateague Island is a critical stopover point for southbound migrating monarchs that use the refuge's resources to rest, refuel, and roost for the night. Nectar source plants are located in various refuge habitats including Beach Road adjacent to Toms Cove, the Overwash, and tip of the Hook, blooming in succession during the migration period.

Beach/Dune Habitat for Turtles

The loggerhead sea turtle is a Federal and State-listed threatened species with habitat found on the refuge; the northern diamondback terrapin (Virginia Wildlife Action Plan Tier II species) also nests in the sandy beach habitats. There are three main threats to nesting loggerheads on Assateague Island. They are: (1) weather and tides, (2) predation, and (3) human activities. According to refuge files, weather is most likely to cause nest loss or mortality. Currently, no turtle nests have been knowingly lost to predators. Management actions, such as mammalian and avian predator removal and placing protective screening over nests, may have prevented predation.

Federally Endangered Plants and Rare Plant Communities

Seabeach amaranth is native to Atlantic coast barrier island beaches from Massachusetts to South Carolina (USFWS 2008b). Although seabeach amaranth generally grows in sparse to very sparse distribution, the existing population on the refuge is greatly dissipated. Beach stabilization efforts and intensive recreational use, as well as natural species predation, have plagued the species on the refuge. We must evaluate management steps, such as the transplanting and reseedling that was successful in Maryland, in order to implement the most effective recovery method on the refuge. The number of rare species documented in Lucky Boy Fen in Wallops Island NWR is high in proportion to its size. It contains two plant species (brown-fruited rush and few-flowered beakrush) considered "critically imperiled" and four plant species (southern bladderwort, ten-angle pipewort, white beakrush, and white-topped fleabane) considered "imperiled" in the State by the Virginia Department of Conservation and Recreation's Natural Heritage Division. For some of these plant species, Virginia represents the southernmost extent of their range and this is the only habitat that supports these species in the State. Groundwater pollution, encroachment of invasive species and sea level rise are among the greatest threats to Lucky Boy Fen on the refuge.

Salt Marsh Habitats for Nesting, Migrating, and Wintering Birds

Known threats to salt marsh abiding species (like American black duck), besides sea level rise, include the following: (1) grazing by herbivores (i.e. Chincoteague ponies), which alters vegetation structure and species composition resulting in habitat loss for marsh-dependent focal species; (2) direct forage competition, which reduces food resources for wildlife; and (3) mammalian trampling during the nesting season, which can disturb or destroy nests.

2.2.7 Management Wetlands (Impoundments)

Managed wetland includes impoundments and artificial nesting structures that we maintain on Assateague Island. They provide habitat for migrating, wintering, and breeding wildlife.

Impoundments for Waterfowl, Shorebirds, Waders and associated species

Impoundments supply numerous habitat benefits, including wintering/migratory habitat for waterfowl; fresh/brackish vegetation roots and seed as food for wintering waterfowl; food sources for waterbirds of conservation concern such as snowy egret, glossy ibis, Forster's and gull-billed

terns; and shorebird migratory stopover habitat for many species of conservation concern including short-billed dowitcher, dunlin, and semipalmated sandpiper. Furthermore, the impoundments concentrate large flocks of birds, providing wildlife viewing, and opportunities for photography, education, and interpretation. In order to provide adequate food, in the form of vegetation (seed or roots) and/or aquatic invertebrates, fresh water, and loafing areas requires the precise management of water levels. All refuge impoundment management strategies depend entirely on precipitation as their sole source of freshwater for the generation of fresh/brackish water plants, and gravity or evaporation for drawdown. Both mechanisms limit management capabilities. Tidal cycles and strong coastal storm events, especially nor'easters and hurricanes, further challenge the attainment of management goals for impoundments. As sea level continues to rise and more frequent overwash events occur, we expect damage to dikes and other impoundment infrastructure. Maintaining water depths at desirable levels may also become more difficult.

2.2.8 Upland Habitats

Upland habitat includes shrub and forested uplands throughout the refuge, with specific conditions for maritime forest on Assateague Island and upland habitat on Wallops Island NWR.

Coastal Shrub Habitat for Breeding and Migrating Landbirds

Bird species that depend on shrubs and other early-successional habitats are declining in the Eastern U.S. due to loss of habitat. Shrubs provide abundance of insect food and berries for birds during the fall migration and/or throughout the winter. The refuge's wax myrtle/bayberry/groundsel shrub community provides migrating birds with an important stopover habitat that supplies the various species with food, water, and protection.

Loblolly Pine Forest for Delmarva Peninsula fox squirrel, Brown-headed Nuthatch and Eastern Towhee

Forest habitat on Assateague Island consists largely of monotypic stands of even-aged, mature loblolly pine trees, aged 65 years or older; some are older than 100 years (Merten, pers. comm., 2010). Without management, such as prescribed burning or selective cutting, these mature age classes are vulnerable to catastrophic loss from insect damage or extreme weather/wind events. The southern pine beetle, a native species, is the only major known insect threat to this forest.

Upland Habitats on Wallops Island NWR

Since its establishment in 1971, Wallops Island NWR has been unstaffed with little monitoring and management. We have made some manipulations to the land, with the goal of creating early successional habitat favored by bobwhite and other species that prefer edge and early succession habitats, in the old-field habitat. However, these changes have been poorly documented. Likewise, some mechanical and chemical treatment of invasive plants such as non-native autumn olive, Phragmites, Nepalese browntop, Japanese stiltgrass, Japanese honeysuckle, and several thistles also may have taken place (CNWR 2004).

2.2.9 Southern Barrier Islands Unit (Assawoman, Metompkin, Cedar)

The Southern Barrier Islands Unit consists of Assawoman, Metompkin, and Cedar Islands and share similar mixes of habitats and management conditions.

Beach/Dune Habitat for Breeding Shorebirds and Turtles

The mid-Atlantic barrier islands provide preferred nesting habitat for terns, skimmers, gulls, American oystercatchers, willets, herons, egrets, other waterbirds, shorebirds, and turtles. During the shorebird breeding season, (March 15 to August 31), the southern islands are managed in partnership with the Commonwealth of Virginia and TNC to reduce disturbance, thereby increasing productivity. Despite this and other protective measures, many wildlife species are in decline throughout the flyway, including common terns, least terns, gull-billed terns, black skimmers, American black duck, and several herons. The decline of these species is thought to be linked to severe weather events, sea level rise, competition and displacement from nesting habitat by aggressive avian species, mammalian and avian predators, and unmanaged human disturbance.

Beach/Dune and Tidal Marsh Habitat for Migrating/Wintering Shorebirds/Threatened Plants

The ecological significance of Assawoman, Metompkin, and Cedar Islands is recognized through their inclusion in the WHSRN as a site of international importance, and by their designation as part of a Biosphere Reserve. The refuge does not currently conduct or organize systematic winter/migratory shorebird surveys on the southern islands like those conducted by volunteers on Assateague Island.

Virginia's string of barrier islands, which extend from Assateague Island south to Fisherman Island at the mouth of the Chesapeake Bay, is the largest collection of near pristine barrier islands left in the country (USFWS 1988). Aside from small private in-holdings, all of Virginia's barrier islands are protected by either Federal or State agencies, or TNC. Although preferred habitat for seabeach amaranth is found on refuge barrier islands, it is only currently found on Assateague Island. Potential habitat on Cedar and Metompkin islands has not been surveyed.

2.2.10 Partnerships

A crucial component of our refuge management strategy is considering both the impacts of refuge actions on the region and our relevant partners as well as the opportunities for collaboration with partners at the regional level for the purposes of conservation, economic development, and safety.

Regional Conservation

The refuge is located in the southern Delmarva Peninsula, an area of recognized global ecological significance for its remarkable estuarine, coastal, and marine habitats and substantial populations of migratory and breeding shorebirds, colonial waterbirds, landbirds, and raptors. The coastal lagoons and barrier islands represent what is arguably the most significant remaining undeveloped, natural land on the Atlantic coast. In partnership with Federal, State, local, and non-profit organizations we have long recognized the area's conservation importance, and together we have protected over a quarter of the land on the southern Delmarva Peninsula.

Several real and growing challenges threaten the area's rich and diverse natural heritage and the many benefits humans derive from the region's intact habitats and natural systems. These include vulnerability of natural systems to global climate change, especially sea level rise and incompatible land uses and land management activities such as plasticulture, commercial pine plantations, conversion of natural habitats to residential development, shoreline armoring, and increased pumping of groundwater for agricultural irrigation, commercial, and residential uses.

We are currently involved in a number of conservation partnerships, including but not limited to the Pocomoke River Conservation Partnership and the Southern Tip Ecological Partnership, and

are working with a number of conservation entities, such as TNC, the Virginia Eastern Shore Land Trust, the Assateague Coastal Trust, and the Conservation Fund. We are committed to working with partners to address the regional issues identified above through examining opportunities to improve connectivity between protected lands, protecting and restoring the ecological integrity, functionality and value of diverse habitats, buffering harmful effects of coastal flooding and storm surges to local communities and infrastructure, and providing lands for multiple recreational activities to support the tourism economy while also providing ecological, educational, and other benefits.

Although the CCP does not propose additional land protection for Chincoteague NWR, we remain committed to work with communities, other governmental agencies, and non-governmental partners to evaluate predicted land use and climate-related changes on the lower Delmarva Peninsula with the intent of maintaining robust fish and wildlife populations within working landscapes for the economic and other societal benefits they provide.

Economic Development

Access to the refuge is through the town of Chincoteague, the economy of which has become increasingly dependent on the tourism dollars brought into the community by refuge visitors. The Town of Chincoteague's Comprehensive Plan clearly states that proximity to the refuge continues to be its largest economic development opportunity, although the NASA facility and adjacent business activity is also considered important and growing, and finfish and shellfish harvest also contributes to local economic activity.

Based on 2010 data, lodging and food businesses comprise about two-thirds of the tourist-related business in Chincoteague (USFWS 2012a). Tourism not only generates revenue for these sectors, but also generates revenue for the town in the form of food and lodging excise taxes. Spending associated with recreational use of the refuge can generate a substantial amount of economic activity in both local and regional economies. The Accomack County Comprehensive Plan (2008), relying on data from the Accomack County and Northampton County Commissioners of Revenue and the Chincoteague Chamber of Commerce, reports that in 2000 about 83 percent of Accomack County's tourist-related tax revenue was generated by the activities and amenities that the town of Chincoteague and the refuge provide to visitors.

Horseshoe crabs live in and around shallow ocean waters of the refuge. They come onto shore in the springtime at the new and full moon tides to mate and lay eggs. Horseshoe crab eggs serve as a significant source of food for migrating birds. Conservation of migratory birds is the primary purpose of the refuge. During a 2011 coordination meeting with NPS, it came to light that commercial harvest of horseshoe crabs is occurring within Toms Cove on lands administered as part of the refuge and in waters administered as part of Assateague Island National Seashore. USFWS policy and law require that a Special Use Permit (SUP) be issued for any commercial activity that takes place on Refuge System lands and waters. Refuge jurisdiction extends to mean low water (MLW). No SUP has been issued for the commercial harvest of horseshoe crabs; it is, therefore, an unauthorized activity. In order for any commercial use to be permitted on Refuge System lands or waters, it must be shown to contribute to the purposes of the refuge. We address this commercial use as part of this CCP by finding the commercial harvesting of horseshoe crabs does not contribute to the refuge's migratory bird purpose, does not contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, and is not beneficial to refuge resources; consequently, the use cannot be permitted.

A regional economic assessment was completed as part of the planning process that provides a means of estimating how current management and the proposed activities could affect the local economy. This type of analysis provides two critical pieces of information. First it illustrates a refuge's contribution to the local community. Second, it can help in determining whether local economic effects are, or are not, a real concern in choosing among management alternatives. The public has expressed concern about impacts on visitation levels, with subsequent impacts to the tourism industry and related jobs. Additionally, there are concerns about property values, the capital/infrastructure improvements, maintenance, and operating costs of the plan.

Hazard Mitigation

The town of Chincoteague, adjacent coastal communities, and NASA are concerned about future impacts of sea level rise and storm surge on infrastructure and access. We share this concern and will work in coordination with those entities and others to explore potential impacts and identify protective methods to address hazard mitigation. We will also work with our partners to explore how best to advance the study, information exchange, and project resources for adaptive management practices that sustain the resiliency of this unique barrier island system including but not limited to Assateague, Wallops, Assawoman, and Metompkin Islands in the face of dynamic coastal processes and climate change. For this CCP, "resiliency" is defined as in Executive Order 13653, as "*the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.*" This is also consistent with the description used in the Hurricane Sandy Coastal Resiliency Competitive Grant Program that "*supports projects that reduce communities' vulnerability to the growing risks from coastal storms, sea level rise, flooding, erosion and associated threats through strengthening natural ecosystems that also benefit fish and wildlife.*"

Interagency Federal Facility Management

The refuge is adjacent to several other Federal entities. NASA operates the Goddard Space Flight Center's Wallops Flight Facility, a center for aeronautic research. The Virginia Commercial Space Flight Authority leases space for the Mid-Atlantic Regional Spaceport, which is expected to see an increase in commercial space flight activity. In addition, the United States Navy's Surface Combat Systems Center is co-located with NASA and the National Oceanic and Atmospheric Administration Command and Data Acquisition Station has leased land for its adjacent facility from NASA since 1965 (Town of Chincoteague 2006). NASA has a visitor center that is adjacent to the Wallops Island NWR. NPS and USDA both have a use agreement with USFWS for shared facilities, mainly for storage, on Wallops Island NWR. Finally, as mentioned previously, Assateague Island National Seashore maintains staff and services within Chincoteague NWR.

We have coordinated with these Federal partners on many issues and are interested in identifying potential opportunities for future collaboration on wildlife management, scientific research, public education, and shared facilities.

Local Conservation of Tidal Creeks, Estuaries, Mudflats, and Nearshore Marine Waters

Most species found on the refuge depend on off-refuge habitats to fulfill one or more of their life cycle needs. Pollutants, human disturbance, or other activities off-refuge can influence the success of management activities that the refuge undertakes. For example, off-shore oil drilling and development of wind turbines on- or off-coast are potential activities that could impact migratory birds and bats.

2.2.11 *Visitor Services*

As mentioned previously, Chincoteague NWR provides a range of recreational opportunities, including the six priority wildlife-dependent activities, while Wallops Island NWR is limited to public access for hunting only. The six priority uses predetermined by the Improvement Act as appropriate but are still subject to a positive finding of compatibility with refuge purposes. Other uses must be determined to be both appropriate and compatible. Figure 2-2 identifies the primary public use areas on Assateague Island.

Concerns were expressed by the community that the USFWS would eliminate personal motor vehicle access to the refuge and beach parking. The USFWS has no goal or objective to do so. All public uses are dependent on access to the refuge. Personal motor vehicle access to Assateague Island, including parking at or near the beach, is very important to visitors and local residents. However, the USFWS does have concerns that climate change, with corresponding sea level rise and storms, will have a significant impact on the sustainability of the road and parking areas that serve the recreational beach. The location and maintenance of the beach parking and the role of transit (whether to provide another option for visitors or to supplement available beach parking if reduced) need to be carefully considered and evaluated. Many visitors and residents also enjoy bicycling and walking to and within the refuge. Accessibility for all users, including those with mobility impairment, is also important.

Hunting

Hunting is a priority public use of the Refuge System and remains a popular form of wildlife-dependent recreation on the refuge and a vital part of the cultural, social, and economic fabric of the communities near the refuge. Chincoteague NWR provides big game hunting (sika and white-tailed deer) and migratory game bird hunting. On Wallops Island NWR, we only allow hunting of white-tailed deer.

Fishing

Surf fishing, crabbing, clamming, and oyster harvest are among the most popular wildlife-dependent recreational activities conducted on the refuge. The surf fishing areas south of the current parking lots are accessible via over-sand vehicle (OSV) use, which is administered jointly by NPS and the refuge, and is limited to certain times and areas to provide maximum protection to prime nesting habitat for coastal nesting birds. Fishing is allowed on Assawoman Island but requires a refuge permit to land a boat to fish the area. However, parts of the island may be closed based on nesting behavior.

Figure 2-2. Primary Public Uses of Chincoteague NWR on Assateague Island



Environmental Education and Interpretation

Refuge staff work with local schools, communities, and educational organizations to provide classroom and hands-on programs, both on and off the refuge, for youth. Activities are conducted throughout the region but on the refuge are concentrated on several trails as well as the Herbert H. Bateman Educational and Administrative Center. NPS offers its own set of programs. The refuge currently provides interpretive opportunities through self-guided interpretation but also through some guided programs.

We are facing a few major challenges, including how to meet the demand for these staff-intensive services, how to expand outreach off of the refuge, and how to provide virtual access to the resources of the refuge through broad band and fiber optic improvements.

Wildlife Observation and Photography

In general, wildlife observation and photography are becoming increasingly popular activities for visitors, and a source of economic growth for many communities where NWRs exist. Chincoteague NWR provides outstanding wildlife viewing opportunities throughout the year along trails, roads, and on the natural beach itself. These sites provide wildlife viewing and opportunities for amateur and professional photographers alike. The public and community desire continued access and additional opportunities for these uses; however, managers must balance opportunities with the need to limit disturbance.

Recreational Beach Use

The beaches of Assateague Island offer a unique experience in the mid-Atlantic area. These beaches exist primarily in an undeveloped setting unlike other beaches (such as Virginia Beach, Virginia, or Ocean City, Maryland) that are heavily developed with motels/hotels, boardwalks, eating establishments, and amusement parks. The natural setting draws many families seeking out a more traditional beach-going experience. Beach activities include sunbathing, swimming, shell collection, and campfires (on NPS lands), among other activities. If one wishes, it is possible to obtain an almost wilderness-like beach experience by hiking to areas where few visitors venture.

At the southern end of Assateague Island within the Chincoteague NWR, the NPS manages an “assigned area” currently consisting of the 1-mile recreational beach and corresponding adjacent 961 parking spaces, provided via a crushed shell surface. The NPS also maintains a visitor contact station, restrooms, and pedestrian trails, as well as seasonal bathhouses, showers, and lifeguard-protected swimming beach. The current recreational beach and facilities on Assateague Island are located in one of the most dynamic areas of the island, which places them under constant threat of damage from flooding and erosion. Over the years, storms and accompanying extreme high tides have repeatedly washed out parts or all of the recreational beach parking lots. NPS has rebuilt and relocated the beach parking lots further to the west as they have been washed out. The 1993 Master Plan addressed these conditions by identifying a long-term strategy to pursue alternative means of transportation such as a shuttle system and off-site parking as necessary to maintain beach use in the future.

In this CCP, we define the “recreational beach” as the zone operated on the refuge by NPS that includes seasonal lifeguards, facilities and infrastructure described above. It is currently 1 mile in length, based on carrying capacity levels evaluated in development with the 1993 Master Plan. While wildlife-dependent recreation may occur on refuge beaches, the recreational beach is

defined here to be separate from other beaches on refuge lands, including Wild Beach (which stretches north 11 miles from the vicinity of D-Dike to the Virginia-Maryland boundary), and the beach at Toms Cove Hook (south of the recreational beach, and extends from the Overwash to Fishing Point).

A brief history of how the jurisdiction associated with the recreational beach at Toms Cove has evolved is included here to provide some clarity into our considerations for current and future planning. In a 1959 agreement, the Bureau of Sport Fisheries and Wildlife (now known as USFWS) assigned to the Chincoteague-Assateague Bridge and Beach Authority (Authority) the south 4 miles of the island for 40 years, renewable for two 15-year periods. The language from Public Law (P.L.) 85-57 states: *“In order to permit the controlled development of a portion of the seashore of the Chincoteague National Wildlife Refuge, Virginia, for recreational purposes, the Secretary of the Interior is authorized to grant to the appropriate agency or agencies of the State of Virginia such easements and rights as may be necessary for the construction and maintenance of a bridge across Assateague Channel and terminating on the Chincoteague National Wildlife Refuge, and also for the construction and maintenance of an access road from the terminus of such bridge to a public beach and recreation area to be developed along the southeastern shore of Assateague Island as designated by the Secretary.”*

In 1966, under P.L. 89-195, the Secretary of the Interior was authorized to acquire all of the right, title, or interest of the Authority. On October 17, 1966, in accordance with the legislation, the NPS acquired all the Authority's interests for some \$600,000, the estimated amount of its obligations. By interim agreement dated October 21, 1966 between the Regional Directors of the USFWS and NPS, the NPS assumed the assigned responsibilities of the Authority, pending development and approval of a comprehensive master plan and completion of a subsequent Memorandum of Agreement between the two agencies. P.L. 89-195, Sec. 9(a) states: *“The Secretary of the Interior is authorized and directed to construct and maintain a road from the Chincoteague-Assateague Island Bridge to the area in the wildlife refuge that he deems appropriate for recreation purposes.”* P.L. 89-195 also states: *“Notwithstanding any other provision of this Act, land and waters in the Chincoteague National Wildlife Refuge, which are a part of the seashore, shall be administered for refuge purposes under laws and regulations applicable to national wildlife refuges, including administration for public recreation uses in accordance with provisions of the Act of September 28, 1962 (Public Law 87-714; 76 Stat. 653).”* The Department of the Interior's Regional Solicitor ruled that “When the NPS acquired the interests and rights of the Chincoteague-Assateague Bridge and Beach Authority, the easement merged with the United States' fee simple interest in the property” (Conte memo 2006).

The Refuge System Administration Act was amended by Congress in 1976 (P.L. 94-223) and recognized the authority of the USFWS to control all lands within the boundaries of national wildlife refuges. Thus, USFWS could cooperate with other Federal agencies to carry out the responsibilities on refuges, and the NPS may administer programs for public recreation and use in the Toms Cove Hook area so long as these programs have the approval of the USFWS. Since 1979, the Toms Cove Hook area has been operated by the two agencies under a Memorandum of Understanding (MOU). The original MOU identified the “assigned area” for the first time.

Our cooperative relationship with NPS for management of the recreational beach, defined in a series of MOUs, has evolved over time. The agreements reflect changes in management goals as well as legislative changes to agency authority and administrative requirements. For example, in 1986 the Atlantic Coast population of piping plover was listed as a threatened species, and the

1988 “Environmental Assessment for the Management of Piping Plovers on Toms Cove Hook” established the closure of 2.5 miles of Toms Cove Hook during the piping plover nesting season. Thus, the agreement is necessary for the two agencies to comply with the various public laws.

Public Law 87-714, also known as the Refuge Recreation Act, authorizes the USFWS to administer areas within the Refuge System for public recreation, regardless of whether the recreation is wildlife-dependent. A recreational use that is not wildlife-dependent is an incidental or secondary use. The Refuge Recreation Act permits public recreation within a national wildlife refuge “*only to the extent that is practicable and not inconsistent with other previously authorized Federal operations or with the primary objectives for which each particular area is established.*” This compatibility standard was reinforced by the National Wildlife Administration Act of 1966 and the Refuge System Improvement Act of 1997.

These laws create a situation of competing interests. Language from P.L. 85-57 makes it clear that Congress intended for a recreational beach to be constructed and maintained on the refuge. It is also apparent that Congress believed or anticipated that “traditional” beach recreation (i.e., swimming, sunbathing, volleyball, etc.) could be compatible with refuge purposes, which today would be a difficult, if not impossible, standard to achieve. It may have been possible to meet these dueling mandates in the 1960s, before the ESA was passed, when beach users were fewer in number, and when more wildlife habitat existed in the area than today. It was also a time before the town of Chincoteague’s economy became so dependent on tourism from beach goers.

The USFWS Compatibility Policy contains exceptions for when the compatibility standard will not be applied to a refuge use. The policy reads:

“Exceptions may apply when there are rights or interests imparted by a treaty or other legally binding agreement, where primary jurisdiction of refuge lands falls to an agency other than us, or where legal mandates supersede those requiring compatibility. Where reserved rights or legal mandates provide that we must allow certain activities, we should not prepare a compatibility determination. In the case of reserved rights, the refuge manager should work with the owner of the property interest to develop stipulations in a special use permit or other agreement to alleviate or minimize adverse impacts to the refuge.”

The policy also states: *“Compatibility provisions of the Refuge Administration Act do not apply to activities authorized, funded, or conducted by another Federal agency that has primary jurisdiction over the area where a refuge or a portion of a refuge has been established, if those activities are conducted in accordance with a memorandum of understanding between the Secretary or the Director and the head of the Federal agency with primary jurisdiction over the area.”*

In order to comply with what we believe was the intent of Congress in passing P.L. 85-57, the USFWS has conveyed primary jurisdiction for beach use and recreation within the “assigned area” to the NPS. We have worked with them to minimize adverse impacts to the refuge, and developed a MOU to document operating procedures and respective responsibilities. Therefore, we will not prepare a CD for those activities administered by the NPS within the “assigned area.”

As stated earlier, the location and length of the recreational beach was further established by a public process undertaken as a part of the 1993 Master Plan. That plan determined that based on carrying capacity, a one-mile beach along the Toms Cove beachfront was the appropriate length

and location for the recreational beach. That evaluation considered factors of safety, beach density sanitation codes, visitor expectations, vicinity of parking, and physical and biological characteristics of the natural resources.

Other Recreational Uses

Other uses on Chincoteague NWR include walking, bicycling, horseback riding, boating, and commercial uses. Non-wildlife dependent recreation beach uses such as swimming, sunbathing, kite flying, campfires, and beachcombing are confined to the 1 mile assigned area of the NPS. All of these uses are limited to specific areas of land and/or times based on wildlife management objectives and might include permits and fees associated with use. There are no campsites on Chincoteague NWR. Visitors are not allowed to feed wildlife and are not allowed to bring alcohol or pets onto the refuge, including in vehicles. Other restricted activities include use of skateboards, roller or in-line skates, and segways, and the collection of plants, animals, or artifacts. However, we allow the collection of one gallon per person per day of unoccupied seashells. Motorized vehicles are not allowed on trails and mopeds are not allowed on Wildlife Loop.

2.2.12 Refuge Administration

Refuge administration covers communication, staffing, and management of specific areas, such as wilderness and cultural and historic resources.

Outreach, Communication, and Emergency Communication

USFWS considers communication systems important for stakeholder consultation, public outreach, and emergency management. We have identified, received funding for, and implemented a variety of communication improvements over the past 5 years, including a variable message sign, partnership with the local radio station, reactivation of the 1610 AM radio station, and traffic counters for beach parking. In addition to these improvements focused on traveler information, traffic, and emergency response, we have identified the potential for further improvements, especially in terms of broadband and fiber optic capacity, which will allow for improved use of the refuge Web site and social media to provide environmental education and to better engage the public, in particular those unable to visit or who live far away.

Staffing & Volunteer Program/Friends Group

Chincoteague NWR has staff in the areas of visitor services, law enforcement, biology, administration, fee collection, management, and maintenance. In addition to refuge staff, NPS provides 6 permanent and 15 seasonal employees to provide lifeguard, law enforcement, maintenance, and interpretive services at Toms Cove and the recreational beach. Since its creation in 1971, Wallops Island NWR has been unstaffed, with limited monitoring or management, except in the past by Delmarva Power and now A&N Electric Cooperative, a utility company with a power line right-of-way that removes tall growing trees, primarily the non-native autumn olive, and some brush species.

Staff is supplemented by year-round volunteers as well as local and national youth and adult groups such as Road Scholar, Youth Conservation Corps (YCC), and the Student Conservation Association (SCA). These individuals and groups provide assistance with wildlife and habitat management programs, wildlife and habitat surveys, invasive species removal, trash pick-up, interpretive education, and other projects. Chincoteague NWR also receives significant support from its non-profit friends group, the Chincoteague Natural History Association (CNHA), which

produces and provides interpretive and educational material for refuge visitors and for local teachers. Additionally CNHA provides funds for student interns, operates a bus tour, operates two retail stores, provides lighthouse keepers that welcome and guide visitors at the Assateague Lighthouse, and provides a conduit for matching grants for workshops and programs.

Wilderness

In 1974, the USFWS recommended that 1,740 acres on Assateague Island be established as part of the NWPS, as defined by the Wilderness Act of 1964. Of this, 1,300 acres are located in Chincoteague NWR (882 acres in Virginia and 418 acres in Maryland) and 440 acres are within the boundaries of Assateague Island National Seashore in Maryland. A Wilderness Area proposal was submitted to Congress on January 13, 1977, recommending 4,760 acres, mostly located in Maryland, as potential wilderness and to become part of the wilderness when nonconforming uses and structures were eliminated. No action has been taken in regard to this recommendation, and there exists no “congressionally designated wilderness lands” within Chincoteague NWR and Wallops Island NWR (USDOJ 1974).

Cultural and Historic Resources

Assateague Island has several cultural and historic resources. Several cemeteries and the ruins of the former Assateague Village from when the island was inhabited remain. The current Assateague Lighthouse was completed in 1867, and the U.S. Coast Guard (the Coast Guard) considered it to be an aid to navigation. In 2004, the Coast Guard transferred ownership of the Assateague Island Lighthouse to the USFWS. The Coast Guard still operates the light, while the USFWS and CNHA share the maintenance of the historic structure. Tours of the lighthouse are provided by CNHA. In August 2008, the lighthouse began a restoration effort, which was completed in 2013.

In addition, following storms, remains of sailing vessels and their cargos are often uncovered and visible on the beach for short periods of time. We manage these resources by balancing preservation and protection with interpretation and public access.

Concerns were expressed by the community that the USFWS would reduce or eliminate the number of Chincoteague ponies grazing on the refuge. The USFWS has no goal or objective that would eliminate ponies from Assateague Island. Many people consider the ponies to be a historic resource, and they are a main source of enjoyment for visitors throughout the year. The Annual Pony Swim and Auction each July attracts an estimated 40,000 visitors and provides funding for the Chincoteague Volunteer Fire Company. The USFWS does have a concern that climate change, with corresponding sea level rise, and pony grazing will significantly impact the salt marsh. In both northern and southern grazing units the salt hay/grasses that come from these marshes are the basic forage upon which the ponies feed both summer and winter and are critical for the life cycle of many native species of animals. Over the life of this CCP, the refuge will work with the Chincoteague Volunteer Fire Company to ensure the health and well-being of Chincoteague ponies and refuge habitats.

Climate Change and Sea Level Rise

The increasing trend in sea level rise currently affecting the Delmarva Peninsula and surrounding areas is primarily driven by water influx from melting polar and glacial ice sheets. The synergistic actions of thermal expansion of the ocean waters (driven by increases in average global

temperature), coastal subsidence, and coastal erosion are also greatly influencing the rate and intensity of sea level rise effects upon the refuge.

The rise in relative sea level for the Delmarva Peninsula will have a significant negative impact on the barrier island system where the refuge is located. Such changes from sea level will result in the submergence of the lowest tidal wetlands, erosion of coastal beaches, increased flooding of lowlands, and the alterations in salinity regimes in coastal waters. Low salt marshes could be converted to tidal flats, and existing tidal flats could become permanently inundated shallow water habitats. In places of more pronounced erosion, marshes could change directly to shallow waters. Currently, salt water is penetrating further and further inland, which is changing the local ecology. While this process has occurred in the past, the pace at which these changes are happening has accelerated and their magnitude has increased in recent times.

Climate change may also increase storm frequency and intensity which will further transform shorelines and coastal resources (Intergovernmental Panel on Climate Change (IPCC) 2013). The shoreline of Assateague Island, already impacted by erosion from the current sea level rise rate, is even more vulnerable with projected increases of 2 millimeters (mm) per year (Figure 2-3). If the rate increases by a little as 2mm/year, the island may break up into smaller sections (segmentation). This same rate will likely pose increased risk to back barrier marshes (Figure 2-4). The impacts of a 7mm/year rise would be a concern to coastal communities. We recognize that various models are being used to predict sea level rise and that no widely acceptable method is currently available for predicting probabilistic projections of sea level rise at actionable (regional and local) scales.

However, by considering consensus projections used by the climate change community at large, provisions for preserving public access and land-use planning in the context of sea level concerns can be considered. These models are based on the best science currently available with the understanding that as new data is generated it will be included in our planning.

With current climate change and sea level rise rates, the continued management of the refuge lands will become increasingly difficult based on the projected one meter rise in sea level by 2100 adopted by the Commonwealth of Virginia. Based on this prediction, the refuge has several facilities and resources that may be vulnerable to sea level rise and storm surge, including the recreational beach parking.

Figure 2-3. Map showing that Assateague Island may already be near its threshold condition and that just a 2mm/year rise in the rate of sea level rise will push it over the threshold which may initiate barrier beach migration and segmentation. (Source: Titus et al. 2009)

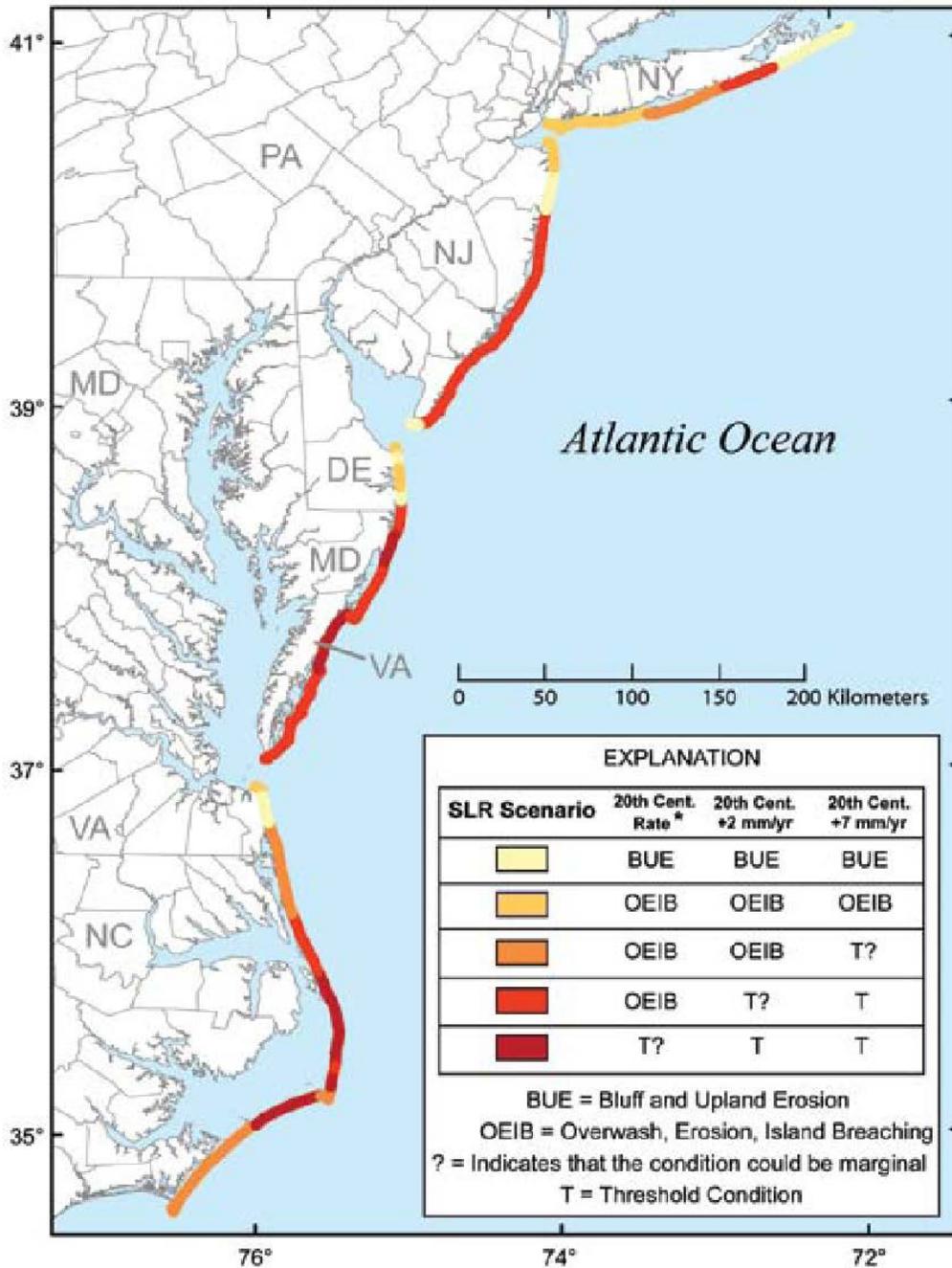


Figure 2-4. Map showing where tidal wetlands may be converted to open water at three rates of sea level rise. A 2mm/year rise in the rate should continue the conversion of low marsh to tidal flat and may even transform these marshes to open water. (Source: Titus et al. 2009)

