

Appendix P



Boardwalk on Refuge

Compatibility Determinations

**Chincoteague NWR and Wallops Island NWR
Compatibility Determinations**

1. Wildlife Observation, Wildlife Photography, and Interpretation
2. Environmental Education
3. Fishing (Recreational) – Finfish, Oysters, Clams, and Crabs
4. Migratory Game Bird Hunting
5. Big Game Hunting
6. Grazing of Chincoteague Ponies
7. Horseback Riding
8. Research and Studies Conducted by Outside Agencies, Universities, and Organizations
9. Shell Collection
10. Temporary/short-term activities conducted by other Federal Government Agencies and/or their contractors
11. Big Game Hunting (Wallops Island NWR)
12. Research and Studies Conducted by Outside Agencies, Universities, and Organizations (Wallops Island NWR)

COMPATIBILITY DETERMINATION

USE:

Wildlife Observation, Wildlife Photography, and Interpretation

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C. 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:**(a) What is the use? Is the use a priority public use?**

The use is wildlife observation, wildlife photography, and interpretation. These are priority public uses identified by Executive Order 12996 (March 25, 1996) and by the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

(b) Where would the use be conducted?

The use would be conducted within the refuge's boundary. The uses would be conducted in current buildings and on current and future trails and roadsides of the refuge. Visitors can access information about the refuge using advanced technology (computers, radio, cell phone, downloadable programming, etc.). Designated areas open to visitors for wildlife observation, photography and interpretation are as follows (see Map 2-3 in the draft CCP/EIS for an illustration of where these uses would be conducted on the refuge):

- Herbert H. Bateman Educational and Administrative Center
- Assateague Lighthouse
- Beach Road and Beach Road Bike Trail
- Marsh Trail
- Wildlife Loop
- Lighthouse Trail
- Black Duck Trail
- Woodland Trail
- Bivalve Trail
- Beachfront
- New Beach Access Road
- New Beach Access Bicycle Trail
- Service Road

Access to the beachfront is permitted in two ways:

- 1) Foot access is allowed year round from the Maryland/Virginia state line to the southern terminus of the National Park Service (NPS) recreational beach parking area.
- 2) Foot access and over sand vehicle (OSV) use/access is allowed at certain times of the year from the NPS southernmost recreational beach parking area at Toms Cove to "Fishing Point" on Toms Cove Hook.

Access for wildlife observation and photography in the OSV Zone is further restricted by the following stipulations:

- 1) Upon completion of the CCP but prior to the relocation of the recreational beach, from March 15 to September 15, the area south of the recreational beach parking area is closed.

- 2) From September 16 to March 14, the zone will again start at the southern terminus of the NPS recreational beach parking area at Toms Cove, then south along the Atlantic Ocean beachfront to “Fishing Point” on Toms Cove Hook, then returning by the same route. Walking and OSV use will generally be within the intertidal zone, unless OSVs are re-directed by signage to avoid sea turtle nest sites; vehicles are prohibited from the dunes or vegetated areas. Wildlife observation and photography could also occur along the beachfront of Assawoman, Metompkin and Cedar Islands outside the shorebird nesting season.

(c) When would the use be conducted?

Opportunities for wildlife/wildlands observation, wildlife photography, and interpretation are available at existing buildings and via existing trails and newly established ones during normal refuge hours. Normal refuge hours are 5:00 a.m. to 10:00 p.m. from May through September; 6:00 a.m. to 6:00 p.m. from November through March; and 6:00 a.m. to 8:00 p.m. during the months of March, April and October. A new access road and bike trail will be established connecting current visitor use areas to the new recreational beach. Some conflicts are expected between refuge user groups as well as wildlife use which will be managed by seasonal closures. These seasonal closures are explained below and apply mostly to non-consumptive users during the hunting season or beachfront walking during the shorebird nesting season.

- All beach areas on Assateague Island south of the newly established year round OSV area will be closed to all visitor use from March 15 until September 15 or until the last shorebird fledges due to nesting of federally threatened piping plovers as well other shorebird species.
- All trails south and east of the Administrative Office and the new Beach Access Road may be closed for big game hunting during the fall and winter months.
- Staffing of the Assateague Island Lighthouse and operation of the Wildlife Tour Bus is provided by the Chincoteague Natural History Association (CNHA). Operations vary throughout the year. Daily access is provided during the busier visitor use periods with weekend access during the shoulder seasons and very limited or no access during the winter months.
- The Herbert H. Bateman Educational and Administrative Center is open daily throughout the year.
- Beachfront access on Assateague Island north of the recreation beach would be year round within the Intertidal zone.
- Staff and/or volunteer guided interpretative programs may occur year round but are concentrated in the busier visitor use periods.
- Beachfront access on the southern islands would be permitted for these uses outside of the shorebird nesting season (March 15 to September 15) and the safety and security zone established by NASA on Assawoman Island. As Metompkin and Cedar Islands have other ownership as well, visitors should consult with those entities prior to visiting.

(d) How would the use be conducted?

These three priority visitor uses would be allowed on established and newly developed roads, trails, parking areas, beachfront areas and in buildings that have been designed to accommodate such uses and in areas that are least sensitive to human intrusion. Uses would be conducted for the general public, as well as for organized groups, including school and youth groups. Brochures and maps depicting the roads and trails open for these uses are available at the Herbert H. Bateman Educational and Administrative Center, at trailheads and on the refuge's website.

Interpretation may be conducted by way of personal presentations by staff, volunteers, CNHA personnel, contracted and guest presenters, teachers and other youth leaders, and at special events and displays both on and off the refuge. Educational and interpretive information will also be provided via signage, kiosks, printed information, exhibits, audiovisual presentations, web based information, podcasts, radio messages and lecture programs. Wildlife observation and photography are usually self-conducted activities and are facilitated through the availability of trails, viewing areas, tours, and informational materials. Wildlife observation programs such as birding field trips, CNHA Wildlife Tours, and other nature walks are frequently given. Viewing scopes are provided in designated areas.

Refuge staff are responsible for on-site evaluations to resolve visitor use issues; monitor and evaluate impacts; maintain boundaries and signs; meet with interested public; recruit volunteers; prepare and present interpretive and educational programs; maintain existing trails and viewing areas; revise brochures and develop new information materials, install and/or update kiosks; develop needed signage; organize and conduct refuge events; conduct regularly scheduled programs for the public; display off-site exhibits at local events; develop relationships with media; provide law enforcement and security; and respond to public inquiries.

Foot access is permitted in all listed areas except the Service Road. Bicycle access is permitted on all paved roads, hard-surfaced trails and on the Bike Trail that parallels Beach Road. Access for non-motorized, hand carried watercraft (including but not limited to kayaks, canoes, kite boards, sail boats and sailboards) into Toms Cove and Assateague Channel will be available from a launch site near the terminus of Beach Road. Access north of the recreational beach via the Service Road will only be available via the CNHA Wildlife Tour Bus and by other organized groups authorized with a permit or agreement.

In addition to published 50 CFR regulations and State regulations, refuge-specific regulations also apply for "Wildlife Observation and Photography and Interpretation" and are as follows:

- All boats must be off the water by sunset. Only non-motorized, hand carried, non-commercial watercraft access will be permitted.
- Areas may be closed on the refuge with little or no warning for safety or other reasons.
- Visitors must stay on the designated trail routes and areas.
- Opportunities for wildlife observation, wildlife photography, and interpretation are available via the established road and trail network, the OSV zone, and along the proposed

beach access road and bike trail as well as along the beachfront during normal refuge hours. All new construction will be done in such a way as to minimize impacts to refuge resources. Some conflict between refuge users is expected to result in short-term moderate adverse impacts, which will be managed through seasonal closures. These seasonal closures apply mostly to non-consumptive users during the hunting season. Other seasonal closures are in place to minimize wildlife disturbance.

- Bicycling is allowed on roads, paved trails or others designated for bicycle use.
- The Herbert H. Bateman Educational and Administrative Center is open daily.
- The following activities are prohibited, including, but not limited to: ice skating, camping, rollerblading, geocaching/metal detecting, off-road and mountain biking, ATVs, picnicking, pets, operation of model boats and airplanes, soliciting of funds (per 50 CFR 27.97 for Private Operations and per 50 CFR 27.86 for Begging), and other activities identified in 50 CFR Part 27.
- All boaters would be required to operate their craft and possess all safety equipment in accordance with Commonwealth of Virginia and U.S. Coast Guard Regulations.

(e) Why is this use being proposed?

Wildlife observation, wildlife photography, and interpretation are Priority Public Uses as defined by The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57), and if compatible, are to receive enhanced consideration over other general public uses.

These uses are conducted to provide compatible educational and recreational opportunities for visitors to enjoy the resource and to gain understanding and appreciation for fish, wildlife, wildlands ecology, the relationships of plant and animal populations within the ecosystem, and wildlife management. These uses will provide opportunities for visitors to observe and learn about wildlife and wildlands at their own pace in an unstructured environment and to observe wildlife habitats firsthand. These uses will enhance the public's understanding of natural resource management programs and ecological concepts to enable the public to better understand the problems facing our wildlife/wildlands resources, to realize what effect the public has on wildlife resources, to learn about USFWS's role in conservation, to better understand the biological facts upon which USFWS management programs are based, and to foster an appreciation for the importance of wildlife and wildlands. It is anticipated that participation in these uses will result in a more informed public, with an enhanced stewardship ethic and enhanced support and advocacy for wildlife conservation.

These uses will also provide an intrinsic, safe, outdoor recreational opportunity in a scenic setting, with the realization that those who come strictly for recreational enjoyment will be enticed to participate in the more educational facets of the visitor use program, and can then become informed advocates for wildlife conservation.

AVAILABILITY OF RESOURCES:

Allowing the use of wildlife observation, photography, and interpretation is within the resources available to administer our Visitor Services program with the current level of participation.

Additional funding for visitor services' improvements can also come from entrance fee revenues, grant funds, and contributions. Compliance with refuge regulations is handled within the regular duties of the station Law Enforcement Officers. As funding is available, the refuge will complete and maintain projects and facilities. Volunteers and partners will be utilized to help with construction and maintenance.

Facilities or materials needed to support this use include maintaining access roads, parking areas, roadside pull-offs, kiosks, signs, the visitor center exhibits, wayside exhibits, observation platforms, photography blinds and trails; creating new beach access road and bike trail, observation tower, accessible crabbing area and boat launch area; and providing information in refuge publications, social media sites, the refuge's website as well as other information sharing venues.

Sufficient staff and maintenance funding within our base budget as well as revenues generated from the refuge entrance fee program are available to make annual progress toward completion of all the projects described above and to maintain those already completed; however, additional funding will be needed to construct the road and trail system to the new recreational beach.

ANTICIPATED IMPACTS OF THE USE:

Anticipated impacts of the use can be divided into those associated without OSV, which encompass nearly all of the use, and those impacts associated with OSV which make up very little of the overall wildlife observation and photography use.

Non-OSV Use Impacts

Wildlife observation, photography and interpretation can result in varying impacts to wildlife resources. An effect of allowing visitor's access to the refuge will be the provision of additional wildlife-dependent recreational opportunities and a better appreciation and more complete understanding of the wildlife and habitats associated with the refuge, the Delmarva ecosystems, and the world at large.

Visitors engaging in these activities are expected to use and stay on trails or roads to access the interior of the refuge. This disturbance may displace individual animals to adjacent areas of the refuge.

The refuge expects that wildlife observation, wildlife photography, and interpretation will have short-term, long-term and cumulative positive impacts on the economies of the town and county in which the refuge lies. While not as significant as the summer beach tourism, visitors participating in these wildlife oriented recreational pursuits come in noteworthy numbers - staying and spending in the local community. Please refer Appendix M of the Draft CCP (*Chincoteague*

National Wildlife Refuge Economic Analysis In Support of Comprehensive Conservation Plan) for more detailed information. The relocation of the recreational beach and associated trails may elevate interest in the wildlife oriented recreational activities on the refuge resulting in an increased spending in the local community and region.

Wildlife observation, wildlife photography, and interpretation are expected to have negligible adverse short-term, long-term or cumulative impacts on soils, local or regional air quality, and hydrology or water quality. However, negative impacts to water quality can result from human activities. We will continue to address these through educational information and programming.

Wildlife observation, wildlife photography, and interpretation are expected to have negligible adverse short-term, long-term or cumulative impacts on vegetation. Disturbance to vegetation (both wetland and upland) will occur during the construction of new beach access road and bike trails as well as associated parking lots.

Disturbance factors resulting from visitor use are always considered for all state and Federal listed species. Of these, impacts on the shorebirds including the piping plover, red knot, upland sandpiper and Wilson's plover will be minimized through the seasonal closure of beachfront south of the designated year round OSV zone from March 15 through September 15. Other than during the construction period, the proposed activities would not likely affect the Delmarva fox squirrel. The bald eagle, while no longer listed as a state or Federal listed species, is still protected under the Bald and Golden Eagle Protection Act. Bald eagles may nest in areas visible to the public making for excellent wildlife observation, interpretative and photography opportunities. At this time these activities are not expected to have any negative impacts on bald eagles

Wildlife observation, wildlife photography, and interpretation are expected to have negligible adverse short-term, long-term or cumulative impacts on waterfowl. Reducing access north of the new recreational beach area will provide waterfowl sanctuaries which will minimize some of these impacts and allow waterfowl to have undisturbed areas during biologically critical periods of the day.

This use is expected to have negligible adverse short-term, long-term or cumulative impacts on shorebirds and landbirds. We expect indirect impacts to landbirds to increase due to the proposed beach access road and trail construction and use. Visitor use activities including wildlife observation, wildlife photography and interpretation are expected to increase in these areas as well; however, after construction, disturbance to landbirds in proposed areas for interpretation, wildlife observation and photography is expected to be negligible since all visitors will be required to be on designated walking trails and access roads.

Wildlife observation, wildlife photography and interpretation are expected to have negligible adverse short-term, long-term or cumulative impacts on secretive marsh and waterbirds. We expect negligible increased impacts to secretive marsh and waterbirds due to proposed expansions

in visitor use activities as they will be offset by fewer disturbances in current visitor use areas. The construction of a bike trail to the new beach area has the potential to increase disturbance to secretive marsh and waterbirds; however, this is a short-term impact.

Wildlife observation, wildlife photography, and interpretation are expected to have negligible adverse short-term, long-term or cumulative impacts on mammals. In general, the presence of humans would disturb most mammals, which would typically result in indirect short-term adverse impacts, which would be negligible because they would not cause long-term effects on individuals and populations.

Refuge strategies for conserving and maintaining biological integrity, diversity, and environmental health, restoring native plant communities, improving habitat conditions for the endangered Delmarva fox squirrel, and controlling invasive or nuisance species would be management actions incorporated in all alternatives and would provide beneficial impacts on mammals. Each of these actions would directly or indirectly benefit mammalian populations over the long term by ensuring the continuation of quality natural habitats on the refuge for resident mammalian wildlife.

Vehicles would be restricted to roads and harassment or taking of any wildlife other than legal game species would not be permitted.

The beneficial impacts of providing the existing level of wildlife-dependent activities, with some modest increases, include helping meet existing and future demands for outdoor recreation as indicated in the 2012 USGS National Visitor Survey. Visitor use appears to be remaining fairly steady in recent years, but we want to continue to improve our opportunities to expand the knowledge base of our visitors on environmental concerns. The economic benefits of increased tourism would also benefit local communities.

Some conflict between wildlife observers, photographers and other refuge users is expected to result in short-term moderate adverse impacts, which will be managed through seasonal closures. In addition, while new visitors become familiar with those changes, violations could increase.

Guided tour activities should not conflict with other refuge users as the CNHA tour bus will be operating north of the new recreational beach. Operation/tours of the Assateague Island Lighthouse and future renovation/operation/Interpretation of the lightkeeper's house by CNHA are occurring in areas not currently open for self guided use.

New or expanded visitor services programs, such as installation of an eBird kiosk, and/or facilities, such as a new visitor contact station, are expected to increase public awareness of, and visitation to, the refuge, and would enable staff to provide better customer service. We would expect a certain level of inconvenience during the construction of refuge facilities. The adverse effects

generally are short-term, and more than offset by the long-term gains in public education and appreciation. Impacts to refuge resources are expected to be negligible.

OSV Impacts

The activity of wildlife observation and photography, by itself, has no significant impact to migratory birds due to disturbance. However, the use of OSVs to gain access to remote southernmost areas of Assateague Island must be reviewed.

Migratory birds - Since the use of OSVs will occur along the Atlantic ocean beachfront, impacts to migratory birds will generally be restricted to shorebirds. The refuge consulted with the USFWS Ecological Services Virginia Field Office who issued a Biological Opinion on the impacts of OSV use, among other uses, on piping plovers. The impacts described therein can be extrapolated to other shorebirds.

The refuge has been designated as internationally important for shorebirds by the Western Hemisphere Shorebird Reserve network. It is an important staging area and provides habitat for shorebirds during both spring and fall migrations. Nesting species include piping plover, American oystercatcher, willet, common and least tern, and black skimmer. Spring migration generally runs from early April to early June, when thousands of shorebirds use refuge habitats. Dunlin and sanderling are predominant during early spring migration, while semipalmated sandpiper makes up nearly half of those birds counted during late spring migration. The peak of fall migration occurs from July through September with semipalmated and least sandpipers accounting for the majority of individuals. The red knot, which is proposed for listing under the Endangered Species Act, also uses the refuge during spring and fall migration.

Motorized vehicle use on beaches is an extreme threat to piping plovers, as well as other shorebirds that nest on beaches and dunes. Vehicles can crush eggs, adults, and chicks (Wilcox 1959, Tull 1984, Burger 1987, Patterson et al. 1991). In Massachusetts and New York, 18 piping plover chicks and 2 adults were killed by off-road vehicles (ORVs) in 14 documented incidents (Melvin et al. 1994). Goldin (1993) compiled records of 34 chick mortalities (30 on the Atlantic Coast and 4 on the Northern Great Plains) due to vehicles. Biologists who monitor and manage piping plovers believe that vehicles kill many more chicks than are found and reported (Melvin et al. 1994). Beaches used by recreational vehicles during nesting and brood-rearing periods generally have fewer breeding plovers than available nesting and feeding habitat can support. In contrast, plover abundance and productivity has increased on beaches where recreational vehicle restrictions during chick-rearing periods have been combined with protection of nests from predators (Goldin 1993) (USFWS 2008a). It has been documented that piping plover chicks will tend to run along ruts caused by vehicles and remain motionless as vehicles approach (USFWS 1996). Piping plover chicks may also have difficulty crossing deep ruts and moving quickly enough out of a vehicle's path. Additionally, piping plovers tend not to reach their full habitat carrying capacity on beaches where vehicles are allowed during the nesting and brood rearing periods (USFWS 1996).

To mitigate for these potential negative impacts, the refuge has instituted seasonal closures for surf fishermen, horseback riders, and OSV users. The beach habitats of Toms Cove Hook are the most productive on the refuge for nesting and staging shorebirds. As noted above, the Toms Cove Hook portion of the surf fishing, horseback riding and OSV zone is closed from March 15 through September 15 annually, and later if unfledged birds remain in the area. The closure period also encompasses the peak times of spring and fall migration, thus providing undisturbed habitat for shorebirds during the most critical times of year.

The closures extend from the nest site a distance of 200 meters (656 feet) north. It is possible that some nests may not be discovered, and the presence of nest searchers may also cause direct loss if eggs are inadvertently crushed. In either of these situations, there could be negative impacts to nesting shorebirds. When the recreational beach area is moved to a more northern location, as is proposed in the draft CCP/EIS (alternative B), the Overwash area would be managed identically with the Toms Cove Hook portion, which will provide added protection to birds using the Overwash area.

OSV users may encounter shorebirds at times outside of the closure period. During this time, all birds should be capable of flight, and therefore can travel short distances to other high quality, undisturbed portions of the refuge, such as the bay side of Toms Cove. There could be some negative impacts due to birds expending energy to travel away from preferred feeding or resting areas.

Based on a review of the literature, with seasonal closures in place, and if nest searches in the Overwash zone are conducted thoroughly and professionally, the direct, indirect, and cumulative impacts of OSV use to shorebirds should not be significant.

Threatened and endangered species - This section assesses impacts to federally listed threatened and endangered species: piping plover, sea turtles, and seabeach amaranth.

Piping plover impacts are covered above under migratory shorebird impacts.

Sea turtles - Five species of federally-listed sea turtles use Assateague Island's ocean and bay waters. The leatherback sea turtle, which is also a state listed, Kemp's Ridley sea turtle, and the Atlantic hawksbill are Federal endangered species. The loggerhead sea turtle and green sea turtle are Federal threatened, with the loggerhead also being state threatened. The loggerhead sea turtle nests on Assateague Island, which is the northern extent of its breeding range. To date, there has been no confirmed nesting by green or leatherback sea turtles within CNWR although both these species have been seen in waters off Virginia's barrier islands during the nesting season. Dead stranded turtles of these species are occasionally found on CNWR beaches. However, with the average global air and water temperatures rising, refuge beaches may become more favorable for these species (USFWS 2008c).

Nesting activity on Assateague and NASA Wallops Islands has risen noticeably in recent years, perhaps the result of a loggerhead translocation project. From 1969 -1979 sea turtle eggs from nests laid on Cape Island of Cape Romain National Wildlife Refuge, Charleston County, SC were relocated to CNWR. During, and the first two decades following, the relocation program (1970–1999) staff recorded 16 crawls on Assateague and NASA Wallops; ten resulted in nests and six were false crawls, meaning no nest was made. Loggerhead sea turtles take 30 years to reach maturity, so females that were part of the transplant project may now be returning to their hatch and release sites. Loggerhead nesting activity from 2000–2012 on Chincoteague Island had a total of 66 crawls; 23 resulted in nests and 43 were false crawls (CNWR unpubl. database). Eleven of the nests were located on Wild Beach, north of the recreational beach in an area closed to all OSV use. Eight nests were located on the Recreational beach area and OSV zone (5 at the Overwash and 3 on public beach). These nests were monitored and managed in accordance with the Chincoteague NWR Intra-Service Section 7 and Biological Opinion (USFWS 2008). The other four nests were located south of the recreational beach on the Toms Cove Hook area.

OSV use poses a risk of injury to females and live stranded turtles, can leave ruts that trap hatchlings attempting to reach the ocean (Hosier et al. 1981, Cox et al. 1994), can disturb adult females and cause them to abort nesting attempts, and can interfere with sea-finding behavior if headlights are used at night (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991). Driving directly above incubating egg clutches can cause sand compaction, which may decrease hatching and emergence success and directly kill pre-emergent hatchlings (National Marine Fisheries Service and U.S. Fish and Wildlife Service 2007). Artificial lighting on human structures may affect turtle behavior in a similar manner (Witherington and Martin 1996). When artificial lighting impairs sea-finding behavior of nesting females and emerging hatchlings, the affected animals face increased exposure to the elements and predation.

To mitigate for potential impacts to sea turtles, the following protocols will be implemented: Sea turtle crawl searches will be conducted in the morning hours during piping plover monitoring and avian predator management to ensure nest protection procedures begin as soon as possible. All sea turtle nests will be marked, thus establishing a buffer zone, to protect the nest from recreation-related human activity. Staff or volunteers will place a minimum of four informative “Area Closed” signs forming a 5 ft radius around the nest. Rope will be strung between the signs to discourage vehicles and pedestrians from trespassing into the nest site. OSV access will occur outside this buffer zone.

OSVs are prohibited from the recreational beach. However, headlights from the parking lot or adjacent OSV zone will have the potential to affect hatchling emergence to the ocean. Staff will erect a light and hatchling emergence barrier around the 5 ft. radius buffer zone into the intertidal zone in both the OSV Zone and recreational beach area.

In this scenario, the beach is wide enough to allow OSVs to travel landside of the nest without adversely affecting dune or vegetated habitats; therefore staff will continue to allow OSV traffic west of the nest. Pedestrians may access areas west of the nest or within the intertidal zone. Because a light and hatchling emergence barrier will be in place during the entire hatch window, a nest sitter will not be present at night.

Staff will erect a light and hatchling barrier around the 5 ft. radius buffer zone and toward the intertidal zone. A corridor will be created near the intertidal zone for OSV and pedestrian access. A nest sitter will open the access corridor to the public one hour after sunrise. A nest sitter will close the corridor at sunset.

Management activities on the refuge should have a net positive effect on sea turtle nesting due primarily to in situ protection of nests. Active and passive predator control, conducted primarily for plover nest protection, will also help nesting sea turtles by reducing the number of potential sea turtle nest predators on the refuge. All sea turtle nests will be left in place and protected from threats as outlined in the attached Intra-Service Section 7 Biological Evaluation Form (USFWS 2008). Following the protocols established in Enclosure 1, CNWR staff will make a determination of how to provide protection to each nest based on the nest timing, location, and any possible site-specific issues. All turtle nests on Assateague will be excavated to confirm the presence of eggs. While this excavation process has a slight possibility of damage to the eggs, it is a standard procedure recommended and used by all sea turtle experts in the United States. The nests will then be protected by predator exclosures and symbolic fencing to prevent public trespass. Any turtle nests that occur in the Overwash zone when that area is re-opened to vehicles after the end of the plover nesting season (generally about September 15), will also be protected with a light barrier.

Seabeach amaranth - Seabeach amaranth is an annual plant and a member of the Amaranth family (Amaranthaceae). Upon germination, the plant initially forms a small, unbranched sprig, but soon begins to branch profusely, forming a low-growing mat. It was added to the List of Endangered and Threatened Wildlife and Plants (50 CFR 17.12) as a threatened species.

Population numbers at the refuge have been low, and limited primarily to beach areas north of the recreational beach. The number of plants within the refuge has experienced major fluctuations in numbers since its rediscovery in 2001. In 2005, a record 69 plants were documented outside of the OSV zone. The numbers dropped to 13 plants in 2006, 2 plants in 2011, and no plants were found in 2012.

OSV use on the beach during the growing season can have detrimental effects on the species, as the fleshy stems of this plant are brittle and easily broken. Plants generally do not survive even a single pass by a truck tire (Weakley and Bucher 1992). Sites where vehicles are allowed to run over seabeach amaranth plants often show severe population declines. Dormant season OSV use has shown little evidence of significant detrimental effects, unless it results in massive physical

erosion or degradation of the site, such as compacting or rutting of the upper beach. In some cases, winter OSV traffic may actually provide some benefits for the species by setting back succession of perennial grasses and shrubs with which seabeach amaranth cannot compete successfully. However, extremely heavy OSV use, even in winter, may have some negative impacts, including pulverization of seeds (Weakley and Bucher 1992).

As noted above, no seabeach amaranth plants have been found within the OSV zone. Activities by refuge staff for management and protection of nesting plovers and sea turtles have a net positive effect on seabeach amaranth, in that the plants are often found during these other management activities, which result in better protection of the plants. The refuge staff annually surveys for the plant and records any locations. If plants are found in public OSV use areas, signs and symbolic fencing will provide protection and reduce the risk of inadvertent disturbance to plants. As a result of closure of nesting areas for protection of the plover and sea turtles, seabeach amaranth that occur in these areas can complete most of its life cycle removed from the threat of crushing from public OSV use. Crushing of a plant or plants by the public, staff, or OSVs may occur in some circumstances, but is unlikely due to the actions taken by the refuge to protect the dune and beach areas. Refuge prohibitions on OSV use in the dunes, and efforts to educate the public should decrease trampling in almost all cases. This form of take is considered insignificant (USFWS 2008a).

Wetlands - The OSV zone is located within the intertidal zone and beachfront area, therefore there will be no wetland impacts.

Recreation - The purpose of continuing to permit OSV use on the refuge is to facilitate wildlife observation and photography, which are both priority recreational uses of the Refuge System. Allowing this use will provide additional opportunities in areas that would be difficult to access without the use of vehicles. Therefore the impact on these recreational users will be positive. While seasonal closures will limit the times and locations that these activities may occur, they are necessary to protect numerous wildlife species that use these same locations.

There is the potential of user conflicts in the OSV zone, especially when vehicles are in use in the presence of pedestrians engaging in wildlife observation or photography, or surf fishermen and/or horseback riders. Times when vehicles are actually in use will be limited. The majority of refuge beach is open for pedestrian use and restricted from OSV use, so there is sufficient opportunity for users to engage in their respective activities without causing disturbance to other users.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day

review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

The refuge will manage these three priority visitor uses (wildlife observation, photography, and interpretation) in accordance with Federal and State regulations and will review it annually to ensure high quality wildlife dependent recreational opportunities are achieved and that these programs are providing safe experiences for participants. The refuge based these stipulations on current practices, the draft CCP/EIS, and refuge-specific regulations.

To ensure compatibility with refuge purposes and the mission of the Refuge System, wildlife observation, photography and interpretation can occur on the refuge if the refuge-specific regulations are followed and following stipulations are met:

- This use must be conducted in accordance with Commonwealth of Virginia and Federal regulations (50 CFR), and special refuge-specific regulations published in refuge brochures.
- The visitor use program will be reviewed annually to ensure that it contributes to refuge objectives in managing quality recreational opportunities and protecting habitats, and is subject to modification if on-site monitoring by refuge personnel or other authorized personnel results in unanticipated negative impacts to natural communities, wildlife species, or their habitats or other refuge uses. Refuge Law Enforcement Officer(s) will promote compliance with refuge regulations, monitor visitor use patterns and public safety, and document visitor interactions. Refuge Law Enforcement personnel will monitor all areas and enforce all applicable State and Federal Regulations.
- All boats must be off the water by sunset.
- Visitors must stay on the designated trail routes and areas.
- Opportunities for wildlife observation, wildlife photography and environmental interpretation are available via existing roads and trails and along the newly constructed beach access road and bike trail during normal operational hours. Best construction practices will be used when developing the new beach access road and trail as well as any other visitor use facility to minimize impacts to refuge resources. Moderate beneficial impacts are expected. Some conflict between refuge users is expected to result in short-term moderate adverse impacts, which will be managed through seasonal closures. These seasonal closures are highlighted below and apply mostly to non-consumptive users during the hunting season. Other seasonal closures are in place to minimize wildlife disturbance.

- All beach areas on Assateague Island south of the new established year round OSV area will be closed to all visitor use from March 15 until September 15 or until the last shorebird fledges due to nesting of federally threatened piping plovers as well as other shorebirds.
- All trails south and east of the Administrative Office and the New Beach Access Road may be closed for Big Game Hunting during the Fall and Winter months.
- Staffing of the Assateague Island Lighthouse and operation of the Wildlife Tour Bus is provided by the Chincoteague Natural History Association (CNHA). Operations vary throughout the year but daily access is provided during the busier visitor use periods with weekend access during the shoulder season and very limited or no access during the winter months.
- The Herbert H. Bateman Educational and Administrative Center is open daily throughout the year.
- All access north of the new recreational beach would be closed except via the beachfront within the intertidal zone.
- Staff and/or volunteer guided interpretative programs may occur year round but are concentrated in the busier visitor use periods.
- Beachfront access on the southern islands outside of the nesting season (March 15 to September 15) would be permitted for these activities and outside of the safety and security zone established by NASA on Assawoman Island. As Metompkin and Cedar Islands have other ownership as well, visitors should consult with those entities prior to visiting.
- Pets are not permitted on the refuge.
- Bicycling is allowed only on roads, hard surfaced trails and the Beach Road Bike trail.
- The following activities are prohibited, including, but not limited to: ice skating, camping, rollerblading, geocaching/metal detecting, off-road and mountain biking, ATVs, picnicking, pets, operation of model boats and airplanes, soliciting of funds (per 50 CFR 27.97 for Private Operations and per 50 CFR 27.86 for Begging), and other activities identified in 50 CFR Part 27.
- All boaters would be required to operate their craft and possess all safety equipment in accordance with Commonwealth of Virginia and U.S. Coast Guard Regulations.
- Beach access will occur only on refuge owned lands on the sandy part of the beach from the toe of the dunes to the Atlantic Ocean (mean high water demarcation to mean low water demarcation). Parking lots with a dune crossover provides access to the beach. Access on the dune and adjacent marshes is prohibited. No refuge-specific permits are required.
- Access to closed areas or use during the refuge's closed hours requires a special use permit, which is subject to the refuge manager's approval, unless the activity is in conjunction with a refuge staff- or volunteer-led program.
- Changes outlined in the CCP dealing with closed and seasonally closed areas and visitor use regulations, when approved, will be incorporated into their respective visitor use program.

CONCURRENCE:

Regional Chief: _____
(Signature) (Date)

MANDATORY 15 YEAR RE-EVALUATION DATE:

COMPATIBILITY DETERMINATION

USE:

Environmental Education

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C. 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

“ ... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”
16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant

resources and their habitats within the United States for the benefit of present and future generations of Americans.

DESCRIPTION OF USE:

(a) What is the use? Is the use a priority public use?

The use is environmental education. This is a priority public use identified by Executive Order 12996 (March 25, 1996) and by the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

(b) Where would the use be conducted?

The use would occur on Chincoteague NWR at the following locations:

Environmental Education Trail: In 2001, the refuge completed construction of an environmental education trail and study area (approximately 1 mile in length) that is designated specifically for curriculum-based educational programming and group activities. The trail, located just west of the historic Assateague Lighthouse provides students with access to several refuge habitats including freshwater and saltwater wetlands and maritime forest. (Note: The Environmental Education Trail is closed to general public access and is not depicted on general refuge map graphics found in publications and on wayside exhibits).

Herbert H. Bateman Educational and Administrative Center(HHBEAC): This education center was completed in 2003 and provides students and teachers with access to 5,000 square feet of exhibits, a 125-seat auditorium, a classroom/wet lab, and a teacher resource room. In total, approximately 9,000 square feet of visitor services space is available to host environmental education programming.

Self-Guided Trails: The following trail systems may also be used for environmental education programming: Wildlife Loop (3.2 miles), Woodland Trail (1.6 miles), Lighthouse Trail (.25 miles), Marsh Trail (.5 miles), Black Duck Trail (1 mile), Swan Cove Trail (.5 miles), and Bivalve Trail.

National Park Service Assigned Area: This assigned area includes the recreational beach, adjacent parking lots, and the visitor contact station.

Toms Cove: Several formal and informal trails provide access to Toms Cove and the associated marshes for multiple uses, including environmental education.

Service Road: Several educational study areas have been identified along the Service Road and are used predominantly by the Marine Science Consortium, which provides students with invaluable field experiences in Ecology, Biology, Marine Science, and Environmental Science.

Websites: A variety of pre- and post-visit activities are available on the refuge's and NPS websites.

- <http://www.fws.gov/northeast/chinco/>
- <http://www.nps.gov/asis>

(c) When would the use be conducted?

Opportunities for environmental education (EE) exist year-round, during authorized refuge hours of operation, which vary on a seasonal basis.

- The highest demand for ranger led EE programs occurs in spring (March through mid-June) and fall (September through October).
- Self guided EE may occur in buildings and on trails during normal operational hours.

(d) How would the use be conducted?

A refuge staff member will serve as the primary point of contact, facilitating the coordination and scheduling of all EE requests being conducted on the refuge. For programs conducted by refuge staff, at least three people must be available for EE from September through mid-June on Wednesday-Friday. From March through mid-June, staff can be expected to be needed every Wednesday through Friday.

The EE Coordinator will manage classroom reservations and it may only be reserved by refuge staff and by partners (CNHA, NPS and Marine Science Consortium) for periods of more than three weekdays in a row during the months of September to February and mid-June to August to ensure it is available for educational use. From March to mid-June, the classroom cannot be scheduled for more than one weekday or for a Friday by an outside organization. Weekend days are exempt from this limitation.

The EE Coordinator will manage auditorium reservations. Auditorium videos will be shown upon request or upon need determined by the staff person working in the HHBEAC from September through mid-June on weekdays. However, the auditorium will be reserved if an EE program is scheduled as notified by the EE coordinator. Even if the EE program is scheduled for outside, the EE program leader will notify the HHBEAC personnel if they would like to keep the auditorium reserved as a backup for inclement weather. Weekend days are exempt from this limitation.

Group tours of exhibits may be self-guided or teacher-guided. If groups request a guided tour, it will be at the discretion of the person scheduling and/or conducting the program, and may depend upon availability of staff, group size, previous visit experience and specific interest.

Minimum scheduling time requirements (including introduction in auditorium, travel time to program location, bathroom time, and program implementation):

- Habitat Hunting: 1.5 hours (actual program time-1hour)
- The Human Connection: 1.5 hours (actual program time-1hour)

- Wildlife and Technology: 2 hours (actual program time-1.5 hours)
- Group consisting of 2 classes for outside or outside/inside field trip: 3 hours
- Group consisting of 3 classes for an outside or outside/inside field trip: 4 hours
- Group consisting of 4 classes for an outside or outside/inside field trip: 5 hours
- Group consisting of 2 classes for an inside program: 1.75 hours
- Group consisting of 3 classes for an inside program: 2.75 hours
- Group consisting of 4 classes for an inside program: 3.5 hours

Groups arriving less than 30 minutes late will have one of their programs (their first program) shortened by the corresponding amount of time. All of their other scheduled programs will remain on schedule. Groups arriving over 30 minutes late will have one (or more if warranted) of their programs cancelled. Teachers and students can utilize any leftover time in the exhibits, watching a video in the auditorium, or on the refuge.

Access for non motorized, hand carried watercraft (including but not limited to kayaks, canoes, kite boards, sail boats and sailboards) into Toms Cove and Assateague Channel will be available from a launch site near the terminus of Beach Road.

(e) Why is this use being proposed?

Environmental education is a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997. EE programs instill learning and awareness, knowledge, attitudes, skills, and commitment to conserve natural resources and to continuously revisit and explore scientific, biological, historical, and societal issues related to conservation (USFWS policy 605 FW 6).

It must be clearly noted that the goal of EE is not environmental advocacy. It is to teach learners how to become aware, ask questions, seek evidence and formulate their own, unique, creative thoughts about the environment and conservation.

The Marine Science Consortium, located near the Wallops Flight Facility, has been conducting Environmental Education on the refuge since 1971. During an average year their students make about 4,000 visits to the refuge. A special use permit allows the groups to use seine nets, dip nets, shovels, sediment sieves, and environmental monitoring equipment at the future terminus of Beach Road near Toms Cove and within the recreational beach area, Black Duck Pool and Swan Cove Pool impoundments, the Woodland Trail, and other approved educational areas along the Service Road.

AVAILABILITY OF RESOURCES:

Allowing the use of environmental education is within the resources available to administer our current level of participation and to ensure that the use remains compatible with the refuge purposes. Additional funding for visitor services improvements and EE can also come from

entrance fee revenues, grant funds, and contributions. Compliance with refuge regulations is handled within the regular duties of the Station Law Enforcement Officers. As funding is available, the refuge will complete and maintain projects and facilities. Volunteers and partners will be utilized to help with construction, maintenance, and with conducting EE activities.

Facilities or materials needed to support this use include maintaining access roads, parking areas, roadside pull-offs, kiosks, signs, the Visitor Center, wayside exhibits, observation platforms, photography blinds, accessible crabbing areas, and trails; creating new beach access road and bike trail, observation tower, accessible crabbing area and boat launch area; and providing information in refuge publications, social media sites, the refuge's website as well as other information sharing venues.

Sufficient staff and maintenance funding within our base budget is available to make annual progress toward completion of all the projects described above and to maintain those already completed; however, additional funding and staff will be needed to grow the program to its full potential as identified in USFWS's "Conserving the Future" document to inventory existing environmental education efforts on refuge, identify priorities for growth, and outlines basic standards of learning in accordance with Commonwealth of Virginia and State of Maryland educational guidelines.

ANTICIPATED IMPACTS OF THE USE:

Visitor use activities currently occurring on the refuge have been analyzed for impacts to wildlife and habitat and are expected to have a short term negative impacts on vegetation. EE could alter habitats by trampling vegetation, compacting soils, and increasing the potential of erosion.

Repeated visitation to any particular locale at the refuge could cause damage to vegetation and therefore, wildlife habitat. Substantial, widespread habitat degradation is not expected due to the limited and regulated occurrence of this activity. For EE, impacts would be minimal since groups use designated areas created to traverse through habitat which prevents additional vegetation impacts.

EE can result in positive impacts to the wildlife resource. Allowing visitors to participate in EE leads to a better appreciation and more complete understanding of the wildlife and habitats associated with the refuge, the Delmarva ecosystems, and the world at large.

Disturbance factors resulting from public use are always considered for all listed threatened or endangered species. Of these, impacts the threatened piping plover, along with other shorebirds such as the red knot, upland sandpiper and Wilson's plover, will be minimized through the seasonal closure of beach front south of the designated OSV parking area from March 15 through September 15. Other than during the construction period, the proposed activities would not likely affect the Delmarva fox squirrel. Areas near active bald eagle nests will be restricted to all activities and access, in accordance with Federal, State and refuge specific guidelines.

EE activities are expected to have negligible adverse short-term, long-term or cumulative impacts on waterfowl, shorebirds and landbirds. Providing areas north of the recreational beach area will provide waterfowl sanctuaries which will minimize some of these impacts and allow waterfowl to have undisturbed access to these areas during biologically critical periods. We expect indirect impacts to landbirds to increase due to the proposed beach access road and trail construction and use. EE activities are expected to increase in these areas as well; however, after construction disturbance to landbirds in proposed areas is expected to be negligible since all visitors will be required to be on designated walking trails and access roads.

Impacts to fisheries from visitors engaged in environmental education are expected to be temporary and minor. While students use sampling techniques such as seine and dip nets to collect organisms, all are returned to the collection area immediately following study. Specimens are collected, stored and observed in containers designed to minimize harm or long term impact. Any non-threatened and/or endangered organisms temporarily removed from the aquatic environment are insignificant to the overall population.

The beneficial impacts of providing the existing level of wildlife-dependent activities, with some modest increases, include helping meet existing and future demands for outdoor recreation as indicated in the 2012 USGS National Visitor Survey. Visitor use appears to be remaining fairly steady in recent years, but we want to continue to improve our opportunities to expand the knowledge base of our visitors on environmental concerns. The economic benefits of increased tourism would also benefit local communities.

Some conflict between EE activities and other refuge users is expected to result in short-term moderate adverse impacts, which will be managed through seasonal closures.

New or expanded visitor services programs and/or facilities are expected to increase public awareness of, and visitation to, the refuge, and would enable staff to provide better customer service. We would expect a certain level of inconvenience during the construction of refuge facilities. The adverse effects generally are short-term, and more than offset by the long-term gains in public education and appreciation. Impacts to refuge resources are expected to be negligible.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

The refuge will manage environmental education in accordance with Federal and State regulations and review it annually to ensure wildlife and habitat goals are achieved and that these programs are providing safe, high quality experiences for participants. The refuge based these stipulations on current practices, the draft CCP/EIS, and refuge-specific regulations (See Description of Use section).

To ensure compatibility with refuge purposes and the mission of the Refuge System, environmental education can occur on the refuge if the refuge-specific regulations are followed and following stipulations are met:

- This use must be conducted in accordance with state and federal regulations (50CFR), and special refuge-specific regulations published in refuge brochures.
- The visitor use program will be reviewed annually to ensure that it contributes to refuge objectives in managing quality recreational opportunities and protecting habitats, and is subject to modification if on-site monitoring by refuge personnel or other authorized personnel results in unanticipated negative impacts to natural communities, wildlife species, or their habitats. Refuge Law Enforcement Officer(s) will promote compliance with refuge regulations, monitor public use patterns and public safety, and document visitor interactions. Refuge Law Enforcement personnel will monitor all areas and enforce all applicable State and Federal Regulations.
- A special use permit may be required to conduct environmental education in designated areas to reduce the possibility of disturbance.
- All boats must be off the water at sunset.
- Visitors must stay on the designated trail routes and areas.
- Opportunities for environmental education are available via existing roads and trails and along the newly constructed beach access road and bike trail during normal operational hours. Best construction practices will be used when developing the new beach access road and trail as well as any other visitor use facility to minimize impacts to refuge resources. Moderate beneficial impacts are expected. Some conflict between refuge users is expected to result in short-term moderate adverse impacts, which will be managed through seasonal closures. These seasonal closures are highlighted below and apply mostly to non-consumptive users during the hunting season. Other seasonal closures are in place to minimize wildlife disturbance.
- All beach areas on Assateague Island south of the new year-round OSV area will be closed to all public use from March 15 until September 15 or when the last shorebird fledges due

to nesting of federally threatened piping plovers as well as other shorebirds. All trails south and east of the Administrative Office and the New Beach Access Road may be closed for big game hunting during the fall and winter months.

- Staffing of the Assateague Island Lighthouse and operation of the Wildlife Tour Bus is provided by the Chincoteague Natural History Association (CNHA). Operations vary throughout the year but daily access is provided during the busier public use periods with weekend access during the shoulder season and very limited or no access during the winter months.
- The Herbert H. Bateman Educational and Administrative Center is open daily throughout the year.
- All access north of the new recreational beach would be closed except via the beachfront.
- Staff and/or volunteer guided environmental education programs may occur year around but are concentrated in spring and fall months.
- All boaters would be required to operate their craft and possess all safety equipment in accordance with Commonwealth of Virginia and U.S. Coast Guard regulations.
- Beach access will occur only on refuge owned lands on the sandy part of the beach from the toe of the dunes to the Atlantic Ocean (mean high water demarcation to mean low water demarcation). Parking lots with a dune crossover provides access to the beach. Access on the dune and adjacent marshes is prohibited. No refuge-specific permits are required.
- Changes outlined in the finalized CCP dealing with closed and seasonally closed areas and public use regulations, when approved, will be incorporated into their respective public use program.

JUSTIFICATION:

Environmental education is a priority wildlife-dependent use for the National Wildlife Refuge System through which the public can develop an appreciation for fish and wildlife (Executive Order 12996, March 25, 1996 and the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57)). USFWS policy is to provide expanded opportunities for wildlife-dependent uses when compatible and consistent with sound fish and wildlife management, and ensure that they receive enhanced attention during planning and management.

These programs and activities are directed toward organized groups and individuals associated with academic institutions. Cooperative outdoor education programs significantly expand general and specialized educational opportunities for the public beyond what the refuge alone can provide.

Specific refuge regulations address equity and quality of opportunities for visitors and help safeguard refuge habitats. Impacts from this proposal, short-term and long-term, direct, indirect, and cumulative, are expected to be minor, and are not expected to diminish the value of the refuge for its stated objectives. Available parking and size of the facilities will typically limit use at any given time, except during special events.

Conflicts between visitors are localized and are addressed through law enforcement, public education, and continuous review and updating to public use regulations. Conflicts are further reduced by the establishment of seasonal area closures.

Stipulations above will ensure proper control of the means of use and provide management flexibility should detrimental impacts develop. Allowing this use also furthers the mission of the Refuge System by providing renewable resources for the benefit of the American public while conserving fish, wildlife, and plant resources on the refuge.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.

SIGNATURE:

Refuge Manager: _____
(Signature) (Date)

CONCURRENCE:

Regional Chief: _____
(Signature) (Date)

MANDATORY 15 YEAR RE-EVALUATION DATE: _____

COMPATIBILITY DETERMINATION

USE:

Fishing (Recreational) – Finfish, Oysters, Clams, and Crabs

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

“... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”
16 U.S.C. § 715d (Migratory Bird Conservation Act)

“... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species”
“... 16 U.S.C. § 460k-1 “... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...” 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

“... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ...” 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

“... for the development, advancement, management, conservation, and protection of fish and wildlife resources ...” 16 U.S.C. § 742f(a)(4) “... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...” 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

“... for conservation purposes ...” 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act).

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:**(a) What is the use? Is the use a priority public use?**

The use is recreational fishing (finfish, oysters, clams, and crabs). Surf fishing, crabbing, and shell fishing are among the most popular wildlife-dependent recreational activities conducted on the refuge. Some of the fin fish common to the waters around the refuge are bluefish, striped bass, summer flounder, Atlantic croaker, spot, and red drum. Clearnose skate, bullfish, and southern stingrays may be caught, as well as smooth or spiny dogfish sharks. Fishing is a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act).

(b) Where would the use be conducted?**Assateague Island**

Surf fishing occurs along the Assateague Island beachfront from the Maryland/Virginia state line to “Fishing Point” on Toms Cove Hook. Access to the beachfront is permitted in two ways:

- 1) Foot access is allowed year round from the Maryland/Virginia state line to the southern terminus of the National Park Service recreational beach parking area.
- 2) Foot access and over sand vehicle (OSV) use/access is allowed from the National Park Service southernmost recreational beach parking area at Toms Cove to “Fishing Point” on Toms Cove Hook.

Access for surf fishing in the OSV Zone is further restricted by the following stipulations:

- 1) Upon completion of the CCP but prior to the relocation of the recreational beach, from March 15 to September 15, the area south of the recreational beach parking area is closed.
- 2) From September 16 through March 14, the surf fishing and OSV zone will again start at the southern terminus of the NPS recreational beach parking area at Toms Cove, then south along the Atlantic Ocean beachfront to “Fishing Point” on Toms Cove Hook, then returning by the same route. Walking and OSV use will generally be within the intertidal zone, unless OSVs are re-directed by signage to avoid sea turtle nest sites; vehicles are prohibited from the dunes or vegetated areas.

Shell fishing activities (clams, oysters, and crabs) are confined primarily to saltmarsh and mudflats within Toms Cove via Bivalve Trail. Additionally, crabbing is allowed within the borrow ditch running along Beach Road within Swan’s Cove Pool. To promote better access, a new fishing/crabbing dock is proposed to be built at the new Beach Road terminus.

Southern Island Units (Assawoman, North Metompkin, and Cedar Islands)

Fishing activities also occur on the Southern Island Units (Assawoman, North Metompkin, and Cedar Islands). Access is limited to boat use and there are time of year restrictions to portions of these islands due to threatened species nesting during the summer months. Assawoman Island would be completely closed to all forms of public use, including fishing, from March 15 through September 15 or thereafter, until the last shorebird fledges.

No data are available for use of these islands; however, information gathered during law enforcement patrols indicates that little of this use occurs on these islands.

(c) When would the use be conducted?

Surf fishing, clamming, crabbing and oyster harvest will be permitted during normal refuge hours of operation which are:

- May through September: 5 a.m. to 10 p.m.;
- October: 6 a.m. to 8 p.m.;
- November through February: 6 a.m. to 6 p.m.;
- March and April: 6 a.m. to 8 p.m.

In addition, on Assateague Island overnight fishing permits are available, at no cost, for nighttime surf fishing only. These “life time” permits may be obtained from the NPS at the Toms Cove Visitor Center or during the winter months at the Herbert H. Bateman Educational and Administrative Center. Permittees must be actively engaged in surf fishing at all times while on the refuge after the normal refuge hours listed above.

Additionally on Assateague Island,

- Overwash and Toms Cove Hook Area - Open from September 16 through March 14. If unfledged shorebirds remain in the surf fishing and OSV zone after September 15, the refuge manager will designate a closed area to protect these birds.
- The refuge manager may close the surf fishing and OSV zone at anytime for safety or security reasons.

(d) How would the use be conducted?

Visitors are allowed to fish, crab, oyster and/or clam in designated areas of the Refuge as these activities are deemed wildlife oriented and are promoted within the U.S. Fish and Wildlife Service, nationwide. Fishing, crabbing, clamming and oyster harvest would take place within the regulatory framework established by the Virginia Marine Resources Commission (VMRC) and the USFWS. Visitors are required to follow all Commonwealth of Virginia regulations, including possession of applicable licenses. Anglers age 16 and older must possess a valid Virginia Saltwater Fishing or Potomac River Fisheries Sport Fishing license. Anglers who are exempt from licensing and holders of out of state reciprocal licenses must register with the Virginia Fisherman Identification Program (FIP). In addition, the Refuge may impose stricter regulations as deemed necessary to maintain healthy populations of oysters and clams on Refuge tidal lands.

Overnight fishing permits are available, at no cost, for nighttime surf fishing. These “life time” permits may be obtained from the NPS at the Toms Cove Visitor Center or during the winter months at the Herbert H. Bateman Educational and Administrative Center. Permittees must be actively engaged in surf fishing at all times while on the refuge after the normal refuge hours.

(e) Why is this use being proposed?

Fishing, crabbing, clamming and oyster harvest are current recreational uses on the Refuge and are appropriate activities. Refuge expenses are very minimal aside from already existing standard law enforcement patrols to verify that regulations are being followed. This use supports wildlife dependent recreation as outlined in the Improvement Act.

Surf fishing was one of the first documented public recreational uses of the Chincoteague NWR (Assateague Island) soon after it was established. The first record of surf fishing appeared in the May-August 1944 refuge report. In most instances, fishermen boated to the "bow-of-the-beach" and walked over the over wash to fish on the ocean beach. In later years (1948), prior to the construction of the bridge to the island, anglers would drive down the beach from the Maryland end of Assateague Island to fish on the refuge. The construction of the bridge to Assateague Island in 1962 contributed to a significant increase in the general use of Assateague Island and subsequently to surf fishing on the refuge. Surf fishing, clamming, crabbing and oyster harvest continue to be popular family oriented recreational activities.

AVAILABILITY OF RESOURCES:

Permitting and oversight of recreational surf fishing, crabbing, clamming and oyster harvest is within the resources available to the Visitor Services and Law Enforcement programs to administer this use.

As indicated in the 2012 Memorandum of Understanding between the NPS and U.S. Fish and Wildlife Service (USFWS) for Interagency Cooperation at Assateague Island National Seashore and Chincoteague National Wildlife Refuge or subsequent agreements, the NPS will assist in the day-to-day management of OSVs used for surf fishing within the refuge by issuing permits, educating permit holders on OSV use regulations, and assisting the USFWS with enforcing OSV use regulations, creel limits, and closures (USFWS 2012). Responsibility of monitoring vehicles, maintenance of facilities, and law enforcement is delegated to qualified and available full time employees of either the NPS or USFWS. Refuge staff will ensure that closed areas are delineated and maintained to achieve maximum protection for beach nesting birds and carry out appropriate monitoring and management actions as required by the USFWS's Biological Opinion on monitoring and management practices for piping plover, loggerhead sea turtle, green sea turtle, leatherback sea turtle, and seabeach amaranth on Chincoteague National Wildlife Refuge, Virginia. These activities include searching for and monitoring piping plover and sea turtle nests, erecting exclosures, signage and barriers to protect nests, and "nest sitting" just prior to anticipated emergence of sea turtle hatchlings.

The USFWS and NPS both administer the day-to-day operation of the OSV permit program. Refuge costs are primarily staff time, with some expenditures for materials such as signs, posts, and fencing. Use of volunteer interns lessens the cost to the refuge, and fee receipts augment the refuge's annual operations and maintenance budget.

Within the annual refuge operations and maintenance budget, in combination with fee receipts, there is sufficient staffing and funding available to accomplish the tasks necessary to facilitate this use. The funding received by the refuge is adequate to ensure that the use remains compatible with refuge purposes.

ANTICIPATED IMPACTS OF USE:

The day-to-day activity of crabbing, clamming and oyster harvest is considered a consumptive use of renewable resources found on the Refuge. However, there are few adverse impacts from that harvest and there is no significant impact on migratory birds due to the small number of those resources that are harvested.

The activity of surf fishing, by itself, has no significant impact to migratory birds due to disturbance or the fish resources that are harvested. However, the use of OSVs to gain access to remote southernmost surf fishing areas of Assateague Island must be reviewed.

Migratory birds - Since the use of OSVs for surf fishing will occur along the Atlantic ocean beachfront, impacts to migratory birds will generally be restricted to shorebirds. The refuge consulted with the USFWS Ecological Services Virginia Field Office who issued a Biological Opinion on the impacts of OSV use, among other uses, on piping plovers. The impacts described therein can be extrapolated to other shorebirds.

The refuge has been designated as internationally important for shorebirds by the Western Hemisphere Shorebird Reserve network. It is an important staging area and provides habitat for shorebirds during both spring and fall migrations. Nesting species include piping plover, American oystercatcher, willet, common and least tern, and black skimmer. Spring migration generally runs from early April to early June, when thousands of shorebirds use refuge habitats. Dunlin and sanderling are predominant during early spring migration, while semipalmated sandpiper makes up nearly half of those birds counted during late spring migration. The peak of fall migration occurs from July through September with semipalmated and least sandpipers accounting for the majority of individuals. The red knot, which is proposed for listing under the Endangered Species Act, also uses the refuge during spring and fall migration.

Motorized vehicle use on beaches is an extreme threat to piping plovers, as well as other shorebirds that nest on beaches and dunes. Vehicles can crush eggs, adults, and chicks (Wilcox 1959, Tull 1984, Burger 1987, Patterson et al. 1991). In Massachusetts and New York, 18 piping plover chicks and 2 adults were killed by off-road vehicles (ORVs) in 14 documented incidents (Melvin et al. 1994). Goldin (1993) compiled records of 34 chick mortalities (30 on the Atlantic Coast and 4 on the Northern Great Plains) due to vehicles. Biologists who monitor and manage piping plovers believe that vehicles kill many more chicks than are found and reported (Melvin et al. 1994). Beaches used by recreational vehicles during nesting and brood-rearing periods generally have fewer breeding plovers than available nesting and feeding habitat can support. In

contrast, plover abundance and productivity has increased on beaches where recreational vehicle restrictions during chick-rearing periods have been combined with protection of nests from predators (Goldin 1993) (USFWS 2008a). It has been documented that piping plover chicks will tend to run along ruts caused by vehicles and remain motionless as vehicles approach (USFWS 1996). Piping plover chicks may also have difficulty crossing deep ruts and moving quickly enough out of a vehicle's path. Additionally, piping plovers tend not to reach their full habitat carrying capacity on beaches where vehicles are allowed during the nesting and brood rearing periods (USFWS 1996).

To mitigate for these potential negative impacts, the refuge has instituted seasonal closures for surf fishermen, horseback riders, and OSV users. The beach habitats of Toms Cove Hook are the most productive on the refuge for nesting and staging shorebirds. As noted above, the Toms Cove Hook portion of the surf fishing, horseback riding and OSV zone will be closed from March 15 through September 15 annually, and later if unfledged birds remain in the area. The closure period also encompasses the peak times of spring and fall migration, thus providing undisturbed habitat for shorebirds during the most critical times of year.

The closures extend from the nest site a distance of 200 meters (656 feet) north. It is possible that some nests may not be discovered, and the presence of nest searchers may also cause direct loss if eggs are inadvertently crushed. In either of these situations, there could be negative impacts to nesting shorebirds. When the recreational beach area is moved to a more northern location, as is proposed in the draft CCP/EIS (alternative B), the Overwash area would be managed identically with the Toms Cove Hook portion, which will provide added protection to birds using the Overwash area.

Surf fishermen and OSV users may encounter shorebirds at times outside of the closure period. During this time, all birds should be capable of flight, and therefore can travel short distances to other high quality, undisturbed portions of the refuge, such as the bay side of Toms Cove. There could be some negative impacts due to birds expending energy to travel away from preferred feeding or resting areas.

Based on a review of the literature, with seasonal closures in place, and if nest searches in the Overwash zone are conducted thoroughly and professionally, the direct, indirect, and cumulative impacts of OSV use for surf fishing to shorebirds should not be significant.

Threatened and endangered species - This section assesses impacts to federally listed threatened and endangered species: piping plover, sea turtles, and seabeach amaranth.

Piping plover impacts are covered above under migratory shorebird impacts.

Sea turtles - Five species of federally-listed sea turtles use Assateague Island's ocean and bay waters. The leatherback sea turtle, which is also a state listed, Kemp's Ridley sea turtle, and the

Atlantic hawksbill are Federal endangered species. The loggerhead sea turtle and green sea turtle are Federal threatened, with the loggerhead also being state threatened. The loggerhead sea turtle nests on Assateague Island, which is the northern extent of its breeding range. To date, there has been no confirmed nesting by green or leatherback sea turtles within CNWR although both these species have been seen in waters off Virginia's barrier islands during the nesting season. Dead stranded turtles of these species are occasionally found on CNWR beaches. However, with the average global air and water temperatures rising, refuge beaches may become more favorable for these species (USFWS 2008c).

Nesting activity on Assateague and NASA Wallops Islands has risen noticeably in recent years, perhaps the result of a loggerhead translocation project. From 1969 -1979 sea turtle eggs from nests laid on Cape Island of Cape Romain National Wildlife Refuge, Charleston County, SC were relocated to CNWR. During, and the first two decades following, the relocation program (1970–1999) staff recorded 16 crawls on Assateague and NASA Wallops; ten resulted in nests and six were false crawls, meaning no nest was made. Loggerhead sea turtles take 30 years to reach maturity, so females that were part of the transplant project may now be returning to their hatch and release sites. Loggerhead nesting activity from 2000–2012 on Chincoteague Island had a total of 66 crawls; 23 resulted in nests and 43 were false crawls (CNWR unpubl. database). Eleven of the nests were located on Wild Beach, north of the recreational beach in an area closed to all OSV use. Eight nests were located on the recreational beach area and OSV zone (5 at the Overwash and 3 on public beach). These nests were monitored and managed in accordance with the Chincoteague NWR Intra-Service Section 7 and Biological Opinion (USFWS 2008). The other four nests were located south of the recreational beach on the Toms Cove Hook area.

OSV use poses a risk of injury to females and live stranded turtles, can leave ruts that trap hatchlings attempting to reach the ocean (Hosier et al. 1981, Cox et al. 1994), can disturb adult females and cause them to abort nesting attempts, and can interfere with sea-finding behavior if headlights are used at night (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991). Driving directly above incubating egg clutches can cause sand compaction, which may decrease hatching and emergence success and directly kill pre-emergent hatchlings (National Marine Fisheries Service and U.S. Fish and Wildlife Service 2007). Artificial lighting on human structures may affect turtle behavior in a similar manner (Witherington and Martin 1996). When artificial lighting impairs sea-finding behavior of nesting females and emerging hatchlings, the affected animals face increased exposure to the elements and predation.

To mitigate for potential impacts to sea turtles, the following protocols will be implemented: Sea turtle crawl searches will be conducted in the morning hours during piping plover monitoring and avian predator management to ensure nest protection procedures begin as soon as possible. All sea turtle nests will be marked, thus establishing a buffer zone, to protect the nest from recreation-related human activity. Staff or volunteers will place a minimum of four informative “Area Closed” signs forming a 5 foot radius around the nest. Rope will be strung between the

signs to discourage vehicles and pedestrians from trespassing into the nest site. OSV access will occur outside this buffer zone.

OSVs are prohibited from the recreational beach. However, headlights from the parking lot or adjacent OSV zone will have the potential to affect hatchling emergence to the ocean. Staff will erect a light and hatchling emergence barrier around the 5 ft. radius buffer zone into the intertidal zone in both the OSV Zone and recreational beach area.

In this scenario, the beach is wide enough to allow OSVs to travel landside of the nest without adversely affecting dune or vegetated habitats; therefore staff will continue to allow OSV traffic west of the nest. Pedestrians may access areas west of the nest or within the intertidal zone. Because a light and hatchling emergence barrier will be in place during the entire hatch window, a nest sitter will not be present at night.

*OSV Zone - DAY: Beach is too narrow for ORVs to pass landward during **Hatch Window**:*

Staff will erect a light and hatchling barrier around the 5 ft. radius buffer zone and toward the intertidal zone. A corridor will be created near the intertidal zone for OSV and pedestrian access. A nest sitter will open the access corridor to the public one hour after sunrise. A nest sitter will close the corridor at sunset. If hatchling activity occurs during the day, nest sitters will follow the OSV Zone-Night protocol.

*OSV Zone-NIGHT: Beach is too narrow for OSVs to pass landward during **Hatch Window**:*

The OSV and pedestrian access corridor gate will close at sunset. Throughout the night a turtle sitter will open the gate to OSVs and pedestrians allowing passage north and south through the corridor of the turtle hatchling emergence zone when hatchlings are not crawling to the ocean. After an OSV or pedestrian passes through the area, the turtle sitter will immediately re-close the gates and sweep away all OSV and foot tracks. The access corridor and gates will be used as needed from sunset until one hour after sunrise or when turtle hatchling activity ceases. A turtle sitter will be posted at nests which fall into this scenario each night for the duration of the entire hatch window.

Management activities on the refuge should have a net positive effect on sea turtle nesting due primarily to in situ protection of nests. Active and passive predator control, conducted primarily for plover nest protection, will also help nesting sea turtles by reducing the number of potential sea turtle nest predators on the refuge. All sea turtle nests will be left in place and protected from threats as outlined in the attached Intra-Service Section 7 Biological Evaluation Form (USFWS 2008). Following the protocols established in Enclosure 1, CNWR staff will make a determination of how to provide protection to each nest based on the nest timing, location, and any possible site-specific issues. All turtle nests on Assateague will be excavated to confirm the presence of eggs. While this excavation process has a slight possibility of damage to the eggs, it is a standard

procedure recommended and used by all sea turtle experts in the United States. The nests will then be protected by predator exclosures and symbolic fencing to prevent public trespass. Any turtle nests that occur in the Overwash zone when that area is re-opened to vehicles after the end of the plover nesting season (generally about September 15), will also be protected with a light barrier. In addition to the barriers, human nest sitters (staff or volunteers) will be used at night during the hatch window to protect nests in areas where the location of the nest and the width of the beach is such that an OSV cannot pass landward of the nest. The nest sitters will prevent vehicles from passing seaward of turtle nests while hatchling turtles are on the beach to prevent injury to hatchling turtles.

Seabeach amaranth - Seabeach amaranth is an annual plant and a member of the Amaranth family (Amaranthaceae). Upon germination, the plant initially forms a small, unbranched sprig, but soon begins to branch profusely, forming a low-growing mat. It was added to the List of Endangered and Threatened Wildlife and Plants (50 CFR 17.12) as a threatened species.

Population numbers at the refuge have been low, and limited primarily to beach areas north of the recreational beach. The number of plants within the refuge has experienced major fluctuations in numbers since its rediscovery in 2001. In 2005, a record 69 plants were documented outside of the OSV zone. The numbers dropped to 13 plants in 2006, 2 plants in 2011, and no plants were found in 2012.

OSV use on the beach during the growing season can have detrimental effects on the species, as the fleshy stems of this plant are brittle and easily broken. Plants generally do not survive even a single pass by a truck tire (Weakley and Bucher 1992). Sites where vehicles are allowed to run over seabeach amaranth plants often show severe population declines. Dormant season OSV use has shown little evidence of significant detrimental effects, unless it results in massive physical erosion or degradation of the site, such as compacting or rutting of the upper beach. In some cases, winter OSV traffic may actually provide some benefits for the species by setting back succession of perennial grasses and shrubs with which seabeach amaranth cannot compete successfully. However, extremely heavy OSV use, even in winter, may have some negative impacts, including pulverization of seeds (Weakley and Bucher 1992).

As noted above, no seabeach amaranth plants have been found within the OSV zone. Activities by refuge staff for management and protection of nesting plovers and sea turtles have a net positive effect on seabeach amaranth. Seabeach amaranth occurrences are often located during these other management activities, which result in better protection of the plants. The refuge staff annually surveys for the plant and records any locations. If plants are found in public OSV use areas, signs and symbolic fencing will provide protection and reduce the risk of inadvertent disturbance to plants. As a result of closure of nesting areas for protection of the plover and sea turtles, seabeach amaranth that occur in these areas can complete most of its life cycle removed from the threat of crushing from public OSV use. Crushing of a plant or plants by the public, staff, or OSVs may occur in some circumstances, but is unlikely due to the actions taken by the refuge to protect the

dune and beach areas. Refuge prohibitions on OSV use in the dunes, and efforts to educate the public should decrease trampling in almost all cases. This form of take is considered insignificant (USFWS 2008a).

Wetlands - The surf fishing and OSV zone is located within the intertidal zone and beachfront area, therefore there will be no wetland impacts.

Recreation - The purpose of continuing to permit OSV use on the refuge is to facilitate surf fishing and hunting, which are both priority recreational uses of the Refuge System. Allowing this use will provide additional opportunities in areas that would be difficult to access without the use of vehicles. Therefore the impact on these recreational users will be positive. While seasonal closures will limit the times and locations that these activities may occur, they are necessary to protect numerous wildlife species that use these same locations.

There is the potential of user conflicts in the OSV zone, especially when vehicles are in use in the presence of pedestrians engaging in wildlife observation or photography and/or horseback riders. Since OSVs are permitted only to access fishing and hunting areas, times when vehicles are actually in use will be limited. The majority of refuge beach is open for pedestrian use and restricted from OSV use, so there is sufficient opportunity for users to engage in their respective activities without causing disturbance to other users.

Allowing overnight surf fishing could potentially impact migratory shore birds and nesting sea turtles. These impacts have been reduced for shorebirds and eliminated for sea turtles by restricting this use to periods outside the peak migration and nesting seasons, respectively. There is the possibility of increased disturbance to dune habitats; however, regular patrols and enforcement of this closed area will be implemented. No other adverse impacts are anticipated.

In addition, surf fishing takes place at the south end of Assawoman Island, and the north end of Metompkin Island except during closures or in restricted areas. Surf fishing in these areas has the potential of impacting the feeding and resting by a variety of shorebirds, gulls, and terns. Surveys conducted from 1990 to 1993 indicated an average peak of 2,000 shorebirds, 370 gulls, and 60 terns along the affected beach activity zone. The highest peak for all three species group occurred during the early fall migration (August) with 4,900, 600, and 180, respectively. Shorebird use of the beach fishing area was approximately 85% sanderling, with whimbrel, ruddy turnstone, red knot accounting for the remaining total. Gull species including laughing gulls in the summer months and great black-backed, herring and ring-billed during the remainder of the year. Terns present within the affected area were mostly royal, common, and least.

To mitigate for the potential negative impact of surf fishing activities to migratory birds, the refuge has instituted a seasonal closure to all access. All of Assawoman Island will be closed from March 15 through September 15 annually, and later if unfledged birds remain in the area. On Metompkin Island shore bird nesting areas are posted closed to public access during the shorebird

nesting season. These closure periods also encompasses the peak times of spring and fall migration, thus providing undisturbed habitat for shorebirds during the most critical times of year.

Shell fishing activities (clams, oysters, and crabs) are confined primarily to saltmarsh and mudflats within Toms Cove. Anticipated impacts include minor disturbance to feeding wading birds, migrant shorebirds, and nesting saltmarsh species (rails and songbirds). Disturbance from crabbing in the borrow ditch along Beach Road near Swans Cove Pool will primarily affect wading birds during the summer months. Because of the small area in which crabbing is allowed disturbance is very minimal.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

Surf fishing, crabbing, clamming and oyster harvest would take place within the regulatory framework established by the Virginia Marine Resources Commission (VMRC) and USFWS. Visitors are required to follow all Commonwealth of Virginia regulations, including license to fish. Anglers age 16 and older must possess a valid Virginia Saltwater Fishing or Potomac River Fisheries Sport Fishing license. Anglers who are exempt from licensing and holders of out of state reciprocal licenses must register with the Virginia Fisherman Identification Program (FIP). In addition, the refuge may impose stricter regulations as deemed necessary to maintain healthy populations of oysters and clam on refuge tidal lands. The refuge does not host any fishing tournaments.

The refuge will implement seasonal closures and other mitigating measures as described above, and in the Biological Opinion on monitoring and management practices for piping plover, loggerhead sea turtle, green sea turtle, leatherback sea turtle, and seabeach amaranth on Chincoteague NWR within the OSV zone.

When and if the recreational beach is moved to a more stable location, and a new surf fishing and OSV zone is created adjacent to the new beach area, the Overwash area will be merged with the Toms Cove Hook area in terms of management of surf fishing, horseback riding and OSV use and seasonal restrictions.

Shell fishing will continue to be restricted to segments of the Toms Cove's saltmarsh and mudflats. These restrictions are dictated by the accessibility of these areas to the visiting public. All other saltmarsh and mudflats will remain closed to public entry the entire year, in order to minimize disturbance.

To ensure compatibility within the lower island refuge units, seasonal restrictions will continue to be imposed on users, and periodic law enforcement patrols will be conducted on weekends and holidays during the summer months for all fishing (finfish and shellfish) activities. To reduce shorebird nesting disturbance on Assawoman Island during the breeding season, we will implement a complete closure, including fishing, from March 15 through August 31 or thereafter, until the last shorebird fledges.

JUSTIFICATION:

Recreational fishing (surf fishing, clamming, crabbing and oyster harvest) is a priority wildlife-dependent use for the National Wildlife Refuge System through which the public can develop an appreciation for fish and wildlife (Executive Order 12996, March 25, 1996 and the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57)). USFWS policy is to provide expanded opportunities for wildlife-dependent uses when compatible and consistent with sound fish and wildlife management and ensure that they receive enhanced attention during planning and management.

The refuge's recreational fishing program is focused on providing a wholesome, fun outdoor experience for the individual or family. Specific refuge regulations address equity and quality of fishing opportunities for visitors and help safeguard refuge habitats. Impacts from this proposal, short-term and long-term, direct, indirect, and cumulative, are expected to be minor and are not expected to diminish the value of the refuge for its stated objectives.

Conflicts between users are localized and are addressed through law enforcement, public education, and continuous review and updating to public use regulations. Conflicts are further reduced by the establishment of seasonal area closures.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.

SIGNATURE:

Refuge Manager: _____
(Signature) (Date)

CONCURRENCE:

Regional Chief: _____
(Signature) (Date)

MANDATORY 15 YEAR RE-EVALUATION DATE: _____

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COMPATIBILITY DETERMINATION

USE:

Migratory Game Bird Hunting

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C. 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:**(a) What is the use? Is the use a priority public use?**

The use is the public hunting of migratory game birds. Hunting was identified as one of six priority public uses by Executive Order 12996 (March 25, 1996) and by the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

(b) Where the use would be conducted?

The use would be conducted in designated areas of the refuge. Migratory game bird hunting is open on Wildcat Marsh, Morris Island, Assawoman Island, and North Metompkin Island. Wildcat Marsh (546 acres) is located at the north end of Chincoteague Island and Morris Island (427 acres) is located between Chincoteague and Assateague Islands. Assawoman Island Division contains 1,434 acres and encompasses the entire island; Metompkin Island Division consists of 174 acres on the north end of the island.

(c) When would the use be conducted?

Hunting would take place within the season dates established by the Virginia Department of Game and Inland Fisheries (VDGIF) and the USFWS. Specific regulations for each hunt will be published by the refuge in advance of the hunt seasons.

(d) How would the use be conducted?

Hunting would take place within the regulatory framework established by VDGIF and USFWS. The refuge manager may, upon annual review of the hunting program and in coordination with VDGIF, impose further restrictions on hunting. Hunting at the refuge is at least as restrictive as the State of Virginia, and in some cases, more restrictive. The refuge coordinates with the VDGIF annually to maintain regulations and programs that are consistent with the State's management programs. Hunting restrictions may be imposed if hunting conflicts with other higher priority refuge programs, endangers refuge resources, or public safety. Specific hunt details will be outlined in the annual hunt program.

Migratory Game Bird Hunt - Specific Regulations:

Hunters must obtain an Annual Refuge Hunt Permit and maintain the permit on their person while hunting on the refuge.

(e) Why is this use being proposed?

Hunting is one of the priority public uses of the Refuge System. This legitimate and appropriate use of a National Wildlife Refuge is generally considered compatible, as long as it does not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the national wildlife refuge. USFWS will continue the tradition of wildlife-related recreation on the refuge by allowing hunting in compliance with State regulations.



The primary objective of the refuge waterfowl hunts is to provide the general public with quality waterfowl hunting opportunities. This objective was reviewed in the CNWR Environment Assessment Big Game and Migratory Game Bird Hunt Proposal of 2007 to ensure the hunt program was in conformance with the laws and policy of USFWS.

AVAILABILITY OF RESOURCES:

The Refuge Recreation Act requires that funds are available for the development, operation, and maintenance of the permitted forms of recreation. The permit fee (\$20 for deer), and a processing application fee (\$5/hunter) are the minimal amounts needed to offset the cost of facilitating the preseason drawings and managing the lottery hunts.

Administrative changes in the hunting program were implemented to ease the administrative burden on staff resources. Kinsail Corporation, a private firm working through a Memorandum of Understanding with the refuge, conducts the hunting applications, lottery selection, and permits. Cost savings resulted from phasing out the use of permanent hunting structures and eliminating the need to have staff conduct daily lottery drawings for permits. Regulations for the fee program allow the refuge to retain 80 percent of the total fees collected, Kinsail retains the \$5 application fee charge to each hunter. The resources necessary to provide and administer this use, at current use levels, are available within current and anticipated refuge budgets and no increase in use is proposed above historic levels.

There would be some costs associated with these programs in the form of road maintenance, and law enforcement. These costs should be minimal relative to total refuge operations and maintenance costs and would not diminish resources dedicated to other refuge management programs.

ANTICIPATED IMPACTS OF THE USE:

General Impacts of Public Use

Direct impacts are those impacts immediately attributable to an action. Indirect impacts are those impacts that are farther in time and in space. Effects that are minor when considered alone, but collectively may be important are known as cumulative effects. Incremental increases in activities by people engaged in the variety of allowed uses on the refuge could cumulatively result in detrimental consequences to wildlife and/or habitats. Refuge staff will monitor these activities to ensure wildlife resources are not impacted in a detrimental manner. Since the hunting areas comprise portions of the refuge with the least amount of waterfowl use and hunting times are restricted, disturbance and other impacts are not expected to be significant.

Hunting provides additional wildlife-dependent recreational opportunities and can foster a better appreciation and more complete understanding of the wildlife and habitats associated with Delmarva ecosystems. This can translate into more widespread and stronger support for wildlife conservation, the refuge, the Refuge System, and the USFWS. The following is a discussion of refuge-specific impacts.

Impacts on Socioeconomic Environment

Accomack County is one of the poorest counties in Virginia. The 2010 population estimate for Accomack County is 33,164 persons (U.S. Census Bureau.) Chincoteague NWR is one of the most heavily visited refuges in the Refuge System. Visitors come to Chincoteague for a variety of reasons. Many come in the summer months to access the beach. The beaches of Assateague Island offer a unique experience in the mid-Atlantic area as they exist primarily in an undeveloped setting unlike other beaches like Virginia Beach or Ocean City that are heavily developed. This natural setting draws many families seeking out a more traditional beach going experience.

Spending associated with recreational use of the refuge can generate a substantial amount of economic activity in both local and regional economies. Refuge visitors spend money on a wide variety of goods and services. Trip-related expenditures may include expenses for food, lodging, and transportation. Anglers, hunters, boaters, and wildlife watchers also buy equipment and supplies for their particular activity. Because this spending directly affects towns and communities where these purchases are made, recreational visitation can have an impact on local economies, especially in small towns and rural areas. These direct expenditures are only part of the total picture, however. Businesses and industries that supply the local retailers where the purchases are made also benefit from recreation spending. For example, a family may decide to purchase a set of fishing rods for an upcoming vacation. Part of the total purchase price will go to the local retailer, say a sporting goods store. The sporting goods store in turn pays a wholesaler who in turn pays the manufacturer of the rods. The manufacturer then spends a portion of this income to cover manufacturing expenses. In this fashion, each dollar of local retail expenditures can affect a variety of businesses at the local, regional and national level. Consequently, consumer spending associated with refuge recreation can have an impact on economic activity, employment, household earnings and local, State and Federal tax revenue.

Total visits to the refuge exceeded 1.36 million in 2010. Refuge recreation-related expenditures, and associated economic output, jobs, job income and total (county, state and Federal) tax revenue are as follows: total retail related expenditures are estimated at \$113.8 million; economic output at \$150.3 million; jobs at 1,794, job income at \$48.6 million and total tax revenue of \$10.6 million. (2012, Chincoteague National Wildlife Refuge -Economic Analysis - In Support of Comprehensive Conservation Plan,)

The refuge's contribution to the economy of the area through offering hunting opportunities for migratory game birds and big game is negligible in context of overall visitation and expenditures. Offering these hunting opportunities may enable hunters to contribute to the local community through local purchases of gas, food, lodging, and supplies.

Impacts on Cultural Resources

The body of federal historic preservation laws has grown dramatically since the enactment of the Antiquities Act of 1906. Several themes recur in these laws, their promulgating regulations, and more recent Executive Orders. They include:

- Each agency is to systematically inventory the historic properties on their holdings and to scientifically assess each property's eligibility for the National Register of Historic Places.
- Federal agencies are to consider the impacts to cultural resources during the agencies management activities and seek to avoid or mitigate adverse impacts.
- Protection of cultural resources from looting and vandalism are to be accomplished through a mix of informed management, law enforcement efforts, and public education.
- The increasing role of consultation with groups, such as Native American tribes, in addressing how a project or management activity may impact specific archaeological sites and landscapes deemed important to those groups.

The USFWS is legally mandated to inventory, assess, and protect cultural resources located on those lands that the agency owns, manages, or controls. The Service's cultural resource policy is delineated in 614 FW 1-5 and 126 FW 1-3.

In the USFWS Northeast Region, the cultural resource review and compliance process is initiated by contacting the Regional Historic Preservation Officer/Regional Archaeologist. The officer or archeologist will determine whether the proposed undertaking has the potential to impact cultural resources, identify the "area of potential effect," determine the appropriate level of scientific investigation necessary to ensure legal compliance, and initiates consultation with the pertinent State Historic Preservation Office and federally recognized Tribes.

With a relatively small number of hunters dispersed across the refuge during the hunting season, impacts would be negligible on the refuge's cultural resources based on our observations of past hunting impacts.

Impacts on Air Quality

Hunting is expected to have negligible adverse short-term, long-term or cumulative impacts on local or regional air quality. Localized increases in emissions from hunter's vehicles or boat motors would be negligible compared to current off-refuge contributions to pollutant levels and likely increases in air emissions in the Accomack County air shed from land development over the next 15 years. Any adverse air quality effects from refuge activities would be more than offset by the benefits of maintaining the refuge in natural vegetation. The hunting program would not violate EPA standards and would comply with the Clean Air Act.

Impacts on Soils

The soils of Chincoteague NWR consist primarily of sand and silt loams. The soils are a mixture of Chincoteague silt loam (0-1 percent slope), Assateague fine sand (2-35 percent slope), Camocca fine sand (0-2 percent slope), beach sand (0-5 percent slope), Fisherman-Camocca complex (0-6

percent slope), and Udorthents and Udipsamments soils (0-30 percent slope). The soils are predominantly made of loam, silt, and sand. Assateague fine sand areas are rarely flooded. However, the rest of the areas are frequently to moderately prone to flooding. Hiking or walking can alter habitats by trampling vegetation, compacting soils, and increasing the potential of erosion. Using these baseline impacts, the refuge's hunt program has the potential to cause some soil compaction since off-trail foot travel occurs; however, hunting is expected to have negligible adverse short-term, long-term or cumulative impacts on soils. With a limited number of hunters dispersed across the refuge during the hunting season, impacts would be negligible based on our observations of past hunting impacts. Vehicles would continue to be confined to existing refuge roads and parking lots to minimize impacts outside of that developed footprint.

Impacts on Hydrology and Water Quality

No natural freshwater streams or lakes exist on Chincoteague NWR. Rainfall and tidal over wash are the only sources of surface water on Assateague Island. The moist soil units or impoundments are slightly brackish to highly saline because of tidal over wash, salt spray, and the accumulation of salt residue as water evaporates. The same environmental influences make the groundwater lenses beneath the islands brackish. Evaporation and transpiration account for major surface water depletion during the summer months. The drinking water supply for Chincoteague Island and the refuge comes via pipeline from three deep wells and a shallow well field near the NASA base on the mainland. Large bodies of water bordering the Refuge are the Atlantic Ocean, Chincoteague Bay, and Assateague Channel. Hunting is expected to have negligible adverse short-term, long-term or cumulative impacts on hydrology or water quality based upon staff observations of past hunting impacts. The hunting program would not violate federal or state standards for contributing pollutants to water sources and would comply with the Clean Water Act.

The use of boats by hunters has the potential to affect water quality negatively by increasing erosion, stirring up bottom sediments, or introducing pollutants into waterways. The Service does not expect emissions from vehicles or boat motors to substantially affect the water quality of the region. Non-toxic shot is required for all waterfowl hunting. Public outreach and education on littering and proper waste disposal will lessen potential negative water quality impacts.

Impacts on Vegetation

Repeated visitation to any particular locale at the refuge would continue to cause minor site-specific damage to vegetation. Accidental introduction of invasive plants, pathogens, or exotic invertebrates attached to boats, or on shoes or clothing, is another source of direct impact on vegetation. In places where unmarked paths are created by hunters and anglers, little used pathways will retain their dominant vegetation species, but on medium-use pathways some plant species will be replaced and heavily-used paths will often contain invasive species (Liddle and Scorgie 1980).

Using the information previously presented as a baseline and considering staff observations of past impacts, hunting is expected to have negligible adverse short-term, long-term, or cumulative impacts on vegetation. Disturbance to vegetation is expected to increase due to an expected increase in migratory game bird hunters in new free roam hunting areas during all hunting seasons. The possibility for new trails to be developed from repeated hunter entry may occur. However, anticipated dispersal of hunters across hunting areas, the inherent nature of hunters to only travel as far as needed to find a hunting location, and knowing that most vegetative species will have already undergone senescence or become dormant, the impacts to vegetation are expected to be negligible. On-going education about the peril of non-native invasive plant species introduction will continue through refuge outreach.

Impacts on Federal and State Endangered Species

The endangered Delmarva Peninsula fox squirrel (*Sciurus cinereus cinereus*) and threatened seabeach amaranth (*Amaranthus pumilus*) are the only federally listed species utilizing refuge hunt areas during the Virginia hunting seasons. Piping plovers (*Charadrius melodus*) and loggerhead sea turtles (*Caretta caretta*) nest on the refuge during the summer, outside of hunting seasons.

While the bald eagle is no longer a federally listed species, the refuge uses the national bald eagle management guidelines for bald eagle management to implement time-of-year restrictions for nesting eagles. The guidelines do not permit any activity within 330 feet of an active nest during the breeding season (USFWS 2011).

Impacts on Waterfowl

The migratory game bird hunting areas consists of approximately 1,750 acres or 13% of the refuge land, with a rail hunting area of 864 acres or 6% of the refuge land. Only the saltmarsh portion of Wildcat Marsh, Morris Island, Assawoman, and Metompkin Islands are used for waterfowl hunting. Rail hunting is only permitted on marshes of Assawoman Island and the north end of Metompkin Island.

Hunting occurs only on the northern end of Chincoteague Island, and on Morris, Assawoman, and the north end of Metompkin Islands. Morton (1986) found that the increased presence of humans associated with the refuge big game hunting program can contribute to movements of ducks, particularly black ducks, off the refuge. These disturbances are at a time when these birds need the isolation of the refuge to feed and rest. Paulus (1984) and Belanger (1989) found that hunting activity (gun shots or hunter movements) caused waterfowl to move to less disturbed areas and avoided some areas until after the hunting season. Laskowski et al (1993) documented human disturbance to a representative species of waterfowl by the visiting public (on managed impoundments) on Back Bay NWR, VA. Disturbance elicited behavioral changes ranging from increase alertness to flying to other parts of the refuge. McNeil et al. (1992) found that many waterfowl species avoid human disturbance by feeding at night instead of the day.

Waterfowl and other migratory bird hunting will continue to be limited to specific areas on the refuge in order to reduce potential disturbance. Migratory game birds are those bird species so designated in conventions between the United States and several foreign nations for the protection and management of these birds. Under the Migratory Bird Treaty Act (16 U.S.C. 703-712), the Secretary of the Interior is authorized to determine when “hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any bird, or any part, nest, or egg” of migratory game birds can take place, and to adopt regulations for this purpose.

Light goose, resident Canada goose, and mourning dove hunting would result in a potential increase in visitors related to hunting. These hunt programs would be regulated as the current hunt programs are, with a limited amount of permits awarded. This number of new permits would not cause significant impacts to birds because the total number of hunters that would be on the refuge at any time would not be enough to result in any significant disturbance.

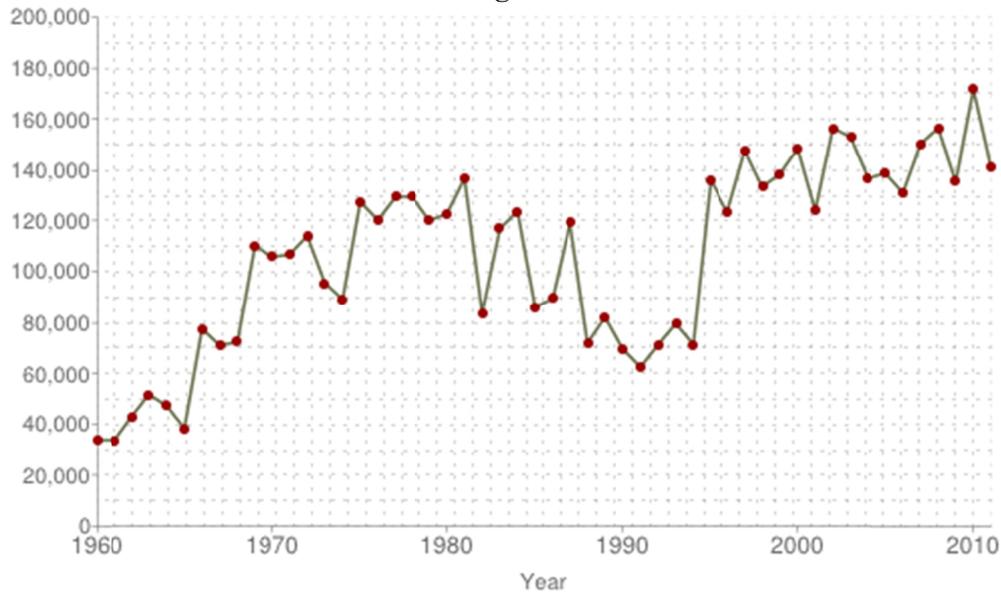
Net positive impacts from the refuge hunt program are expected. We expect that the harvest of local resident Canada geese would have the following beneficial effects:

- Increase natural seed regeneration within refuge impoundments thereby increasing fall/winter food availability for migrating ducks, geese and swans.
- Reduce fecal contamination in the refuge impoundments. Excessive fecal matter also changes the nitrogen and oxygen levels in the refuge waters resulting in algal blooms and death of aquatic organisms. (Source: USDA-APHIS. 1999. Environmental Assessment for the management of conflicts associated with non-migratory Canada geese, migratory Canada geese, and urban/suburban ducks in the Commonwealth of Virginia. 77 pp.)
- Reduce the possibility of transmitting disease to susceptible populations of migrating birds as they over-winter at the Refuge or pass through.
- Reduce negative interactions (aggressive behavior) with refuge visitors on roads and trails during spring breeding season.

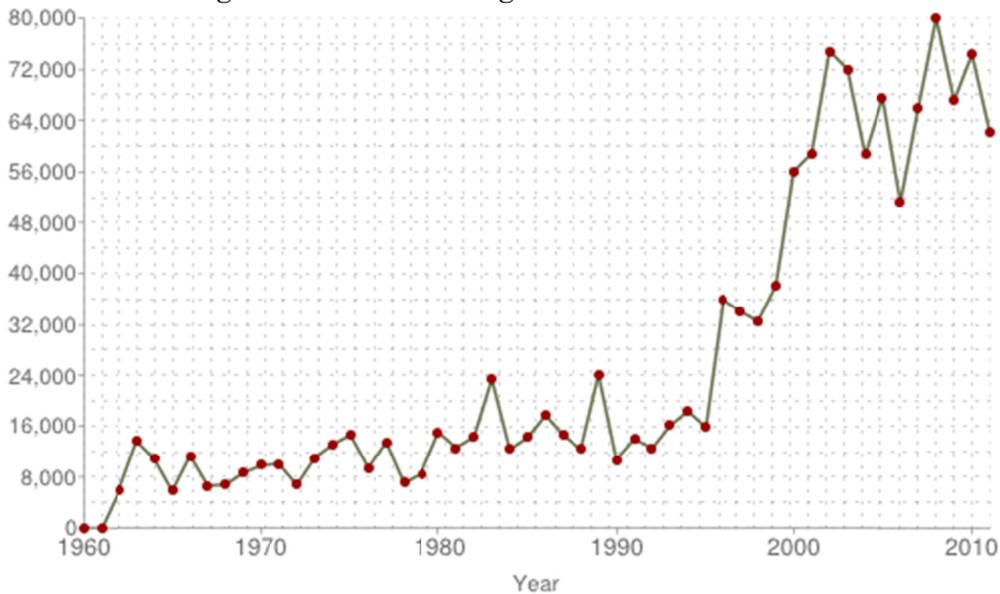
Harvest and disturbance of light geese under the authority of the light goose conservation order would have the following beneficial effects:

- Reduce damage caused by light geese to sensitive arctic breeding habitats. This would have the additional benefit of reducing negative impacts to other bird species nesting within that same arctic habitat.
- Reduce damage to wintering habitats within the Atlantic Flyway.

Total number of ducks harvested in Virginia



Total number of geese harvested in Virginia



<http://www.flyways.us/regulations-and-harvest/harvest-trends>

The resident Canada goose population increased significantly during the 1980s and early 1990s. The population peaked at over 260,000 geese in the mid-late 1990s in Virginia and has been steadily reduced by specific management programs since that time. The current population estimate is 158,267 (+/- 28%) in Virginia and over 1 million in the Atlantic Flyway. For migrant Canada geese, the breeding population estimate for 2012 (190,340) is similar to the past 3 year average (189,317).

http://www.dgif.virginia.gov/hunting/va_game_wildlife/waterfowlfactsheets.pdf

Liberal duck seasons (60 days, 6 bird bag limit) and resident goose seasons have resulted in higher waterfowl harvests in Virginia during the past ten years. Harvest has averaged approximately 150,000 ducks and 60,000 geese from 2000-2011, compared to 114,770 ducks and 25,000 geese during the 1990s. The long season length and liberal bags offer greater opportunity and a greater cumulative harvest over the course of the season.

Waterfowl hunter numbers in Virginia have been generally stable since the late 1990s, and Federal Duck Stamp sales have averaged 23,390 in Virginia (for 5-year period, 2006-10). Since 1999, the Harvest Information Program (HIP) has been used to estimate hunter effort and harvest. The average number of duck and goose hunters over the past 3 years, as measured by HIP, was 13,618 and 12,360 respectively. In 2011, only 99 visits occurred on the refuge for migratory bird hunting, possibly because the hunt areas are only accessible by boat.

Chincoteague Waterfowl Harvest (self-reported, 2008-2013)

2008/2009 - 212

2009/2010 - 65

2010/2011 - 53

2011/2012 - 67

2012/2013 - 69

Given the exceptionally low numbers of waterfowl harvested from the refuge in respect to the total statewide harvest and waterfowl population, no cumulative impacts to local, regional, or statewide populations of ducks or geese are anticipated from hunting on the refuge.

Based on past observations of impacts on shorebirds by refuge staff, disturbance by refuge hunters to shorebirds is expected to be negligible since most shorebird species have completely passed through Virginia by peak hunting season in November through January. Some hunting occurs when these species may be migrating before and after this peak hunting time. In addition, hunters are restricted from prime shorebird use areas.

Impacts to Landbirds

Disturbance to landbirds has been well documented. Pedestrian travel can influence normal behavioral activities, including feeding, reproductive, and social behavior and the location of recreational activities impacts species in different ways. Miller et al. (1998) found that nesting success was lower near recreational trails, where human activity was common, than at greater distances from the trails. A number of species have shown greater reactions when pedestrian use occurred off trail (Miller et al. 1998). For songbirds, Gutzwiller et al. (1997) found that singing behavior of some species was altered by low levels of human intrusion.

Disturbance to these non-hunted migratory birds could have regional, local, and flyway effects. Free-roaming big game hunters may cause local, temporary, minor alterations to feeding and

resting behavior in landbirds. However, the limited number of hunters, and the availability of nearby undisturbed habitats, render the direct, indirect, and cumulative impacts on these species negligible. Hunting will have little to no effect on nesting landbirds due to seasonal differences in these activities. The early part of nesting season of some raptors coincides with the end of the majority of hunting seasons, but hunting would have little impact on the critical periods of incubation and fledging.

Impacts on Secretive Marsh and Waterbirds

Resident waterbirds tend to be less sensitive to human disturbance than are migrants, and thus will be less impacted by disturbance from public use on the refuge. However, wading birds have been found to be extremely sensitive to disturbance in the northeastern U.S. and may be adversely impacted by disturbance from public use on the refuge (Burger and Gochfeld 1998). The impacts of intrusion through public use are generally negligible for this group of birds, but can vary by species and between years (Gutzwiller and Anderson 1999).

Disturbance to secretive marsh birds and waders from hunting would start in September and usually end in January, unless hunting is allowed during the snow goose conservation order into mid-April. This disturbance may have direct effects on migrating and wintering secretive marsh birds and waders. Due to the limited number of hunting days and the restricted hours, we expect the short-term, long-term and cumulative impacts to be negligible.

Impacts on Fisheries

Impacts to fisheries from visitors engaged in hunting are expected to be temporary and negligible. Anticipated increases in hunting will cause increased suspension of bottom sediments from boat motors. However, since hunting occurs during the fall and winter months, this sediment suspension should not adversely affect biological oxygen demand (BOD) for fisheries resources. Effects on inter-jurisdictional fishes are expected to be unlikely from hunting because the majority of the refuge will experience minimal, transitory use by hunters.

Impacts on Mammals

In general, the presence of humans will disturb most mammals, which typically results in indirect negligible short-term adverse impacts without long-term effects on individuals and populations. Adverse impacts on resident game populations from hunting would be negligible.

Negative impacts from hunting on non-hunted mammals, such as voles, moles, mice, shrews, and bats, are expected to be negligible. Except for some species of migratory bats, these species have very limited home ranges and hunting would not affect their populations regionally. Impacts of hunting to migratory bat species would be negligible. These species are in torpor or have completely passed through Virginia by peak hunting season in November through January. Vehicles are restricted to roads and harassment or taking of any wildlife other than legal game species is not permitted.

Impacts to Amphibians and Reptiles

The direct, indirect, and cumulative effects of hunting to amphibians and reptiles such as snakes, skinks, turtles, lizards, salamanders, frogs, and toads are expected to be negligible. Hibernation or torpor by cold-blooded reptiles and amphibians limits their activity during the hunting seasons for migratory game birds, when temperatures are low and hunters would rarely encounter them during most of the hunting season.

Impacts to Invertebrates

Impacts to invertebrates such as butterflies, moths, other insects, and spiders are expected to be negligible. Invertebrates are not active during the majority of the hunting seasons and would have few interactions with hunters during the hunting season.

Impacts on Public Use and Access

Refuge lands allow the public to enjoy hunting at no or little cost in a region where private land is leased for hunting, often costing a person several hundred to several thousand dollars per year for membership. Refuge hunting programs also make special accommodations for mobility-impaired hunters. Hunting provides opportunities to experience a wildlife-dependent recreational activity, instills an appreciation for and understanding of wildlife, the natural world and the environment, and promotes a land ethic and environmental awareness. Visitors interested in hunting would find high quality opportunities to engage in their favored pastime.

The refuge would also be promoting a wildlife-oriented recreational opportunity that is compatible with the purpose for which the refuge was established. The public would have an increased awareness of the refuge and the Refuge System and public demand for more areas to hunt and learn about wildlife would be met. The hunting program provides an administratively simple program that balances other public use activities. The program supports Presidential Executive Order #13443: Facilitation of Hunting Heritage and Wildlife Conservation, regional directives, and parallels State hunting regulations. In addition, it provides seasonal closures to minimize wildlife disturbance and/or avoid conflicts with other uses, enhances disabled hunting opportunities, further develops an appreciation for fish and wildlife, and expands public hunting opportunities.

Migratory game bird hunting on Wildcat Marsh, Morris, Assawoman and Metompkin Islands is expected to cause no conflicts with other refuge public use programs. It is anticipated that hunting will be the only major use on these areas and will take place at a time when other public uses are declining. All hunting areas are remote, accessible only by boat, and located a considerable distance from the main public use areas. These factors alone should eliminate conflicts with other public use activities.

Other Past, Present, Proposed, and Reasonably Foreseeable Actions and Anticipated Impacts

Cumulative effects on the environment result from incremental effects of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative effects may result from individually minor actions, they may, viewed as a whole, become substantial over time. The hunt plan has been designed to be sustainable through time given relatively stable conditions.

Natural marsh habitats on some migration and wintering areas have been impacted by the destructive feeding strategies of overabundant Greater snow geese (Giroux and Bedard 1987, Giroux et al. 1998, Widjeskog 1977, Smith and Odum 1981, Young 1985). In addition, goose damage to agricultural crops has become a problem (Bedard and Lapointe 1991, Filion et al. 1998, Giroux et al. 1998, Delaware Div. of Fish and Wildlife 2000). Snow geese use the refuge wetland habitats extensively, and are not subjected to any hunting disturbance or mortality on the refuge. Impacts to refuge wetlands and impacts to wetland-dependent wildlife increase over time if the population is not adequately controlled at the flyway level, through the coordinated efforts of individual agencies.

Similarly, resident Canada geese have been shown to cause changes in wetland community structure (Laskowski et al. 2002). Resident geese can reduce the amount of plant biomass that would be available to migrant birds at the end of the growing season. Direct damage to agricultural resources by resident geese includes grain crops, trampling and spring seedlings. Heavy grazing by geese can result in reduced yields and in some instances a total loss of the grain crop (Allen et al. 1985, Flegler et al. 1987). Thus, uncontrolled Canada goose populations on the refuge can affect migratory bird populations utilizing the refuge as well as contribute to agricultural losses on lands surrounding the refuge.

Anticipated Impacts if Individual Actions are Allowed to Accumulate

The cumulative impact of hunting on migratory and resident wildlife populations at Chincoteague NWR is negligible. The proportion of the refuge's harvest of migratory game birds is negligible when compared to local, regional, and flyway populations and harvest.

Because of the regulatory process for harvest management of migratory birds in place within the Service, the setting of hunting seasons largely outside the breeding seasons of resident and migratory wildlife, the ability of individual refuge hunt programs to adapt refuge-specific hunting regulations to changing local conditions, and the wide geographic separation of individual refuges, we anticipate no direct or indirect cumulative effects on resident wildlife, migratory birds, and non-hunted wildlife of hunting on Chincoteague NWR.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague National Wildlife Refuge CCP/EIS. Public notification and review will include a notice of availability published in the

Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

The refuge will manage the hunt program in accordance with Federal and State regulations and review it annually to ensure wildlife and habitat goals are achieved and that the program is providing a safe, high quality hunting experience for participants.

To ensure compatibility with refuge purposes and the mission of the Refuge System, hunting can occur on the refuge if the refuge-specific regulations highlighted in this document and following stipulations are met:

- This use must be conducted in accordance with State and federal regulations, and special refuge regulations published in the refuge Hunting Regulations brochures.
- This use is subject to modification if on-site monitoring by refuge personnel or other authorized personnel results in unanticipated negative impacts to natural communities, wildlife species, or their habitats.
- Law Enforcement Officer(s) will promote compliance with refuge regulations, monitor public use patterns and public safety, and document visitor interactions. Law Enforcement personnel will monitor all areas and enforce all applicable State and Federal Regulations.
- Several management strategies identified by Klein (1989) can be used to control the negative effects of recreation on wildlife; these included: permits, user fees, zoning (Cullen 1985), travel ease, public education (Purdy et al. 1987), limiting number of visitors present, and periodic closing. Chincoteague NWR employs these measures to lessen the disturbance and impact to wildlife.
- The refuge manager may, upon annual review of the hunting program and in coordination with VDGIF, impose further restrictions on hunting. Further restrictions may include but are not limited to recommending that the refuge be closed to hunting or further liberalize hunting regulations. Hunting restrictions may be imposed if hunting conflicts with other; higher priority refuge programs, endangers refuge resources, or public safety. Specific hunt details will be outlined in the annual hunt program.

JUSTIFICATION:

Hunting is a priority wildlife-dependent use for the Refuge System through which the public can develop an appreciation for fish and wildlife (Executive Order 12996, March 25, 1996 and The

National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57)). USFWS policy is to provide expanded opportunities for wildlife-dependent uses when compatible and consistent with sound fish and wildlife management and ensure that they receive enhanced attention during planning and management.

Hunting seasons and bag limits are established by the Commonwealth of Virginia and generally adopted by the refuge. These restrictions ensure the continued well-being of overall populations of game animals. Hunting does result in the taking of many individuals within the overall population, but restrictions are designed to safeguard an adequate breeding population from year to year. Specific refuge regulations address equity and quality of opportunity for hunters, and help safeguard refuge habitat. Disturbance to other fish and wildlife does occur, but this disturbance is generally short-term and adequate habitat occurs in adjacent areas. Loss of plants from foot traffic is minor, or temporary, since hunting occurs mainly after the growing season.

Conflicts between hunters are localized and are addressed through law enforcement, public education, and continuous review and updating to State and refuge hunting regulations. Conflicts between other various user groups are minor given the season of the year for hunting, the location of most hunting away from public use facilities, and seasonal area closures.

Stipulations above will ensure proper control of the means of use and provide management flexibility should detrimental impacts develop. Allowing this use also furthers the mission of the Refuge System by providing renewable resources for the benefit of the American public while conserving fish, wildlife, and plant resources on the refuge.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.

SIGNATURE:

Refuge Manager: _____
(Signature)

(Date)

CONCURRENCE:

Regional Chief: _____
(Signature)

(Date)

MANDATORY 15 YEAR RE-EVALUATION DATE: _____

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COMPATIBILITY DETERMINATION

USE:

Big Game Hunting

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C. 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:**(a) What is the use? Is the use a priority public use?**

The use is the public hunting of big game (white-tailed deer and sika elk). Hunting was identified as one of six priority public uses by Executive Order 12996 (March 25, 1996) and by the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

(b) Where the use would be conducted?

The use would be conducted in designated areas of the refuge on the Virginia portion of Assateague Island. Assateague Island is a barrier beach island that extends over 30 miles along the Atlantic coast. Additionally, big game hunting is allowed on the northern portion of Chincoteague Island on a unit of the refuge known as Wildcat Marsh.

(c) When would the use be conducted?

Hunting would take place within the season dates established by the Virginia Department of Game and Inland Fisheries (VDGIF) and the USFWS; however, the hunting of sika elk may occur outside of the Commonwealth's deer season as a depopulation hunt. Deer hunting is normally between mid-November through the first week of January. Specific regulations for each hunt will be published by the refuge in advance of the hunt seasons.

(d) How would the use be conducted?

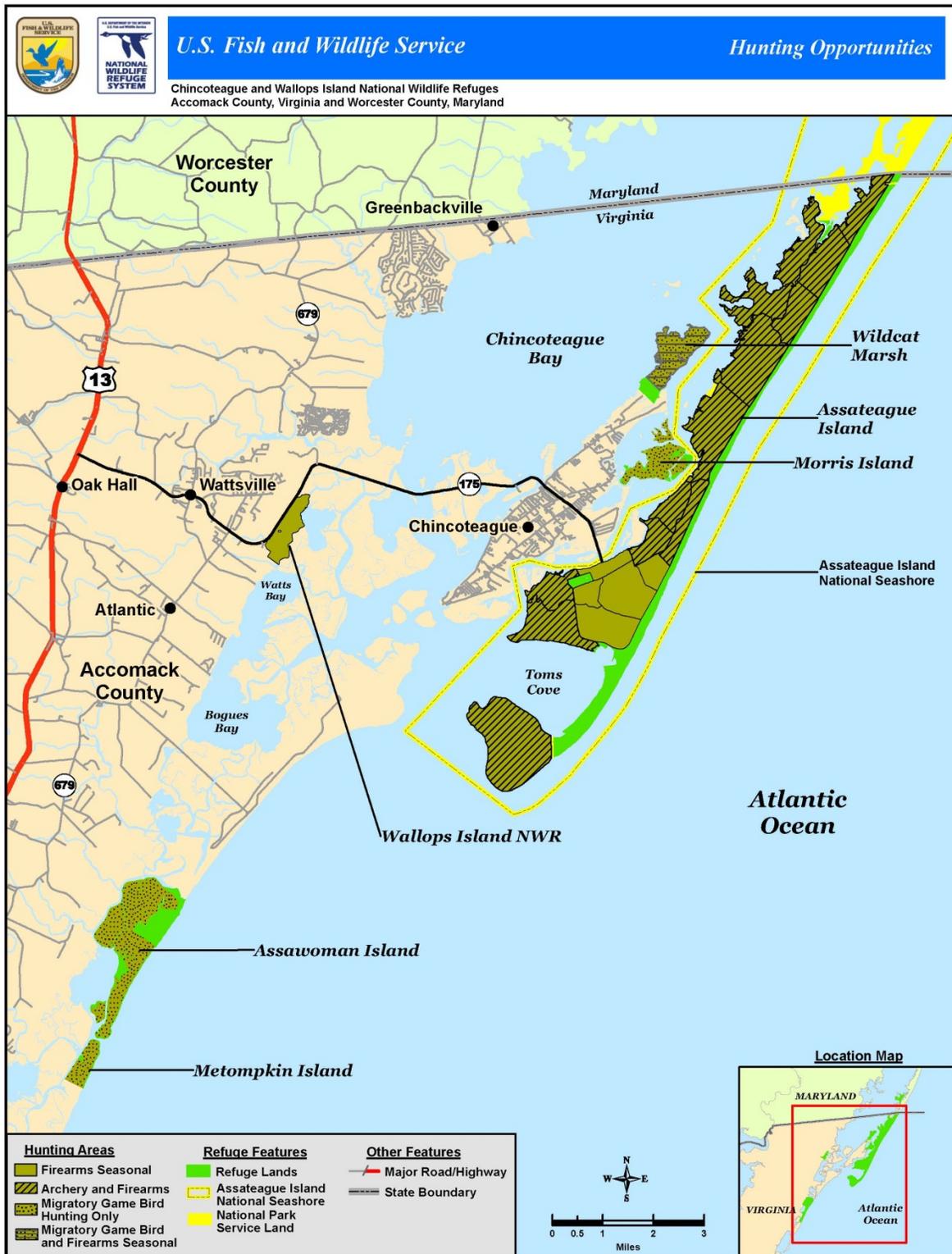
Hunting would take place within the regulatory framework established by VDGIF and USFWS; however, the hunting of sika elk may occur outside of the Commonwealth's deer season as a depopulation hunt.

The refuge manager may, upon annual review of the hunting program and in coordination with VDGIF, impose further restrictions on hunting. Hunting at the refuge is at least as restrictive as the State of Virginia, and in some cases, more restrictive. The refuge coordinates with the VDGIF annually to maintain regulations and programs that are consistent with the State's management programs. Hunting restrictions may be imposed if hunting conflicts with other higher priority refuge programs, endangers refuge resources, or public safety. Specific hunt details will be outlined in the annual hunt program.

Big Game Hunt - Specific Regulations:

Permits - Applications for the big game hunt are processed by Kinsail Corporation. Hunters can apply and pay on-line.

Orientations - All hunters must attend a firearms orientation session prior to their assigned hunt period to obtain their permit. Sessions will be held prior to each scheduled hunt period. Hunters must be on time. Once the orientation begins, individuals will not be allowed in or allowed to hunt,



under any circumstances. Scouting will be permitted following the orientation session. Hunters may only scout their area on the day prior to their scheduled two-day hunt period.

General Regulations

- Hunters must adhere to regulations published in the refuge hunt brochure, all Accomack County and VDGIF hunting regulations, and those specific regulations that apply to big game hunting.
- VDGIF requirements on the use of firearms, muzzleloaders and bows apply.
- A sign-in/out box is located at the kiosk in parking area one. Each hunter must sign in immediately before entering and sign out after exiting the hunt zone.
- Reporting all harvested animals must comply with VDGIF requirements via tele-check and also be indicated on refuge check in/out sheet located at the kiosk.
- Hunters must park in designated parking areas.
- Non-hunters or persons not in possession of a valid refuge permit are not permitted to hunt on the refuge.
- All hunters must make a reasonable effort to recover wounded animals.
- Discharging any weapon within 50' of the centerline of any road or on/from/into a safety zone is prohibited.
- The boundaries of the hunt zone are recognized in the field by prominent signs. Each hunter is responsible for knowing the boundaries of the hunt zone.
- Federal government worksites may be staffed during the hunt. The zone around these sites is posted closed to hunting. Hunters may enter this zone strictly for the purpose of accessing the hunting area and must have their weapons unloaded.
- Hunters may pursue downed or crippled deer into the safety area (closed to hunting around the worksites). Contact the refuge headquarters for assistance if needed to dispatch wounded animal.
- Those hunters scouting must be in possession of their hunt permit.
- Hunters engaged in scouting or hunting must wear a minimum of 400 total square inches of blaze orange material consisting of a vest and hat or jacket and hat. Blaze orange camouflage is not acceptable.
- Any hunters who require assistance with retrieving or dressing harvested animals may apply for up to 2 non-hunting permits. This permit will allow an assistant to be present only during the retrieval and dressing of harvested animals. Non-hunting assistant permits must be requested.

(e) Why is this use being proposed?

Hunting is one of the priority public uses of the Refuge System. This legitimate and appropriate use of a National Wildlife Refuge is generally considered compatible, as long as it does not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the national wildlife refuge. USFWS will continue the tradition of wildlife-related recreation on the refuge by allowing hunting in compliance with State regulations.

Primary objectives of the refuge hunts are to (1) maintain big game populations at a level compatible with refuge habitats, (2) reduce the exotic big game population, (3) reduce competition between exotic sika elk (*Cervus nippon*), and native wildlife, including white-tailed deer (*Odocoileus virginianus*), waterfowl and other wetland species, (4) provide the general public with quality big game hunts and (5) minimize direct conflicts between big game populations and humans, particularly when human safety is an issue. These objectives were reviewed in the CNWR Environment Assessment Big Game and Migratory Game Bird Hunt Proposal of 2007 to ensure the hunt program was in conformance with the laws and policy of USFWS.

AVAILABILITY OF RESOURCES:

The Refuge Recreation Act requires that funds are available for the development, operation, and maintenance of the permitted forms of recreation. The permit fee (\$20 for deer), and a processing application fee (\$5/hunter) are the minimal amounts needed to offset the cost of facilitating the preseason drawings and managing the lottery hunts.

Administrative changes in the hunting program were implemented to ease the administrative burden on staff resources. Kinsail Corporation, a private firm working through a Memorandum of Understanding with the refuge, conducts the hunting applications, lottery selection, and permits. Cost savings resulted from phasing out the use of permanent hunting structures and eliminating the need to have staff conduct daily lottery drawings for permits. Regulations for the fee program allow the refuge to retain 80 percent of the total fees collected, Kinsail retains the \$5 application fee charge to each hunter. The resources necessary to provide and administer this use, at current use levels, are available within current and anticipated refuge budgets and no increase in use is proposed above historic levels.

There would be some costs associated with these programs in the form of road maintenance, and law enforcement. These costs should be minimal relative to total refuge operations and maintenance costs and would not diminish resources dedicated to other refuge management programs.

ANTICIPATED IMPACTS OF THE USE:

General Impacts of Public Use

Direct impacts are those impacts immediately attributable to an action. Indirect impacts are those impacts that are farther in time and in space. Effects that are minor when considered alone, but collectively may be important are known as cumulative effects. Incremental increases in activities by people engaged in the variety of allowed uses on the refuge could cumulatively result in detrimental consequences to wildlife and/or habitats. Refuge staff will monitor these activities to ensure wildlife resources are not impacted in a detrimental manner. Since the hunting areas comprise portions of the refuge with the least amount of waterfowl use and hunting times are restricted, disturbance and other impacts are not expected to be significant.

Hunting provides additional wildlife-dependent recreational opportunities and can foster a better appreciation and more complete understanding of the wildlife and habitats associated with

Delmarva ecosystems. This can translate into more widespread and stronger support for wildlife conservation, the refuge, the Refuge System, and the USFWS. The following is a discussion of refuge-specific impacts.

Impacts on Socioeconomic Environment

Accomack County is one of the poorest counties in Virginia. The 2010 population estimate for Accomack County is 33,164 persons (U.S. Census Bureau.) Chincoteague NWR is one of the most heavily visited refuges in the Refuge System. Visitors come to Chincoteague for a variety of reasons. Many come in the summer months to access the beach. The beaches of Assateague Island offer a unique experience in the mid-Atlantic area as they exist primarily in an undeveloped setting unlike other beaches like Virginia Beach or Ocean City that are heavily developed. This natural setting draws many families seeking out a more traditional beach going experience.

Spending associated with recreational use of the refuge can generate a substantial amount of economic activity in both local and regional economies. Refuge visitors spend money on a wide variety of goods and services. Trip-related expenditures may include expenses for food, lodging, and transportation. Anglers, hunters, boaters, and wildlife watchers also buy equipment and supplies for their particular activity. Because this spending directly affects towns and communities where these purchases are made, recreational visitation can have an impact on local economies, especially in small towns and rural areas. These direct expenditures are only part of the total picture, however. Businesses and industries that supply the local retailers where the purchases are made also benefit from recreation spending. For example, a family may decide to purchase a set of fishing rods for an upcoming vacation. Part of the total purchase price will go to the local retailer, say a sporting goods store. The sporting goods store in turn pays a wholesaler who in turn pays the manufacturer of the rods. The manufacturer then spends a portion of this income to cover manufacturing expenses. In this fashion, each dollar of local retail expenditures can affect a variety of businesses at the local, regional and national level. Consequently, consumer spending associated with refuge recreation can have an impact on economic activity, employment, household earnings and local, State and Federal tax revenue.

Total visits to the refuge exceeded 1.36 million in 2010. Refuge recreation-related expenditures, and associated economic output, jobs, job income and total (county, state and Federal) tax revenue are as follows: total retail related expenditures are estimated at \$113.8 million; economic output at \$150.3 million; jobs at 1,794, job income at \$48.6 million and total tax revenue of \$10.6 million. (2012, Chincoteague National Wildlife Refuge -Economic Analysis - In Support of Comprehensive Conservation Plan,)

The refuge's contribution to the economy of the area through offering hunting opportunities for migratory game birds and big game is negligible in context of overall visitation and expenditures. Offering these hunting opportunities may enable hunters to contribute to the local community through local purchases of gas, food, lodging, and supplies.

Impacts on Cultural Resources

The body of federal historic preservation laws has grown dramatically since the enactment of the Antiquities Act of 1906. Several themes recur in these laws, their promulgating regulations, and more recent Executive Orders. They include:

- Each agency is to systematically inventory the historic properties on their holdings and to scientifically assess each property's eligibility for the National Register of Historic Places.
- Federal agencies are to consider the impacts to cultural resources during the agencies management activities and seek to avoid or mitigate adverse impacts.
- Protection of cultural resources from looting and vandalism are to be accomplished through a mix of informed management, law enforcement efforts, and public education.
- The increasing role of consultation with groups, such as Native American tribes, in addressing how a project or management activity may impact specific archaeological sites and landscapes deemed important to those groups.

The USFWS is legally mandated to inventory, assess, and protect cultural resources located on those lands that the agency owns, manages, or controls. The Service's cultural resource policy is delineated in 614 FW 1-5 and 126 FW 1-3.

In the USFWS Northeast Region, the cultural resource review and compliance process is initiated by contacting the Regional Historic Preservation Officer/Regional Archaeologist. The officer or archeologist will determine whether the proposed undertaking has the potential to impact cultural resources, identify the "area of potential effect," determine the appropriate level of scientific investigation necessary to ensure legal compliance, and initiates consultation with the pertinent State Historic Preservation Office and federally recognized Tribes.

With a relatively small number of hunters dispersed across the refuge during the hunting season, impacts would be negligible on the refuge's cultural resources based on our observations of past hunting impacts.

Impacts on Air Quality

Hunting is expected to have negligible adverse short-term, long-term or cumulative impacts on local or regional air quality. Localized increases in emissions from hunter's vehicles or boat motors would be negligible compared to current off-refuge contributions to pollutant levels and likely increases in air emissions in the Accomack County air shed from land development over the next 15 years. Any adverse air quality effects from refuge activities would be more than offset by the benefits of maintaining the refuge in natural vegetation. The hunting program would not violate EPA standards and would comply with the Clean Air Act.

Impacts on Soils

The soils of Chincoteague NWR consist primarily of sand and silt loams. The soils are a mixture of Chincoteague silt loam (0-1 percent slope), Assateague fine sand (2-35 percent slope), Camocca fine sand (0-2 percent slope), beach sand (0-5 percent slope), Fisherman-Camocca complex (0-6

percent slope), and Udorthents and Udipsamments soils (0-30 percent slope). The soils are predominantly made of loam, silt, and sand. Assateague fine sand areas are rarely flooded. However, the rest of the areas are frequently to moderately prone to flooding. Hiking or walking can alter habitats by trampling vegetation, compacting soils, and increasing the potential of erosion. Using these baseline impacts, the refuge's hunt program has the potential to cause some soil compaction since off-trail foot travel occurs; however, hunting is expected to have negligible adverse short-term, long-term or cumulative impacts on soils. With a limited number of hunters dispersed across the refuge during the hunting season, impacts would be negligible based on our observations of past hunting impacts. Vehicles would continue to be confined to existing refuge roads and parking lots to minimize impacts outside of that developed footprint, with the exception of hunters assigned to Toms Cove Hook.

Impacts on Hydrology and Water Quality

No natural freshwater streams or lakes exist on Chincoteague NWR. Rainfall and tidal over wash are the only sources of surface water on Assateague Island. The moist soil units or impoundments are slightly brackish to highly saline because of tidal over wash, salt spray, and the accumulation of salt residue as water evaporates. The same environmental influences make the groundwater lenses beneath the islands brackish. Evaporation and transpiration account for major surface water depletion during the summer months. The drinking water supply for Chincoteague Island and the refuge comes via pipeline from three deep wells and a shallow well field near the NASA base on the mainland. Large bodies of water bordering the Refuge are the Atlantic Ocean, Chincoteague Bay, and Assateague Channel. Hunting is expected to have negligible adverse short-term, long-term or cumulative impacts on hydrology or water quality based upon staff observations of past hunting impacts. The hunting program would not violate federal or state standards for contributing pollutants to water sources and would comply with the Clean Water Act.

The Service does not expect emissions from vehicles to substantially affect the water quality of the region. Lead slugs and buckshot are permitted for deer hunting. Public outreach and education on littering and proper waste disposal will lessen potential negative water quality impacts.

Impacts on Vegetation

Repeated visitation to any particular locale at the refuge would continue to cause minor site-specific damage to vegetation. Accidental introduction of invasive plants, pathogens, or exotic invertebrates attached to boats, or on shoes or clothing, is another source of direct impact on vegetation. In places where unmarked paths are created by hunters and anglers, little used pathways will retain their dominant vegetation species, but on medium-use pathways some plant species will be replaced and heavily-used paths will often contain invasive species (Liddle and Scorgie 1980).

Using the information previously presented as a baseline and considering staff observations of past impacts, hunting is expected to have negligible adverse short-term, long-term, or cumulative

impacts on vegetation. Disturbance to vegetation is expected to increase due to an expected increase in deer hunters in new free roam hunting areas during all hunting seasons. The possibility for new trails to be developed from repeated hunter entry may occur. However, anticipated dispersal of hunters across hunting areas, the inherent nature of hunters to only travel as far as needed to find a hunting location, and knowing that most vegetative species will have already undergone senescence or become dormant, the impacts to vegetation are expected to be negligible. On-going education about the peril of non-native invasive plant species introduction will continue through refuge outreach.

Deer overabundance can affect native vegetation and natural ecosystems and has been well-studied (Tilghman 1989, Nudds 1980, Hunter 1990; Behrend et al. 1970). White-tailed deer selectively forage on vegetation (Strole and Anderson 1992), and thus can have substantial impacts on certain herbaceous and woody species and on overall plant community structure (Waller and Alverson 1997). Overbrowsing by deer can decrease tree reproduction, understory vegetation cover, plant density, and plant diversity (Warren 1991). High densities of deer have also been recognized as vectors for spreading invasive species like Japanese stiltgrass. Thus, control of the white-tailed deer population on the refuge will have a moderate beneficial impact on the vegetation communities.

Impacts on Federal and State Endangered Species

The endangered Delmarva Peninsula fox squirrel (*Sciurus cinereus cinereus*) and threatened seabeach amaranth (*Amaranthus pumilus*) are the only federally listed species utilizing refuge hunt areas during the Virginia hunting seasons. Piping plovers (*Charadrius melodus*) and loggerhead sea turtles (*Caretta caretta*) nest on the refuge during the summer, outside of hunting seasons.

While the bald eagle is no longer a federally listed species, the refuge uses the national bald eagle management guidelines for bald eagle management to implement time-of-year restrictions for nesting eagles. The guidelines do not permit any activity within 330 feet of an active nest during the breeding season (USFWS 2011).

Impacts on Waterfowl

Morton (1986) found that the increased presence of humans associated with the refuge big game hunting program can contribute to movements of ducks, particularly black ducks, off the refuge. These disturbances are at a time when these birds need the isolation of the refuge to feed and rest. Paulus (1984) and Belanger (1989) found that hunting activity (gun shots or hunter movements) caused waterfowl to move to less disturbed areas and avoided some areas until after the hunting season. Laskowski et al (1993) documented human disturbance to a representative species of waterfowl by the visiting public (on managed impoundments) on Back Bay NWR, VA. Disturbance elicited behavioral changes ranging from increase alertness to flying to other parts of the refuge. McNeil et al. (1992) found that many waterfowl species avoid human disturbance by feeding at night instead of the day.

Impacts to Landbirds

Disturbance to landbirds has been well documented. Pedestrian travel can influence normal behavioral activities, including feeding, reproductive, and social behavior and the location of recreational activities impacts species in different ways. Miller et al. (1998) found that nesting success was lower near recreational trails, where human activity was common, than at greater distances from the trails. A number of species have shown greater reactions when pedestrian use occurred off trail (Miller et al. 1998). For songbirds, Gutzwiller et al. (1997) found that singing behavior of some species was altered by low levels of human intrusion.

Disturbance to these non-hunted migratory birds could have regional, local, and flyway effects. Free-roaming big game hunters may cause local, temporary, minor alterations to feeding and resting behavior in landbirds. However, the limited number of hunters, and the availability of nearby undisturbed habitats, render the direct, indirect, and cumulative impacts on these species negligible. Hunting will have little to no effect on nesting landbirds due to seasonal differences in these activities. The early part of nesting season of some raptors coincides with the end of the majority of hunting seasons, but hunting would have little impact on the critical periods of incubation and fledging.

Impacts on Secretive Marsh and Waterbirds

Resident waterbirds tend to be less sensitive to human disturbance than are migrants, and thus will be less impacted by disturbance from public use on the refuge. However, wading birds have been found to be extremely sensitive to disturbance in the northeastern U.S. and may be adversely impacted by disturbance from public use on the refuge (Burger and Gochfeld 1998). The impacts of intrusion through public use are generally negligible for this group of birds, but can vary by species and between years (Gutzwiller and Anderson 1999).

Disturbance to secretive marsh birds and waders from hunting would start in September and usually end in January, unless hunting is allowed during the snow goose conservation order into mid-April. This disturbance may have direct effects on migrating and wintering secretive marsh birds and waders. Due to the limited number of hunting days and the restricted hours, we expect the short-term, long-term and cumulative impacts to be negligible.

Impacts on Fisheries

Impacts to fisheries from visitors engaged in hunting are expected to be temporary and negligible. Since hunting occurs during the fall and winter months, any sediment suspension should not adversely affect biological oxygen demand (BOD) for fisheries resources. Effects on inter-jurisdictional fishes are expected to be unlikely from hunting because the majority of the refuge will experience minimal, transitory use by hunters.

Impacts on Mammals

In general, the presence of humans will disturb most mammals, which typically results in indirect negligible short-term adverse impacts without long-term effects on individuals and populations. Adverse impacts on resident game populations from hunting would be negligible.

VDGIF, under the direction of a Governor-appointed Board of Directors, is specifically charged by the General Assembly with the management of the state's wildlife resources. The Virginia Deer Management Plan, first completed in 1999 and revised in 2006, guides management of deer habitat, deer populations, damage caused by deer, and deer-related recreation in the Commonwealth. In 2012, 213,597 deer were reported killed by hunters in Virginia. This total included 96,712 antlered bucks, 18,061 button bucks, 98,781 does (46.3%), and 43 “unknown” deer. It is also 8% below the last 10-year average of 232,573. In Accomack County, an average of 3,056 deer per year are killed (see Table, 2008-2012 data).

Accomack County Deer Kills, 2008-2012

Year	Antlered Males	Male Fawns	Females	% Female	Unknown	Total
2008	1412	371	1924	51.9%	0	3707
2009	1225	249	1614	52.3%	0	3088
2010	1246	307	1740	52.8%	0	3293
2011	1007	263	1535	54.7%	2	2807
2012	923	212	1249	52.4%	0	2384

<http://www.dgif.virginia.gov/wildlife/deer/harvest/index.asp>

Population reconstruction computer models indicate that Virginia’s statewide deer population has been relatively stable over the past decade, fluctuating between 850,000 and 1,050,000 animals (mean = 945,000). <http://www.dgif.virginia.gov/wildlife/deer/management-plan/virginia-deer-management-plan.pdf>

Hunting resident game species, such as deer, on Chincoteague NWR and Wallops Island NWR will result in negligible impacts on their populations because of their restricted home ranges. The refuges also contribute negligibly to the state’s total harvest for resident game species.

Chincoteague NWR white-tailed deer harvest

2008/2009 – 23

2009/2010 - 20

2010/2011 - 15

2011/2012 - 27

2012/2013 - 26

Wallops Island NWR white-tailed deer harvest

2008 - 13

2009 - 15

2010 - 15

2011- 8

2012 – 11

The refuges harvested a total of 173 white-tailed deer over the past 5 years, with 37 in 2012. Given the exceptionally low numbers of animals harvested from the refuges in respect to the total statewide harvest and deer population, no cumulative impacts to local, regional, or statewide populations of white-tailed deer are anticipated from hunting of the species on the refuges.

CNWR recognizes the need for an overall Assateague Island deer and elk population estimate. Staff continues to collaborate with Assateague Island National Seashore to develop a protocol for data collection resulting in a deer and elk population estimation. Using past harvest data, VDGIF Wildlife Biologist, Todd Engelmeyer, estimated the Assateague Island, Virginia sika herd population size. Engelmeyer applied the Downing Population Reconstruction Model to 2007 and 2008 CNWR sika harvest data to produce a minimum population estimate. Downing population reconstruction “uses harvest-by-age data and backward addition of cohorts to estimate minimum population size over time” (Davis et al 2007). Results indicated a minimum population estimate of 644 sika (218 bucks, 426 does) in fall 2007 and 567 sika (181 bucks, 386 does) in fall 2008 (Todd Engelmeyer, VDGIF, pers. comm.). Note the Downing Population Estimate is based on harvest data, not survey data and the estimate only takes into account the Virginia portion of Assateague. The estimate does not consider the Maryland portion of Assateague Island nor hunter effort, skill, etc. Also, no prevention or control of epizootic hemorrhagic disease exists to date except by keeping populations below the carrying capacity of their habitats. Based on these considerations, it is anticipated that hunting would have short-term and long-term minor-to-moderate beneficial impacts on deer health and quality and habitat condition.

The continued aggressive management of the non-native sika population would have a beneficial impact on native white-tailed deer. As white-tailed deer compete with sika for habitat and food sources, the decreased sika population would reduce this competition. Deer impacts to ecosystems (e.g., forest regeneration, ground-dwelling birds) are a concern in certain areas with poor habitat and high deer populations. The VDGIF has implemented innovative programs such as the Deer Population Reduction Program (DPOP). The refuge manages sika population with DPOP. The 5-year (2008-2012) average of sika harvested from CNWR is 212, while white tailed deer averaged 22 annually.

Negative impacts from hunting on non-hunted mammals, such as voles, moles, mice, shrews, and bats, are expected to be negligible. Except for some species of migratory bats, these species have very limited home ranges and hunting would not affect their populations regionally. Impacts of hunting to migratory bat species would be negligible. These species are in torpor or have

completely passed through Virginia by peak hunting season in November through January. Vehicles are restricted to roads and harassment or taking of any wildlife other than legal game species is not permitted.

Impacts to Amphibians and Reptiles

The direct, indirect, and cumulative effects of hunting to amphibians and reptiles such as snakes, skinks, turtles, lizards, salamanders, frogs, and toads are expected to be negligible. Hibernation or torpor by cold-blooded reptiles and amphibians limits their activity during the hunting seasons for deer, and migratory game birds, when temperatures are low and hunters would rarely encounter them during most of the hunting season.

Impacts to Invertebrates

Impacts to invertebrates such as butterflies, moths, other insects, and spiders are expected to be negligible. Invertebrates are not active during the majority of the hunting seasons and would have few interactions with hunters during the hunting season.

Impacts on Public Use and Access

Refuge lands allow the public to enjoy hunting at no or little cost in a region where private land is leased for hunting, often costing a person several hundred to several thousand dollars per year for membership. Refuge hunting programs also make special accommodations for mobility-impaired hunters. Hunting provides opportunities to experience a wildlife-dependent recreational activity, instills an appreciation for and understanding of wildlife, the natural world and the environment, and promotes a land ethic and environmental awareness. Visitors interested in hunting would find high quality opportunities to engage in their favored pastime.

The refuge would also be promoting a wildlife-oriented recreational opportunity that is compatible with the purpose for which the refuge was established. The public would have an increased awareness of the refuge and the Refuge System and public demand for more areas to hunt and learn about wildlife would be met. The hunting program provides an administratively simple program that balances other public use activities. The program supports Presidential Executive Order #13443: Facilitation of Hunting Heritage and Wildlife Conservation, regional directives, and parallels State hunting regulations. In addition, it provides seasonal closures to minimize wildlife disturbance and/or avoid conflicts with other uses, enhances disabled hunting opportunities, further develops an appreciation for fish and wildlife, and expands public hunting opportunities.

As the majority of big game hunting will take place north of the major public use area and will occur after the high visitation summer season, little conflict with other refuge visitation is expected.

However, limited hunting will occur within the major public use area, requiring the closing of some trails to the general public. In order to minimize conflicts, selected hunting zones will be

limited to half-day hunts. To accommodate hunters confined to wheelchairs, hunt zone(s) will be closed to the general public daily, throughout the hunt. Closures within the major public use area will be heavily signed and patrolled to alert non-hunters of the ongoing big game hunt. In addition, allowing firearms hunting only from Monday through Friday and not on the weekends will further reduce conflicts with other refuge visitors.

Other Past, Present, Proposed, and Reasonably Foreseeable Actions and Anticipated Impacts

Cumulative effects on the environment result from incremental effects of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative effects may result from individually minor actions, they may, viewed as a whole, become substantial over time. The hunt plan has been designed to be sustainable through time given relatively stable conditions.

Anticipated Impacts if Individual Actions are Allowed to Accumulate

The cumulative impact of hunting on migratory and resident wildlife populations (white-tailed deer and sika) at Chincoteague NWR is negligible. The proportion of the refuge's harvest of deer is negligible when compared to local, regional, and state populations and harvest.

Because of the setting of hunting seasons largely outside the breeding seasons of resident and migratory wildlife, the ability of individual refuge hunt programs to adapt refuge-specific hunting regulations to changing local conditions, and the wide geographic separation of individual refuges, we anticipate no direct or indirect cumulative effects on resident wildlife, migratory birds, and non-hunted wildlife of hunting on Chincoteague NWR.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague National Wildlife Refuge CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

The refuge will manage the hunt program in accordance with Federal and State regulations and review it annually to ensure wildlife and habitat goals are achieved and that the program is providing a safe, high quality hunting experience for participants.

To ensure compatibility with refuge purposes and the mission of the Refuge System, hunting can occur on the refuge if the refuge-specific regulations highlighted in this document and following stipulations are met:

- This use must be conducted in accordance with State and federal regulations, and special refuge regulations published in the refuge Hunting Regulations brochures.
- This use is subject to modification if on-site monitoring by refuge personnel or other authorized personnel results in unanticipated negative impacts to natural communities, wildlife species, or their habitats.
- Law Enforcement Officer(s) will promote compliance with refuge regulations, monitor public use patterns and public safety, and document visitor interactions. Law Enforcement personnel will monitor all areas and enforce all applicable State and Federal Regulations.
- Several management strategies identified by Klein (1989) can be used to control the negative effects of recreation on wildlife; these included: permits, user fees, zoning (Cullen 1985), travel ease, public education (Purdy et al. 1987), limiting number of visitors present, and periodic closing. Chincoteague NWR employs these measures to lessen the disturbance and impact to wildlife.
- Big game hunting, using firearms, will continue to be permitted on about 5,200 acres of the 13,682 acre refuge, or 38% of the total area; other areas will remain closed to this activity.
- Big game hunting will continue to be by permit only, with all successful hunters being required to register at the refuge game check station.
- The archery hunt will begin in early October in order to avoid the major migration period.
- The refuge manager may, upon annual review of the hunting program and in coordination with VDGIF, impose further restrictions on hunting. Further restrictions may include but are not limited to recommending that the refuge be closed to hunting or further liberalize hunting regulations. Hunting restrictions may be imposed if hunting conflicts with other, higher priority refuge programs, endangers refuge resources, or public safety. Specific hunt details will be outlined in the annual hunt program.

JUSTIFICATION:

Hunting is a priority wildlife-dependent use for the Refuge System through which the public can develop an appreciation for fish and wildlife (Executive Order 12996, March 25, 1996 and The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57)). USFWS policy is to provide expanded opportunities for wildlife-dependent uses when compatible and consistent with sound fish and wildlife management and ensure that they receive enhanced attention during planning and management.

Hunting seasons and limits are established by the Commonwealth of Virginia and generally adopted by the refuge. These restrictions ensure the continued well-being of overall populations of game animals. Hunting does result in the taking of many individuals within the overall population,

but restrictions are designed to safeguard an adequate population from year to year. Specific refuge regulations address equity and quality of opportunity for hunters, and help safeguard refuge habitat. Disturbance to other fish and wildlife does occur, but this disturbance is generally short-term and adequate habitat occurs in adjacent areas. Loss of plants from foot traffic is minor, or temporary, since hunting occurs mainly after the growing season.

Conflicts between hunters are localized and are addressed through law enforcement, public education, and continuous review and updating to State and refuge hunting regulations. Conflicts between other various user groups are minor given the season of the year for hunting, the location of most hunting away from public use facilities, and seasonal area closures.

Big game hunting is conducted to maintain populations at a level compatible with refuge habitat, reduce the exotic sika population to lessen competition with native white-tailed deer, and to provide the general public with quality hunting. Without a method to reduce the big game populations on Assateague Island, overpopulation would occur, followed by a reduction in the quality of the habitat, and a reduced herd size due to disease and starvation. A public hunt is the most feasible alternative at this time to accomplishing a reduction in the herd size.

Stipulations above will ensure proper control of the means of use and provide management flexibility should detrimental impacts develop. Allowing this use also furthers the mission of the Refuge System by providing renewable resources for the benefit of the American public while conserving fish, wildlife, and plant resources on the refuge.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.

SIGNATURE:

Refuge Manager: _____
(Signature)

(Date)

CONCURRENCE:

Regional Chief: _____
(Signature)

(Date)

MANDATORY 15 YEAR RE-EVALUATION DATE: _____

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COMPATIBILITY DETERMINATION

USE:

Grazing of Chincoteague Ponies

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C. 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:**(a) What is the use? Is the use a priority public use?**

The use is grazing of Chincoteague ponies. The grazing program on the refuge allows up to 150 adult Chincoteague ponies, a registered breed and owned by the Chincoteague Volunteer Fire Company (CVFC), a 501c3 nonprofit organization, to graze within two separate compartments on the refuge. In 2013, an Interim Pony Management Plan was developed as part of the draft CCP/EIS to provide guidance and set short term management objectives for this use. This is not a priority public use.

(b) Where would the use be conducted?

The horses are allowed to graze on approximately 3,946 acres. The current grazing program includes two compartments: the southern compartment which contains 547 acres and the northern compartment which has 3,399 acres. The southern compartment consists primarily of salt marsh with a limited amount of shrub/scrub and upland pine forest. USFWS allows the grazing of up to 50 adult Chincoteague ponies in this unit. This compartment is the primary public viewing area for the Chincoteague ponies. The northern compartment is a mix of salt marsh, brackish water areas, scrub/shrub, pine forest and maritime forest. USFWS allows the grazing of up to 100 adult Chincoteague ponies in this unit. However, if necessary during the winter months, ponies from the southern compartment may be moved to the north compartment for animal safety and welfare.

The compartments were established to keep the ponies off the beach and dune areas and some of the major moist soil management units, as well as separating them from the visiting public for safety reasons. The maximum number of ponies allowed has remained constant at 150 adult animals since the initial permit was issued in the 1940s. Any recruitment above that number is removed each summer.

(c) When would the use be conducted?

The grazing program is conducted year round.

(d) How would the use be conducted?

A Special Use Permit (SUP) for grazing is annually issued to the CVFC at the start of the new fiscal year. Prior to the signing of the new SUP, the Refuge Manager will meet with the Pony Committee Chair for the CVFC and discuss changes or updates to the proposed SUP. Once agreement has been reached as to the content of the SUP, the Pony Committee Chair will submit the proposed SUP to the CVFC Pony Committee and then the full CVFC membership. Once approved, the SUP will be signed by the Refuge Manager and the Pony Committee Chair and/or the President of the CVFC. Additional meetings with the CVFC Pony Committee are held to organize volunteer work details and/or round-up events.

As stated, the ponies are contained by either fencing or natural barriers, such as the Assateague Channel. The fire company is required to keep the ponies within the grazing units and to repair the fence as needed with the assistance of refuge personnel. The roundups are conducted by the CVFC members on horseback. Both the spring and fall roundups take two days to complete. The summer event(s) (round-up, penning, sunrise walk down the beach, swim, auction, and return) is a one week event. This week long event takes place in the last week of July in which the Wednesday and Thursday fall within the month of July. This provides consistency in long range planning efforts for the CVFC, the refuge, Town of Chincoteague, Chamber of Commerce, and tourism related agencies.

(e) Why is this use being proposed?

The grazing of the Chincoteague ponies, by the CVFC, has been an ongoing use since the 1920s, nearly 20 years prior to the refuge's establishment. The proposal being reviewed is a continuation of that use. However, a brief history is instrumental in understanding this use.

Domestic livestock grazing has long been a part of Assateague Island's history from the time the Eastern Shore was settled during the early 1600's. Early accounts of grazing horses and other livestock (sheep, goats, cattle, etc.) on barrier islands indicate this was a common and widespread practice all along the Atlantic Coast. Periodic roundups and so called "pennings" were often held to determine ownership and to count and sell excess or unwanted stock. In the mid 1920's the CVFC purchased horses/ponies from the estate of Joseph S. Pruitt, an oysterman from Greenbackville, Virginia. The first annual pony roundup and swim conducted by the CVFC was in 1925. Fire company members, later dubbed "Saltwater Cowboys," herded the ponies to the Assateague Channel and swam them to nearby Chincoteague Island for auction.

With the creation of the Refuge in 1943, USFWS granted a permit to livestock owner, Wyle Maddox, to graze cattle and horses on designated portions of the island (Narrative Report (NR) 1943). In 1946, USFWS issued the CVFC a Special Use Permit (SUP) for grazing no more than 150 head of horses (NR 1946). These animals (domestic animals and horses) were allowed free range of the entire refuge. Between 1946 and 1952, both permits were in effect; however, in 1953 the only grazing permit issued was to the CVFC. This permit was renewed annually and is currently in place, although the conditions of the permit have changed considerably over the years. Since the late 1950's, a number of attempts have been made to fence the ponies out of the most sensitive wildlife areas. The latest attempt, which continues to the present, was begun in 1989, when the fences around the two compartments were redone in order to more adequately contain the ponies.

Foals of the year are sold at auction and are not included in count of adult horses. This activity includes three roundups each year with the annual pony penning and swim in July. The historical details of the grazing program are covered in the 1990 Pony Management Plan (as amended in

1995). Additionally, this program was evaluated in the 1992 Final EIS and the 1993 Chincoteague NWR Master Plan. This use was subsequently considered compatible in two compatibility determinations approved in 1994 and 2004.

In 1947, the Chincoteague ponies reaped national and international attention with Marguerite Henry's children's classic, *Misty of Chincoteague*. The later movie version in 1961 further heightened the popularity of the authentic island pony and its lineage. To children and adults, "Misty of Chincoteague" is an iconic symbol of the spirited ponies freely roaming on Assateague Island.

The Assateague Island recreational beach, the ponies, and the Refuge are the Town of Chincoteague's and Accomack County's major tourist attractions. Every year the Refuge experiences between 1.2 and 1.5 million visits. This makes the Refuge one of the top five most visited National Wildlife Refuges in America. Due to Refuge related tourism, over \$100 million dollars is spent in the regional economy for lodging, meals, gasoline, souvenirs, recreation, and other items.

In 2010, the town completed a visitor survey. Eighty percent (80%) of Chincoteague visitors selected Assateague Beach as their top destination. Viewing the wild ponies consistently ranked among the top three activities most important to visitors.

By allowing the uses described in this determination, the visiting public, who might come just to see these world famous ponies, will also be exposed to natural resource related subjects and therefore, will have a better understanding and appreciation for wildlife, the cultural history of the refuge, and the importance of the Refuge System. Therefore, the draw of the Chincoteague ponies will positively contribute to the achievement of Refuge System and refuge purposes.

AVAILABILITY OF RESOURCES:

The CVFC owns and manages the Chincoteague ponies and is responsible for the health and well being of the ponies including, but not limited to: veterinarian services, supplemental watering and feeding, rounding-up horses that escape their pastures, opening gates/fences when large coastal storm threaten, and oversight of the three round-ups and the pony swim.

Additionally, CVFC jointly coordinates efforts with refuge staff to identify and conduct maintenance and replacement projects for gates and fence lines, clearing of down trees and limbs from fence lines, repair of corrals, and other pony related management and/or maintenance projects.

The refuge will provide the posts, barbed wire, and gates needed to maintain the approximate 13 miles of fence line that contains the Chincoteague ponies in the two pasture areas. This

expenditure is undertaken by USFWS to limit its exposure for possible litigation. Federal Courts have held that the government should compensate private individuals "...for the value of the improvements that they had constructed on lands covered by their grazing permits...." (Rusk 2008). The word "their" in this sentence refers to government agencies. The estimated cost for materials to replace 1 mile of three strand barbed wire fence is \$3,500. Annual costs to USFWS are estimated at \$65,000.

Additionally, staff time is devoted to issuing the permit, assisting with fence repair and maintenance, crowd control during pony round-ups, and ensuring compliance with the special conditions. The refuge is very fortunate to attract individuals and groups from around the country that wish to conduct volunteer service at the refuge, and these volunteers are often employed to help with fence and gate maintenance projects.

Within the annual refuge operations and maintenance budget, there is sufficient staffing and funding available to accomplish these tasks encompassed by this use.

ANTICIPATED IMPACTS OF THE USE:

Numerous studies have been conducted and articles written on the effect of grazing on marshes. Some of these studies have been specific to Assateague Island and even to the refuge. Depending on the study, one can find both positive and negative effects of grazing on marshes. Several studies have shown that grazing could have a stimulating effect on grass production (McNaughton, 1979; Hubbard, 1970; Chabreck, 1968; and Ranwell, 1961. McNaughton (1979) found that production of grasses increased up to an optimal level of grazing then declined when subjected to overgrazing. Bakker (1985) determined that grazing of a salt marsh lead to enhanced species diversity, due to the removal of litter. However, Wood (1980) found that the net primary productivity of the marsh on a barrier island in North Carolina was reduced by heavy grazing, but that the exploitation of the salt marsh was not exceeding productivity. Rubenstein et al (1976), working in the same location as Wood, indicated that grazing had no significant effect on above ground biomass but did on the below ground biomass in marsh areas. Turner (1987), in studying grazing on a barrier island in Georgia, indicated that the abundance of the periwinkle snail was reduced due to grazing and that grazing had a substantial impact on the standing stocks of *Spartina*. Turner (1988), in another study on the same island, determined that the horse population should be maintained at a level to prevent excessive damage to the salt marsh. Zervanos (1978), working on Assateague Island, found little evidence to demonstrate adverse effects from pony grazing on the Maryland end of the island. Keiper (1981) determined that grazing on the refuge may stimulate additional plant growth, although the vegetation may be shorter but denser; he discovered that more growth was exhibited in the grazed versus un-grazed sites.

Since the ponies are allowed to graze within migratory bird habitat, impacts are likely to occur. Pony grazing on the natural marshes and within moist soil management units can lessen the amount of food and cover available to migratory birds. The value, of areas of the marsh which may be heavily grazed, is less for migratory birds, such as rails and black ducks which utilize this habitat. Nests of ground nesting birds, such as willets, quail, shorebirds, etc. are in danger of being trampled if the nesting occurs within the grazing compartments. Based on the research cited in this determination, some habitat may actually be improved, while others are negatively impacted.

The National Park Service (2009) published a Finding of No Significant Impact - Environmental Assessment of Alternatives for Managing the Feral Horses of Assateague Island National Seashore. In this document the NPS determined that "...Scientific studies have found that the horses can disrupt important native plant communities, such as salt marsh wetlands, by reducing plant vigor, changing species composition, and altering marsh structure and morphology. This, in turn, can reduce the ecological functionality of those communities and their value as habitat for native fauna, thereby limiting biodiversity. Horse grazing has been shown to also harm rare species, including the beach-dwelling threatened species *Amaranthus pumilus*, by dramatically reducing seed production and limiting the plant's reproductive potential. Natural processes essential to maintaining a healthy barrier island ecosystem have also been affected by a too-large horse population. Favored by horses, the intensive grazing of American beach grass (*Ammophila brevigulata*) has been demonstrated to alter the processes of dune formation and stabilization. Collectively, the results of a broad array of research indicate that the recommended limit of 150 horses has failed to protect the other natural resources and values of Assateague Island. ...". Additionally, as part of its research efforts, the NPS determined that a feral horse population maintained in the range of 80-100 would best sustain both herd and ecosystem health.

Research now indicates that the Mid-Atlantic coastline is experiencing a rate of sea level rise that is second only to that of the Louisiana and Texas wetlands/coastline along the Gulf of Mexico. Delissa Padilla Nieves, (2009), conducted a Sea Level Affecting Marsh Model (SLAMM) analysis for the lower Delmarva Peninsula. The results of that modeling revealed an overall loss of approximately 57% of the salt marsh by the year 2100 under a 1 meter sea level rise scenario. Most of the grazing area within the southern compartment (547 acres) consists primarily of salt marsh. In the northern compartment (3,399 acres) much of this unit is also salt marsh, but it does have a more upland shrub/scrub and pine forest component. Over the term of this CD (10 years) conversion of salt marsh habitat to mud flats or open water is expected to be less than significant.

Since the establishment of the refuge, the actual amount of grazing on the refuge has been reduced from two grazing permits to only one, with the number of animals being reduced by half in the early 1950's when the second permit was discontinued. Additionally, restrictions have also been added to reduce any possible impacts to the migratory bird habitat. Since the early 1950's,

the number of ponies has been fairly constant at around 150 adult animals; therefore, their impacts can be considered to be fairly constant. However, continued grazing by Chincoteague ponies in the salt marshes of the two grazing compartments is expected to reduce and/or eliminate the accumulation of detritus (decaying vegetation). This buildup of decaying vegetation is thought to be vital if salt marsh root systems are to keep pace with rising sea levels. Reducing grazing pressure on the salt marsh is consistent with CVFC's goal of maintaining a viable healthy population of Chincoteague ponies on the refuge. Although not mandated, we believe maintaining the Chincoteague pony population at or below its current number of 135 animals, in lieu of 150, over the next 10 years is important in maintaining a balanced approach to pony grazing in the light of a changing climate.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

The Chincoteague Volunteer Fire Company will be required to adhere to the special conditions contained in the Special Use Permit which allows the grazing and must be consistent with provisions of the Pony Management Plan in order for this activity to remain compatible. The special conditions include:

1. This permit authorizes the use of the Chincoteague NWR for the grazing of Chincoteague Ponies (ponies) only. Ponies are authorized only within the permitted pasture/habitat units (i.e. North and South Pony Management Areas, see attached map.) The herd numbers will not exceed that allotted (150) for such grazing, unless permission is granted by Refuge Manager for extenuating circumstances (i.e. weather, tidal flooding, etc.) Permittee is solely responsible for ensuring the ponies are in compliance with these conditions. Failure to comply may result in cancellation of grazing privileges, the imposition of administrative fees and/or legal charges.
 - a. Permittee has one week to return ponies to permitted compartments once notified by the Refuge Manager; an additional week may be granted based on adequate justification. Ponies that

habitually get out of permitted compartments will be removed from the refuge until the fence is repaired or escape is blocked.

b. Ponies will be promptly returned to their assigned grazing units after the annual July round-up and auction.

2. The permittee is responsible for the maintenance of all assigned fences, including repair of damage caused by tidal flooding and other acts of nature. The U.S. Fish and Wildlife Service will purchase all post and fencing materials necessary for scheduled maintenance and repairs of fence lines. The permittee, in concert with the Refuge Manager, will develop a fence replacement and repair schedule/plan that stipulates the replacement of fence lines for a period of 10 years. The permittee will work in concert with the Refuge Manager for the scheduling of joint fence maintenance activities.

3. The permittee will designate individuals authorized to assist in management activities for the Chincoteague pony herd and will supply a list to the Refuge Manager within 30 days after issuance of the Special Use Permit. The top four names will be authorized to take action in the event of an emergency, if the Pony Committee Chairman is not available. Additionally, the permittee will provide the Refuge Manager a list of volunteers and helpers assigned to Pony Committee activities (round-ups, feeding and watering, etc.).

4. The permittee will provide the name and phone number of a contact veterinarian in case of emergency. CNWR will contact the permittee in case of an emergency, but should the permittee fail to respond within 12 hours, CNWR will initiate veterinarian services and the permittee will be responsible for all charges. Permittee will comply with all Commonwealth of Virginia and US Department of Agriculture livestock health laws.

5. Pony penning activities are allowed for herd size management. Additional stipulations apply and are identified in the 2013 Interim Pony Management Plan and Special Use Permit.

6. The permittee is responsible for conduct of members of work parties while on the refuge. Consumption of alcoholic beverages is not allowed on the refuge.

7. The permittee after each round-up (spring, summer and fall) will provide the Refuge Manager a written report stating the number of ponies present on the refuge. The report at a minimum will provide the number of adult females and males found in individual grazing units (north and south.) Stock present in excess of the maximum allowable as of November 1 will be removed from the refuge within 30 days. Animals in excess of the maximum allowable after 30 days will subject the permittee to appropriate administrative and legal action.

8. The Refuge Manager reserves the right to amend or modify this permit if conditions and management considerations dictate. The Chairman of the Pony Committee will be notified prior to any anticipated changes in this permit.

JUSTIFICATION:

The Chincoteague ponies are important assets to the local communities, evoking a meaningful sense of place and generating both economic and environmental benefits.

The Chincoteague ponies have long been a part of Assateague Island's history from the time the Eastern Shore was settled during the early 1600's through today. In 1947, the Chincoteague ponies reaped national and international attention with Marguerite Henry's children's classic, *Misty of Chincoteague*. The later movie version in 1961 further heightened the popularity of the authentic island pony and its lineage. To children and adults, "Misty of Chincoteague" is an iconic symbol of the spirited ponies freely roaming on Assateague Island.

The Assateague Island recreational beach, the ponies, and the Refuge are the Town of Chincoteague's and Accomack County's major tourist attractions. Every year the Refuge experiences between 1.2 and 1.5 million visits. This makes the Refuge one of the top five most visited National Wildlife Refuges in America. Due to Refuge related tourism, over \$100 million dollars is spent in the regional economy for lodging, meals, gasoline, souvenirs, recreation, and other items.

In 2010, the town completed a visitor survey. Eighty percent (80%) of Chincoteague visitors selected Assateague Beach as their top destination. Viewing the wild ponies consistently ranked among the top three activities most important to visitors.

By allowing the uses described in this determination, the visiting public, who might come just to see these world famous ponies, will also be exposed to natural resource related subjects and therefore, will have a better understanding and appreciation for wildlife, the cultural history of the refuge, and the importance of the Refuge System. Therefore, the draw of the Chincoteague ponies will positively contribute to the achievement of Refuge System and refuge purposes.

Past studies by USFWS confirm that controlled livestock grazing can be beneficial to some vegetative communities by increasing vigor of perennial grasses, speeding recycling of nutrients, increasing production of vegetation, preventing the decline and death of plants due to lodging and build-up of old plant material, and accomplishing the effect of burning without leaving soil severely exposed (Service 1987).

On a rotational basis, the refuge undertakes mowing, disking and at times prescribed burning of impoundments to set back succession and maintain a healthy vigorous plant community. Refuge

staff propose introducing a specified number of ponies (to be determined) into the impoundments (Pools A, B North , C, D, and E) for a specified period of time. This will provide rotational disturbance to the plant communities without the use of fossil fuels.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established. In addition, this activity will contribute to one or more purposes of the refuge or Refuge System.

SIGNATURE:

Refuge Manager: _____
(Signature) (Date)

CONCURRENCE:

Regional Chief: _____
(Signature) (Date)

MANDATORY 10 YEAR RE-EVALUATION DATE: _____

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COMPATIBILITY DETERMINATION

USE:

Horseback Riding

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C. 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act).

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:**(a) What is the use? Is the use a priority public use?**

The use is recreational horseback riding on Chincoteague NWR, on Assateague Island, Virginia. Horseback riding is not a priority public use; however, it does facilitate wildlife observation and photography.

(b) Where would the use be conducted?

Horseback riding will be conducted along the southernmost Atlantic ocean beachfront of Assateague Island.

Upon completion of the CCP but prior to the relocation of the recreational beach, from March 15 to September 15, the area south of the recreational beach parking area is closed.

From September 16 to March 14, the horseback riding and OSV zone will again start at the southern terminus of the National Park Service assigned area/recreational beach parking areas then south along the Atlantic Ocean beachfront to Fishing Point on Toms Cove Hook, then returning by the same route. The approximate linear distance of beachfront open to OSV use at this time of year is 4.5 miles one way, 9 miles round trip. Travel will generally be within the intertidal zone, unless horseback riders and vehicle drivers are re-directed by signage to avoid sea turtle nest sites; horseback riding and vehicles are prohibited from the dunes or vegetated areas.

(c) When would the use be conducted?

Upon completion of the CCP but prior to the relocation of the recreation beach, horseback riding will mimic the opening and closing of the OSV Zone:

- Overwash and Toms Cove Hook Area - Open from September 16 to March 14. Horseback riding will be permitted along the beachfront ending at the south tip of Assateague Island known as "Fishing Point";
- If unfledged shorebirds remain in the OSV zone after September 15, the refuge manager will designate a closed area to protect these birds;
- The refuge manager may close the OSV zone at anytime for safety or security reasons.

Horseback riding will be permitted during normal refuge hours of operation which are:

- May through September: 5 a.m. to 10 p.m.;
- October: 6 a.m. to 8 p.m.;
- November through March: 6 a.m. to 6 p.m.;
- April: 6 a.m. to 8 p.m.

(d) How would the use be conducted?

In cooperation with the National Park Service the Refuge will develop maps and brochures that detail the specific routes of travel and any regulations that those engaged in horseback riding

must adhere to. A check-in and check-out box will be located conveniently at the start of the trail so that horseback riders can sign-in and obtain current brochures, maps and any updates on closed areas or beachfront conditions.

The refuge, in conjunction with NPS, will be responsible for all routine maintenance activities and law enforcement within the area established for this use. Refuge staff will post nesting areas for the protection of endangered species (i.e. sea turtles) as well as informing riders of any special restricted areas.

(e) Why is this use being proposed?

Horseback riding has a long history on Assateague Island. Even before the establishment of the refuge in 1943, horseback riding was the preferred way of rounding-up livestock that was allowed to free range on the island. During World War II the United States Coast Guard patrolled the Assateague Island shoreline by horseback looking for German U-boats or evidence of human activity on the beach. However, recreational horseback riding has always been a favorite pastime of local/county residents and has been permitted with varying degrees of restrictions since the establishment of the Refuge.

Historically, horseback riding was allowed on the Beach Road, Spur Road to the OSV zone and, depending on the time of year, the area of Toms Cove Hook that was open to off road vehicle use and along a small section of Tom's Cove beyond the Coast Guard Station. Since the writing of the last CD for horseback riding (2004,) horseback riders have parked their trailers at or near the southern terminus of the NPS assigned area and have accessed the horseback riding area/OSV Zone from that location. In 2012, approximately 140 riders participated in this activity. This use has remained very low over the years, with the vast majority of this use taking place in the beachfront area of the OSV zone.

AVAILABILITY OF RESOURCES:

The resources necessary to provide and administer this use, at current levels, is available within current and anticipated refuge budgets. Staff time associated with administration of this use is minimal. Since all of this activity takes place in an area that is currently administered as the OSV Zone, which has a much larger volume of traffic/use, administering this use will be a minor duty in the oversight of the OSV use.

ANTICIPATED IMPACTS OF THE USE:

Wildlife Impacts

Studies that have been conducted elsewhere show that horseback travel can cause disturbances to wildlife. Disturbances vary with the wildlife species involved and the type, level, frequency, duration and the time of year such activities occur. Whittaker and Knight (1998) note that wildlife response can include attraction, habituation and avoidance. The proposed use has the potential of intermittently interrupting the feeding habits of a variety of shorebirds, gulls, terns and wading

birds on the Refuge. Numerous studies have documented that migratory birds are disturbed by human activity on beaches. Erwin (1989) documented disturbance of common terns and skimmers and recommended that human activity be restricted a distance of 100 meters around nesting sites. Disturbance can cause shifts in habitat use, abandonment of habitat and increase energy demands on affected wildlife (Knight and Cole 1991). Flight in response to disturbance can lower nesting productivity and cause disease and death. Knight and Cole (1991) suggest recreational activities occurring simultaneously may have a combined negative impact on wildlife. Hammitt and Cole (1998) conclude that the frequent presence of humans in a wildland area can dramatically change the normal behavior of wildlife mostly through unintentional harassment. Horseback riders would tend to present some of the same potential impacts as pedestrians. However, since this use will not be allowed during the nesting season no impact to nesting shorebirds is expected.

Besides possible direct disturbance, horseback riding can lead to soil compaction, which could have detrimental effects on invertebrates using the area and therefore limit the amount of forage for shorebirds. However, since this activity occurs mostly in the intertidal zone, the addition of horses is not expected to cause any additional serious consequences to migratory birds, as the result of soil compaction. Due to the limited amount of this activity and the closures in place to restrict this use, overall disturbance is expected to be minimal. Anticipated impacts of horse use on wildlife include temporal disturbances to species using refuge habitats open to horseback riding. These disturbances are likely to be short term and infrequent based on current levels of use. Routes found compatible for horseback riding are located in the OSV Zone on the refuge. Smaller more sensitive wildlife habitat such as riparian, wetland and grassland areas are closed for this use. Based on current observations by Refuge Law Enforcement Officers and other refuge staff existing levels of use are not anticipated to significantly increase wildlife habitat fragmentation or cause significant impacts through disturbance.

Impacts to plants

Under all development scenarios, approximately 96% of the horseback riding will take place along the Atlantic Ocean beachfront below the high tide zone. This area is devoid of vegetation. It is anticipated however, that allowing this use will have minimal impact to vegetation near parking area assigned for horse trailer parking. Current plant communities that occur in these areas are not rare or highly sensitive to disturbance based on available information. Through the development of brochures, maps, and established travel corridors we will minimize the impacts to vegetation along the entire horseback riding/OSV zone.

Invasive Species

Exposed soil and an abundance of sunlight along roads and trails provide ideal conditions for the establishment of invasive plant species. The known incidence of invasive plant species is relatively low on the Refuge. Based on current levels of use it is anticipated that no significant increases in invasive plant species will occur as a result of this use. In addition, the saline environment of the area helps prevent the establishment of invasive plants from seeds found in the fecal excrement of horses.

Threatened and Endangered Species

Two Federal threatened species found on the refuge could be affected by this activity. Piping plovers (*Charadrius melodus*) which use the refuge can be impacted negatively by human activity. Pedestrians on beaches may crush eggs (Burger 1987, Hill 1988, Shaffer and Laporte 1992, Cape Cod National Seashore 1993, Collazo et al. 1994). Other studies have shown that if pedestrians cause incubating plovers to leave their nests, the eggs can overheat (Burgstrom 1991) or the eggs can cool to the point of embryo death (Welty 1982). Pedestrians have been found to displace unfledged chicks (Strauss 1990, Burger 1991, Hoopes et al. 1992, Loegering 1992, Goldin 1993). Horses have the potential to cause some of the same impacts but the seasonal closure of the horseback riding and OSV Zone will prevent any disturbances to nesting piping plovers. It is anticipated that recreational horseback riding will not cause any direct or indirect impacts to nesting or migrating piping plovers due to the minimal nature of this use and the seasonal closures of nesting areas.

Seabeach amaranth (*Amaranthus pumilus*) is a small annual dune plant native to barrier island beaches of the Atlantic coast. It is currently listed as a Federal threatened species. Germination takes place over a relatively long period of time, generally from April to July. Flowering begins as soon as plants have reached sufficient size, sometimes as early as June, but more typically commencing in July and continuing until the death of the plant in late fall. Seed production begins in July or August and reaches a peak in most years in September but continues until the death of the plant. It is a "pioneer species," growing on newly created dunes, over wash fans and other areas of bare sand. Intensive recreational use of beaches threatens amaranth populations in some instances. Pedestrian traffic, even during the growing season, generally occurs in areas where it has little effect on populations of seabeach amaranth. Any impacts by recreational horseback riders will be similar to those of OSV use since they will occur in the same area under the same rules and regulation of OSV use.

Unregulated, OSV use and by extension horseback riding on the beach during the growing season could have detrimental effects on the species if those uses are not routed around the plants (Weakley and Bucher 1991). The fleshy stems of this plant are brittle and easily broken. Therefore, even minor beach traffic (OSV and horseback riding) over the plants during the growing season is detrimental, causing mortality and reduced seed production (Weakley and Bucher 1991). Dormant season OSV use has shown little evidence of significant detrimental effects, unless it results in massive physical erosion or degradation of the site. In some cases, winter OSV traffic may actually provide some benefits for the species by setting back succession of perennial grasses and shrubs with which seabeach amaranth cannot compete successfully (USFWS 1996). Extremely heavy use of an *Amaranthus* site, even in the winter, may have some negative impacts including pulverization of seeds. No negative impacts are anticipated to seabeach amaranth by horseback riding.

User Conflicts

Conflicts between trail users are commonly reported in the literature (Knight and Gutzwiller 1995, Ramthun 1995, Watson et. al 1994, Chavez et al. 1993). Conflicts range from concerns over personal safety to certain user groups feeling that they should be given priority over other groups based on a past history or other reasons. In the best professional opinion of the refuge law enforcement officers obtained from observation and direct contact, no significant user conflicts have been reported on the refuge.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is Not Compatible

Use is Compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

- Klein (1989) identified several management strategies used to control the negative effects of recreation on wildlife; these included: user fees, travel ease, permits, zoning (Cullen, 1985), public education (Purdy 1987), limiting number of visitors present, and periodic closing. Chincoteague NWR employs measures such as:
 - 1) Charging an entrance fee
 - 2) Develop informational brochures and maps
 - 3) Developing rules and regulations that govern horseback riding
 - 4) Specify areas open or closed to horseback riding
 - 5) Protecting and marking sea turtle nest and sea beach amaranth plants
 - 6) Conducting routine law enforcement patrols
- Horseback riding will be permitted from established parking area(s) and corridors and then along the beachfront/intertidal zone. This area will be subject to the same conditions and closures as the OSV zone as they apply:
 - 1) Sand dunes and vegetated areas are considered closed, even within OSV zone.
 - 2) Horseback riders must stay to the east of the black and white post
 - 3) Horseback riding is permitted
 - May through September: 5 a.m. to 10 p.m.;

- October: 6 a.m. to 8 p.m.;
- November through March: 6 a.m. to 6 p.m.;
- April: 6 a.m. to 8 p.m.

- 4) Litter or waste may not be burned, buried or discarded but must be removed and disposed of in designated receptacles located outside of OSV Zone.
- 5) The OSV/Horseback riding zone will be subject to partial or total closure to all OSV, horseback riding, boat, and pedestrian use during the piping plover nesting season.
- 6) Horseback riding is allowed east and south of the designated black and white OSV posts along the intertidal area and terminates at Fishing Point the western tip of Toms Cove Hook.
- 7) This activity will be limited to times when this area is open to OSVs.
- 8) Upon completion of the CCP, horseback riding will mimic the opening and closing of the OSV Zone.
 - September 16 to March 14, it will be permitted along the beachfront ending at the south tip of Assateague Island known as “Fishing Point.”
 - After September 15, if unfledged shorebird chicks remain in the OSV zone the refuge manager will designate a closed area to protect those chicks.
- 9) Prior to opening of the OSV and horseback riding zone, locations of seabeach amaranth plants and sea turtle nests will be identified by refuge staff. All seabeach amaranth plants and sea turtle nests found by refuge staff will be protected with wire mesh fencing similar to predator exclosures used for piping plover nests. Fences provide additional protection from being crushed by either OSVs or horses.

JUSTIFICATION:

Although horseback riding is considered a nonwildlife-oriented form of recreation, it does facilitate wildlife observation and photography. Use is low and occurs in an area used by OSVs which results in very little additional disturbance.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.

SIGNATURE

Refuge Manager: _____
(Signature) (Date)

CONCURRENCE:

Regional Chief: _____
(Signature) (Date)

MANDATORY 10 YEAR RE-EVALUATION DATE: _____

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COMPATIBILITY DETERMINATION

USE:

Research and Studies Conducted by Outside Agencies, Universities, and Organizations

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."
16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:**(a) What is the use? Is the use a priority public use?**

The use is research conducted by other than U.S. Fish and Wildlife Service (USFWS) personnel on the refuge. Research conducted by non-USFWS personnel is not a priority public use of the Refuge System; however, it assists in answering questions that are relevant and contribute to refuge management decisions. In addition, research activities based on needs identified and prioritized by in partnership with others will support the landscape level conservation needs identified by the Landscape Conservation Cooperatives (LCC). Monitoring and research are an integral part of refuge management. Plans and actions based on thorough research and consistent monitoring provide an informed approach to the effects of management on wildlife and habitat.

(b) Where would the use be conducted?

The Chincoteague NWR is located primarily in Accomack County, Virginia with approximately 418 acres in Worcester County, Maryland. Most of the 14,032-acre refuge is located on the southern end of Assateague Island (9,021 acres), a 37-mile long, mid-Atlantic, coastal, barrier island on the east side of the Delmarva Peninsula. In addition, the refuge operates three divisions that are located on islands which, including Assateague Island, extend over 30 miles along the Atlantic Coast. Assawoman Island Division contains 1,434 acres and encompasses the entire island; Metompkin Island Division consists of 174 acres on the north end of the island; and Cedar Island Division contains 1,412 acres in fee title and 600 acres in easements. Additional lands can be found on the north end of Chincoteague Island: Wildcat Marsh (546 acres) and Morris Island (427 acres), which is located between Chincoteague and Assateague Islands.

The location of the use will depend on the research project that is being conducted. A research project may be limited to a particular species or habitat type. Some research projects involve a combination of different habitats and species. The research location will be limited to the areas which are necessary to conduct the research project, and that do not create a significant negative impact to refuge operations and wildlife use.

(c) When would the use be conducted?

The timing of the research will depend on the project which is being conducted. Research will be allowed to occur on the refuge throughout the year. Individual research projects may require one or two visits to the refuge while other projects may require daily visits to a study site. The timing of each research project will be limited to the minimum required to complete the project.

(d) How would the use be conducted?

The methods of research will depend upon the research project which is conducted. Methods of each research project will be reviewed by staff before data collection will be allowed to occur on the refuge. No research project will be allowed to occur if it does not have an approved scientific method or if it compromises public health and safety.

Each request for this use will be considered, and if appropriate, will be issued a Special Use Permit (SUP) by the refuge manager. Each request must be presented in writing with details of who, what, where, when, why, and how the research will be conducted. Each request will be evaluated on its own merit. The refuge manager will use sound professional judgment and ensure that the request will have no considerable negative impacts to natural, cultural, or visitor services, and does not violate refuge regulations. Special needs will be considered on a case-by-case basis and are subject to the refuge manager's approval. Any approved SUP will outline the framework in which the use can be conducted and refuge staff will ensure compliance with the permit. The SUP will provide any needed protection to individual refuge policies, mission, wildlife populations and natural habitats. In addition, all research projects require the primary investigator to submit written summary reports of all findings and acknowledge the refuge's participation.

(e) Why is this use being proposed?

USFWS encourages approved research to further the understanding of natural resources, and strengthen the agency's tradition of scientific excellence in the conservation of fish, wildlife, plants, and their habitat. The refuge will support and seek research which will improve and strengthen natural resource management decisions and promote adaptive management. Research by non-USFWS personnel is conducted by colleges, universities, Federal, State, and local agencies, non-governmental agencies, and qualified members of the general public. Much of the information generated by research projects is and will be applicable to management on or near the refuge, with little or no expense to the refuge or USFWS.

The refuge will also consider research for other purposes that may not relate to directly to refuge specific purposes, but contribute to the broader enhancement, protection, use, preservation, or management of native populations of fish, wildlife and plants and their natural diversity.

AVAILABILITY OF RESOURCES:

Staff time spent reviewing research proposals and administering permits will be minimal. Funding and staff are available within the current levels of funding and staffing. Researchers will be required to furnish their own materials and supplies. Supplies and staff time associated with cooperative studies involving the refuge and other agencies or universities will be covered by joint cooperators such as the Science on the Shore initiative (USFWS, NASA, MSC, ESCC, and TNC).

ANTICIPATED IMPACTS OF THE USE:

Research by various groups and agencies has been diverse. Research activities have ranged from broad scale investigations of a complete botanical survey of the refuge to habitat use, abundance, and distribution of neotropical migrants. Other studies have been concentrated on the refuge's endangered fox squirrel population, the exotic sika deer, and an investigation of the ecology of the deer tick and the incidence of Lyme Disease, population study of woodland birds, Red knot migratory stopover ecology study, Fowler's toad research and monarch butterfly tagging and monitoring. In most instances, these studies have been conducted by educational institutions

(colleges and universities) and with investigations having duration of one to three years. For example, Master's thesis research has involved the effects of fire on vegetation and the endangered Delmarva fox squirrel's habitat use. The refuge continues to partner with the Marine Science Consortium and several universities on a variety of climate change related projects including research on the ghost forest on Assateague Island. Virginia Tech is also conducting research on effects of climate change on breeding piping plovers and implications to beach strand habitat.

The USFWS encourages approved research projects to further the understanding of natural resource problems, which will, in turn, increase our ability to manage our trust resources. Properly conducted studies will have little negative impact on refuge flora, fauna, or wildlife species.

Ideally, any research project conducted on the refuge would positively contribute to one or more of our objectives. There may be short-term disturbance to plants and wildlife during field investigations, but this is unavoidable in most cases. We will conduct Intra-Service Section 7 Biological Evaluations for any proposal that could be anticipated to have an impact on any Federal threatened or endangered species. We will ensure that the refuge or any non-USFWS researchers obtain any special permits, (i.e. collection and banding permits), required by the Commonwealth or Federal law prior to issuing a refuge SUP.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

- Prior to initiation of any research and/or management studies on the refuge, the requesting agencies or organization is required to apply for a permit and submit a Research/Management Study Proposal as outlined in the Refuge Manual 4 RM 6 (or future revisions of the chapter). The study proposal requires an outline of the objectives, justification, and procedure of the study.
- Priority of approval will be based on studies that contribute to the enhancement, protection, use, preservation, and management of native wildlife populations and their habitat.
- Proposals that are privately funded or funded by other agencies may be approved at the refuge level where those that require USFWS funds will be forwarded to the Regional or Washington Office for approval.
- Approved research/study proposals will be issued a SUP with appropriate restrictions to lessen disturbance to wildlife, identify restricted areas, and other limits as needed. Permittee will be required to seek and receive any permits required by the NPS or other agencies when conducting research in areas within their jurisdiction.
- Permittee will advise the refuge supervisory wildlife biologist a minimum of 5 working days prior to planned sampling dates on the refuge.
- A short summary of findings will be submitted to the refuge no later than the end of the calendar year. The report will include the dates and location of field work, species and number of birds captured, incidental observations, preliminary findings, and management recommendations.
- Permittee may drive the Wildlife Loop before normal public vehicle access and the graveled Service Road north to the turn-around.
- Permittee may access the above areas through the maintenance shop closed area.
- Refuge speed limits must be strictly adhered to. The vehicle speed limit shall not exceed 20 miles per hour (mph) except as otherwise posted. Vehicles will slow to 15 mph when in 100 feet of pedestrians or horses.
- Unusual wildlife sightings or potential problems will be reported to the refuge as soon as possible.
- All rules and regulations apply. The permit may be revoked or terminated at any time for noncompliance with the terms thereof or of the regulations in 50 CFR.
- No removal of artifacts, plants, animals, fungi, nest, or collecting of any natural resources is permitted unless granted by special provision for the purpose of the study and if permittee provides a valid, current collection permit (State and if a federally listed species, Federal) which must accompany the permit application for animal collection.
- Refuge staff will monitor research activities for potential impacts to the refuge and for compliance with conditions listed on the special use permits. The refuge manager may determine that previously approved research and SUP be terminated due to observed impacts. The refuge manager will also will have the ability to cancel a SUP if the researcher is not in compliance with the stated conditions.

- Safina, C. and J. Burger. 1983. Effects of human disturbance on reproductive success in the black skimmer. *Condor*. 85:164-171.
- U. S. Fish and Wildlife Service. 1982. National Wildlife Refuge System - Refuge Manual Dept. of Interior, USFWS, Washington, D.C.
- Tremblay, J. and L. N. Ellison. 1979. Effects of human disturbance on breeding of black-crowned night-herons. *Auk* 96:364-369.

COMPATIBILITY DETERMINATION

USE:

Shell Collection

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C. 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant

resources and their habitats within the United States for the benefit of present and future generations of Americans.

DESCRIPTION OF USE:

(a) What is the use? Is the use a priority public use?

This use allows the collection of non-inhabited shells for personal enjoyment. This use would be authorized only in areas open to public use, where it would not interfere with other public use activities. This is not a priority public use; however people participating in this activity are likely to experience other priority public uses like observing wildlife.

(b) Where would the use be conducted?

The majority of shell collecting will take place along the beachfront of Assateague Island. Collection will be focused in the area directly in front of the parking lots but will extend the entire length of the island. Limited collection may occur on the Southern Islands as well in conjunction with other wildlife dependent recreation. Shell availability is totally dependent upon the ocean currents, tides, and storm events.

(c) When would the use be conducted?

The activity occurs throughout the calendar year during normal operational hours.

(d) How would the use be conducted?

Shell collection will be limited to one gallon of shells/person/day for non-commercial use and only in areas open to the general public.

(e) Why is this use being proposed?

Allowing visitors to pick up shells and beach debris and take home a small amount of shells from the refuge will encourage an appreciation for the beach and marine environment. Shell collection has a long history on Assateague Island. It has historically taken place on the refuge since Native Americans used the area. Mollusks were used for food, their shells for tools and/or as currency. Since refuge establishment, visitors have wandered the beachfront in search of these treasures from the sea.

AVAILABILITY OF RESOURCES:

Permitting shell collecting is within the resources available to administer our visitor services program. The funding received by the refuge is adequate to continue to administer this program and to ensure that the use remains compatible with the refuge purposes.

ANTICIPATED IMPACTS OF THE USE:

Impacts to refuge resources from the activity of shell collecting will likely be minimal if conducted in accordance with refuge regulations. Shell collecting may intermittently interrupt the feeding

habits of a variety of shorebirds, gulls and terns. Numerous studies have documented that migratory birds are disturbed by human activity on beaches. Erwin (1989) documented disturbance of common terns and skimmers and recommended that human activity be restricted a distance of 100 meters around nesting sites. Klein (1993) in a studying waterbird response to human disturbance found that as intensity of disturbance increased, avoidance response by the birds increased and found that out of vehicle activity to be more disruptive than vehicular traffic. Pfister et al. (1992) found that the impact of disturbance was greater on species using the heavily disturbed front side of the beach, with the abundance of the impacted species being reduced by as much as 50 percent. Roberson et al. (1980) discovered, in studying the effects of recreational use of shorelines on nesting birds, that disturbance negatively impacted species composition. Piping plovers which use the refuge heavily are also impacted negatively by human activity. Pedestrians on beaches may crush eggs (Burger 1987, Hill 1988, Shaffer and Laporte 1992, Cape Cod National Seashore 1993, Collazo et al. 1994). Other studies have shown that if pedestrians cause incubating plovers to leave their nests, the eggs can overheat (Berstrom 1991) or the eggs can cool to the point of embryo death (Welty 1982). Pedestrians have been found to displace unfledged chicks (Strauss 1990, Burger 1981, Hoopes et al. 1992, Loegering 1992, Goldin 1993). Although some disturbance to migratory birds will occur, it will be minimal due to the activity taking place on or near the recreational beach. Additionally, there are existing seasonal closures in place to protect piping plovers and other coastal nesting birds.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

- Use is not compatible
 Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

- Visitors are limited to one gallon/person/day.
- No commercial collection will be permitted.
- Only non-occupied shells may be collected.
- Visitors are not permitted to collect any item prohibited by Federal law, such as historic artifacts.
- Access south of OSV parking area will be closed from March 15 to September 15 or until the last shorebird fledges.

- Klein, M. L. 1993. Waterbird behavioral responses to human disturbance. *Wildl. Soc.Bull.* 21:31-39.
- Leogering, J.P. 1992. Piping Plover breeding biology, foraging ecology and behavior on Assateague Island National Seashore, Maryland. M.S. Thesis. Virginia Polytechnic Institute and State University, Blacksburg, Virginia. 247 pp.
- Pfister, C., B. A. Harrington, and M. Lavine. 1992. The Impact of Human Disturbance on Shorebirds at a Migration Staging Area. *Biological Conservation* 60 (2) :115-126.
- Pruner, R.A, M. J. Friel, and J. A. Zimmerman. 2011. Interpreting the influence of habitat management actions on shorebird nesting activity at coastal state parks in the Florida panhandle. 2010-11 study final report. Department of Environmental Protection, Florida Park Service, Panama City, Florida.
- Robertson, R. J. and N. J. Flood. 1980. Effects of Recreational Use of Shorelines on Breeding Bird Populations. *Canadian Field-Naturalist* 94 (2) :131-138.
- Strauss, E. 1990. Reproductive success, life history patterns, and behavioral variation in a population of Piping Plovers subjected to human disturbance (1982-1989). Ph.D. dissertation. Tufts University, Medford, Massachusetts.
- Welty, J.C. 1982. *The life of birds*. Saunders College Publishing, Philadelphia, Pennsylvania. 754 pp.

COMPATIBILITY DETERMINATION

USE:

Temporary/short-term activities conducted by other Federal Government Agencies and/or their contractors

REFUGE NAME:

Chincoteague National Wildlife Refuge

DATE ESTABLISHED:

May 13, 1943

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) Refuge Recreation Act {16 U.S.C. 460 K-1, K-2}
- 3) Emergency Wetlands Resources Act of 1986 {16 U.S.C. 3901(b)}
- 4) Fish and Wildlife Act of 1956 {16 U.S.C 742f (a)(4), (b)(1)}
- 5) Consolidated Farm and Rural Development Act {7 U.S.C. 2002}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."
16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... suitable for— (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... for conservation purposes ..." 7 U.S.C. § 2002 (Consolidated Farm and Rural Development Act)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant

resources and their habitats within the United States for the benefit of present and future generations of Americans.

DESCRIPTION OF USE:

(a) What is the use? Is the use a priority public use?

The uses are minor, short-duration actions on the refuge by Federal Government agencies and/or their contractors, primarily those concerned with national defense, such as the Department of the Navy, or geologic or atmospheric sciences, such as USGS, NASA and NOAA, for minor operational support purposes, when activities do not interfere with the needs of wildlife or other public use activities. These activities are not priority public uses of the Refuge System. In the past, uses of this type have been very limited in scope, temporary in nature, and require no permanent alteration of the landscape, although they have involved accessing and traversing refuge lands. Examples of prior uses include:

1. The Naval Surface Warfare Center, Department of the Navy, has been granted permission to conduct calibration tests of naval equipment (usually radar systems.) This activity included the towing a small trailer over refuge roads, Off Road Vehicles trails, and dikes for the operation of an aerostat balloon or large kite which is elevated to various altitudes (> 4,000 feet) at different strategic locations, etc. Additionally, the trailer may deploy radar reflectors. The purpose of this work is to calibrate the Aegis radar/combats systems at Wallops Island for training.
3. The U.S. Geological Survey has been granted permission to install temporary aerial photographic survey markers at benchmark sites on Assateague Island.
4. NASA was given permission to test a robotic walker/lander on the recreational beach as a trial of this unit's ability to navigate terrain similar to that of the moon or Mars. NASA also operates maintains a freestanding tower with a radio frequency receiver/locator at the refuge shop. This tower also allows the NPS to operate a radio receiver to provide better communication ability between NPS LE and life guards, the Town of Chincoteague, and the refuge.
5. The United States Coast Guard (USCG) is given permission to set up a "watch post" at the tip of Assateague Island for ocean rescue training operations. Additionally, USCG was given access to the refuge to conduct after hour law enforcement operations.

(b) Where would the use be conducted?

The location of these sites will vary depending on the individual projects. However, the majority of requests are for locations south of D dike. The entire refuge (except for the proposed Wilderness Area and Research Natural Area) may be open and available for projects, contingent upon compliance with stipulations listed in a Special Use Permit (SUP) and this CD, including appropriate restrictions to lessen disturbance to wildlife, and other limits as needed. The

location(s) will be limited to only those areas of the refuge that are absolutely necessary to conduct the project.

(c) When would the use be conducted?

The timing of the project will depend entirely on the individual project that is being conducted. Activities may be allowed to occur on the refuge throughout the year, depending upon the potential impacts of the project on trust resources, e.g. migratory birds and endangered and threatened species. Ideally, an individual project should be short term in design, requiring intermittent visits or other actions. The timing of each individual project will be limited to the minimal timeframe required to complete the project. If a project occurs during the refuge hunting season, special precautions will be required and enforced to ensure health and safety. If a project occurs during migratory bird or other trust species breeding seasons, or other sensitive life cycle periods, special precautions will be required to ensure minimal disturbance to these species, or not allowed, depending on anticipated disturbance.

(d) How would the use be conducted?

The mechanics of the project will depend entirely on the individual project that is conducted. The methods of each project will be reviewed thoroughly before it will be allowed to occur on the refuge. No project will be allowed to occur if it compromises the purposes of the refuge, or public health and safety.

(e) Why is this use being proposed?

Projects must sometimes be conducted by other Federal agencies and /or their contractors to further national defense/security, to further understanding in atmospheric or geologic sciences, to fulfill the mandates and purposes for which the agency was created, to increase understanding of the natural environment, or to improve the management of the refuge's natural resources. Much of this information cannot be collected on lands other than refuge lands due to the secure nature of the refuge, the refuge's relative isolation, the geographic position, relatively natural state, and the relative freedom from human disturbance. The refuge is therefore sometimes in a unique position of furthering other Federal agency operations and mandates. Furthermore, some information generated by such projects may be applicable to our management of refuge lands and waters, or other refuges or lands controlled by conservation partners.

AVAILABILITY OF RESOURCES:

The bulk of the cost incurred by the refuge is incurred in staff time to review project proposals, coordinate with outside personnel, and research/write Special Use Permits. In some cases, a project may require additional staff time to escort outside personnel to the project site. Overall, the need for refuge resources will be minimal.

ANTICIPATED IMPACTS OF THE USE:

Disturbance to wildlife and vegetation by project personnel and equipment could occur. Each project will be reviewed on a case-by-case basis.

Impacts to Plants: Pedestrian travel can have indirect impacts to plants by compacting soils and diminishing soil porosity, aeration, and nutrient availability that affect plant growth and survival (Kuss 1986). Hammitt and Cole (1998) note that compaction limits the ability of plants to re-vegetate affected areas. Repeated foot travel can directly impact plants by crushing the plants themselves. Rare plants with limited site occurrence are particularly susceptible to such impacts. Plants growing in wet or moist soils are the most sensitive to disturbance from trampling effects (Kuss 1986). Moist and wet soil conditions are common at Chincoteague NWR particularly in swales between old/historic sand dunes, and, wildlife impoundments.

Allowing this use may cause some vegetation loss, particularly on repeatedly used routes. Foot travel may increase root exposure and trampling effects, however it is anticipated that under levels intended by this compatibility determination (e.g., intermittent, irregular), the incidence of these problems will be minor. Under SUP's, refuge personnel will select designated travel routes which do not have any known occurrences of rare plant species on their surface that would be impacted by this use.

Impacts to Soils: Soils can be compacted and eroded as a result of continued use of travel routes, particularly wetland soils. It is anticipated that some soil erosion will occur as a result of regular travel on designated routes. Under SUP's, refuge personnel will select designated travel routes which should minimize such erosion.

Wildlife Impacts: Disturbances vary with the wildlife species involved and the type, level, frequency, duration and the time of year such activities occur. Whittaker and Knight (1998) noted that wildlife response can include attraction, habituation and avoidance. These responses can have negative impacts to wildlife such as mammals becoming habituated to humans making them easier targets for hunters. Human induced avoidance by wildlife can prevent animals from using otherwise suitable habitat.

Travel routes can disturb wildlife outside the immediate trail corridor (Trails and Wildlife Task Force 1998, Miller et al. 2001). Miller et al. (1998) found bird abundance and nesting activities (including nest success) increased as distance from a recreational trail increased in both grassland and forested habitats. Bird communities in this study were apparently affected by the presence of recreational trails, where "generalists" (American robins) were found near trails and "specialist" species (i.e. grasshopper sparrows) were found farther from trails. Nest predation was also found to be greater near trails (Miller et. al 1998).

Disturbance can cause shifts in habitat use, abandonment of habitat and increase energy demands on affected wildlife (Knight and Cole, 1991). Flight in response to disturbance can lower nesting

productivity and cause disease and death. Hammitt and Cole (1998) conclude that the frequent presence of humans in wildland areas can dramatically change the normal behavior of wildlife mostly through unintentional harassment.

Seasonal sensitivities can compound the effect of disturbance on wildlife. Examples include regularly flushing birds during nesting or causing mammals to flee during winter months, thereby consuming large amounts of stored fat reserves. Hammitt and Cole (1998) note that females with young (such as white-tailed deer) are more likely to flee from a disturbance than those without young.

It is anticipated that there will be temporal disturbances to wildlife species using habitat on or directly adjacent to routes accessed by other Federal agency personnel. These disturbances are likely to be short term and infrequent based on levels of use addressed by this compatibility determination. Under SUP's, refuge personnel will select designated travel routes which are not likely to significantly affect wildlife populations based on the current use patterns.

Threatened and Endangered Species Impacts: Travel (pedestrian or vehicular) on the refuge may affect threatened piping plovers or endangered Delmarva Peninsula fox squirrels. Squirrels may be sensitive to any habitat changes that remove a forest canopy or reduce food sources. Projects which would create such disturbances/changes to refuge habitats for the squirrel will not be permitted.

The Revised Recovery Plan for Atlantic coast population of piping plover (USFWS, May 2, 1996) lists disturbance by humans and pets as one of the reason for listing and continuing threats to this population. Projects which would involve human activity within the intertidal zone and the beach closest to the intertidal zone on the refuge will not be permitted during the piping plover breeding season, as these areas are very important feeding areas for both piping plover adults and chicks.

These restrictions will be placed on any activities, to ensure this designated use will not impact threatened or endangered species.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

- Use is not compatible
 Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

All outside agencies/personnel will be required to submit a detailed project proposal following USFWS Policy (USFWS Refuge Manual Chapter 4 Section 6 or future revisions). The proposal must include the following: Who will be the participants, who is the sponsoring agency/institution; what will the project involve, what are the objectives of the project, what methods will be utilized during the project, how long will the project last, what access requirements are needed for the project and why should the project occur on the refuge as opposed to another location. The proposal is reviewed and conditions and/or restrictions are placed in the Special Use Permit (SUP), the Cooperative Agreement, or Memorandum of Understanding which will ensure that any identified negative impacts towards the USFWS's interest will be addressed and minimized.

In the absence of an approved Cooperative Agreement or Memorandum of Understanding, SUPs will be issued for all projects conducted by non-USFWS personnel. The SUP will list all conditions that are necessary to ensure compatibility. Conditions and stipulations to be addressed in each permit include:

- Time of day/year restrictions
- Location and means of access
- Frequency and duration of visitation
- Degree of soil/vegetation disturbance
- Impacts on trust resources
- Impacts on primary public use activities
- Impacts on refuge management activities
- Public safety

All rules and regulations apply. The permit may be revoked or terminated at any time for noncompliance with the terms thereof or of the regulations in 50 CFR. No removal of artifacts, plants, animals, fungi, nest, or collecting of any natural resources is permitted unless granted by special provision for the purpose of the study and if permittee provides a valid, current collection permit (State and if a federally listed species, Federal) which must accompany the permit application for animal collection.

The regional refuge biologists, other USFWS Divisions, and Commonwealth agencies may be asked to review and comment on complex proposals. All projects will be required to obtain appropriate Commonwealth of Virginia and Federal review and permits, if needed.

JUSTIFICATION:

USFWS recognizes the need of other Federal agencies to use the refuge's land base to accommodate the needs, goals, and mandates of those agencies. Within the scope of the refuge

purposes and the USFWS mission, USFWS wishes to cooperate when possible. The refuge has received a limited number of requests by outside agencies to conduct projects on refuge property.

Projects conducted by non-USFWS personnel will not materially interfere with or detract from the mission of the Refuge System or the purposes for which the refuge was established, as long as stipulations put in SUP are adhered to.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.

SIGNATURE:

Refuge Manager: _____
(Signature) (Date)

CONCURRENCE:

Regional Chief: _____
(Signature) (Date)

MANDATORY 10 YEAR RE-EVALUATION DATE: _____

LITERATURE CITED

Hammitt, W. E. and D.N. Cole. 1998. Wildland Recreation. John Wiley & Sons, New York, 361pp.

Knight, R.L. and D.N. Cole. 1991. Effects of recreational activity on wildlife in wildlands. Transactions of the 56th North American Wildlife and Natural Resources Conference pp.238-247.

Kuss, F. R. 1986. A review of major factors influencing plant responses to recreation impacts. Environmental Management, 10:638-650.

Miller, S.G., R.L. Knight, and C.K. Miller. 2001. Wildlife responses to pedestrians and dogs. Wildlife Society Bulletin 29(1): 124-132.

Miller, S.G., R.L. Knight, and C.K. Miller. 1998. Influence of recreational trails on breeding bird communities. Ecological Applications 8:162-169.

Trails and Wildlife Task Force. 1998. Planning trails with wildlife in mind: A handbook for trail planners. Colorado State Parks, Denver Co. 51pp.

U.S. Fish and Wildlife Service. 1985. Refuge Manual. Washington, D.C.: U.S. Government Printing Office.

Whittaker, D. and Knight, R. 1998. Understanding wildlife responses to humans. Wildlife Society Bulletin 26(3): 312-317.

COMPATIBILITY DETERMINATION**USE:**

Big Game Hunting

REFUGE NAME:

Wallops Island National Wildlife Refuge

DATE ESTABLISHED:

March 11, 1971

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) An Act Authorizing the Transfer of Certain Real Property for Wildlife {16 U.S.C. § 667b}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."
16 U.S.C. § 715d (Migratory Bird Conservation Act).

"... particular value in carrying out the national migratory bird management program." 16 U.S.C. § 667b (An Act Authorizing the Transfer of Certain Real Property for Wildlife).

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:**(a) What is the use? Is the use a priority public use?**

The use is the public hunting of white-tailed deer. Hunting was identified as one of six priority public uses by Executive Order 12996 (March 25, 1996) and by the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57).

(b) Where would the use be conducted?

Public hunting for white-tailed deer will be allowed on the entire 373 acre refuge except for designated safety zones and closed areas.

(c) When would the use be conducted?

The use would be conducted in designated areas of the refuge in accordance with Federal and Commonwealth regulations. Hunting would take place within the open hunting seasons

established by VDGIF. This is normally between mid-November through the first week of January.

(d) How would the use be conducted?

Hunting will be conducted within the framework of the Commonwealth of Virginia regulations (including hunt days and hunting hours), and Federal regulations published in Title 50 of the Code of Federal Regulations (50 CFR 32), pertaining to the National Wildlife Refuge System Administration Act, as well as existing, refuge-specific regulations. The refuge manager may, upon annual review of the hunting program and in coordination with VDGIF, impose further restrictions on hunting. Hunting at the refuge is at least as restrictive as the State of Virginia, and in some cases, more restrictive. The refuge coordinates with VDGIF annually to maintain regulations and programs that are consistent with the State's management programs. Hunting restrictions may be imposed if hunting conflicts with other higher priority refuge programs, endangers refuge resources, or public safety. Specific hunt details will be outlined in the annual hunt program.

Hunters will be selected for the opening week(s) of the Commonwealth's firearms deer season through a lottery selection system similar to the one currently used at the Chincoteague NWR. For the remainder of the deer season, each hunter will pay and obtain a refuge hunting permit online.

Further refuge-specific regulations applicable to deer hunting at Wallops Island NWR are detailed in this CD under the section "Stipulations Necessary to Ensure Compatibility."

(e) Why is this use being proposed?

Hunting is one of six priority public uses encouraged on National Wildlife Refuges as long as they are deemed compatible. Hunting will be used primarily as a management tool for reducing the impacts of white-tailed deer on forested habitats important to migratory birds and other wildlife. The public hunt will also reduce the threat of deer-aircraft strikes at the adjacent NASA/Goddard Space Flight Center/Wallops Flight Facility (WFF), and deer-automobile strikes on the adjacent Virginia State Route 175. Finally, the proposed hunt will provide limited public hunting opportunities on Wallops Island NWR.

The objectives for the Wallops Island NWR hunt program are to (1) reduce deer and vehicle collisions that occur along State Route 175 and the refuge boundary, (2) reduce the potential for increased deer/aircraft collisions at NASA WFF, (3) manage the deer population at levels that minimize negative effects upon the natural ecosystems at Wallops Island NWR, including native vegetation and wildlife communities, (4) provide a wildlife-dependent recreational activity.

AVAILABILITY OF RESOURCES:

An estimated 30 staff days will be required to plan and manage the hunt, including: handling public inquiries and law enforcement. This use is routine in nature and may be accomplished with approved staffing and funding.

ANTICIPATED IMPACTS OF THE USE:

Deer hunting will occur on the refuge within the designated firearms deer season established by VDGIF. This is normally between mid-November through the first week of January and occurs during the fall migration and wintering period for many migratory bird species, including waterfowl that use the tidal creeks on and adjacent to the refuge. Morton (1987) found that the increased presence of humans and vehicles associated with the refuge hunting program on Chincoteague NWR was contributing to movements of black ducks off the refuge at a time when these birds need the isolation of the refuge. Laskowski et al. (1993) documented human disturbance to representative species of waterfowl, wading birds, and shorebirds by the visiting public on Back Bay NWR, VA. Disturbance elicited behavioral changes ranging from increase alertness to flying to other parts of the refuge. Klein (1993) found that approaching birds on foot was the most disruptive of usual visitor activities at J. N. "Ding" Darling NWR, Florida. Morton (1993) summarizes research on the impacts of human disturbance and its effects on waterfowl and proposes management actions that could reduce the frequency or effects of disturbance. Some of the disturbances listed will occur on the refuge with waterfowl being the major category of birds impacted, due to the time of year that hunting occurs.

We anticipate there will be limited disturbance to waterfowl, raptors, or wading birds in the area on the days hunters will be on the refuge. Disturbance will be minimized because: hunting activities will take place outside nesting and brood-rearing periods for most wildlife species; hunter numbers will be limited; the number of hunting days will be limited; hunters will not be permitted to enter the hunting area with motor vehicles, ATVs or hunting dogs. Harassment of waterfowl will be limited because the hunting zones will restrict hunter activities to the upland/woodland habitats. The large acreage of saltmarsh and woodland in the vicinity of the refuge will provide adequate space and habitat for temporarily displaced birds. Escape cover for smaller mammals is available and disturbance by hunters should not adversely affect them. A 330' closed area around any active eagle nest will be maintained.

Positive effects on the vegetation are anticipated from a reduction in the white-tailed deer population at Wallops Island NWR. The impacts of dense deer populations on forest regeneration and the composition and diversity of the herbaceous understory have been well documented (Tilghman, 1989). Reducing the size of the deer population will prevent further degradation due to over browsing. Well-managed hunting can effectively control deer and produce striking changes in the forest vegetation (Behrend, et al., 1970). The impact of deer hunting on the vegetation would likely result in better recruitment of forest canopy species and an increase in the diversity of shrubs and the herbaceous understory. This will increase the quality of forage areas, escape cover,

and nesting habitat for neotropical songbirds and other forest-floor or mid-canopy wildlife species at Wallops Island NWR.

The sea level fen on the refuge will not be open to deer hunting activities. Therefore, there are no anticipated adverse impacts to this rare ecosystem.

The refuge delineates small, limited-use parking areas for hunters; however such parking is adjacent to State Route 175; and does not result in clearing any forested areas. We anticipate slight benefits to human health and safety adjacent to the refuge. By reducing the number of deer on the refuge, we will reduce the potential for deer-vehicle collisions on State Route 175 and deer-aircraft collisions at the Wallops Flight Facility.

VDGIF, under the direction of a Governor-appointed Board of Directors, is specifically charged by the General Assembly with the management of the state's wildlife resources. The Virginia Deer Management Plan, first completed in 1999 and revised in 2006, guides management of deer habitat, deer populations, damage caused by deer, and deer-related recreation in the Commonwealth. In 2012, 213,597 deer were reported killed by hunters in Virginia. This total included 96,712 antlered bucks, 18,061 button bucks, 98,781 does (46.3%), and 43 “unknown” deer. It is also 8% below the last 10-year average of 232,573. In Accomack County, an average of 3,056 deer per year are killed (see Table, 2008-2012 data).

Accomack County Deer Kills, 2008-2012

Year	Antlered Males	Male Fawns	Females	% Female	Unknown	Total
2008	1412	371	1924	51.9%	0	3707
2009	1225	249	1614	52.3%	0	3088
2010	1246	307	1740	52.8%	0	3293
2011	1007	263	1535	54.7%	2	2807
2012	923	212	1249	52.4%	0	2384

<http://www.dgif.virginia.gov/wildlife/deer/harvest/index.asp>

Population reconstruction computer models indicate that Virginia’s statewide deer population has been relatively stable over the past decade, fluctuating between 850,000 and 1,050,000 animals (mean = 945,000).

<http://www.dgif.virginia.gov/wildlife/deer/management-plan/virginia-deer-management-plan.pdf>

Hunting resident game species, such as deer, on Chincoteague NWR and Wallops Island NWR will result in negligible impacts on their populations because of their restricted home ranges. The refuges also contribute negligibly to the state’s total harvest for resident game species.

Chincoteague NWR white-tailed deer harvest

2008/2009 – 23

2009/2010 - 20

2010/2011 - 15

2011/2012 - 27

2012/2013 - 26

Wallops Island NWR white-tailed deer harvest

2008 - 13

2009 - 15

2010 - 15

2011- 8

2012 – 11

The refuges harvested a total of 173 white-tailed deer over the past 5 years, with 37 in 2012. Given the exceptionally low numbers of animals harvested from the refuges in respect to the total statewide harvest and deer population, no cumulative impacts to local, regional, or statewide populations of white-tailed deer are anticipated from hunting of the species on the refuges.

Several management strategies identified by Klein (1989) can be used to control the negative effects of recreation (including hunting) on wildlife; these include: permits, user fees, zoning (Cullen 1985), travel ease, public education (Purdy et al. 1987), limiting number of visitors present, and periodic closing. Chincoteague NWR currently employs many of these measures to lessen the disturbance and impact to wildlife of existing deer hunt programs.

Cumulative effects on the environment result from incremental effects of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative effects may result from individually minor actions, they may, viewed as a whole, become substantial over time. The hunt plan has been designed to be sustainable through time given relatively stable conditions.

The cumulative impact of hunting white-tailed deer at the refuge is negligible. The proportion of the refuge's harvest of deer is negligible when compared to local, regional, and State populations and harvest. Because of the ability of individual refuge hunt programs to adapt refuge-specific hunting regulations to changing local conditions, we anticipate no direct or indirect cumulative effects on resident wildlife, migratory birds, or non-hunted wildlife on Wallops Island NWR.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day

review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION: (CHECK ONE BELOW)

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

Deer hunting will be permitted the entire refuge except within small safety zones and designated closed areas. The deer hunt program will be evaluated annually to ensure meets the hunt plan objectives.

Persons possessing, transporting, or carrying firearms on National Wildlife Refuges must comply with all provisions of state and local law. Persons may only use (discharge) firearms in accordance with refuge regulations (50 CFR 27.42 and specific refuge regulations in 50 CFR Part 32).

Wallops Island NWR Refuge Specific Regulations:

- All Federal and State hunting regulations apply.
- State requirements for hunting licenses and stamps apply.
- State requirements on the use of firearms, muzzleloaders and bows apply.
- Hunters must have their permits in possession prior to entering the refuge to scout or hunt.
- Reporting all harvested animals must comply with state requirements for check-in and also be indicated on check-in/out sheet (see below for additional information).
- A sign-in/out box is located at the kiosk in parking area one (see map). Each hunter must sign in immediately before entering and sign out after exiting the hunt zone.
- All harvests must be reported on the sign-in/out sheet.
- 330' closed area around eagle's nests.
- Hunters must park in designated parking areas.
- Non-hunters or persons not in possession of a valid refuge permit are not permitted on the refuge.
- All hunters must make a reasonable effort to recover wounded animals.
- Discharging any weapon within 50 feet of the center line of any road or on/from/into a safety zone is prohibited.
- The boundaries of the hunt zone are recognized in the field by prominent signs. Each hunter is responsible for knowing the boundaries of the hunt zone.
- Federal government worksites may be staffed during the hunt. The zone around these sites is posted closed to hunting (see map). Hunters may enter this zone strictly for the

purpose of accessing the hunting area and must have their weapons unloaded. There shall be no loitering in areas closed to hunting.

- Hunters may pursue downed or crippled deer into the safety zone (area closed to hunting around worksites). Contact the refuge headquarters for assistance if needed to dispatch wounded animal.
- Tree stands permanently attached by nails, wire, screws, or in any other way is prohibited. Portable stands are permitted and may remain installed for the duration of the season. All stands must be removed at the close of the season. USFWS is not responsible for any personal property left unattended.
- The use of a boat, all terrain vehicle (ATV), bicycle or saddled animal is prohibited.
- The minimum age allowed to hunt on the refuge is 12.
- Hunters must reach the age minimum by the date of their assigned hunt and the child must meet Virginia state licensing requirements.
- Hunters between the ages of 12 and 17 must be accompanied and directly supervised by a mentor over 18 who has on their person a valid Virginia hunting license and refuge permit from Chincoteague NWR headquarters.
- Scouters must be in possession of their hunt permit while scouting.
- Scouters and hunters must sign-in and out at the refuge kiosk. Scouters and hunters must wear a minimum of 400 total square inches of blaze orange material consisting of a vest and hat or jacket and hat. Blaze orange camouflage is not acceptable.
- Any hunters who require assistance with retrieving or dressing harvested animals may apply for 1 or 2 non-hunting permits. This permit will allow an assistant to be present only during retrieval and dressing of harvested animals. Non-hunting assistant permits must be requested prior to November 16th.
- Camping and fires are prohibited.

JUSTIFICATION:

Hunting is a priority wildlife-dependent use for the Refuge System through which the public can develop an appreciation for fish and wildlife (Executive Order 12996, March 25, 1996 and The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57)). USFWS policy is to provide expanded opportunities for wildlife-dependent uses when compatible and consistent with sound fish and wildlife management and ensure that they receive enhanced attention during planning and management.

Hunting seasons and bag limits are established by the Commonwealth of Virginia and generally adopted by the refuge. These restrictions ensure the continued well-being of overall populations of game animals. Hunting does result in the taking of many individuals within the overall population, but restrictions are designed to safeguard an adequate breeding population from year to year. Specific refuge regulations address equity and quality of opportunity for hunters, and help safeguard refuge habitat. Disturbance to other fish and wildlife does occur, but this disturbance is

generally short-term and adequate habitat occurs in adjacent areas. Loss of plants from foot traffic is minor, or temporary, since hunting occurs mainly after the growing season.

Conflicts between hunters are localized and are addressed through law enforcement, public education, and continuous review and updating to State and refuge hunting regulations. Conflicts between other various user groups are minor given the season of the year for hunting, the location of most hunting away from public use facilities, and seasonal area closures.

Recreational hunting of white-tailed deer will be subject to the stipulations listed, and will not interfere with the primary purposes for which the refuge was established. A public deer hunt on Wallops Island NWR is considered a feasible and cost effective means of improving habitat quality, especially for forest understory, migratory songbirds, and for maintaining structural and species diversity on the refuge. In addition, it is believed that by instituting a deer hunt, incidences of vehicle-deer and aircraft-deer strikes on the neighboring State Route 175 and Wallops Flight Facility will be reduced over time.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.

SIGNATURE:

Refuge Manager: _____
(Signature) (Date)

CONCURRENCE:

Regional Chief: _____
(Signature) (Date)

MANDATORY 15 YEAR RE-EVALUATION DATE: _____

LITERATURE CITED:

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COMPATIBILITY DETERMINATION

USE:

Research and Studies Conducted by Outside Agencies, Universities, and Organizations

REFUGE NAME:

Wallops Island National Wildlife Refuge

DATE ESTABLISHED:

March 11, 1971

ESTABLISHING AND ACQUISITION AUTHORITY(IES):

- 1) Migratory Bird Conservation Act {16 U.S.C. 715d}
- 2) An Act Authorizing the Transfer of Certain Real Property for Wildlife {16 U.S.C. § 667b}

REFUGE PURPOSE(S):

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."
16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... particular value in carrying out the national migratory bird management program." 16 U.S.C. § 667b (An Act Authorizing the Transfer of Certain Real Property for Wildlife)

NATIONAL WILDLIFE REFUGE SYSTEM MISSION:

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

DESCRIPTION OF USE:

(a) What is the use? Is the use a priority public use?

The use is research conducted by other than U.S. Fish and Wildlife Service (USFWS) personnel. Research conducted by non-USFWS personnel is not a priority public use of the Refuge System; however, it assists in answering research questions that are both relevant and contributes to refuge management decisions. In addition, priority research activities based on needs identified and prioritized by partners and partnerships will support the landscape level conservation needs identified by the Landscape Conservation Cooperatives. Monitoring and research are an integral part of the national wildlife refuge management. Plans and actions based on thorough research and consistent monitoring provide an informed approach to management effects on wildlife and habitat.

(b) Where would the use be conducted?

Wallops Island NWR encompasses 373 acres of which 195 acres are salt marsh, 121 acres are forest, and 57 acres are old-field/early successional forests. Loblolly pine is the dominant species

in the forest habitat, secondary components include: tulip poplar, red maple, southern red oak, wild cherry, dogwood sassafras, and sweet gum. Understory includes: American holly, spicebush, Devil's walking stick and greenbrier. Transition zones between the marsh and woodland are dominated by groundsel tree and wax myrtle. The salt marsh is dominated by cordgrasses.

A Simoneaston Bay sea level fen, named the Lucky Boy Fen, is found on Wallops Island NWR. Sea level fens are nutrient-poor, maritime seepage wetlands, confined to a few sites with an unusual combination of environmental conditions for the mid-Atlantic (VDCR 2001). The sea level fen is a globally significant (G1) community type (Fleming and Patterson 2010); only four occur in Virginia, all of them in Accomack County (VDCR 2001). Lucky Boy Fen is located just above highest tide levels, at the base of a slope where abundant groundwater discharges. It is less than one-half acre in size, but supports six rare plant species.

The location of the use will depend on the research project that is being conducted. A research project may be limited to a particular species or habitat type. Some research projects involve a combination of different habitats and species. The research location will be limited to the areas which are necessary to conduct the research project, and that do not create a significant negative impact to refuge operations and wildlife use.

(c) When would the use be conducted?

The timing of the research will depend on the project which is being conducted. Research will be allowed to occur on the refuge throughout the year. Individual research projects may require one or two visits to the refuge while other projects may require daily visits to a study site. The timing of each research project will be limited to the minimum required to complete the project.

(d) How would the use be conducted?

The methods of research will depend upon the research project which is conducted. Methods of each research project will be reviewed by staff before data collection will be allowed to occur on the refuge. No research project will be allowed to occur if it does not have an approved scientific method or if it compromises public health and safety.

Each request for this use will be considered, and if appropriate, will be issued a Special Use Permit (SUP) by the refuge manager. Each request must be presented in writing with details of who, what, where, when, why, and how the research will be conducted. Each request will be evaluated on its own merit. The refuge manager will use sound professional judgment and ensure that the request will have no considerable negative impacts to natural, cultural, or visitor services, and does not violate refuge regulations. Special needs will be considered on a case-by-case basis and are subject to the refuge manager's approval. Any approved SUP will outline the framework in which the use can be conducted and refuge staff will ensure compliance with the permit. The SUP will provide any needed protection to individual refuge policies, mission, wildlife populations and natural habitats. In addition, all research projects require the primary investigator to submit written summary reports of all findings and acknowledge the refuge's participation.

(e) Why is this use being proposed?

USFWS's goal is to strengthen the agency's tradition of scientific excellence in the conservation of fish, wildlife, plants, and their habitat.

We encourage approved research to further the understanding of natural resources. The refuge will support and seek research which will improve and strengthen natural resource management decisions and promote adaptive management. Research by non-USFWS personnel is conducted by colleges, universities, Federal, State, and local agencies, non-governmental agencies, and qualified members of the general public. Much of the information generated by research projects is and will be applicable to management on or near the refuge, without any expense to the refuge or USFWS.

The refuge will also consider research for other purposes that may not relate to directly to refuge specific purposes, but contribute to the broader enhancement, protection, use, preservation or management of native populations of fish, wildlife and plants and their natural diversity.

AVAILABILITY OF RESOURCES:

This refuge is managed as a satellite of Chincoteague NWR. Therefore, all funding and staff time spent reviewing research proposals and issuing permits is administered by Chincoteague NWR. Researchers will be required to furnish their own materials and supplies. Supplies and staff time associated with cooperative studies involving the refuge and other agencies or universities should be covered by appropriate refuge/joint funds to promote and grow the Science on the Shore initiative (USFWS, NASA, Marine Science Consortium, Eastern Shore Community College, and The Nature Conservancy).

ANTICIPATED IMPACTS OF THE USE:

USFWS encourages approved research projects to further the understanding of the natural resource problems, which will, in turn, increase our ability to manage our trust resources. Properly conducted studies will have little negative impact on refuge flora, fauna, or wildlife species.

Ideally, any research project conducted on the refuge would positively contribute to one or more of our interim objectives. There may be short-term disturbance to plants and wildlife during field investigations, but this is unavoidable in most cases. We will conduct Intra-Service Section 7 Biological Evaluations for any proposal that could be anticipated to have an impact on any Federal threatened or endangered species. We will ensure that the refuge or any non-USFWS researchers obtain any special permits, (i.e. collection and banding permits), required by the Commonwealth or Federal law prior to issuing a SUP.

PUBLIC REVIEW AND COMMENT:

This compatibility determination is part of the draft Chincoteague NWR CCP/EIS. Public notification and review will include a notice of availability published in the Federal Register, a 60-day comment period for the draft CCP/EIS during which public meetings will be held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. We will also inform the public through local media releases and our website.

DETERMINATION (CHECK ONE BELOW):

Use is not compatible

Use is compatible, with the following stipulations

STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:

- Prior to initiation of any research and/or management studies on the refuge, the requesting agencies or organization is required to apply for a permit and submit a Research/Management Study Proposal as outlined in the Refuge Manual 4 RM 6 or future revisions of this chapter. The study proposal requires an outline of the objectives, justification, and procedure of the study.
- Priority of approval will be based on studies that contribute to the enhancement, protection, use, preservation, and management of native wildlife populations and their habitat.
- Proposals that are privately funded or funded by other agencies may be approved at the refuge level where those that require USFWS funds will be forwarded to the Regional or Washington Office for approval.
- Permittee will advise the refuge supervisory wildlife biologist a minimum of 5 working days prior to planned sampling dates on the refuge.
- A short summary of findings will be submitted to the refuge no later than the end of the calendar year. The report will include the dates and location of field work, species and number of birds captured, incidental observations, preliminary findings, and management recommendations.
- Unusual wildlife sightings or potential problems will be reported to the refuge as soon as possible.
- All rules and regulations apply. The permit may be revoked or terminated at any time for noncompliance with the terms thereof or of the regulations in 50 CFR.
- No removal of artifacts, plants, animals, fungi, nest, or collecting of any natural resources is permitted unless granted by special provision for the purpose of the study and if permittee provides a valid, current collection permit (State and if a federally listed species, Federal) which must accompany the permit application for animal collection.

- Refuge staff will monitor research activities for potential impacts to the refuge and for compliance with conditions listed on the special use permits. The refuge manager may determine that previously approved research and SUP be terminated due to observed impacts. The refuge manager will also will have the ability to cancel a SUP if the researcher is not in compliance with the stated conditions.
- Approved research/study proposals will be issued a Special Use Permit with appropriate restrictions to lessen disturbance to wildlife, identify restricted areas, and other limits as needed and may not interfere with or distract from the missions of the tenants (NPS, USDA) and adjacent landowner (NASA).

JUSTIFICATION:

USFWS encourages and supports research and management studies in order to provide scientific data upon which decisions regarding management of the refuge may be based. Allowing refuge approved research and management studies will provide valuable information to better manage the wildlife resources under the refuge's auspices.

This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.

SIGNATURE:

Refuge Manager: _____
(Signature) (Date)

CONCURRENCE:

Regional Chief: _____
(Signature) (Date)

MANDATORY 10 YEAR RE-EVALUATION DATE: _____

LITERATURE CITED:

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