State: VA
Literal: RPP
Subj#: 1969
SubSubj: FINAL

COMPATIBILITY DETERMINATION

Project Title: Public Deer Hunting

Station Name: Rappahannock River Valley National Wildlife Refuge

Date Established: May 28, 1996

Establishing Authorities:

The Emergency Wetlands Resources Act of 1986 (100 Stat. 3582-91) for: "...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); 100 Stat. 3583).

The Endangered Species Act of 1973 (16 U.S.C. §1531-1543), as amended: "...to conserve (A) fish or wildlife which are listed as endangered species or threatened species...or (B) plants..." (16 U.S.C. §1534).

The Land and Water Conservation Fund Act (P.L. 88-578; 16 U.S.C. §4601; 78 Stat. 897) for: "...the acquisition of areas needed for conserving endangered or threatened species of fish, wildlife and plants..." (P.L. 94-422; 90 Stat. 1313).

Purpose for which Established:

The purposes for which the Rappahannock River Valley National Wildlife Refuge was established are:

"...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 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(, 100 Stat. 3583 (Emergency Wetlands Resources Act of 1986); and

...to conserve (A) fish or wildlife which are listed as endangered or threatened species ... or (B) plants ... 16 U.S.C. 1534 (Endangered Species Act of 1973".

National Wildlife Refuge System Mission: 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 Proposed Use: We propose to open the Refuge to public deer hunting within the hunting framework established by the Commonwealth of Virginia. All current and future Refuge properties may be opened if the conditions of the hunt conform to the stipulations of this determination. Hunting is one of the six priority public uses of the National Wildlife Refuge System.

We are proposing a deer hunting program for two primary reasons:

1) To maintain the deer population at a level commensurate with available habitat, in order to maintain the health of the herd and prevent habitat degradation that accompanies an overpopulation of deer, and

2) To provide high-quality wildlife-dependent recreational opportunities, in accordance with the National Wildlife Refuge System Administration Act.

As of December 31, 2001, the Refuge consists of 4, 842 acres in 11 tracts, spread over five counties. Habitats include forested riparian zones, fresh and brackish water tidal marsh, upland and bottomland hardwood forest, regenerating pine and mixed hardwood forest, managed grasslands, reverting scrub/shrub fields, and agricultural lands.

Riparian areas are important to roosting and nesting bald eagles. In 2000-2001, 80 active bald eagle nests were observed along the lower Rappahannock River. Eagle concentration areas are located along the River shoreline for approximately 25 miles within the Refuge boundary. The River, adjoining wetlands, and agricultural fields are used by an average of 20,000 ducks, 30,000 geese and 1,000 swans during winter and migration. Over 240 species of birds have been recorded in the Refuge vicinity. The most important wildlife resources found on the Refuge and vicinity during the deer hunting season are bald eagles and migrating and wintering birds.

Hunting could potentially occur from the first week in October to the first week in January. Hunting hours are one-half hour before sunrise to one-half hour after sunset, Monday through Saturday. Sunday hunting is prohibited by State law. Archery season typically extends from the first week in October through the third week in November. Muzzleloading season typically occurs during the second two weeks in November. Firearms season typically extends from the third week in November through the first week in January. The Refuge hunting program may allow hunting during each of these seasons. County firearms regulations prohibit the use of rifles for deer hunting; during the firearms season, only shotguns would be permitted. The Refuge will develop regulations regarding season dates, methods of take, bag limits, open and closed areas,

and other program details on an annual basis. These will be included as permit conditions required of each Refuge hunter.

The number of hunters will be determined by the number of acres opened during a given year. A ratio of one hunter, per 25 acres of habitat suitable for hunting, will promote hunter safety and a quality hunting experience. Areas not expected to harbor deer or provide safe hunting opportunities (e.g. tidal marsh and open land) will be excluded from this calculation.

Facilities needed to support hunting will be minimal. We will identify or create several small parking areas, each capable of holding two to ten vehicles. Some of these areas will simply be fields that may be mowed or posted to designate parking areas. Existing roads and pull off areas will be used to the maximum extent possible to avoid any additional loss of habitat. Parking areas will not be located in or near sensitive habitats, such as eagle roosting areas. We will post all Refuge tracts open for hunting, as well as any safety zones or other closed areas.

Availability of Resources: As noted above, development of facilities to support hunting will be minimal. Most of the costs associated with the hunting program will be salary of permanent full time staff. Currently, the staff includes no law enforcement personnel. We will ensure compliance of Federal and State regulations in cooperation with Service special agents, Refuge law enforcement staff brought in on intermittent details, and State game wardens. Some per diem costs, estimated at $320/year will be incurred when employing staff from other refuges.

An analysis of costs associated with the hunting program, included as part of the Deer Hunting Management Plan, is summarized below:

Pre-hunt preparation staff salary:	$3,065 (includes processing applications, conducting stakeholder meetings, parking lot construction, posting, and annual hunt program preparation);
Conducting the hunt staff salary:	$1,612 (includes staffing check station, checking parking areas, opening/closing gates, law enforcement);
Supplies and materials:	$1,800 (includes signs, posts, postage, copying, envelopes, and check station supplies)
Total:	$6,477

We plan to charge a $10.00 permit fee for those selected to hunt. We will request to be included in the recreational fee demonstration program, whereby we will receive 80% of our fee receipts to put back into hunting and other public use programs. Cost estimates are based on 400 applicants and 332 selected hunters for the initial opening (83 hunters per day for four days). Sufficient financial resources exist within the annual Refuge budget to administer this program without significantly impacting other wildlife management responsibilities.

Anticipated Impacts on Refuge Purpose: We assessed the impacts of a hunting program in a Draft Environmental Assessment prepared in December 2001. Impacts discussed in the EA are as follows:

> Based on a nationwide survey of all states (Krausman 1992), deer were effectively controlled with hunting and habitat manipulation in many areas where they were overpopulated. The remaining overpopulated herds were either not hunted, had an inadequate doe harvest, or an inadequate general harvest. Because the population of deer in the Refuge boundary area is open, with numerous tracts and corridors for movement and contact with other herds, it is unlikely that hunting will reduce the population to such low levels as to place it at risk of becoming genetically bottlenecked. Also, no prevention or control of epizootic hemorrhagic disease exists to date except by keeping populations below the carrying capacity of their habitats. In a 10-year study in northwestern Pennsylvania examining the impacts of varying densities of deer on deer health and habitat, starvation mortality resulted when densities reached higher than 25 deer per square kilometer (247 acres). Species richness and abundance of shrubs and herbaceous vegetation was also shown to decline when deer densities reach between 4-8 deer/km^2 (deCalesta and Stout 1997). At high densities, deer may act as a host reservoir for Lyme-disease bearing ticks (Jones et al. 1998). Reducing the deer population will reduce the potential for Lyme disease transmission. Based on these considerations, it is anticipated that hunting would have a positive impact on deer health and quality and habitat condition. Reducing the deer population will also benefit the surrounding human community by reducing damage on crops and residential landscape vegetation.
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> No adverse impacts to vegetation from trampling from hunters is likely, as most species will have already undergone senescence or become dormant. Soil and water quality are not expected to experience any negative effects under this alternative. The deer hunt would occur outside of the breeding period of most species, thereby avoiding any potential disturbance. The Refuge will abide by the joint Service-State Bald Eagle Protection Guidelines for Virginia. These guidelines provide distance and time-of-year restrictions for activities that could disturb nesting or roosting eagles. Guidelines in effect as of this Environmental Assessment would dictate a season closure of December 1. A Section 7 Consultation with the USFWS Virginia Field Office determined that there will be no adverse impact on bald eagles. No adverse effects on migratory birds or inter-jurisdictional fishes are anticipated as a result of establishing a hunt program. Wintering or resident birds (such as bobwhite quail, wild turkey and savannah sparrows), small mammals, and reptiles may experience some flushing, but there is ample cover in the form of marsh, hedgerows, shrubland, and tall grasses for flushed wildlife to repair to, therefore it is expected that this disturbance will be temporary and normal use will resume shortly after the hunt closes each day.
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> A managed hunt would provide the public with a quality wildlife-dependent recreational opportunity, as is consistent with the requirements of the National Wildlife Refuge

Improvement Act of 1997. The Refuge will be open to hunting starting from the State season opening (usually first week in October) opening until November 30. The Refuge may close to other public uses during hunt days, unless these uses can be safely sequestered from locations of hunting activity.

Public Review and Comment: A news release announcing the availability of this determination, and the Draft Environmental Assessment, for a 30-day public review and comment period, was issued to the following media outlets and individuals on December 14, 2001:

Daily Press
Northern Neck News
Rappahannock Record
Rappahannock Times
Richmond Times Dispatch
Westmoreland News
WRAR radio
WNNT radio
Office of Senator John Warner
Office of Senator George Allen
Office of Representative Jo Ann Davis

The only comment received regarding compatibility was one phone call from a private citizen who felt that hunting, in general, was incompatible on national wildlife refuges.

Determination (check one below):

_____ **Use is Not Compatible**

__X__ **Use is Compatible With the Following Stipulations**

Stipulations Necessary to Ensure Compatibility:

1. All deer hunting will end by December 1 to prevent disturbance to eagle concentration areas and nesting sites. This complies with the Bald Eagle Protection Guidelines for Virginia, jointly developed by the U.S. Fish and Wildlife Service and the Virginia Department of Game and Inland Fisheries.

2. Results of the hunt, to include impacts from hunters and hunter success, will be reviewed annually to ensure that the program contributes to Refuge objectives in managing deer numbers and protecting habitats.

3. Expansions of the hunt area will only occur if sufficient staff resources exist to safely and effectively administer the program without detracting substantially from higher priority activities.

Justification: Hunting is one of the six priority public uses of the National Wildlife Refuge System and has been determined to be a compatible activity on hundreds of other refuges nationwide.

In the absence of a deer hunting program, or other removal process, deer impacts on Refuge habitats are expected to be severe. The following discussion from the Draft Environmental Assessment of the deer hunting proposal outlines these impacts:

> The no-action alternative includes long-term negative effects such as potential for disease epidemic (Demarais et al 2000), increase in automobile accident rates, browsing pressure on vegetation and crops, and severe habitat degradation (Cypher and Cypher 1988). Overbrowsing will eventually affect the abundance and distribution of vegetative species and have continued effects on the composition of forest canopy for a long time after the deer herd is reduced. For grasslands, cover would quickly regenerate (Porter 1991), however, species composition may be permanently altered. The effects on vegetation composition and forest regeneration is of great concern to Refuge management for maintaining bald eagle and other migratory bird habitat. The intensity of grazing on woody browse in forest fragments is inversely proportionate to the availability of field forbs (Augustine and Jordan 1998). Pastures and old fields are vulnerable to overgrazing when deer densities are high because they contain more and higher quality forage, especially in spring and summer (Johnson et al.1995). Cumulative effects of grazing over successive years may result in reduced plant reproduction and growth (Augustine and Frelich 1998) and height (Anderson 1994), which exposes sensitive plants and places them at risk of extirpation (Augustine and Frelich 1998). The Refuge is concerned about the impacts this phenomena may have on breeding and wintering bird populations and on the existing exemplary plant communities found on the Refuge.
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> One management concern is that ungulate populations generally overshoot the ultimate carrying capacity of the habitat before an equilibrium is reached (McCullough 1982). White-tailed deer are more prone to habitat alteration during this process than many other species due to their high reproductive potential (McCullough 1982; McCullough 1997), with substantial impact on the vegetation. Deer foraging habits and preferences can change plant composition and structure over time (Russell and Fowler 1999, Augustine and Jordan 1998, Brown and Parker 1997, Van Deelen et al. 1996, Porter et al. 1991) and such alterations have subsequent impacts on other wildlife, such as songbird species richness and abundance (DeCalesta 1994). This impact is magnified when other factors, such as mild weather, alternative food sources (such as crops), and reduced annual mortality allow populations to quickly increase in numbers.

In addition to a general decrease in habitat quality, impacts of high deer densities include a decline in overall deer population health as evidenced by decreased body weights, increased occurrence of deformities, increased levels of internal and external parasitism, decreased body fat deposits, and disease transmission (Cypher and Cypher 1988, Fischer et al. 1995, Demarais et al. 2000).

If allowed to progress unchecked by natural predators or management, deer reproductive potential can be very high. For example, just one mating pair can grow to 1,000 in 10 years, including natural mortality (Yarrow and Yarrow 1999). Although a weak correlation exists between density and fertility rates (reproduction declines at high densities), substantial reproduction still occurs when densities exceed 50 deer per square kilometer (247 acres) (Swihart 1998). This is because of higher number of adult does in the population, and even though they have lowered reproduction, collectively they produce a large number of offspring each year. The goal of the Refuge, therefore, is not to only manage the deer herd to protect habitat but also to protect the overall health of the herd.

Finally, local communities have relied on hunting to curb population growth and limit crop damage from deer, and to provide outdoor recreation. Many of the Refuge units were once farms that participated in local hunts or were open to local hunt clubs. To permanently retire these units from hunting or some type of population reduction would in effect undermine and impair local ability to curb deer population growth on Northern Neck and would result in a loss of wildlife-dependent recreational opportunity. This loss is contrary to the goals of the NWR system.

Signature: Refuge Manager: Joseph F. McCauley 1/14/02
Signature and Date

Concurrence: Regional Chief: Anthony D. Tegler 1/28/2002
Signature and Date

Mandatory 10- or 15-year Re-evaluation Date: January 1, 2017