

Cooperative Farming

Justification for Cooperative Farming as an Appropriate Use
Eastern Virginia Rivers NWR Complex
Rappahannock River Valley NWR

Rappahannock River Valley National Wildlife Refuge was established

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

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

“... 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

“for the development, advancement, management, conservation, and protection of fish and wildlife resources ... 16 U.S.C. § 742f(a)(4) (Fish and Wildlife Act of 1956).

The Final Environmental Assessment, including a Finding of No Significant Impact (FONSI), establishing the refuge was released in February 1995. The EA contained many references pertaining to cooperative farming, including the following:

“This proposal should not to be viewed (sic) as being in competition with agricultural land use. Cooperative farming agreements will allow the continuation of farming on some agriculture lands that may be incorporated in the Refuge” (FONSI, page 3).

“Impact to Agriculture: The Service does not anticipate the cessation of all farming on those lands it acquires, and does not believe that Refuge establishment will have a significant adverse impact upon farming. Cooperative farming agreements will be initiated where and when appropriate. The opportunity also exists to demonstrate sustainable agriculture practices on some refuge lands that may be acquired” (Summary, page iii).

“At Cat Point Creek,...Cooperative farming and shoreline preservation, timber, and grassland/brushland management actions could be emphasized....It is anticipated that a number of public use and interpretive programs could be initiated such as ... sustainable agriculture oriented grassland and cropland management...” (Final EA, page 7).

Beginning with the first refuge tract purchased in 1996, we have acquired approximately 1,665 acres of open land. The majority of these fields were in row crops, with lesser amounts in pasture and hayfields. We are now managing approximately 750 acres of these open lands as native grassland/early successional habitat. We have converted approximately 520 acres into native hardwoods or shrubs through planting, while approximately 170 acres are being allowed to naturally succeed to later vegetative stages or are being prepared for planting to native hardwoods. The remaining 225 acres continue to be farmed, and are the subject of this determination. These acres represent 13.5% of the total agricultural land purchased for the refuge since its inception and 3.5% of the total area of the refuge purchased in fee title.

In 1997, Congress passed the National Wildlife Refuge System Improvement Act. Among the provisions of the Act were directives concerning compatibility and the biological integrity, diversity and environmental health of the refuge system. New refuge system policies on Compatibility, and Biological Integrity, Diversity and Environmental Health (Integrity Policy) were issued in 2000 and 2001, respectively. The Integrity Policy directed that refuge habitats be managed to support historic conditions, defined as the “composition, structure, and functioning of ecosystems resulting from natural processes that we believe, based on sound professional judgment, were present prior to

substantial human related changes to the landscape.” Further, the policy states that “we do not allow refuge uses or management practices that result in the maintenance of non-native plant communities unless we determine there is no feasible alternative for accomplishing refuge purpose(s).” The policy uses farming to illustrate this directive: “For example, where we do not require farming to accomplish refuge purpose(s), we cease farming and strive to restore natural habitats.”

In consultation with the literature and with experts in the field of bird conservation, we believe that the refuge has an important role to play in grassland management. However, in many ways, we are still in the early stages of understanding the best methodologies for establishing and maintaining grassland habitats on the refuge. Over the past several years, we have made significant changes to our grassland management, including correcting ill advised planting regimes, preparing to convert planted warm season grass fields to riparian forest, experimenting with methods to control woody encroachment, and employing other adaptive management approaches as we seek to refine the program. We have used the cooperative farming agreement to help us achieve many of these habitat management activities. The cooperator has assisted with field preparation, planting, mowing, disking, and invasive species control to help establish new grassland fields and prepare other fields for restoration to native forest. Because we are still in the process of fully restoring former agricultural fields, we are not in the position to undertake new restoration of the 225 acres still in row crop production. With limited staff resources to plan and implement restoration, and little expectation of adding new staff within the next five years, we propose to keep lands in agricultural production until we can successfully restore them to native habitats. We believe this can be accomplished in a five year period, assuming stable budgets and staff, and with the continued assistance provided through the cooperative agreement.

We propose to use cooperative farming as an interim measure to keep fields open in preparation for conversion to native plants, and as a means to help us properly establish newly converted early successional habitats. This has been the primary justification for cooperative farming since the refuge was established in 1996. Our cooperative farming program is an integral component of our overall habitat restoration and management efforts as we work toward full compliance with refuge system policies on compatible uses and biological integrity, diversity, and environmental health. Therefore, we have determined that cooperative farming as described, and for the duration proposed, is an appropriate use.

COMPATIBILITY DETERMINATION

Project Title: Cooperative farming

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

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

"... 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

"for the development, advancement, management, conservation, and protection of fish and wildlife resources ... 16 U.S.C. § 742f(a)(4) (Fish and Wildlife Act of 1956)."

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: The following questions and answers provide a concise description of the proposed use.

1. What is the use? Is the use a priority public use? The use is cooperative farming. Cooperative farming is not 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.

2. Where would the use be conducted? We would allow this use on the Tayloe Tract (Tract 12), located off Naylor's Beach Road in Richmond County, Virginia. The Tayloe Tract is approximately 1,112 acres. The area proposed for use is contained within 12 fields ranging in size from 3.2 to 42 acres, and totaling 225 acres (figure 1). Other habitats on the Tayloe Tract include mixed hardwood and pine forest (\pm 470 acres), tidal marsh (\pm 180 acres), planted grassland (\pm 92 acres), open water (\pm 76 acres), old field (\pm 27 acres), planted hardwoods/shrubs (\pm 33 acres), and moist soil (\pm 9 acres). Of the total acreage on the tract, approximately 161 acres were in row crops or pasture at the time of refuge establishment, and have been converted to native plants.

Other, yet un-acquired tracts may be temporarily added to the cooperative farming program pending conversion to native habitats.

There are several structures on the Tayloe property, all of which are scheduled for demolition or removal. They include six sheds/barns, two grain silos, and one office trailer. We have removed one house, two sheds and one large dairy barn since 2003. The house will be replaced with a modular building to be used as refuge quarters.

The tract is open by reservation only for wildlife observation, environmental education, and photography. Hunting of white-tailed deer is permitted during the fall.

3. When would the use be conducted? Farming would occur all year long via planting and harvesting of small grains (wheat, barley) and large grains (corn and soybeans). Corn is typically planted in late spring and harvested in late summer/early fall. Soybeans are planted in late spring/early summer, and harvested in late fall. Small grains are typically planted in late fall and harvested in late spring/early summer. Application of fertilizer, lime, and pesticides occurs before and after planting, but prior to harvest.

4. How would the use be conducted? We would manage the farming program through a cooperative agreement with a local farmer. We followed guidance from the Refuge Manual in selecting the individual with which to enter into an agreement. Field rental rates are determined by taking the average of rates from the local area based on the Custom Rate Survey of the Northern Neck and Middle Peninsula, conducted by the Westmoreland County Extension Agent. Rather than making cash payments, the cooperator conducts farming-related services on the refuge of an amount equal to the amount of rent. Farming-related services eligible for inclusion into the agreement are: providing native grass and other native seed, planting, plowing, disking, mowing, and applying herbicide. The cooperative farming agreement is a component of

the refuge's annual habitat management program and activities conducted by the cooperator support the accomplishment of refuge habitat management objectives.

We follow best management practices in the implementation of the cooperative farming program. Forested or grass buffers are established between all farm fields and any adjacent wetlands and streams. "No-till" practices are also employed to the maximum extent possible. We prepare pesticide use proposals for application of all pesticides, and only those that are shown to not impact fish and wildlife resources are approved.

We will seek approval to use genetically modified crops, specifically Roundup™ Ready soybeans and corn. These products are widely-used on farms around the refuge, including those adjacent to the Tayloe Tract. We have reviewed the literature on the effects of Roundup Ready soybeans and corn, and of glyphosate herbicide, on fish and wildlife resources and can find no definitive studies that show that use of these products, as is proposed herein, would materially affect refuge or System purposes. Some of the issues surrounding use of Roundup Ready crops are summarized below:

- a. Cultivation of herbicide tolerant crops dramatically increases use of herbicides – According to a 2002 USDA report, adoption of GE (genetically engineered) crops including Bt cotton and herbicide tolerant corn, cotton and soybeans, resulted in a decline of 19.1 million-acre treatments in 1997. This equated to a decline of about 2.5 million pounds of active ingredients. While the pounds of active ingredients such as glyphosate increased on soybeans fields, "this substitution displaced other synthetic herbicides that are nearly three times as toxic to humans and that persist in the environment twice as long as glyphosate" (Fernandez-Cornejo and McBride 2002). Locally, this statement is verified by the removal of Prowl (manufactured by BASF, active ingredient: pendimethalin) from the list of requested herbicides for soybeans in favor of glyphosate. Pendimethalin is more harmful to the applicator and significantly (approximately 10 times) more toxic to fish (rainbow trout) and aquatic invertebrates (*Daphnia magna*) than glyphosate.
- b. Use of Roundup harms and kills amphibians – There are varying opinions on this claim in the literature, but the surfactant used in some glyphosate products appears to be more toxic to aquatic organisms than glyphosate itself. On the refuge, we do not believe that the potential effects of commercial surfactants will harm aquatic organisms due to the fact that all our fields are buffered from streams and wetlands, and herbicides are applied from ground equipment (tractors), thereby reducing the potential for drift into wetland sites.
- c. Widespread use of glyphosate tolerant crops has led to chemical resistance by some weeds – The most often cited example is resistance by mare's tail or horseweed. We have not experienced this phenomenon on the refuge. Our experience with mare's tail is that it comes in strong during the first year or two after a field is taken out of production, and then it virtually disappears as other plants, either planted or volunteer, take over.

5. Why is the use being proposed? We propose to use cooperative farming as an interim measure to keep fields open in preparation for conversion to native plants, and as a means to help us properly establish newly converted early successional habitats. This has been the primary justification for cooperative farming since the refuge was established in 1996. Our cooperative farming program is an integral component of our overall habitat restoration and management efforts as we work toward full compliance with refuge system policies on compatible uses and biological integrity, diversity, and environmental health.

Beginning with the first refuge tract purchased in 1996, we have acquired approximately 1,665 acres of open land. The majority of these fields were in row crops, with lesser amounts in pasture and hayfields. We are now managing approximately 750 acres of these open lands as native grassland/early successional habitat. We have converted approximately 520 acres into native hardwoods or shrubs through planting, while approximately 170 acres are being allowed to naturally succeed to later vegetative stages or are being prepared for planting to native hardwoods. The remaining 225 acres continue to be farmed, and are the subject of this compatibility determination. These acres represent 13.5% of the total agricultural land purchased for the refuge since its inception and 3.5% of the total area of the refuge purchased in fee title.

The Draft Environmental Assessment to establish the Rappahannock River Valley National Wildlife Refuge was released for public review and comment in July 1994, and the Final Environmental Assessment, including a Finding of No Significant Impact (FONSI), was released in February 1995. The following statements pertaining to cooperative farming are contained in the Final Environmental Assessment, and reflect Service policies at the time of refuge establishment:

“This proposal should not to be viewed (sic) as being in competition with agricultural land use. Cooperative farming agreements will allow the continuation of farming on some agriculture lands that may be incorporated in the Refuge” (FONSI, page 3).

“Impact to Agriculture: The Service does not anticipate the cessation of all farming on those lands it acquires, and does not believe that Refuge establishment will have a significant adverse impact upon farming. Cooperative farming agreements will be initiated where and when appropriate. The opportunity also exists to demonstrate sustainable agriculture practices on some refuge lands that may be acquired” (Summary, page iii).

“Once acquired, habitats would be managed as part of the National Wildlife Refuge System in accordance with all applicable Federal rules and regulations contained in Title 50, Code of Federal Regulations. Management policies and procedures are contained in the U.S. Fish and Wildlife Service Manual....Techniques might include shoreline preservation by establishment of vegetative filter strips along the river, forest management grassland mowing and disking, prescribed burning and, cooperative farming” (Final EA, page 6).

“At Cat Point Creek, . . . Cooperative farming and shoreline preservation, timber, and grassland/brushland management actions could be emphasized. . . . It is anticipated that a number of public use and interpretive programs could be initiated such as . . . sustainable agriculture oriented grassland and cropland management. . . .” (Final EA, page 7).

“Land Use – Open space farms and wildlands are resources which are declining in the region and nationwide. Some areas can be kept in a manner that is usable for wildlife and recreation, but creation of new wild space in the true sense is impossible. Under Service acquisition, there would be little or no major change from present land-use patterns. Some marginal agricultural lands may be allowed to revert to later successional stages, especially along the river shoreline, to prevent erosion and provide habitat cover. Agricultural practices on some remaining lands will be modified to provide food and cover sources for migratory birds. Acquisition monies can be used to purchase conservation easements from landowners who are interested in continuing their current use, while selling their development rights. Such a program would allow former landowners or tenant farmers to continue raising crops on certain acquired lands, or portions thereof, while also providing wildlife benefits. Lease back agreements are also possible which would give the seller or others who rent the property an opportunity to continue using the land for crop raising. Agricultural land could remain in production, thus, helping to maintain the livelihood of the farmer. The farmer/landowner would have the first refusal option to enter into a lease back agreement, while the tenant or party renting the land would be given the second option” (Final EA, page 42).

There are other references to cooperative farming in the EA that are similar in nature to those above.

In 1997, Congress passed the National Wildlife Refuge System Improvement Act. Among the provisions of the Act were directives concerning compatibility and the biological integrity, diversity and environmental health of the refuge system. New refuge system policies on Compatibility, and Biological Integrity, Diversity and Environmental Health (Integrity Policy) were issued in 2000 and 2001, respectively. The Integrity Policy directed that refuge habitats be managed to support historic conditions, defined as the “composition, structure, and functioning of ecosystems resulting from natural processes that we believe, based on sound professional judgment, were present prior to substantial human related changes to the landscape.” Further, the policy states that “we do not allow refuges uses or management practices that result in the maintenance of non-native plant communities unless we determine there is no feasible alternative for accomplishing refuge purpose(s).” The policy uses farming to illustrate this directive:

“For example, where we do not require farming to accomplish refuge purpose(s), we cease farming and strive to restore natural habitats.”

The Improvement Act also mandated that all refuges complete a comprehensive conservation plan by 2012. These plans address all aspects of refuge management for a 15-year period. Rappahannock River Valley began pre-planning in 2001 and currently (2006) is in the midst of preparing its plan, scheduled for completion in August 2007. As part of the planning analysis, refuge staff conducted investigations into historic conditions. While the predominant upland

vegetation appears to have been eastern deciduous forest, evidence exists to suggest that large clearings existed as well, due to naturally occurring wildfire, fires set by Native Americans, and, further west in Virginia, grazing by bison (Ingram 2006). At the time of European contact, the forest landscape in much of the East contained open stands of trees and some grasslands (savannahs) (Davis 1981), shaped by short-interval, low-intensity fires. Grasslands and prairies were common in Ohio, Pennsylvania and Virginia, primarily as a result of introduced or naturally-occurring fire (Brown 2000). Many open areas had been created by slash-and-burn agricultural practices of Native Americans, and as a result of gathering and clearing for firewood (Day 1953, Russel 1998). Fire (whether natural or man-made) and drought since the end of the last ice-age also created park-like woodlands and stretches of open grasslands throughout the Bay area (Grumet 2000). A contemporary site in Virginia also points to an extensive landscape of grasslands or spruce savannahs as it contains the skeletons of many grassland vertebrate species (Askins 2002).

As summarized by Mitchell, et al (2000), many grassland dependent birds are experiencing significant population declines. As noted in the Partners in Flight Bird Conservation Plan for the Mid-Atlantic Coastal Plain (Watts 1999), plan partners (including the Fish and Wildlife Service) control many of the most important grassland areas in the region, and therefore have a heightened opportunity and responsibility to appropriately manage these lands for grassland-dependent birds, particularly the grasshopper sparrow during the breeding season, and several other grassland-obligates during the winter.. As mentioned above, we currently manage approximately 750 acres of early successional habitat with a focus on breeding grasshopper sparrows and wintering savannah sparrows.

Establishment of native warm season grasslands requires significant early investment, including field preparation, planting, invasive species control, and general weed control to establish the stands. Allowing fields to naturally seed themselves requires considerably less investment of time and funds. These differing methods of grassland establishment produce different vegetative communities, but both are used by grassland dependent birds. The refuge is evaluating the relative abundance of birds using the different field types to determine which better achieves refuge objectives.

Maintenance of grassland fields also requires intensive management to keep out woody plant species, control invasive species, reduce the build-up of thatch, and maintain the vigor of the grasses. We maintain grassland fields by prescribed burning, mowing, disking, and application of approved herbicides. Without regular maintenance, fields would rapidly succeed to shrub, and eventually forest, habitats. Fields that are taken out of agricultural production will, without management, begin growing tress within two years, making reclamation of these fields into grassland much more difficult and expensive. Burning is ineffective in removing trunks of small trees and mowing leaves stobs that can puncture tractor tires in the immediate subsequent years.

In consultation with the literature and with experts in the field of bird conservation, we believe that the refuge has an important role to play in grassland management. However, in many ways, we are still in the early stages of understanding the best methodologies for establishing and maintaining grassland habitats on the refuge. Over the past several years, we have made significant changes to our grassland management, including correcting ill advised planting

regimes, preparing to convert planted warm season grass fields to riparian forest, experimenting with methods to control woody encroachment, and employing other adaptive management approaches as we seek to refine the program. We have used the cooperative farming agreement to help us achieve many of these habitat management activities. The cooperator has assisted with field preparation, planting, mowing, disking, and invasive species control to help establish new grassland fields and prepare other fields for restoration to native forest. Because we are still in the process of fully restoring former agricultural fields, we are not in the position to undertake new restoration of the 225 acres still in row crop production. With limited staff resources to plan and implement restoration, and little expectation of adding new staff within the next five years, we propose to keep lands in agricultural production until we can successfully restore them to native habitats. We believe this can be accomplished in a five year period, assuming stable budgets and staff, and with the continued assistance provided through the cooperative agreement.

In the interim, lands that remain in agriculture will not be as beneficial to migratory birds and other wildlife as they would be if restored to native vegetation. They will have no value as breeding habitat. However, these fields do have value as foraging areas for birds throughout the year. Large numbers (>1,000) of Canada geese have been observed feeding on waste grain in both corn and soybean fields after harvest. Eastern meadowlarks prefer open ground for foraging during the winter and are often seen feeding in corn and soybean stubble. Grasshopper sparrows and other birds have been observed feeding on insects in growing soybeans fields adjacent to restored fields.

It is clear that, when viewed in the context of the overall habitat management status and capacity of the refuge, that cooperative farming as it is being practiced, and for the limited duration proposed, contributes to the purposes of the refuge and the mission of the refuge system by significantly adding to the refuge's ability to successfully restore and manage native habitats over the long term.

Availability of Resources: With the exception of staff time necessary to administer it, the cooperative farming program is self sustaining. The disking, planting, mowing, herbicide application, and other farming practices used to help restore native habitats are conducted in exchange for use of the 225 acres for agricultural production. Staff hours for cropland management in FY 2006 were estimated at 66 hours, primarily from the deputy refuge manager and refuge biologist, with oversight by the refuge manager. Costs to administer the cooperative farming program were approximately \$2,800 in FY 2006. This represents 0.28% of the refuge operational budget in FY 2006 and 0.99 % of the combined salaries of the three staff involved.

Anticipated Impacts on Refuge Purpose: We are scheduled to complete our Comprehensive Conservation Plan in 2007. In the interim, we are using the broad objectives set forth in the Environmental Assessment prepared during the establishment of the Refuge in 1995. They are as follows:

- (1) To preserve and enhance the refuge's land and water in a manner that will conserve the natural diversity of fish, wildlife, plants and their habitats for present and future generations;

- (2) To protect, restore and enhance ecologically significant wetland habitats;
- (3) To conserve and enhance populations of fish, wildlife, and plants within refuge boundaries; to manage and perpetuate the migratory bird resource including populations of waterfowl, neotropical migrants, raptors, passerines, and marsh and water birds;
- (4) To protect, restore and enhance interjurisdictional fish populations;
- (5) To protect and enhance endangered and threatened species populations;
- (6) To protect and enhance water quality of aquatic habitats with the refuge and the River;
- (7) To fulfill international treaty obligations of the United States with respect to fish and wildlife and their habitats, and
- (8) To provide opportunities for compatible scientific research, environmental education, and fish and wildlife-oriented recreation.

In terms of the impacts related specifically to interim objectives of the Refuge, we expect no impact to the **diversity** of fish, wildlife or plants now occurring on the Refuge. The relatively small impact area (3.5% of the Refuge area) suggests that no plant or species of fish or wildlife will be extirpated from the Refuge. While the croplands will not be as valuable to the diversity of wildlife as they will be when restored, they do provide feeding habitat, and add to the local diversity of habitats within the refuge. Their proximity to restored lands on the Tayloe Tract adds more to their value than croplands in a solely agricultural setting (Spencer pers. comm.).

Wetlands will be not be impacted due to the vegetated buffers strips surrounding all agricultural fields. Buffer strips along the most sensitive wetland area, Cat Point Creek, are greater than 100 feet in width. Buffers of only 25 meters (77 feet) have been shown to reduce sediments due to surface runoff by 98%, and nitrogen and phosphorous due to surface runoff by almost 80% (Gillam et al 1997).

Habitat available to **migratory birds** will be of lesser value on lands now in crops than it would be if restored to native habitats. However, when viewed within the scope of the refuge's current ability to successfully complete restorations now underway, the short term loss is outweighed by the long term gain in managing all former agricultural lands methodically to maximize their long term value to migratory birds and other wildlife.

No **interjurisdictional fish** will be impacted by this program, due to reasons stated above concerning wetland impacts.

With regard to **threatened and endangered species**, 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. The farming operation at the Tayloe Tract is a continuing activity that has been in existence for decades if not

centuries. There will be no additional impact to bald eagles above what has occurred historically. In fact, since the refuge purchased the property and established buffers along Cat Point Creek, the distance between farmed fields and potential bald eagle habitat has increased. Planting and harvesting activities are well spaced during the year, so any disturbance will be minimal and short lived. We received concurrence from a Section 7 Consultation with the USFWS Virginia Field Office indicating that this use is not likely to adversely impact bald eagles.

Water quality will not be impacted for reasons stated above when describing impacts to wetlands.

United States' **treaty obligations** will not be adversely affected since migratory bird populations will be protected and enhanced in the long term. Short term loss of nesting habitat will occur, but since birds are not known to nest in these fields (unpublished refuge data 2002), no mortality is expected to occur due to farming operations.

The cooperative farming program presents opportunities to satisfy a refuge objective, and a goal of the Improvement Act, for compatible **wildlife -dependent recreation, specifically interpretation**. Farming and forestry have been the predominate land uses in the area surrounding the refuge for centuries. Farming and forestry also have a rich tradition in the field of wildlife management. It was not so long ago that growing crops for wildlife was one of our primary management techniques on refuges. While we have evolved into restoring and managing native habitats, and by policy, toward historic conditions, this change in philosophy is not well recognized or understood by the general public. While having cooperative farming on the land is not necessary to interpret this message, it does present an opportunity for visitors to witness the evolution in progress. In the interim period while farming is on-going, it also presents opportunities to interpret sustainable farming and best management practices in use. The Tayloe Tract is one of the best examples of soft-edge buffers in Richmond County (Hall pers. comm.).

Public Review and Comment: A news release announcing the availability of this determination for a 15-day public review and comment period, was issued to the following media outlets and individuals on October 11, 2006:

Rappahannock Times	Richmond Times Dispatch
Northern Neck News	The Journal
Southside Sentinel	Daily Press
Northumberland Echo	WRAR
Westmoreland News	WNNT
The Free Lance-Star	WKWI
Rappahannock Record	NorthernNeckToday.com
The Caroline Progress	TidewaterReview.com

The news release was published in at least two local newspapers, the Rappahannock Times and Northern Neck News, and a short article announcing the availability of the draft determination also appeared in the Richmond Times Dispatch. During the public comment period, we received 11 letters and one petition. Nine of the letters, and the 38

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signatories to the petition, expressed the opinion that cooperative farming should remain a long-term component of the refuge's habitat management program. Two letters supported restoring refuge lands to native vegetation. For the reasons discussed in the body of this determination, we do not believe that cooperative farming would be compatible over the long term. However, we recognize that there may be some cooperative farming occurring on the refuge beyond the five-year window described. If new lands are acquired, for example, they may be temporarily enrolled in a cooperative farming program while plans are made and implemented to restore them to native habitats.

The refuge manager will provide responses to the 11 individuals who wrote letters commenting on the draft determination, explaining the final decision. A letter to the editor or news release will be used to disseminate information to the public at large in order to reach those who signed the petition.

Determination (check one below):

_____ **Use is Not Compatible**

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

Stipulations Necessary to Ensure Compatibility:

The cooperative farming program on the Tayloe Tract will be phased out entirely within five years, unless new circumstances arise at which time a new compatibility determination will be required.

The program will adhere to general conditions for cooperative farming programs as listed in the Refuge Manual (6 RM 4 Exhibit 1).

All operations on refuge cropland are to be carried out in accordance with the best farming and soil conservation practices.

The cooperator must have prior approval of the Refuge Manager before the application of any pesticide. The cooperator must supply the Refuge Manager, at least three months prior to farming, a label containing common name, application rate, number, and methods, and target pests. The cooperator, at the time of application, is required to complete a pesticide spray record furnished by the refuge. These records provide the refuge information on trace residues and improve pest control practices.

Justification

The Final Environmental Assessment to establish the Rappahannock River Valley National Wildlife Refuge provides for the use of cooperative farming as a viable resource management opportunity in the management of the refuge. The use of cooperative farming as an interim measure will keep fields open in preparation for conversion to native plants, and will help us to properly establish newly converted early successional habitats.

The refuge cooperative farming program is an integral component of the refuge's overall habitat restoration and management efforts. In lieu of paying rent for the use of refuge farm fields, the cooperator supports the accomplishment of refuge habitat management objectives by performing farming-related services related to our annual habitat management program and activities. Farming-related services include providing native grass and other native seed, planting, plowing, disking, mowing, and applying herbicide.

In accordance with 50 CFR 29.1, cooperative farming, as described in this compatibility determination, significantly contributes to the mission, purposes, goals, and objectives of the Rappahannock River Valley NWR and the National Wildlife Refuge System mission.

Signature: Refuge Manager: Joseph F. McAuley 11/15/06
(Signature and Date)

Concurrence: Regional Chief: Richard J. Sege 12/8/06
(Signature and Date)

Mandatory 10- year Re-evaluation Date: November 15, 2016

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FINDING OF APPROPRIATENESS OF A REFUGE USE

Refuge Name: Rappahannock River Valley NWR

Use: Firewood Cutting

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

Decision Criteria:	YES	NO
(a) Do we have jurisdiction over the use?	✓	
(b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)?	✓	
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	✓	
(d) Is the use consistent with public safety?	✓	
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	✓	
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	✓	
(g) Is the use manageable within available budget and staff?	✓	
(h) Will this be manageable in the future within existing resources?	✓	
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	✓	
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	✓	

Where we do not have jurisdiction over the use ("no" to (a)), there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ("no" to (b), (c), or (d)) may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes No

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

Not Appropriate

Appropriate

Refuge Manager: _____

Date: _____

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence.

Refuge Supervisor: _____

Date: _____

A compatibility determination is required before the use may be allowed.

**FWS Form 3-2319
02/06**

Firewood Cutting

Justification for Cutting Firewood as an Appropriate Use
Eastern Virginia Rivers NWR Complex
Rappahannock River Valley NWR

Firewood cutting by the public or refuge staff can benefit the refuge in several ways: cost savings from having to hire contractors, fuel reduction and prevention of wildfires, protection of refuge facilities, and assistance in cleanup from major storms. This use can be accommodated in select locations and during certain periods without causing negative impacts to the diversity or productivity to fish, wildlife or plants. Impacts from this proposal, both 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. The area affected by the proposed use represents a small fraction of the refuge land area.

COMPATIBILITY DETERMINATION

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

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

"... 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

"...for the development, advancement, management, conservation, and protection of fish and wildlife resources ... 16 U.S.C. § 742f(a)(4) (Fish and Wildlife Act of 1956)."

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: The following questions and answers provide a concise description of the proposed use.

1. What is the use? Is the use a priority public use? The use is firewood cutting by the public or by refuge staff. It is not one of the priority uses of the Refuge System, however, cutting of downed trees by the public or refuge staff could facilitate priority uses by removing obstacles along trails or public roads, or by removing trees that threaten refuge facilities.

In accordance with 50 CFR 29.1, firewood cutting is an economic use of the refuge, in that firewood is a commodity that is typically bought and sold.

Firewood Cutting

2. Where would the use be conducted? Firewood cutting could potentially occur on any refuge tract acquired in fee. Fire wood collection will be restricted to existing roads, trails, dikes and other facilities. No new roads will be constructed to facilitate this use. Equipment used for the harvesting and collection of firewood will be limited to chainsaws and axes for cutting. Personal pick-up trucks with small utility trailers would generally be used for access and hauling of wood. Other equipment such as farm tractors may be allowed if the refuge manager determines that no resource damage is likely to occur as a result, and if this type of equipment would result in a more efficient or safer operation.

We have no authority to allow this use on tracts where the refuge holds a conservation easement.

3. When would the use be conducted? The use would occur during daylight hours, potentially on any day of the week throughout the year. The use will be limited to times when the ground is dry to prevent rutting and damage to roads or underlying soils and vegetation.

4. How would the use be conducted? We plan to permit firewood cutting for personal use when removing wood from the refuge provides benefits to refuge management, such as after a storm event when trees are blocking refuge roads or if standing trees threaten refuge facilities. We may also allow wood to be taken in situations where doing so would not materially interfere with refuge purposes or prevent us from accomplishing refuge objectives. For example, if an individual tree falls along a common boundary with a refuge neighbor, and the neighbor requests to be allowed to cut the tree for firewood, we may issue a special use permit authorizing this use, if doing so would not have adverse impacts on adjoining habitat.

Pending regional director approval, we may also extend the firewood cutting privilege to refuge staff under the same conditions as those presented to the public at large. In the event of a large storm event, such as Hurricane Isabel, we may have dozens or even hundreds of trees down on the refuge. Allowing refuge staff or the public to remove trees may save the refuge time and funds, especially at times when tree contractors have more work than they can handle.

We would evaluate firewood cutting requests on a case-by-case basis. We would evaluate potential impacts to adjoining habitats (including access lanes), safety, duration, time of year, and any other parameters necessary to protect wildlife, plants, and habitat and to ensure public safety. Prior to allowing this use, a special use permit would be issued describing the parameters of the activity (who, when where, how), and any special conditions that must be followed.

We would likely charge a small fee for firewood cutting, such as \$25 per cord. A cord is roughly two loads in a full size pickup truck. This would help defray administrative costs in issuing and enforcing special use permits. The fee would apply equally to the public or refuge staff. Refuge staff would not be permitted to use refuge equipment or vehicles for firewood cutting or removal if it is for personal use.

5. Why is the use being proposed? This use is being proposed in response to past inquiries from refuge neighbors who have asked for permission to cut and remove trees that have fallen on or near refuge boundaries near their private property. We deferred making any decision on these requests since they came during preparation of the refuge's Comprehensive Conservation Plan and we wanted to evaluate them in light of newly developed refuge goals, objectives, and strategies. It is clear that none of the proposed refuge goals, objectives, or strategies would be materially compromised due to a firewood cutting program that receives further evaluation on a case-by-case basis. The program will significantly enhance our ability to engage, educate and utilize volunteers and other individuals in refuge management activities by permitting and authorizing the collection of firewood for personal use.

We are also cognizant of past instances when having the public or staff remove trees from refuge roads or public use areas would have benefitted the refuge in terms of cost savings or timeliness, such as after Hurricane Isabel.

Tree removal can also reduce fire hazards by reducing fuel loads after timber harvest, storm events, or in areas that are overstocked.

Availability of Resources: We do not anticipate this use requiring significant resources to administer. Refuge staff would have to visit any sites proposed for firewood cutting and evaluate the situation using parameters described above. A special use permit would be issued and monitored. Follow up with permittees may be necessary if all conditions of the permit were not met. We expect that in the majority of instances, these activities would require a minimal amount of time. An estimate of resources required for a single permit is as follows:

Site visit:	1 hour @ \$30/hour*	= \$30.00
Permit preparation:	0.5 hour @ \$18/hour**	= \$ 9.00
Permit compliance:	1 hour @ \$30/hour	= \$30.00

Total: = \$69.00

Potential income based on 2 cords per permit: @ \$25 = \$50.00

Net estimated resources required per permit: = \$19.00

* \$30/hour based on average of GS-7 (refuge officer), GS-12 (deputy manager) and GS-13 (manager).

** \$18/hour based on GS-7 (administrative assistant).

Anticipated Impacts on Refuge Purpose: As noted on page one of this compatibility determination, there are four purposes for establishment and management of this refuge. In general, they relate to four primary conservation and management responsibilities:

1. Migratory birds,
2. Threatened and endangered plant and animal species,
3. Wetlands, and
4. Other fish and wildlife resources.

Following is a discussion on the anticipated impacts of the proposed uses related to the resources listed within refuge purposes.

Potential impacts to birds: Firewood cutting could adversely impact birds through disturbance due to excessive noise, trampling of nests, loss of nests built in downed trees, removal of cavity trees, and disturbance during ingress and egress.

Since permits will only be issued after a site visit by refuge staff, we can ensure that impacts will be minimized or eliminated. For example, we would not permit removal of dead standing trees unless they threaten refuge facilities. In those instances, we will remove only that portion of the tree that is likely to cause damage and will leave as much of the trunk as possible to serve as future cavities and as feeding areas for insectivorous birds. We will also rely on existing roads and trails for access, reducing the potential loss of habitat from creating new roads or trails. Disturbance due to noise and activity in the immediate vicinity of trees being cut will be temporary and confined to a relatively localized area. We will observe time of year and distance restrictions for bald eagles as outlined in the Virginia bald eagle management guidelines.

Potential impacts to threatened and endangered species: The only federal-threatened species confirmed to exist on the refuge is the sensitive joint-vetch. The sensitive joint-vetch is an annual legume that grows along fresh tidal rivers and streams. Firewood cutting would not occur in proximity to this habitat and therefore would have no impact on this species.

Potential impacts to wetlands: Potential adverse impacts to wetlands could arise if vehicles were permitted to access firewood cutting areas through wetlands or if this or other activities associated

Firewood Cutting

with the program increase erosion into wetlands. Site visits and the accompanying evaluations will prevent these impacts from occurring.

Potential impacts to other fish and wildlife: We expect that potential impacts to other fish and wildlife will be temporary and isolated.

We are including this program in our CCP as a planned activity common to all alternatives so we can accommodate requests and opportunities on a case-by-case basis without having to do a compatibility determination on each instance. In essence we will be doing an evaluation, and assuring compatibility, each time a request is made or we seek to save costs by inviting the public or staff to remove trees that we would otherwise have to have removed via contract. Each time we evaluate a potential firewood cutting operation, we will ensure that impacts to fish, wildlife, and plants, and their habitats, are minimal and do not interfere with refuge objectives. We will make it a condition of the permit that firewood taken from the refuge is for personal use and is not to be re-sold.

In summary, our research, observations and knowledge of the area provide no evidence that firewood cutting as described above, on a case-by-case basis, directly, indirectly, or cumulatively, will have an unacceptable effect on wildlife resources or their habitats.

Public Review and Comment: This determination will be available for a public review and comment period in conjunction with the release of the Draft Comprehensive Conservation Plan for the refuge.

Determination (check one below):

Use is Not Compatible

 X

Use is Compatible With the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

1. All activities will comply 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, in consultation with the Center for Conservation Biology.
2. Each special use permit issued for firewood cutting will be evaluated on a case-by-case basis to ensure that there will be only minor and temporary adverse impacts to wildlife and habitat.
3. Uses will be monitored as needed to ensure that the program contributes to, or does not detract from, refuge objectives.

Justification: Firewood cutting by the public or refuge staff can benefit the refuge in several ways: cost savings from having to hire contractors, fuel reduction and prevention of wildfires, protection of refuge facilities, and assistance in cleanup from major storms. This use can be accommodated in select locations and during certain periods without causing negative impacts to the diversity or productivity to fish, wildlife or plants. Impacts from this proposal, both 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. The area affected by the proposed use represents a small fraction of the refuge land area.

In accordance with 50 CFR 29.1, firewood cutting, as described in this compatibility determination, significantly contributes to the mission, purposes, goals, and objectives of the Rappahannock River Valley NWR and the National Wildlife Refuge System mission.

Signature: Refuge Manager: _____
(Signature and Date)

Concurrence: Regional Chief: _____
(Signature and Date)

Mandatory 10-year Re-evaluation Date: _____

FINDING OF APPROPRIATENESS OF A REFUGE USE

Refuge Name: Rappahannock River Valley NWR

Use: Research

This form is not required for wildlife-dependent recreational uses, take regulated by the State, or uses already described in a refuge CCP or step-down management plan approved after October 9, 1997.

Decision Criteria:	YES	NO
(a) Do we have jurisdiction over the use?	✓	
(b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)?	✓	
(c) Is the use consistent with applicable Executive orders and Department and Service policies?	✓	
(d) Is the use consistent with public safety?	✓	
(e) Is the use consistent with goals and objectives in an approved management plan or other document?	✓	
(f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed?	✓	
(g) Is the use manageable within available budget and staff?	✓	
(h) Will this be manageable in the future within existing resources?	✓	
(i) Does the use contribute to the public's understanding and appreciation of the refuge's natural or cultural resources, or is the use beneficial to the refuge's natural or cultural resources?	✓	
(j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future?	✓	

Where we do not have jurisdiction over the use ("no" to (a)), there is no need to evaluate it further as we cannot control the use. Uses that are illegal, inconsistent with existing policy, or unsafe ("no" to (b), (c), or (d)) may not be found appropriate. If the answer is "no" to any of the other questions above, we will **generally** not allow the use.

If indicated, the refuge manager has consulted with State fish and wildlife agencies. Yes ___ No ✓

When the refuge manager finds the use appropriate based on sound professional judgment, the refuge manager must justify the use in writing on an attached sheet and obtain the refuge supervisor's concurrence.

Based on an overall assessment of these factors, my summary conclusion is that the proposed use is:

Not Appropriate ___

Appropriate ✓

Refuge Manager: Joseph F. McCauley

Date: December 7, 2006

If found to be **Not Appropriate**, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found **Not Appropriate** outside the CCP process, the refuge supervisor must sign concurrence.

If found to be **Appropriate**, the refuge supervisor must sign concurrence.

Refuge Supervisor: John P. Stack

Date: 1/10/07

A compatibility determination is required before the use may be allowed.

FWS Form 3-2319
02/06

Research

Eastern Virginia Rivers NWR Complex
Rappahannock River Valley NWR

Justification for Research as an Appropriate Use

Prior to allowing any use of the refuge, the refuge manager must first determine if the use is appropriate, and if so, he or she must then complete a compatibility determination. The six priority wildlife dependent recreational uses (environmental education, fishing, hunting, interpretation, wildlife observation and wildlife photography) are considered by policy to be appropriate. Therefore, only general public uses or specialized uses must be evaluated for their appropriateness.

We have evaluated **research** and the refuge manager has determined that this use is appropriate.

Rappahannock River Valley National Wildlife Refuge was established

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

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

“... 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

“for the development, advancement, management, conservation, and protection of fish and wildlife resources ... 16 U.S.C. § 742f(a)(4) (Fish and Wildlife Act of 1956).

The refuge manager has determined that research meets all ten criteria for a use of the refuge to be considered appropriate. A brief explanation follows:

Research conducted by non-Service personnel, including colleges, universities, federal, state, and local agencies, non-governmental organizations, and qualified members of the public can further our understanding of the natural environment and improve the management of refuge natural resources. Much of the information research generates applies to management on and near the refuge.

The Service encourages and supports research and management studies on refuge lands that will improve and strengthen decisions on managing natural resources. The refuge manager will encourage research that clearly relates to approved refuge objectives, improves habitat management, and promotes adaptive management. Research can provide information to better manage the Nation’s biological resources that can be used by other units of the National Wildlife Refuge System, other Federal agencies, and State Fish and Game agencies. Research may address important management issues, or identify and refine techniques for managing species or habitats.

We will also consider permitting research for other purposes that may not relate directly to refuge-specific objectives, but contribute to the broader enhancement, protection, use, preservation or management of native populations of fish, wildlife and plants, and their natural diversity in the region or the Atlantic flyway. All proposals must comply with Service policy on compatibility, and generally require issuance of a special use permit.

COMPATIBILITY DETERMINATION

Project Title: Research

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

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

"... 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

"for the development, advancement, management, conservation, and protection of fish and wildlife resources ... 16 U.S.C. § 742f(a)(4) (Fish and Wildlife Act of 1956)."

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: The following questions and answers provide a concise description of the proposed use.

- 1. What is the use? Is the use a priority public use?** The use is research or other ecological investigations not conducted by the Service or a Service-authorized agent. Research is not 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.
- 2. Where would the use be conducted?** Research could be conducted throughout the refuge, depending on the subject. Any refuge tract could potentially be available for research activities. Specific areas open for research will be stipulated in conditions of a special use permit, including access points.
- 3. When would the use be conducted?** As with locations, the timing of research will be dependent on the type and subject(s) of the research project. Research could potentially occur throughout the year. Time of year restrictions could be imposed to protect threatened or endangered species or to prevent conflicts with other refuge uses or management activities.
- 4. How would the use be conducted?** The mechanics of the research will depend entirely on the individual research project. We will carefully scrutinize the objectives, methods, and approach of each research project before allowing it on the refuge. We will not allow any research project that lacks an approved study plan and protocol or compromises public health and safety. We will route draft proposals through the Regional Research Coordinator and Regional Biologist for review to ensure that protocols meet Service standards.
- 5. Why is the use being proposed?**

Research by non-Service personnel is conducted by colleges, universities, federal, state, and local agencies, non-governmental organizations, and qualified members of the public furthers our understanding of the natural environment and improves the management of refuge natural resources. Much of the information research generates applies to management on and near the refuge.

The Service encourages and supports research and management studies on refuge lands that will improve and strengthen decisions on managing natural resources. The refuge manager encourages and seeks research that clearly relates to approved refuge objectives, improves habitat management, and promotes adaptive management. Priority research addresses information on better managing the Nation's biological resources that generally are important to agencies of the Department of Interior, the National Wildlife Refuge System, and State Fish and Game Agencies, that address important management issues, or demonstrate techniques for managing species or habitats.

We also consider research for other purposes that may not relate directly to refuge-specific objectives, but contribute to the broader enhancement, protection, use, preservation or management of native populations of fish, wildlife and plants, and their natural diversity in the region or the Atlantic flyway. All proposals must comply with Service policy on compatibility.

Both the Refuge Manual and the Service Manual provide guidance on allowing research on refuges. The Refuge Manual (4 RM 6.2) lists three objectives that can be met by permitting research on refuges:

- 1) To promote new information which will improve the quality of refuge and other Service management decisions,
- 2) To expand the body of scientific knowledge about fish and wildlife, their habitats, the use of these resources, appropriate resource management, and the environment in general, and
- 3) To provide the opportunity for students and others to learn the principles of field research.

The Service Manual (603 FW 1.10D(4)) provides supplemental guidance in terms of the appropriateness of research on refuges, as follows: “We actively encourage cooperative natural and cultural research activities that address our management needs. We also encourage research related to the management of priority general public uses. Such research activities are generally appropriate. However, we must review all research activities to decide if they are appropriate or not as defined in section 1.11. Research that directly benefits refuge management has priority over other research.”

The Refuge Manager determined that research is an appropriate use of the refuge in a document signed on December 7, 2006. We will follow the above-referenced guidance in seeking and approving any research activities on the refuge.

There are two examples of research completed on the refuge that serve to illustrate the kind of research that may occur in the future. Both of these projects were conducted by Service personnel or Service-authorized agents, and therefore were classified as management activities not subject to compatibility review. However, they are excellent examples of the type of research we would consider to be appropriate and compatible.

Winter Grassland Bird Study – Few investigations have been completed on methodologies for inventorying obligate grassland birds on their wintering ranges. After consulting the literature and expert ornithologists, the refuge and regional biologists crafted a study to examine three different methods, their relative costs, and their statistical robustness. The results gave the refuge information on species using the refuge in winter months, the kinds of structural habitats they were using, and provided information on methods that could be used by other refuges seeking similar information.

Effects of Salinity and Nitrogen on the Distribution and Growth of *Phragmites australis* Along the Rappahannock River – The refuge has promoted and sponsored an aggressive control program for common reed (*Phragmites*) on both public and private lands along the Rappahannock River for several years. This study examined both native and introduced genotypes of *Phragmites* and the effects of salinity and nitrogen on growth and distribution. The

Research

results not only added new information to the scant body of literature regarding native *Phragmites*, but gave the refuge specific locations of native stands, and potential locations based on salinity regimes, in order to better protect this subspecies during control operations.

Availability of Resources: Refuge support for research may take the form of funding, in-kind services such as housing, the use of other refuge facilities, vehicles, boats, or equipment, the direct assistance of refuge staff in collecting data, providing historical records, conducting management treatments, or providing other assistance as appropriate. Generally, however, we incur the bulk of the cost for research in staff time to review research proposals, coordinate with researchers, and write special use permits (SUPS). In some cases, a research project may require only a few hours of staff time to review the proposal, coordinate with other reviewers, and write a SUP. In other cases, a research project may involve more significant staff time, because the refuge staff must coordinate with students and advisors and accompany researchers on site visits.

For projects conducted entirely by non-Service researchers, the following staff resources would be typical:

Proposal review, coordination, and SUP preparation –	Refuge Manager, 2 hours	\$112
	Deputy Manager, 2 hours	\$ 200
	Refuge Biologist, 8 hours	\$2,880
Total		\$485

For the refuge to expend significantly more than this level of resources, the research would generally be required to have specific implications to our management. If the research was aimed at answering refuge-specific management questions, we would consider contributing additional resources. In this case, we might expect to contribute the following:

Proposal review, coordination, and SUP preparation –	Refuge Manager, 8 hours	\$ 448
	Deputy Manager, 8 hours	\$ 362
	Refuge Biologist, 16 hours	\$ 566
Field assistance	Refuge Biologist, 160 hours	\$5,659
	Maint. Worker, 40 hours	\$ 961
Use of Facilities and Equipment		
Trailer as quarters	30 days @ \$12/day	\$ 360
Vehicle or boat	30 days @\$20/day	\$ 600
Total		\$8,956

Anticipated Impacts on Refuge Purpose: We are scheduled to complete our Comprehensive Conservation Plan in 2007. In the interim, we are using the broad objectives set forth in the Environmental Assessment prepared during the establishment of the Refuge in 1995. They are as follows:

- (1) To preserve and enhance the refuge's land and water in a manner that will conserve the natural diversity of fish, wildlife, plants and their habitats for present and future generations;
- (2) To protect, restore and enhance ecologically significant wetland habitats;
- (3) To conserve and enhance populations of fish, wildlife, and plants within refuge boundaries; to manage and perpetuate the migratory bird resource including populations of waterfowl, neotropical migrants, raptors, passerines, and marsh and water birds;
- (4) To protect, restore and enhance interjurisdictional fish populations;
- (5) To protect and enhance endangered and threatened species populations;
- (6) To protect and enhance water quality of aquatic habitats with the refuge and the River;
- (7) To fulfill international treaty obligations of the United States with respect to fish and wildlife and their habitats, and
- (8) To provide opportunities for compatible scientific research, environmental education, and fish and wildlife-oriented recreation.

In terms of the impacts related specifically to interim objectives of the Refuge, we expect no negative long-term impact to the **wildlife or plant diversity, wetlands, migratory birds, interjurisdictional fish, threatened and endangered species, water quality, treaty obligations, or wildlife -dependent recreation.**

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 federally threatened or endangered species. We will pay particular attention to 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. We will ensure that the refuge or any non-Service researchers obtain any special permits, including collection and banding permits, required by State or Federal law prior to issuing a SUP.

Public Review and Comment: A Draft Compatibility Determination was released for public review from January 18 through February 9, 2007. A news release announcing the availability of the draft determination was issued to the following media outlets:

Rappahannock Times
Northern Neck News
Southside Sentinel
Northumberland Echo

Westmoreland News
Free Lance-Star
Rappahannock Record
Caroline Progress