

# **Appendix B**

**FINAL**

**Conceptual Management Plan for a  
Proposed Cherry Valley National Wildlife Refuge**

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## **Introduction**

The proposed Cherry Valley National Wildlife Refuge lies approximately 60 miles northwest of New York City, and 60 miles north of Philadelphia, Pennsylvania, in the southeastern section of Monroe County, Pennsylvania and northeastern Northampton County, Pennsylvania. If established, a refuge would protect a combination of wetland and upland habitat supporting several nationally-rare ecosystems. The area is home to several federally-listed threatened or endangered species, a wealth of migratory birds, and numerous plant and animal species listed as threatened or endangered by the Commonwealth of Pennsylvania. It is recognized as one of the most unique and important areas for the federally-listed, threatened bog turtle (*Clemmys [Glyptemys] muhlenbergii*), and is a key corridor for migrating raptors and other migratory birds. Unique habitats of the valley include mid-Atlantic calcareous fens, the Kittatinny Ridge, pitch pine/scrub oak barrens, kettle hole bogs and caves, and Cherry Creek. Cherry Valley contains large contiguous blocks of wildlife habitat including riparian corridors, ponds, emergent marshes, fens, scrub-shrub wetlands, wooded swamps, mixed hardwood upland forests, grasslands, and farmlands. Should the preferred action to establish a Cherry Valley National Wildlife Refuge move forward, the refuge would be comprised of up to 20,466 acres of wildlife habitat that is protected, in perpetuity through fee acquisition or by conservation easements.

This document, the final Conceptual Management Plan (CMP), provides further detail on the U.S. Fish and Wildlife Service's (Service, we, our) preferred action and how the lands identified therein would be administered should a refuge be established in Cherry Valley.

## **Purpose of Conceptual Management Plan**

The Final Cherry Valley Feasibility Study and Environmental Assessment (Final EA) examines the feasibility of establishing a national wildlife refuge (refuge; NWR) in Cherry Valley, Pennsylvania. In Chapter 3 of the Study Report, three Alternatives are described and considered for a potential refuge, with Alternative B (Diverse Habitat Complex) presented as the Service's preferred action. This alternative will not be implemented until it has been officially reviewed and authorized.

If approved, Alternative B, the "Diverse Habitat Complex" alternative, would create an acquisition boundary of up to 20,466 acres within the 31,500 acre study area, containing portions of 13 of Cherry Valley's and ridge's defined ecosystems (for more specific information see Chapter 3 of the Final EA). Acquisition of lands would be done through fee title (about 50 percent of the acres) and conservation easements (about 50 percent of the acres). The Service concludes that acquiring these habitat areas over time would provide the protection of rare and unique habitats envisioned by the Study Act and the coalition of organizations and individuals that advocate the consideration of a refuge in

the valley. It would also provide ample opportunities for wildlife-dependent recreation, new and dynamic partnerships, and scientific research.

The Service developed this CMP to describe the management direction for a proposed Cherry Valley National Wildlife Refuge, as defined in Alternative B, and outline possible interim habitat management priorities and compatible public uses on newly acquired lands, should a refuge be approved. The activities described in this CMP will direct the way we pursue and manage acquisitions, conservation easements, and other land interests until a Comprehensive Conservation Plan (CCP) is developed. By Service policy, a CCP must be developed within 15 years of the actual establishment of the refuge (i.e., acquisition of first land parcel). Any major changes in the activities described in this CMP, any new activities, and our development of the CCP would be subject to public review and comment in accordance with the provisions of Service refuge planning policy (602 FW 1, 2 and 3) and Service and U.S. Department of the Interior policy implementing the National Environmental Policy Act (NEPA) of 1969 (Department of Interior Manual 516, Appendix 1).

### **Mission of the Service and the National Wildlife Refuge System**

The mission of the Service is working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. As part of the Department of the Interior, we manage all refuges within the National Wildlife Refuge System (Refuge System), as well as 66 national fish hatcheries, 78 ecological services field stations, and 64 fish and wildlife assistance offices. We also enforce federal wildlife laws, honor international treaties, assist foreign governments in their conservation efforts, and oversee the Wildlife and Sport Fish Restoration Program (formerly known as Federal Assistance), which distributes hundreds of millions of dollars from excise taxes on fishing and hunting equipment to state fish and wildlife agencies.

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. The Refuge System now comprises over 100 million acres on more than 548 national wildlife refuges and 3,000 waterfowl production areas. More than 40 million visitors each year participate in such outdoor pursuits as hunting, fishing, wildlife observation and photography, and environmental education and interpretation on refuge lands. Lands acquired through conservation easements, partnerships, etc. are managed as part of the Refuge System.

### **Background and Rationale for the Establishment of a Cherry Valley NWR**

Pennsylvania's Cherry Valley is rich in natural resources and wildlife diversity. Cherry Valley is largely defined by Cherry Creek which flows through southern Monroe County in northeastern Pennsylvania, and into the Delaware River. For generations, local

landowners and conservation organizations safeguarded the valley's clean waters and important natural communities. However, recent rapid residential and commercial growth in Monroe County, has outpaced efforts to protect these resources. The county is within a two-hour drive of 25 million people.

The community took action several years ago to encourage permanent protection of Cherry Valley as part of the Refuge System. As a result, U.S. Representatives Paul Kanjorski (D-11th) and Charles Dent (R-15th) co-sponsored a bill to study the area for potential inclusion in the Refuge System. The 109th U.S. Congress passed the Cherry Valley National Wildlife Refuge Study Act (Study Act) in 2006. The Study Act directs the Service to evaluate the biological value of natural communities within Cherry Valley to determine if the area merits protection as a refuge. To facilitate the study, the Service convened a Cherry Valley Study Team (CVST). The CVST includes members from the Service, The Nature Conservancy, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, Pennsylvania Natural Heritage Program, Monroe County conservation and planning administrators, National Park Service, and local academic institutions including Northampton County Community College and East Stroudsburg University. The CVST held an initial meeting in October 2007 and met regularly during the preparation of the planning documents.

The 31,500-acre study area harbors nationally significant ecosystems and many protected plants and animals, including federally listed threatened and endangered species. Species of concern documented to be present in the refuge Study Area include bog turtle<sup>1</sup>, northeastern bulrush<sup>2</sup>, and American eel<sup>3</sup>. A historical record for Indiana bat<sup>2</sup>, in conjunction with appropriate summer foraging and roosting habit, and the proximity of bat hibernacula, are strong indicators that the species may still be represented in the valley. Dwarf wedgemussel<sup>2</sup>, striped bass<sup>3</sup>, and American shad<sup>3</sup>, are documented to be present nearby in the Delaware River. There is a historical record for small-whorled pogonia<sup>1</sup> that is thought to be within or near Cherry Valley, and appropriate habitat for this species does occur within the valley. Although it is uncertain if dwarf wedgemussel occurs in Cherry Creek, and striped bass and American shad likely do not, all three species are aided in the Delaware basin by clean, unpolluted water from the Cherry Creek watershed. At a minimum, the Cherry Creek watershed provides a valuable ecological service in this regard. Kittatinny Ridge, following the creek's path, is a major avenue for migrating birds of prey, songbirds, waterfowl and bats. Unique habitats of the valley include mid-Atlantic calcareous fens, Kittatinny Ridge, pitch pine/scrub oak barrens, kettle hole bogs, caves, and Cherry Creek.

In addition to federal trust resources, numerous state-listed, threatened and endangered species inhabit Cherry Valley. This provides a unique opportunity for

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<sup>1</sup> Federally listed under the Endangered Species Act as threatened

<sup>2</sup> Federally listed under the Endangered Species Act as endangered

<sup>3</sup> Federal interjurisdictional fish

partnering with state agencies and local conservation groups for the preservation of additional species and habitats. The synergy of these partnerships will allow us to better protect the federal resources that are present.

### **Laws Guiding the National Wildlife Refuge System**

A number of laws, policies and regulations, including the following, govern our acquisition and management of land in the Cherry Valley.

*National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act).*

This act guides the development and operation of the Refuge System. It clearly identifies the mission of the Refuge System, requires the Secretary of the Interior to maintain the biological integrity, diversity and environmental health of refuge lands, mandates a “wildlife first” policy on refuges, and requires comprehensive conservation planning. It also designates six wildlife-dependent recreational uses as priority public uses of the Refuge System: hunting, fishing, wildlife observation and photography, and environmental education and interpretation. This act amended the National Wildlife Refuge System Administration Act of 1966, which continues to serve as the parent legislation for the Refuge System.

*National Wildlife Refuge System Administration Act of 1966.* This act defines the Refuge System, including refuges, areas for the protection and conservation of fish and wildlife threatened with extinction, wildlife ranges, wildlife management areas, and waterfowl production areas. It also authorizes the Secretary of the Interior to permit any use of an area, provided the use is compatible with the major purposes for establishing the area.

*Migratory Bird Treaty Act.* The Migratory Bird Treaty Act protects all migratory birds and their parts (including eggs, nests, and feathers) from illegal trade. The Migratory Bird Treaty Act is a domestic law that acknowledges the United States' involvement in four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. The bird resource is considered shared because these birds migrate between countries at some point during their annual life cycle.

*Endangered Species Act (ESA) of 1973 (as amended).* This act directs all federal agencies to participate in endangered species conservation by protecting endangered and threatened species and restoring them to a secure status in the wild. Section 7 of the act charges federal agencies to aid in the conservation of species listed as threatened or endangered under the ESA, and requires federal agencies to ensure that their activities will not jeopardize the continued existence of ESA-listed species or adversely modify designated, critical habitats.

*National Environmental Policy Act of 1969 (NEPA).* NEPA requires that all federal agencies consult fully with the public in planning any action that may significantly affect the quality of the human or natural environment. The Final EA that this document accompanies is formatted to assist the Service in complying with NEPA if the proposed refuge moves forward.

*Land and Water Conservation Act.* The Land and Water Conservation Fund uses monies from certain user fees, the proceeds from the disposal of surplus federal property, the federal tax on motor boat fuels, and oil and gas lease revenues (primarily Outer Continental Shelf oil monies) to fund matching grants to states for outdoor recreation projects and to fund land acquisition for various federal agencies.

*Migratory Bird Conservation Act.* The Migratory Bird Conservation Act provides for the acquisition of suitable habitats for use as migratory bird refuges, and the administration, maintenance, and development of these areas, under the administration of the Secretary of the Interior.

*Archeological Resources Protection Act of 1979 (ARPA).* ARPA provides protection for archeological resources on public lands by prohibiting the “excavation, removal, damage or defacing of any archeological resource located on public or Indian lands,” and sets up criminal penalties for those acts. It also encourages the increased cooperation and exchange of information between governmental authorities, the professional archeological community, and private individuals having archeological resources or data obtained before 1979.

*National Historic Preservation Act of 1966 (NHPA).* NHPA requires all federal agencies to consider the effects of their undertaking on properties meeting criteria for the National Register of historic places, and ensures that historic preservation fully integrates into the ongoing programs and missions of federal agencies.

### **Purpose of Establishment and Land Acquisition Authority**

Refuge lands can be acquired under various legislative and administrative authorities for specified purposes. Land acquisition for the proposed Cherry Valley National Wildlife Refuge would be authorized by the Endangered Species Act of 1973, Fish and Wildlife Act of 1956, the Migratory Bird Conservation Act of 1929, the Refuge Recreation Act of 1962 and Emergency Wetland Resources Act of 1986.

The purposes of a refuge are derived from the legislative authorities under which it was established. The purposes guide the long term management of the refuge, prioritize future land acquisition, and play a key role in determining the compatibility of proposed public uses. The purposes of the Cherry Valley National Wildlife Refuge as proposed in the Study Report called for by the Cherry Valley National Wildlife Refuge Study Act of 2006 would include:

*“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*

*“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*

*“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 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).*

Based on these purposes, the following sections provide more detail on the overall management focus of the refuge.

***(1) Management, advancement, conservation, and protection of federally threatened and endangered species.***

**Bog turtle**

The Bog Turtle (*Clemmys muhlenbergii*) Northern Population Recovery Plan (USFWS 2001) identifies eastern Pennsylvania as a stronghold of this federally-listed, threatened species. The area encompassed by the proposed Cherry Valley National Wildlife Refuge includes numerous documented bog turtle wetlands where the species is thriving, and other wetlands where turtles are present but the habitat is in need of restoration. A number of important partnerships between the Service’s Partners for Fish and Wildlife program, The Nature Conservancy, the Pocono Heritage Land Trust, private landowners, and others have resulted in the protection of some of these wetlands, as well as successful bog turtle habitat restoration projects throughout the valley. The proposed refuge will continue and expand upon these partnerships and management opportunities.

Bog turtles live in spring-fed wetlands throughout the Cherry Valley and the existing riparian corridor along Cherry Creek and its tributaries provide good habitat connectivity for this species as well as other species of concern. Although some of the wetlands are in a sense protected due to conservation-focused easements and ownerships, many such wetlands remain unprotected and are therefore in peril. An additional challenge is that springs that provide water to these wetland systems have their genesis on the ridge and mountain slopes that flank the Cherry Valley to the north and south. Unfortunately,

only a small amount of these forested slopes is protected. This is of great concern because development or other alterations here would jeopardize the hydrologic link that supports the valley wetlands and the unique assemblage of species that inhabit them. The Service's preferred action seeks to protect the wetlands, slopes and riparian corridor areas of Cherry Valley.

We recognize that various refuge activities associated with general maintenance and operations have the potential to adversely affect bog turtles and their habitat. Such activities may include, but are not limited to, road, building, parking area and trail construction and maintenance. Future activities that have the potential to adversely affect bog turtles will be carefully planned to ensure adverse effects are avoided.

As part of the Service's management activities, we may manage or restore bog turtle habitat for the benefit of this species. While these activities have an overall beneficial effect on bog turtle populations, some adverse effects to individual turtles may occur. Consequently, all habitat management and restoration activities in known or potential bog turtle habitat will be conducted in accordance with the Northeast Region's intra-Service Biological Opinion (BO) dated March 10, 2006 entitled "Effects of the Implementation of Habitat Restoration Projects on the Northern Population of the Bog Turtle." Any management or restoration activities in bog turtle habitat that are not covered by the BO will be addressed in a separate consultation, as needed.

Recognizing bog turtles are also threatened by illegal collection and trade, the Service will work with partners, including the Pennsylvania Fish and Boat Commission and local landowners, to address this threat. Protection measures may include, but are not limited to, establishment of neighborhood watch networks, controlling access to bog turtle habitat, and increased surveillance by local, State, and federal agency personnel.

#### Indiana Bat

Indiana bats (*Myotis sodalis*) were once known to occur in the Cherry Valley region of eastern Pennsylvania based on historic records from Hartman's Cave. Currently, two hibernacula are known within close proximity to Cherry Valley and are located in historic mines at Hibernia and Mount Hope, New Jersey, approximately 35 miles away. A thriving summer population of Indiana bats is found at Great Swamp National Wildlife Refuge, approximately 15 miles from these hibernacula sites. During the spring and summer, these bats make their way to the Great Swamp for foraging, and birthing and rearing of young. The habitat at the Great Swamp that supports this activity consists of large dead snags and dying trees that lie within close proximity to open marshes and stream corridors. Based on the proximity of the Cherry Valley region to the hibernacula sites, as well as the presence of high quality summer habitat consistent with that observed at the Great Swamp NWR, and the historical records of Indiana bats in Cherry Valley, there is a high likelihood that the species is present there during the summer months. In addition, there is also a high likelihood that wintering populations could be

restored to the area if Hartman's Cave and other potential hibernacula sites are protected from disturbance.

The best potential habitat for the Indiana bat in Cherry Valley, aside from the historical hibernaculum at Hartman's Cave, would be forested uplands, wetlands, and riparian corridors, particularly forests or woodlots with large dead and dying snags for roosting. If the refuge is established, future management of the refuge to retain and restore appropriate habitat may serve to attract bats to the area and/or expand upon current habitat use. Based on available information, protection and management of appropriate habitat in Cherry Valley has a high potential for aiding in the recovery of this species. Surveys for Indiana bats would take on a high priority at the proposed refuge.

Based on our current understanding of Indiana bat habitat use and habitat characteristics, the following *Forest Management Guidelines* will be implemented in areas known or likely to support Indiana bats. These guidelines are subject to change as new information about the species and its needs becomes available. In locations where bog turtles and Indiana bats co-occur, further consultation will take place to identify site-specific management plans that weigh and address the needs of both species.

#### FOREST MANAGEMENT GUIDELINES

1. Retain at least 60 to 80% canopy closure within forested stands.
2. Retain all snags, except where they pose a serious human safety hazard due to their location near a building, yard, road or powerline. A tree with less than 10% live canopy should be considered a snag. When possible, delay removal of hazard trees until bats are hibernating (between November 15 and March 31).
3. Do not harvest or manipulate shagbark hickory trees (*Carya ovata*) unless the density of shagbark hickory exceeds 16 trees per acre. If present, maintain at least 16 live shagbark hickory greater than 11" dbh (diameter at breast height) per acre. If there are no shagbark hickory trees greater than 11" dbh to leave, then the 16 live shagbark hickory trees per acre will include the largest specimens in the stand.
4. The following species of trees have been identified as having relatively high value as potential Indiana bat roost trees

shagbark hickory (*Carya ovata*)  
bitternut hickory (*Carya cordiformis*)  
mockernut hickory (*Carya tomentosa*)  
pignut hickory (*Carya glabra*)  
other hickories (*Carya* spp.)  
silver maple (*Acer saccharinum*)

sugar maple (*Acer saccharum*)  
red maple (*Acer rubrum*)  
green ash (*Fraxinus pennsylvanica*)  
white ash (*Fraxinus americana*)  
eastern cottonwood (*Populus deltoides*)  
northern red oak (*Quercus rubra*)  
scarlet oak (*Quercus coccinea*)  
black oak (*Quercus velutina*)  
white oak (*Quercus alba*)  
chestnut oak (*Quercus prinus*)  
slippery elm (*Ulmus rubra*)  
American elm (*Ulmus americana*)  
black locust (*Robinia pseudoacacia*)

This list is based on review of literature and data on Indiana bat roosting requirements. Other species may be added as they are identified. Other tree species with exfoliating bark, crevices or cavities could also serve as potential roost trees.

5. Retain large-diameter trees, particularly those greater than 18" dbh. Where the density of trees greater than 18" dbh is low (e.g., less than three per acre), retain trees greater than 11" dbh so they will recruit into the larger size classes over time, ensuring an ongoing supply of potential roost trees.
6. No harvest or timber stand improvement activities within 100 feet on both sides of perennial, intermittent or ephemeral streams.
7. Do not cut trees between April 1 and November 15. This corresponds to the Indiana bat reproductive and spring/fall emergence and swarming seasons.
8. Do not carry out prescribed burns in forest habitat between April 1 and November 15.

#### Other Federally-Listed, Threatened and Endangered Species

Other species of concern documented to be present in the Cherry Valley Area include the federally-listed, endangered northeastern bulrush and a possible historical record of the federally-listed, threatened small-whorled pogonia. There is one known population of northeastern bulrush within the acquisition boundary proposed under Alternative B. Further consultation will occur on individual actions that may affect this species. Dwarf wedgemussel (federally-listed, endangered) is known to occur nearby in the Delaware River. Although it is uncertain if dwarf wedgemussel occurs in Cherry Creek, recent survey efforts in the creek conducted by the Service and Pennsylvania Fish and Boat Commission did not find this species (R. Anderson, US Fish and Wildlife Service, personal communication, 5 August 2008). If the small-whorled pogonia or dwarf wedgemussel

are found in or adjacent to refuge lands, further consultation will occur on individual actions that may affect these species.

***(2) Management, advancement, conservation, and protection of other federal trust species, nationally significant ecosystems, unique habitats, and other species of concern present in or supported by Cherry Valley.***

Other Federal Trust Species

Striped bass and American shad (interjurisdictional fish) are documented to be present nearby in the Delaware River. Striped bass and American shad likely do not occur in the Cherry Creek, however, these species are aided by clean, unpolluted water coming from tributaries to the Delaware River. At a minimum, the Cherry Creek watershed provides a valuable ecological service in this regard.

The American eel, documented in Cherry Creek, is a catadromous (lives in freshwater, reproduces in the Sargasso Sea) interjurisdictional fish. Because the species was thought to be in decline in some areas, a status review was initiated in 2004 to evaluate if Endangered Species Act protection should be extended to the eel. The Service determined in 2007 that although there was compelling evidence of eel decline in some areas, the overall population is not in danger of extinction nor is it likely to become so in the foreseeable future.

State-Listed Species

In addition to their federal status as threatened or endangered, the bog turtle, Indiana bat, and dwarf wedgemussel are all listed as endangered by the Commonwealth of Pennsylvania. These species are also identified in the Pennsylvania Wildlife Action Plan (WAP) as “Wildlife of Immediate Concern.” According to an inventory conducted by The Nature Conservancy and the Pennsylvania Natural Heritage Program, the Cherry Valley area supports up to 19 state-listed, endangered and 13 state-listed, threatened species. At least thirteen of the 37 species identified in the Wildlife Action Plan as Pennsylvania’s species of greatest conservation concern are known to occur in the Cherry Valley study area.

Ecosystems of Concern

In addition to the individual species listed above, the Cherry Valley area includes three ecosystems that deserve mention. Open Sedge Fens are located in the valley and are considered to be a National Critically Endangered Ecosystem (Pennsylvania Special Concern). The Kittatinny Ridge is considered to be a National Endangered Ecosystem and is a major migration corridor for birds of prey, waterfowl, and song birds. The Riparian Forest Ecosystem is considered to be a National Threatened Ecosystem, and in Cherry Valley provides habitat and habitat connectivity corridors for a great diversity of wildlife.

Two other imperiled ecosystems, Northern Appalachian Acidic Cliff and Acidic Shrub Swamp, are present in Cherry Valley and are designated as Pennsylvania Special Concern Ecosystems.

### ***(3) Management, advancement, conservation, and protection of migratory birds***

#### Migratory Birds

Cherry Valley lies within the Atlantic Flyway in northeastern Pennsylvania. Numerous migratory colonial water birds, songbirds, raptors, freshwater wetland birds, and waterfowl follow the Kittatinny Ridge as a travel corridor and take refuge, forage, and nest in the forest, scrub-shrub, grassland, and wetland habitats that are found there.

The proposed refuge is located in the Northern Ridge and Valley physiographic area, also called Bird Conservation Area 17 in the Partners in Flight (PIF) Bird Conservation Plan. Roughly 50 percent of the undeveloped areas in the Northern Ridge and Valley physiographic area is forested; another 40 percent is agricultural land consisting primarily of old fields and tracts that remain in agricultural production. The proposed refuge area provides a good mix of habitat types and as such provides potential and documented habitat for numerous PIF priority species including:

- Shrub-Early Successional (golden-winged warbler, American woodcock, field sparrow, eastern towhee, willow flycatcher, brown thrasher, blue-winged warbler, prairie warbler, etc.)
- Deciduous Oak-Hickory and Riparian Forest (cerulean warbler, worm-eating warbler, wood thrush, Louisiana waterthrush, red-headed woodpecker, eastern wood-pewee, scarlet tanager, Kentucky warbler, Baltimore oriole, etc.)
- Agricultural/Grassland (grasshopper sparrow, bobolink, meadowlark, etc.)
- Northern Hardwood-Mixed Forest (eastern wood-pewee, wood thrush, Canada warbler, olive-sided flycatcher, Louisiana waterthrush, scarlet tanager, yellow throated vireo, etc.)
- Freshwater Wetlands (American black duck, wood duck, bald eagle, etc.).

To the best of our knowledge, the majority of these species are well represented. Indeed, Cherry Valley is recognized as a premiere birding location in the Northeast and is commonly traversed by birders, academic classes from local education institutions, and others.

Much of the land already managed or protected in this physiographic area is forested (Delaware Water Gap National Recreation Area, Appalachian Trail corridor, State Game Lands, state forests and parks). The proposed refuge would hold a unique position of

offering a mosaic of habitats that aid a greater diversity of avian species. One of the greatest opportunities in this regard may be the presence of larger non-forested tracts that could be managed for shrubland birds. Scrub-shrub habitat is a high priority in the Northern Ridge and Valley, primarily because it continues to support numerous breeding populations of golden-winged warblers, one of the highest priority species in the Area 17 PIF Plan. The PIF plan considers managing for this species as a high priority wherever feasible. Other shrubland species have undergone significant population declines in this physiographic area due to the overall loss of early successional habitats.

The landscape composition around the proposed refuge also presents a great opportunity to make significant contributions to the conservation of grassland birds. Grasslands throughout the physiographic area are being significantly degraded by succession and through colonization of these areas by invasive plant species. The expansion of fast spreading invasive species such as multi-flora rose and autumn olive into grassland habitats very quickly makes these habitats unsuitable for grassland bird species. A well planned and organized invasive species control program would be crucial to grassland management, as well as management of the other habitats at the proposed refuge.

Mature hardwood forest is the top conservation priority in Area 17. With much of the existing forestland in this physiographic area lying on ridges, bottomland forests are comparatively rare. Managing for forested bottomland corridors along the Cherry Creek and its tributaries would constitute a significant contribution to the overall goals for Area 17. Management of forested upland habitat and forested wetland habitats would support nesting interior-forest-dwelling birds of concern.

Management of non-forested wetland habitat would provide spring and fall migratory waterfowl and shorebird habitat. Extensive pockets of suitable waterfowl and shorebird habitat are present along the entire length of the Cherry Creek riparian corridor and elsewhere in Cherry Valley.

#### ***(4) Fish and wildlife-oriented recreational opportunities***

The Refuge Improvement Act establishes six priority public uses on refuges. Those priority uses depend on the presence, or the expectation of the presence of wildlife. These uses are: hunting, fishing, wildlife observation and photography, and environmental education and interpretation. Although these priority uses must receive our consideration in planning for public use, they also must be compatible with the purpose for which the refuge was established and the mission of the Refuge System. Compatibility determinations, which evaluate the impacts of the use in the context of species or habitats, aid in making those decisions. As lands are acquired in the Cherry Valley, compatibility determinations would be used to decide the public use opportunities that may be permitted.

Public use opportunities contribute to the long term protection of wildlife resources by promoting understanding, appreciation and support for wildlife conservation. The six priority public uses would be accommodated where they do not have a significant negative impact on wildlife. All the proposed public use activities are contingent upon availability of staff and funding to develop and implement these programs. We would promote opportunities for volunteers and develop community appreciation and public support for the refuge. We would work with school districts and teachers to develop an environmental education program featuring unique species or communities at the refuge. We would open newly acquired lands for hunting if they can biologically, ecologically, and safely accommodate hunting within state guidelines. Newly acquired lands that traditionally have been hunted would remain open until we have completed our planning process. Before closing any newly acquired lands, we would complete a separate public review process.

An increase in public use would result from the new trails, parking areas, fishing access, interpretive overlooks and observation platforms that would be a part of the preferred action. We would allow public access for day use on many of the newly acquired lands outside the sensitive bog turtle and bird nesting habitats. Generally, we would allow hunting. Any hunting on the refuge would be based on the Commonwealth of Pennsylvania's hunting seasons and consistent the refuge's Annual Hunt Plan. We would allow fishing along Cherry Creek where accessible and appropriate. Working with state and local agencies, we would study the feasibility of converting existing historic logging roads into public use trails. The refuge also would provide interpretive and environmental education programs and increase partnership opportunities to interpret the refuge and the watershed.

The plans for increased public use opportunities may cause concern for refuge neighbors due to the perception that new visitors to the Cherry Valley may have adverse impacts on privacy, traffic, frequency of trespass on non-refuge owned lands, etc. The Service evaluates impacts of public uses, not only to wildlife, but also to neighboring landowners and the local community. This "good neighbor policy" strives to avoid such potential conflicts by careful placement of public use areas and trails, clear posting of refuge boundaries, open communication with our refuge neighbors, and a refuge-based law enforcement presence. In the absence of a refuge law enforcement officer, cooperative agreements with local and state police and conservation officers help to eliminate such conflicts.

### **Administration**

The proposed refuge may be managed as a stand alone refuge or as part of a refuge complex. Generally, a stand alone refuge has a dedicated staff and equipment and is managed locally. As part of a complex, Cherry Valley would likely have less on-site staff and would share staff and equipment with one or more other refuges. Sometimes, refuges initially are part of a complex, but as they grow in size and complexity, are then

separated to become “stand alone”. Under the “complex” scenario, the refuge staff of another refuge would have the responsibility for managing the newly established refuge. During the interim period, the Service would seek funding to station staff in Cherry Valley. Staff likely consisting of a refuge manager, wildlife biologist, and maintenance worker would be phased in at that time. In the long term, the Service’s Region 5 regional office would evaluate the need for additional full-time staff based on management needs, project loads, public use activities, etc. and could move forward with providing additional staff when justified. The ability to fill staff positions would depend on availability of funds.

The proposed Cherry Valley National Wildlife Refuge has good access via state and local roads. PA Route 611, PA Route 191, and PA Route 33 run north-south on the eastern edge, middle, and western edge of the proposed refuge, respectively. All of these roads connect to Interstate 80 just north of the proposed refuge area. To the south, these roads connect to Routes 22 and Interstate 78. East-west running roads in the Cherry Valley area include Cherry Valley Road, Middle Road, and Poplar Valley Road (aka Lower Cherry Valley Road), among others. Existing access roads on acquired properties would be evaluated for use depending on access needs, presence of sensitive species and/or habitats, public use, and other potential future needs. Some roads may be retained and improved while others may be abandoned and removed. Legal access to inholdings and homes would be maintained.

Throughout the remainder of this document the reader will be introduced to the terms “compatibility”, “compatible uses”, etc. A “compatible use” is a proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the national wildlife refuge. The refuge manager would not initiate or permit a new use of a national wildlife refuge or expand, renew, or extend an existing use of a national wildlife refuge unless it has been determined that the use is consistent with the mission of the Refuge System and the purposes of each specific refuge. Further, the same use may be deemed compatible on some refuges but not others due to refuge-specific differences.

### ***Facilities***

Because no actual lands have been acquired as of yet, it is difficult to discuss specifics of facilities and improvements that may be appropriate to effectively manage the refuge. This document will discuss general approaches adopted by the Service elsewhere when establishing a new refuge. As such, the Service may opt for the following when and where compatible:

Conversion of existing trails or logging roads, etc. to public use and/or refuge management access corridors. Such roads may also be abandoned to limit access to sensitive habitats and protected species. Roads and trails may only be open during certain times of year, etc. to protect wildlife resources.

Small gravel parking areas may be constructed in some areas to provide for adequate and safe parking of vehicles in potential public use areas.

A refuge headquarters/visitor contact station may be established through the adaptive reuse of buildings potentially acquired through land acquisition, e.g. a farm house may be used as a refuge office building; a pole building or barn may be used for equipment storage.

No new facilities are proposed for the refuge at this time. In the long term, the Service would establish permanent facilities in or near Cherry Valley through reuse of existing structures for use as a refuge administrative office and maintenance shop. Other potential future on-site improvements, including additional trails, improved access roads, observation platforms, photography blinds, etc. may be discussed in a future Comprehensive Conservation Plan. The construction of new facilities or conversion of existing structures is contingent upon availability of funds and acquisition of appropriate land.

Where facility construction, operation or maintenance may conflict with the conservation of federally-listed, endangered or threatened species, appropriate measures (e.g., buffers, seasonal restrictions, etc.) will be identified and implemented to avoid adverse effects. This will be done in consultation with the Service's Endangered Species Program.

Generally, public use areas would be open from dawn to dusk and wildlife management areas would be closed to the public and others (except emergency, police, and fire response). Special Use Permits would be issued to researchers, educational groups, etc. on an as needed basis providing that the activities are compatible with refuge management goals and contribute to biological survey or baseline data needs. Wildlife Management Areas, although normally closed to public access, may at times be opened to meet refuge goals. Hunting, environmental education, and interpretive walks are some examples of activities that may be allowed in these areas on a limited basis.

### ***Funding***

We would maintain a current inventory of management needs in the Service Maintenance Management System and Refuge Operating Needs System databases, and update their costs and priorities annually. Those databases provide a mechanism for each unit of the Refuge System to identify its essential staffing, mission-critical projects and major needs and form a realistic assessment of the funding needed to meet each station's goals, objectives and strategies.

### ***Staffing***

As mentioned above, the staffing situation on national wildlife refuges is based on a number of factors including refuge size and complexity, proximity to other refuges, and

funding. Based on these and other factors, the proposed refuge may be managed as a stand alone refuge or as a unit of a refuge complex. A stand alone refuge has a dedicated staff and equipment and is managed locally whereas a unit of a complexed refuge would share staff and equipment with other refuge units. At this time it is difficult to delineate staffing specifics for the proposed Cherry Valley National Wildlife Refuge because of uncertainties associated with the refuge's size, complexity, resource issues, funding, etc. Because of this uncertainty, two staffing models and a Case Study on the Growth of Cape May National Wildlife Refuge have been included in Attachment B.1 to better illustrate how these variables interact to determine levels of staffing. These models and the case study may serve to guide how Cherry Valley NWR may grow in staff over time.

The staffing strategy for the proposed Cherry Valley NWR under the individual refuge scenario identifies several new positions to ultimately be established. A refuge manager would provide direction and supervision for all activities, and ensure the effective oversight and community outreach for the successful management of acquisitions, easements and perhaps a cooperative "private lands" program. A wildlife biologist would assist in delivering the full range of wildlife conservation and restoration projects on public land, provide technical assistance, assist in the restoration and management of new acquisitions, and monitor and inventory wildlife and habitat use and condition. A maintenance worker/engineering equipment operator position would assist in meeting the maintenance and heavy equipment work obligations of the refuge. In the long term, the Service's Region 5 regional office would evaluate the need for additional full time staff based on management needs, project loads, public use activities, etc. and could move forward with providing additional staff if justified.

### ***Partnerships***

Public use areas of the refuge would be open to the public year-round from dawn to dusk. We may restrict access at times because of the incompatibility of a use, concerns about human safety, or illegal activities and law enforcement investigations. Staff would establish formal, cooperative agreements with local law enforcement departments and the county sheriff and state police, to provide protection, enforcement and appropriate law enforcement response. Conservation law enforcement personnel from the Service, Pennsylvania Game Commission, and Pennsylvania Fish and Boat Commission would also likely patrol intermittently and monitor hunting, fishing, and other public uses. We would also establish fire suppression agreements with local volunteer fire departments to coordinate fire suppression activities. The Fish and Wildlife Service Fire Program would also be actively involved in this regard. Fire staff are currently located at Wallkill River NWR in Sussex, NJ, approximately 45 miles away and would be available to assist in these activities.

We recognize the inability of any one organization to solve the problems of habitat fragmentation and land acquisition. Therefore, we would work to combine our efforts

with those of many partners, such as The Nature Conservancy, Friends of Cherry Valley, Monroe County Conservation District, Ducks Unlimited, Trout Unlimited, Pennsylvania Audubon, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, National Park Service, Pennsylvania Department of Conservation and Natural Resources, Natural Resource Conservation Service, Monroe County, Stroud Township, Hamilton Township, Smithfield Township, Ross Township, Pocono Heritage Land Trust, Pocono Wildlife Rehabilitation Center, Brodhead Watershed Association, as well as numerous other partners yet to be identified. Staff would also look for opportunities to work with farmers and landowners to manage the land in ways that benefit the goals and interests of the refuge and its neighbors.

### **Management of Cherry Valley National Wildlife Refuge**

#### ***Goals of Cherry Valley National Wildlife Refuge***

The following goals for the proposed Cherry Valley National Wildlife Refuge were developed within the framework of the Refuge System's mission statement, the Refuge Improvement Act, the refuge's primary purposes, and other Service policy and directives. The goals are intentionally broad statements that describe desired future conditions, and would guide the management of the refuge in the interim period and the development of management objectives and strategies for the CCP.

- Protect and enhance habitats for federal trust species and species of management concern, with special emphasis on migratory birds and species listed under the ESA, along with protection of wetlands and the Kittatinny Ridge.
- Create opportunities for hunting, fishing, wildlife observation and photography, and environmental education and interpretation, while promoting activities that compliment the purposes of the refuge and other protected lands in the region.
- Promote science, education, and research through partnerships to inform land management decisions and encourage continued responsible stewardship of the natural resources of Cherry Valley.

#### ***Wildlife and Habitat Management***

Recent survey work by partners, literature review, and reconnaissance surveys suggest that Cherry Valley is a unique area that supports a great diversity of habitats and wildlife. In the interim period between acquisition of property and the development of the CCP, baseline surveys and monitoring efforts would be crucial to ensuring science-based decisions for the management of the refuge. Priorities for management during this interim period would include: Monitoring and inventory of threatened and endangered species, migratory birds, and unique plant communities, and building community support. The objectives outlined below give specific directions in the management of the refuge during the interim period. The priorities may change as new information and Service policies are revised.

## Objectives

- Work with partners to survey for threatened and endangered plant and animal species that potentially occur within the approved refuge boundary. Surveys for federally-listed species will be done by qualified surveyors, in accordance with the most recent Fish and Wildlife Service guidelines. Any deviations from the guidelines will be subject to consultation with the Service's Endangered Species Program.
- Work with partners to inventory fish and macroinvertebrate species in Cherry Creek and other watersheds within the refuge acquisition boundary.
- Work with partners to inventory and monitor neotropical migratory birds, waterfowl, mammals, amphibians and reptiles of concern.
- Work with partners to monitor and control (or eradicate if possible) exotic or invasive plant and animal species to preclude threats to the integrity of the ecosystem. Where such control activities may affect federally-listed species, refuge staff will consult with the Service's Endangered Species Program.
- Work with partners to inventory vegetative communities on lands within the refuge acquisition boundary and develop a vegetation map of the study area using GIS tools.
- Coordinate with adjacent landowners and other partners to protect and enhance the health and integrity of Cherry Creek and other watersheds within the refuge acquisition boundary.
- Monitor deer populations to determine impacts of historical hunting on deer and minimize impacts of deer on vegetation.
- Promote and support research that contributes to refuge goals and objectives, increase understanding of refuge resources, or facilitate resource management.

### ***Acquisition Management***

Protection of lands would be accomplished through fee title acquisition (about 50 percent of the acres) and establishment of conservation easements (about 50 percent of the acres). The reader is referred to the attached Land Protection Plan (LPP; Appendix E) which identifies the boundary for the proposed Cherry Valley National Wildlife Refuge (NWR, refuge). Working with others, we delineated 20,466 acres of biologically significant land in the Cherry Valley watershed. We plan to acquire land throughout this

focus area. Of their total acres, we recommend acquiring approximately 10,233 acres in fee title and approximately 10,233 acres in conservation easements.

The Land Protection Plan provides landowners and the public with an outline of U.S. Fish and Wildlife Service policies, priorities, and protection methods for land in the project area, assists landowners in determining whether their property lies within the acquisition boundary, and inform landowners about our long-standing policy of acquiring land only from willing sellers. [We will not buy any lands or easements if the owners are not interested in selling.]

Managers are tasked with the responsibility for identifying tracts of land that meet the goals of the refuge. Managers work with private landowners and conservation partners to obtain conservation easements or fee title purchase of lands. As such, identifying and connecting with willing sellers within the approved refuge boundary is an important step in the acquisition process. When land is purchased in fee title it becomes the property of the people, is managed by the United States Government, and is exempt from taxation. As a partial response to this loss of tax revenue, Congress passed the Refuge Revenue Sharing Act, which provides for annual payments to local governments for fee-title land designated as national wildlife refuges. Depending upon the location, the amount of payment often equals or exceeds the value in taxes the town would have collected if the property were in private ownership. The Service pays according to a formula, usually three-quarters of 1 percent of the appraised value of the land, subject to the availability of funds through congressional appropriations, to the unit of local government that levies and collects general purpose and real property taxes.

When the Service purchases land in fee or easements, federal law requires us to offer fair market value for the property or rights. We base our offers on professionally prepared appraisals and comparisons of actual sale prices of comparable properties in the vicinity. Both the refuge manager and a realty specialist from our regional office in Hadley, Massachusetts, would contact private landowners who inform us of their interest in selling easements or land in fee title to the Service. It is the policy of the Service to acquire land only from willing sellers. Cultural resources would be evaluated on a parcel by parcel basis to identify and protect potential archeological and historic sites.

### ***Public Use Management***

#### **Appropriate Refuge Uses Policy**

The initial decision-making process a refuge manager follows when first considering whether or not to allow a proposed use on a refuge involves an evaluation of the appropriateness of a given activity on a national wildlife refuge. The refuge manager must find a use to be appropriate before undertaking a compatibility review of the use. If a proposed use is not found to be appropriate, the refuge will not allow the use and will not prepare a compatibility determination. By screening out proposed uses that are not appropriate to the refuge, the refuge manager avoids unnecessary

compatibility reviews. By following the process for finding the appropriateness of a use, we strengthen and fulfill the Refuge System mission.

### Compatibility and Priority Uses

The Refuge Improvement Act establishes six priority public uses on refuges. Those priority uses depend on the presence, or the expectation of the presence of wildlife. These uses are: hunting, fishing, wildlife observation and photography, and environmental education and interpretation. Although these priority uses must receive our consideration in planning for public use, they also must be compatible with the purpose for which the refuge was established and the mission of the NWRs. Compatibility determinations, which evaluate the impacts of a use that has been determined to be appropriate in the context of species or habitats, aid in making those decisions. As lands are acquired in Cherry Valley, compatibility determinations would be used to decide what public use opportunities are compatible and can be permitted.

Public use opportunities contribute to the long term protection of wildlife resources by promoting understanding, appreciation and support for wildlife conservation. The six priority public uses will be accommodated where they do not have a significant negative impact on wildlife. All the proposed public use activities are contingent upon availability of staff and funding to develop and implement these programs. We will promote opportunities for volunteers and develop community appreciation and public support for the refuge. We would work with school districts and teachers to develop an environmental education program featuring unique species or communities at the refuge.

### Other Uses and Limitations

In addition to the priority uses described above, many other uses may also be determined to be appropriate and compatible with management of the refuge. Some examples of these types of uses from other refuges include: cross-country skiing, berry picking, haying, grazing of livestock, collection of edible wild plants for personal use, furbearer management, etc. The site-specific conditions and wildlife resources at each refuge will dictate the additional uses that may be permitted. Since these conditions vary from refuge to refuge, particular uses may be permitted at one refuge and precluded at another.

Although a refuge use may be both appropriate and compatible, the Refuge Manager retains the authority to prohibit or modify the use if potential conflicts are perceived. For example, on some occasions, two appropriate and compatible uses may interfere with each other. In these situations, even though both uses are appropriate and compatible, the Refuge Manager may need to limit or entirely restrict one of the uses in order to provide the greatest benefit to refuge resources and the public. For proposed uses that might develop after the preparation of this

document, the refuge would apply the same procedure outlined above to make an appropriateness finding without additional public review and comment. If a proposed use is determined to be appropriate, a determination of whether or not the use is compatible will be made and will include an opportunity for public involvement in the decision making process.

Table 1 summarizes public uses that would likely be allowed during the interim phase and their potential limitations under current conditions in Cherry Valley. Attachment B.2 presents the compatibility determinations summarized in Table 1.

Table 1. Summary of the six priority public uses and the proposed interim public uses. All public uses are subject to logistical and biological constraints and the availability of funding and staff.

<b>Public Use Activity</b>	<b>Would this use be provided during the interim phase?</b>
Public hunting	Likely, limited by available hunting areas, some seasons may conflict with presence of species of concern.
Public fishing	Likely, limited by few fishing access areas and presence of species of concern.
Environmental education	Likely, limited due to staffing. Need for partnership development with local schools and conservation groups.
Interpretation	Likely, limited due to staffing. Need for partnership development, perhaps Friends of Cherry Valley.
Wildlife Observation	Likely, limited due to lack of public use areas and safe parking lots. Need for partnership development.
Photography	Likely, limited due to lack of public use areas and safe parking lots. Need for partnership development.

1. **Hunting:** Hunting is a prized activity by many of the residents of Cherry Valley. Private lands are largely posted, greatly limiting hunting access. Non-residents of Cherry Valley are sometimes able to obtain permission from landowners for hunting, but this occurs on a limited basis. In general, select and appropriate lands that would become part of the refuge likely would be open for public hunting, on a permit basis. The issuance of permits allows the refuge to track the numbers of hunters afield to provide for safety and limit other potential impacts. A more thorough review of the various Pennsylvania hunting seasons

[(Squirrel, Ruffed Grouse, Rabbit, Pheasant, Bobwhite Quail, Woodchucks, Crows, Starlings and English Sparrows, Wild Turkey, Spring Gobbler, Black Bear, Deer (Archery), Deer (Muzzleloader), Deer (Firearms), and Deer (Flintlock)], would be required in order to establish compatibility of each of these seasons with the refuge purpose. However, until such time as manageable units are acquired and a detailed hunt plan is written and based on the attached compatibility determination, hunting on parcels acquired as part of the refuge would be allowed to continue on an interim basis at the same level of activity that existed prior to Service acquisition of the land.

2. Fishing: Cherry Creek is a valued trout fishery. At least one fishing club leases land along the Cherry Creek. Like hunting, fishing is limited due to the posting of private land and limited public access. In general, become part of the refuge would be open for public fishing, providing select and appropriate lands that would they are in close proximity to Cherry Creek. It is reasonable to expect, given the habitat diversity in the Cherry Creek that trout, bass, pickerel, American eel, sunfish, crappies, catfish, rock bass, suckers, and carp would be present. Until such time as manageable riparian units are acquired and a detailed public use plan is written and based on the attached compatibility determination, fishing along Cherry Creek on parcels acquired as part of the refuge would be allowed to continue on an interim basis at the same level of activity that existed prior to Service acquisition of the land
3. Wildlife Observation: Cherry Valley provides a wealth of wildlife for observation, however viewing opportunities are limited by access. The narrow state and township roads running through the valley do not provide adequate pull-offs so safety is of the utmost concern. Until such time as better wildlife observation opportunities can be provided and a detailed public use plan is written and based on the attached compatibility determination, wildlife observation would be allowed to continue on an interim basis on parcels acquired by the refuge at the same level of activity that existed prior to Service acquisition of the land.
4. Photography: Until such time as better wildlife photography opportunities can be provided and a detailed public use plan is written and based on the attached compatibility determination, wildlife photography would be allowed to continue on an interim basis on parcels acquired by the refuge at the same level of activity that existed prior to Service acquisition of the land.
5. Environmental Education: Environmental Education is limited by the lack of support facilities in the valley. Shortfalls in environmental education opportunities may be overcome with partnerships with local schools and conservation groups. Until such time as better environmental education opportunities can be provided and a detailed public use plan is written and

based on the attached compatibility determination, environmental education would be allowed to continue on an interim basis on parcels acquired by the refuge at the same level of activity that existed prior to Service acquisition of the land.

6. Interpretation: Interpretation is limited by the lack of support facilities in the valley. Shortfalls in interpretive opportunities may be overcome with partnerships with local schools and conservation groups. Until such time as better interpretation opportunities can be provided and a detailed public use plan is written and based on the attached compatibility determination, interpretative activities would be allowed to continue on an interim basis on parcels acquired by the refuge at the same level of activity that existed prior to Service acquisition of the land.

Where any of the priority public uses may conflict with the conservation of federally-listed, endangered or threatened species, appropriate measures (e.g., buffers, seasonal restrictions, etc.) will be identified and implemented to avoid adverse effects. This will be done in consultation with the Service's Endangered Species Program.

### ***Operations and Planning***

Refuges are managed according to an annual work plan (AWP) that summarizes goals and objectives of the upcoming year. Specific actions for on the ground work such as operation procedures, wildlife inventory plans, habitat management actions, public use, etc. are covered in detail in refuge specific management plans. An annual work plan may generally state, for example, that 150 acres of invasive plant species will be controlled on the refuge, setting a target and goal for invasive species management. The Invasive Species Management Plan would provide more detail, such as various species to be controlled, location of invasive species, control methods, timing of control, monitoring of effectiveness of the application, re-treating areas, monitoring, etc.

Long term planning, outlined earlier, includes the preparation of a comprehensive conservation plan (CCP). A CCP describes the desired future conditions of a refuge and provides long-range guidance and management direction to achieve the purposes of the refuge. A CCP is consistent with and helps fulfill the mission of the Refuge System and acts to maintain and, where appropriate, restore the ecological integrity of each refuge and the Refuge System. The National Wildlife Refuge System Improvement Act of 1997 mandates that the U.S. Fish and Wildlife Service write CCPs for all national wildlife refuges and reevaluate them every 15 years or as needed. The National Environmental Policy Act (NEPA) mandates that we incorporate, as appropriate, either an environmental assessment or an environmental impact statement in the CCP to satisfy NEPA requirements. The planning project provides a unique opportunity for the Service to involve individuals and local communities in the long-term management of the refuge.

## **Conclusion**

Should the refuge proposal go forward, the Service and the Refuge System will work toward the biological, cultural, and public use goals that have been outlined herein. Partnerships with landowners, neighbors, conservation organizations, and local, county, state, and other federal government agencies are a crucial component of a successful Cherry Valley National Wildlife Refuge.

**Attachment B.1**

Proposed Cherry Valley National Wildlife Refuge Staffing Concept:  
National Wildlife Refuge Staffing Model  
and a  
Case Study from  
Cape May National Wildlife Refuge  
Cape May, NJ

## Introduction

The staffing levels of a National Wildlife Refuge are based on a number of factors including refuge size and complexity, proximity to other refuges, and funding. Based on these and other factors, the proposed Cherry Valley refuge could be managed as a stand alone refuge or as a unit of a refuge complex. A stand alone refuge has a dedicated staff and equipment and is managed locally whereas a unit of a complexed refuge would share staff and equipment with other refuge units. At this time it is challenging to delineate staffing specifics for the proposed Cherry Valley National Wildlife Refuge because of uncertainties associated with the refuge's size, complexity, resource issues, funding, etc., and how these variables can and will change over time. Because of these uncertainties, we have included Attachment B.1 which gives the reader a background on how a number of variables interact to determine levels of staffing at a particular national wildlife refuge. These two illustrations include: the application of the newly promulgated Staffing Model for Field Stations, National Wildlife Refuge System, U.S. Fish and Wildlife Service, June 2008 Report; and a simplified look at the growth of Cape May National Wildlife Refuge in Cape May, NJ from its beginning in 1989 to present.

## Staffing Model for Field Stations

Finished in June 2008, a national team of Refuge System professionals developed a staffing model to determine the level of staffing needed to most effectively operate and manage the diversity of field stations in the National Wildlife Refuge System. The predictive model evaluates the specifics of each refuge based on 15 key factors which drive the site specific workload of each field station. These factors include total acres, number of easement contracts, acres actively managed, level of invasive species, endangered species, biological management and monitoring, wilderness management, visitor services, maintenance needs, aircraft and ocean vessels, and subsistence use visits. Data used in the development of the model was drawn from the Annual Report of Lands, Refuge Annual Performance Plan or RAPP, Real Property Inventory, and other sources. A limitation to the application of the model to the proposed Cherry Valley National Wildlife Refuge is that since the refuge does not currently exist, it was necessary to make a number of assumptions regarding the 15 factors listed above. Based on these assumptions, a model was run for the Cherry Valley example that would be representative of the early years in the development of the refuge, and one that more closely approximates conditions during the later years in the refuge's evolution. The tables below have been pulled directly from the staffing guidance document and assumptions and their associated scores are shaded to assist the reader in review of the models and workload assumptions as they pertain to Cherry Valley.

# Example Cherry Valley NWR Staffing Model

## 1: Early Refuge Development

### WILDLIFE AND HABITAT FUNCTION

<b>1</b>	<b>Habitat and Biological Management (Total acres – 2006 Report of Lands – see note for this factor)</b>	<b>Score</b>
	> 4 million acres =	11
	1 M acres to 4 million acres =	9
	500,000 acres to < 1 million acres =	7
	100,000 acres to < 500,000 acres =	5
	40,000 acres to < 100,000 acres =	3
	10,000 acres to < 40,000 acres =	2
	100 acres to < 10,000 acres =	1
	< 100 acres or easement refuges =	0
<b>2</b>	<b>Wetland Management Districts ONLY: number of wetland/grassland/habitat easement contracts</b>	<b>Score</b>
	> 2,000 contracts =	4
	1,000 to 2,000 contracts =	3
	500 to < 1,000 contracts =	2
	200 to < 500 contracts =	1
	100 to < 200 contracts =	0.5
	< 100 contracts =	0
		NA
<b>3</b>	<b>Acres Receiving Active Management (Sum of RAPP measures 1.30 through 1.37) (forest mgmt., cropland, water mgmt., haying/mowing, grazing, etc.)</b>	<b>Score</b>
	> 10,000 acres =	3
	5,000 acres to 10,000 acres =	2.5
	2,500 acres to < 5,000 acres =	2
	1,000 acres to < 2,500 acres =	1.5
	500 acres to < 1,000 acres =	1
	250 acres to < 500 acres =	0.5
	< 250 acres =	0
<b>4</b>	<b>Invasive Species Management</b>	
	<b>a. Acres Infested Invasive Plants (RAPP 1.42)</b>	<b>Score</b>
	> 10 acres to < 1,000 acres =	1
	1,000 acres to 10,000 acres =	2
	> 10,000 acres =	3

**Score**

**b. Invasive Animal Populations Controlled (RAPP 1.46)**

1 to 3 populations =	0.5
> 3 populations =	1

**5 Endangered Species Monitoring and Management**

**a. T&E Species with Target Goals (RAPP 1.67) Score**

1 to 3 populations =	0.5	0.5
4 to 5 populations =	1	
> 5 populations =	1.5	

**b. Number of T&E Actions Implemented (RAPP 1.72) Score**

1 to 3 actions =	0.5	0.5
4 to 5 actions =	1	
> 5 actions =	1.5	

**6 Biological Monitoring and Management**

**a. Surveys and Studies (Sum of RAPP measures 1.54, 1.73, and 1.74) Score**

< 15 survey, actions, studies =	0	0
15 to 30 surveys, actions, studies =	1	
> 30 surveys, actions, studies =	2	

**b. Alaskan refuges only adjustment Score**  
Multiply "a" result above by 2

**7 Maintaining Biological Integrity (threats and conflicts) Score**

No manager assigned (see notes for factor) =	0	
Low to Med ( $\leq$ GS-12 and GS-13 stations) =	0.5	0.5
High to Extreme (GS-14 and 15 stations) =	1	

**8 Wilderness Management (RAPP measure 3.04 + any officially proposed to Congress) Score**

< 10,000 acres		0
10,000 acres to 25,000 acres at station =	0.5	
> 25,000 acres to 100,000 acres at station =	1	
> 100,000 acres to 500,000 acres at station =	3	
> 500,000 acres =	4	

**VISITOR SERVICES FUNCTION**

**9 Total Number Station Visitors (RAPP measure 5.04) Score**

< 10,000 visitors =	0	0
10,000 to 25,000 visitors =	0.5	

- > 25,000 to 50,000 visitors = 1
- > 50,000 to 100,000 visitors = 2
- > 100,000 to 500,000 visitors = 3
- > 500,000 visitors = 4

<b>10 Environmental Education Programs (RAPP measure 5.43)</b>	<b>Score</b>
< 1,000 participants	<b>0</b>
1,000 to 2,000 participants = 0.5	
> 2,000 to 10,000 participants = 1	
> 10,000 participants = 2	
<b>11 Volunteer Management (RAPP measure 6.02 but 3-YR average 2005 to 2007)</b>	<b>Score</b>
>100 volunteers = 1	
50 to 100 volunteers = 0.5	<b>0.5</b>
<b>12 Friends Group Coordination (RAPP measure 6.10)</b>	<b>Score</b>
Yes, have Friends Group = 0.5	<b>0.5</b>

**FACILITIES AND MAINTENANCE FUNCTION**

<b>13 Maintenance and Asset Management -- Real Property Inventory Replacement Value (RPI data as of Oct. 1, 2007)</b>	<b>Score</b>
< \$5 Million in value = 0	<b>0</b>
\$5M to < \$15M = 0.5	
\$15 M to < \$50 M = 1	
\$50 M to < \$100 M = 2	
\$100 M to \$150 M = 3.5	
> \$150 M = 3.5 + 1 for each \$50M increment above \$150M (e.g. \$200 M = 4.5)	

**SUB TOTAL**

<b>14 Special Alaska and Other Station Factors</b>	<b>Score</b>
a. Aircraft assigned to station = 1 per aircraft	
b. Ocean-going vessel = actual current FTEs assigned	
c. Alaska special commercial uses = 1 per refuge	
<b>d. Subsistence (actual current + sum of RAPP factors 6.14 thru 6.16)</b>	<b>Score</b>
< 500 subsistence visits = 1 + current	
500 visits to < 1,000 visits = 2 + current	
1,000 visits to < 3,000 visits = 3 + current	
3,000 visits to < 5,000 visits = 4 + current	
5,000 visits to < 10,000 visits = 5 + current	

≥ 10,000 subsistence visits = 6 + current

**LAW ENFORCEMENT FUNCTION**

<b>15 LE Workload</b> (To be imported based on Washington deployment actions)	<b>Score</b>
	<b>NA</b>
<b>STATION TOTAL</b>	<b>5.5</b>

**ASSET MANAGEMENT** (to be imported and added to Regional total based on Washington-developed model)

**FIRE and PARTNERS for F&W FUNCTIONS**  
(non-1260 funding, modeled separately)

Based on the assumptions presented in the table above, the proposed Cherry Valley National Wildlife Refuge could be expected to require 5.5 Full Time Employees or FTE’s to meet its habitat protection and restoration goals early on in its development. This score was driven by assumptions on the initial size of the refuge, number of acres in active management, invasive species control activities, work on threatened and endangered species, and working with an already existing volunteer base and Friends group.

Now we will look at a more developed refuge model that assumes conditions that could reasonably be expected later on in the development of the refuge:

## Example Cherry Valley NWR Staffing Model 2: Later Refuge Development

### WILDLIFE AND HABITAT FUNCTION

<b>1</b>	<b>Habitat and Biological Management (Total acres – 2006 Report of Lands – see note for this factor)</b>	<b>Score</b>
	> 4 million acres =	11
	1 M acres to 4 million acres =	9
	500,000 acres to < 1 million acres =	7
	100,000 acres to < 500,000 acres =	5
	40,000 acres to < 100,000 acres =	3
	10,000 acres to < 40,000 acres =	2
	100 acres to < 10,000 acres =	1
	< 100 acres or easement refuges =	0
<b>2</b>	<b>Wetland Management Districts ONLY: number of wetland/grassland/habitat easement contracts</b>	<b>Score</b>
	> 2,000 contracts =	4
	1,000 to 2,000 contracts =	3
	500 to < 1,000 contracts =	2
	200 to < 500 contracts =	1
	100 to < 200 contracts =	0.5
	< 100 contracts =	0
<b>3</b>	<b>Acres Receiving Active Management (Sum of RAPP measures 1.30 through 1.37) (forest mgmt., cropland, water mgmt., haying/mowing, grazing, etc.)</b>	<b>Score</b>
	> 10,000 acres =	3
	5,000 acres to 10,000 acres =	2.5
	2,500 acres to < 5,000 acres =	2
	1,000 acres to < 2,500 acres =	1.5
	500 acres to < 1,000 acres =	1
	250 acres to < 500 acres =	0.5
	< 250 acres =	0
<b>4</b>	<b>Invasives Species Management</b>	
	<b>a. Acres Infested Invasive Plants (RAPP 1.42)</b>	<b>Score</b>

> 10 acres to < 1,000 acres =	1	
1,000 acres to 10,000 acres =	2	2
> 10,000 acres =	3	
<b>Score</b>		
<b>b. Invasive Animal Populations Controlled (RAPP 1.46)</b>		
1 to 3 populations =	0.5	
> 3 populations =	1	
<b>5 Endangered Species Monitoring and Management</b>		
<b>a. T&amp;E Species with Target Goals (RAPP 1.67)</b>		<b>Score</b>
1 to 3 populations =	0.5	
4 to 5 populations =	1	1
> 5 populations =	1.5	
<b>b. Number of T&amp;E Actions Implemented (RAPP 1.72)</b>		<b>Score</b>
1 to 3 actions =	0.5	
4 to 5 actions =	1	1
> 5 actions =	1.5	
<b>6 Biological Monitoring and Management</b>		
<b>a. Surveys and Studies (Sum of RAPP measures 1.54, 1.73, and 1.74)</b>		<b>Score</b>
< 15 survey, actions, studies =	0	0
15 to 30 surveys, actions, studies =	1	1
> 30 surveys, actions, studies =	2	
<b>b. Alaskan refuges only adjustment</b>		<b>Score</b>
Multiply "a" result above by 2		
<b>7 Maintaining Biological Integrity (threats and conflicts)</b>		
No manager assigned (see notes for factor) =		<b>Score</b>
Low to Med ( $\leq$ GS-12 and GS-13 stations) =		0.5
High to Extreme (GS-14 and 15 stations) =		1
<b>8 Wilderness Management (RAPP measure 3.04 + any officially proposed to Congress)</b>		
< 10,000 acres		0
10,000 acres to 25,000 acres at station =		0.5
> 25,000 acres to 100,000 acres at station =		1
> 100,000 acres to 500,000 acres at station =		3
> 500,000 acres =		4

**VISITOR SERVICES FUNCTION**

<b>9</b>	<b>Total Number Station Visitors (RAPP measure 5.04)</b>	<b>Score</b>
	< 10,000 visitors = 0	0
	10,000 to 25,000 visitors = 0.5	
	> 25,000 to 50,000 visitors = 1	
	> 50,000 to 100,000 visitors = 2	
	> 100,000 to 500,000 visitors = 3	
	> 500,000 visitors = 4	
<b>10</b>	<b>Environmental Education Programs (RAPP measure 5.43)</b>	<b>Score</b>
	< 1,000 participants	0
	1,000 to 2,000 participants = 0.5	
	> 2,000 to 10,000 participants = 1	
	> 10,000 participants = 2	
<b>11</b>	<b>Volunteer Management (RAPP measure 6.02 but 3-YR average 2005 to 2007)</b>	<b>Score</b>
	>100 volunteers = 1	
	50 to 100 volunteers = 0.5	0.5
<b>12</b>	<b>Friends Group Coordination (RAPP measure 6.10)</b>	<b>Score</b>
	Yes, have Friends Group = 0.5	0.5

**FACILITIES AND MAINTENANCE FUNCTION**

<b>13</b>	<b>Maintenance and Asset Management -- Real Property Inventory Replacement Value (RPI data as of Oct. 1, 2007)</b>	<b>Score</b>
	< \$5 Million in value = 0	
	\$5M to < \$15M = 0.5	
	\$15 M to < \$50 M = 1	
	\$50 M to < \$100 M = 2	2
	\$100 M to \$150 M = 3.5	
	> \$150 M = 3.5 + 1 for each \$50M increment above \$150M (e.g. \$200 M = 4.5)	

**SUB TOTAL**

<b>14</b>	<b>Special Alaska and Other Station Factors</b>	<b>Score</b>
	a. Aircraft assigned to station = 1 per aircraft	
	b. Ocean-going vessel = actual current FTEs assigned	
	c. Alaska special commercial uses = 1 per refuge	
	d. Subsistence (actual current + sum of RAPP factors 6.14 thru 6.16)	Score

< 500 subsistence visits =	1 + current
500 visits to < 1,000 visits =	2 + current
1,000 visits to < 3,000 visits =	3 + current
3,000 visits to < 5,000 visits =	4 + current
5,000 visits to < 10,000 visits =	5 + current
≥ 10,000 subsistence visits =	6 + current

**LAW ENFORCEMENT FUNCTION**

<b>15 LE Workload</b> (To be imported based on Washington deployment actions)	<b>Score</b>
	<b>1</b>
<b>STATION TOTAL</b>	<b>14</b>

**ASSET MANAGEMENT** (to be imported and added to Regional total based on Washington-developed model)

**FIRE and PARTNERS for F&W FUNCTIONS**  
(non-1260 funding, modeled separately)

In this model, the size and complexity of the refuge have increased dramatically. Active management is present on a greater number of acres. Invasive species management, threatened and endangered species actions, biological surveys, and law enforcement issues have greatly increased over the earlier model. Based on the assumptions presented in the table above, the proposed Cherry Valley National Wildlife Refuge could be expected to require 14 Full Time Employees or FTE’s to meet its habitat protection and restoration goals later on in its development.

Cape May National Wildlife Refuge

Our second look at staffing on National Wildlife Refuges brings us to an example provided by actual growth and complexity data at the Cape May National Wildlife Refuge, and how that increase equated to increases in staffing. A summary of this information is presented in the following table:

Year	Funding Source			Acreage Summary		Staffing Summary						
	LWCF (acres)	MBCF (acres)	Other (acres)	Annual Total (acres)	Overall Total (acres)	Staffing (FTE)	Staff Composition					
1989	911.78	90.04	0	1001.82	1001.82	1	RM					
1990	982.56	994.82	135	2112.38	3114.2	1	RM					
1991	1380.1	351.52	0	1731.62	4845.82	1	RM					
1992	512.47	436.73	0	949.2	5795.02	1	RM					
1993	181.23	36.3	0	217.53	6012.55	1	RM					
1994	366.89	48.5	0	415.39	6427.94	2.5	RM	TLE	PTAO			
1995	485.85	284.51	0	770.36	7198.3	2.5	RM	TLE	PTAO			
1996	0	1087.87	0	1087.87	8286.17	3.5	RM	TLE	PTAO	ROS		
1997	0	328.54	0	328.54	8614.71	3.5	RM	TLE	PTAO	ROS		
1998	382.21	468.59	0	850.8	9465.51	3.5	RM	TLE	PTAO	ROS		
1999	131.37	4.85	490.8	627.02	10092.53	3.5	RM	TLE	PTAO	ROS		
2000	243.2	0	0	243.2	10335.73	3.5	RM	TLE	PTAO	ROS		
2001	237.8	166.77	0	404.57	10740.3	3	RM	FTLE	ROS			
2002	150.05	117.86	0	267.91	11008.21	3	RM	FTLE	WB			
2003	26.46	44	0	70.46	11078.67	4	RM	DRM	FTLE	WB		
2004	31.4	28.11	0	59.51	11138.18	6*	RM	DRM	FTLE	WB	M	AO
2005	0	11	0	11	11149.18	5*	RM	DRM	FTLE	WB	M	
2006	0	0	0	0	11149.18	5*	RM	DRM	FTLE	WB	M	
2007	0	0	0	0	11149.18	5*	RM	DRM	FTLE	WB	M	
2008	0	0	0	0	11149.18	5*	RM	DRM	FTLE	WB	M	

LWCF = Land and Water Conservation Fund  
MBCF = Migratory Bird Conservation Fund  
\* Cape May and Supawna Meadows NWR's complexed  
2006 - Present: Regional Administrative Officer located at Great Swamp NWR

RM = Refuge Manager  
DRM = Deputy Refuge Manager  
TLE = Temporary Law Enforcement Officer  
FTLE = Full Time Law Enforcement Officer  
WB = Wildlife Biologist  
PTAO = Part Time Administrative Officer  
ROS = Refuge Operations Specialist  
M = Maintenance  
AO = Administrative Officer

From these data, the reader will note several important trends in refuge development. First, over the course of a 16 year period, the land base at Cape May NWR increased from 0 to over 11,000 acres. Most of this land was purchased with monies from the Land and Water Conservation Fund and the Migratory Bird Conservation Fund, although over 600 acres were acquired through donation and other means (Other). The reader will note that some years were very busy in terms of land acquisition and others were slow; since 2006, no additional lands have been acquired. The reader will also note that refuge staffing increased with increases in the land base, starting with placement of a Refuge Manager on site in 1989.

Summary

The proposed Cherry Valley National Wildlife Refuge could be managed as a stand alone refuge or as part of a refuge complex. Generally, a stand alone refuge has a dedicated staff and equipment and is managed locally. As part of a complex, Cherry Valley would likely have less on site staff and would share staff and equipment with other refuge(s).

Sometimes, refuges in their early stages are part of a complex, but as they grow in size and complexity, are then split off to stand alone. Under the “complex” scenario, the refuge staff of another refuge would have the responsibility for at least some of the management of the newly established refuge. During the interim period, the Service would seek funding to station staff in Cherry Valley. A staff likely consisting of a refuge manager, wildlife biologist, and engineering equipment operator would be phased in at that time. In the longer term, the Regional Office would evaluate the need for additional full time staff based on management needs, project loads, public use activities, etc. and could move forward with providing additional staff if justified. The ability to fill staff positions would depend on availability of funds.

### Acknowledgements

We would like to thank Howard Schlegel, Refuge Manager, Cape May National Wildlife Refuge; Jared Brandwein, Refuge Manager, Back Bay National Wildlife Refuge; Don Hultman, Refuge Manager, Upper Mississippi River National Wildlife and Fish Refuge; and Walt Quist, Region 5, Realty for their cooperation in the preparation of this Attachment.

**Attachment B.2.  
Compatibility Determinations**

## **Pre-Acquisition Compatibility Determination Cherry Valley National Wildlife Refuge**

(For use on lands included in the proposed Cherry Valley National Wildlife Refuge)

### Uses

Wildlife observation and photography, environmental education and interpretation

### Refuge names, establishing and acquisition authorities, and purposes

Each National Wildlife Refuge is established under specific legislation or administrative authority. Similarly, each refuge has one or more specific legal purposes for which it was established. The establishing legislation or authority and the purposes for the Cherry Valley National Wildlife Refuge 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 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).*

### National Wildlife Refuge System Mission

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

### Description of Use

*What is the use?*

This pre-acquisition compatibility determination serves as our commitment to allow wildlife observation and photography, environmental education and interpretation activities to continue, where they are pre-existing and owner-authorized, on lands that will be acquired by the Service, should the refuge proposal go forward.

The specific parcels covered by this compatibility determination have been identified in the final Land Protection Plan, Appendix E of the Final Cherry Valley National Wildlife Refuge Feasibility Study and Environmental Assessment (Final EA). Within the proposed refuge acquisition boundary, most of the parcels are privately owned and currently unimproved, and we are aware of only a few existing public use opportunities. As we pursue acquisition of individual parcels we will be able to verify where other opportunities exist.

*Are the uses priority public uses?*

Yes, wildlife observation and photography, and environmental education and interpretation were identified as priority, wildlife-dependent public uses by the National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act, P.L. 105-57).

*Where would the use be conducted?*

The Final EA identifies a proposed acquisition boundary for the refuge. It also delineates the specific parcels, using township and county tax records, proposed for acquisition by the Service. The uses would be allowed on all parcels where they existed prior to acquisition by the Service, until such time as detailed planning occurs.

*When would the use be conducted?*

In general, refuges are open from sunrise to sunset for these activities; the only exceptions would be pre-approved environmental education and interpretive programs. Environmental education and interpretation, and wildlife observation and photography activities would occur year-round.

*How would the use be conducted?*

The uses would be allowed to continue in the manner in which they were conducted prior to acquisition by the Service.

*Why is the use being proposed?*

These priority public uses may already be occurring on privately owned lands, with the owner's permission. These uses are also identified as priority uses by the National Wildlife Refuge System Improvement Act of 1997.

## Availability of Resources

No additional Refuge resources would be devoted to these uses; that is, no additional infrastructure would be developed to accommodate these new areas until compatibility determinations are revised in response to new information or until we revise individual step-down management plans. Any proposed expenditures for improving public use opportunities in these areas would be identified as projects in a Visitor Services Plan. Acquisition and posting of these parcels would occur regardless of their potential for wildlife-dependent public use.

## Anticipated Impacts of Proposed Actions

We expect only minimal impacts from continuing to allow these priority public uses.

## Public Review and Comment

As part of the Draft EA, this compatibility determination has been through extensive public review, including a public comment period, following release of the Draft EA. Specific and general comments regarding this compatibility determination or public use opportunities have been addressed in the Final EA and supporting documents.

## Determination

The uses are compatible  X .

The uses are not compatible \_\_\_\_.

## Stipulations Necessary to Ensure Compatibility

The following conditions must all be met before allowing existing, priority, wildlife-dependent public use to continue on an interim basis on newly acquired lands:

- 1) There are no indirect, direct, or cumulative threats anticipated to human health or safety;
- 2) There are no indirect, direct, or cumulative threats anticipated to natural or cultural resources;
- 3) The use would not compromise management strategies based on site-specific conditions; and,
- 4) There are no anticipated, irresolvable conflicts between or among priority public uses.

Existing uses may be allowed if these conditions are found to exist; all refuge regulations would apply to the newly acquired lands. This pre-acquisition compatibility determination is in effect until the currently approved compatibility determinations for the Refuge are revised. A compatibility determination will be revised when conditions under which the use was first allowed change significantly, or if there is significant new information regarding the effects of the use, or with completion of a Comprehensive Conservation Plan. There may also be changes warranted when the Visitor Services Plan is completed. However, at any time, the Refuge Manager retains the authority to modify or cancel any public uses in order to insure compatibility with refuge purposes or to insure the conditions above are met. Significant changes to these compatibility determinations will require another public review period.

### Justification

Existing priority, wildlife-dependent recreational uses have been determined appropriate by the Refuge Improvement Act, are considered compatible through this determination, and will continue on newly acquired tracts of land. These programs support the mission of the National Wildlife Refuge System by promoting an understanding and appreciation of natural and cultural resources and their management within a national system of refuges. Our programs would reach out to all segments of the public to expand support for the Refuge System. Individual refuge programs will be consistent with, and fully support, the goals and objectives of the refuge.

### Signatures

\_\_\_\_\_

**Refuge Manager**

\_\_\_\_\_

**Date**

\_\_\_\_\_

**Regional Chief, Concurrence**

\_\_\_\_\_

**Date**

**Mandatory 15 year Reevaluation**

\_\_\_\_\_

**Date**

## Pre-Acquisition Compatibility Determination Cherry Valley National Wildlife Refuge

(For use on lands included in the proposed Cherry Valley National Wildlife Refuge)

### Uses

#### Hunting

### Refuge names, establishing and acquisition authorities, and purposes

Each National Wildlife Refuge is established under specific legislation or administrative authority. Similarly, each refuge has one or more specific legal purposes for which it was established. The establishing legislation or authority and the purposes for the Cherry Valley National Wildlife Refuge 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 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).*

### National Wildlife Refuge System Mission

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

### Description of Use

*What is the use?*

This pre-acquisition compatibility determination serves as our commitment to allow hunting to continue, where it is pre-existing and owner-authorized, on lands that will be acquired by the Service, should the refuge proposal go forward.

The specific parcels covered by this compatibility determination have been identified in the final Land Protection Plan, Appendix E in the Final Cherry Valley National Wildlife Refuge Feasibility Study and Environmental Assessment (Final EA). Within the proposed refuge acquisition boundary, most of the parcels are privately owned and currently unimproved, and we are aware of only a few existing public use opportunities. As we pursue acquisition of individual parcels we will be able to verify where other opportunities exist. Hunting activities covered under this Compatibility Determination include:

Squirrel, ruffed grouse, rabbit, pheasant, Northern bobwhite, woodchuck, crow, European starling, English sparrow, wild turkey (including spring season), black bear, white-tailed deer (archery, muzzleloader, firearm, flintlock), and others consistent with Pennsylvania Game Commission laws and regulations.

*Are the uses priority public uses?*

Yes, hunting has been identified as a priority, wildlife-dependent public use by the National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act, P.L. 105-57).

*Where would the use be conducted?*

The Final EA identifies a proposed acquisition boundary for the refuge. It also delineates the specific parcels, using township and county tax records, proposed for acquisition by the Service. The use would be allowed on all parcels where they existed prior to acquisition by the Service, until such time as detailed planning occurs.

*When would the use be conducted?*

In general, refuges are open from sunrise to sunset for these activities; the only exceptions would be pre-approved environmental education and interpretive programs. Hunting activities would occur during seasons and times established by the Pennsylvania Game Commission.

*How would the use be conducted?*

The use would be allowed to continue in the manner in which they were conducted prior to acquisition by the Service.

*Why is the use being proposed?*

This priority public use may already be occurring on privately owned lands, with the owner's permission. This use is also identified as a priority use by the National Wildlife Refuge System Improvement Act of 1997.

### Availability of Resources

No additional Refuge resources would be devoted to these uses; that is, no additional infrastructure would be developed to accommodate these new areas until compatibility determinations are revised in response to new information or until we revise individual step-down management plans. Any proposed expenditures for improving public use opportunities in these areas would be identified as projects in a Hunting or Visitor Services Plan. Acquisition and posting of these parcels would occur regardless of their potential for wildlife-dependent public use.

### Anticipated Impacts of Proposed Actions

We expect only minimal impacts from continuing to allow these priority public uses.

### Public Review and Comment

As part of the Draft EA, this compatibility determination has undergone extensive public review, including a public comment period, following release of the draft study document. Specific and general comments regarding this compatibility determination or public use opportunities have been addressed in the Final EA and supporting documents.

### Determination

The uses are compatible  X .

The uses are not compatible \_\_\_\_.

### Stipulations Necessary to Ensure Compatibility

The following conditions must all be met before allowing existing, priority, wildlife-dependent public use to continue on an interim basis on newly acquired lands:

- 1) There are no indirect, direct, or cumulative threats anticipated to human health or safety;
- 2) There are no indirect, direct, or cumulative threats anticipated to natural or cultural resources;

3) The use would not compromise management strategies based on site-specific conditions; and,

4) There are no anticipated, irresolvable conflicts between or among priority public uses.

Existing uses may be allowed if these conditions are found to exist; all refuge regulations would apply to the newly acquired lands. This pre-acquisition compatibility determination is in effect until the currently approved compatibility determinations for the Refuge are revised. A compatibility determination will be revised when conditions under which the use was first allowed change significantly, or if there is significant new information regarding the effects of the use, or with completion of a Comprehensive Conservation Plan. There may also be changes warranted when the Hunting and/or Visitor Services Plans are completed. However, at any time, the Refuge Manager retains the authority to modify or cancel any public uses in order to insure compatibility with refuge purposes or to insure the conditions above are met. Significant changes to these compatibility determinations will require another public review period.

### Justification

Existing priority, wildlife-dependent recreational uses have been determined appropriate by the Refuge Improvement Act, are considered compatible through this determination, and will continue on newly acquired tracts of land. These programs support the mission of the National Wildlife Refuge System by promoting an understanding and appreciation of natural and cultural resources and their management within a national system of refuges. Our programs reach out to all segments of the public to expand support for the Refuge System. Individual refuge programs would be consistent with, and fully support, the goals and objectives for the refuge.

### Signatures

\_\_\_\_\_  
**Refuge Manager**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Regional Chief, Concurrence**

\_\_\_\_\_  
**Date**

**Mandatory 15 year Reevaluation**

\_\_\_\_\_  
**Date**

## Pre-Acquisition Compatibility Determination Cherry Valley National Wildlife Refuge

(For use on lands included in the proposed Cherry Valley National Wildlife Refuge)

### Uses

Fishing

### Refuge names, establishing and acquisition authorities, and purposes

Each National Wildlife Refuge is established under specific legislation or administrative authority. Similarly, each refuge has one or more specific legal purposes for which it was established. The establishing legislation or authority and the purposes for the Cherry Valley National Wildlife Refuge 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 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).*

### National Wildlife Refuge System Mission

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

### Description of Use

*What is the use?*

This pre-acquisition compatibility determination serves as our commitment to allow fishing to continue, where it is pre-existing and owner-authorized, on lands that will be acquired by the Service, should the refuge proposal go forward.

The specific parcels covered by this compatibility determination have been identified in the Final Cherry Valley National Wildlife Refuge Feasibility Study and Environmental Assessment (Final EA). Within the proposed refuge acquisition boundary, most of the parcels are privately owned and currently unimproved, and we are aware of only a few existing public use opportunities. As we pursue acquisition of individual parcels we will be able to verify where other opportunities exist. Fishing activities covered under this Compatibility Determination include:

Trout, bass, pickerel, American eel, sunfish, crappie, catfish, rock bass, sucker, carp, and others consistent with Pennsylvania Fish and Boat Commission laws and regulations.

*Are the uses priority public uses?*

Yes, fishing was identified as a priority, wildlife-dependent public use by the National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act, P.L. 105-57).

*Where would the use be conducted?*

The Final EA identifies a proposed acquisition boundary for the refuge. It also delineates the specific parcels, using township and county tax records, proposed for acquisition by the Service. The use would be allowed on all parcels where they existed prior to acquisition by the Service, until such time as detailed planning occurs.

*When would the use be conducted?*

In general, refuges are open from sunrise to sunset for these activities; the only exceptions would be pre-approved environmental education and interpretive programs. Fishing activities would occur during seasons and times established by the Pennsylvania Fish and Boat Commission.

*How would the use be conducted?*

The use would be allowed to continue in the manner in which they were conducted prior to acquisition by the Service.

*Why is the use being proposed?*

This priority public use may already be occurring on privately owned lands, with the owner's permission. This use is also identified as a priority use by the National Wildlife Refuge System Improvement Act of 1997.

### Availability of Resources

No additional Refuge resources would be devoted to these uses; that is, no additional infrastructure would be developed to accommodate these new areas until compatibility determinations are revised in response to new information or until we revise individual step-down management plans. Any proposed expenditures for improving public use opportunities in these areas would be identified as projects in a Fishing or Visitor Services Plan. Acquisition and posting of these parcels would occur regardless of their potential for wildlife-dependent public use.

### Anticipated Impacts of Proposed Actions

We expect only minimal impacts from continuing to allow these priority public uses.

### Public Review and Comment

As part of the Draft EA, this compatibility determination has undergone extensive public review, including a public comment period, following release of the Draft EA. Specific and general comments regarding this compatibility determination or public use opportunities have been addressed in the Final EA and supporting documents.

### Determination

The uses are compatible  X .

The uses are not compatible \_\_\_\_.

### Stipulations Necessary to Ensure Compatibility

The following conditions must all be met before allowing existing, priority, wildlife-dependent public use to continue on an interim basis on newly acquired lands:

- 1) There are no indirect, direct, or cumulative threats anticipated to human health or safety;
- 2) There are no indirect, direct, or cumulative threats anticipated to natural or cultural resources;
- 3) The use would not compromise management strategies based on site-specific conditions; and,

4) There are no anticipated, irresolvable conflicts between or among priority public uses.

Existing uses may be allowed if these conditions are found to exist; all refuge regulations would apply to the newly acquired lands. This pre-acquisition compatibility determination is in effect until the currently approved compatibility determinations for the Refuge are revised. A compatibility determination will be revised when conditions under which the use was first allowed change significantly, or if there is significant new information regarding the effects of the use, or with completion of a Comprehensive Conservation Plan. There may also be changes warranted when the Fishing and/or Visitor Services Plans are completed. However, at any time, the Refuge Manager retains the authority to modify or cancel any public uses in order to insure compatibility with refuge purposes or to insure the conditions above are met. Significant changes to these compatibility determinations will require another public review period.

### Justification

Existing priority, wildlife-dependent recreational uses have been determined appropriate by the Refuge Improvement Act, are considered compatible through this determination, and will continue on newly acquired tracts of land. These programs support the mission of the National Wildlife Refuge System by promoting an understanding and appreciation of natural and cultural resources and their management within a national system of refuges. Our programs reach out to all segments of the public to expand support for the Refuge System. Individual refuge programs would be consistent with, and fully support, the goals and objectives for the refuge.

### Signatures

\_\_\_\_\_  
**Refuge Manager**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Regional Chief, Concurrence**

\_\_\_\_\_  
**Date**

**Mandatory 15 year Reevaluation**

\_\_\_\_\_  
**Date**

**Attachment B.3.  
Endangered Species Act Compliance**

## Introduction

Pursuant to section 7(a)(1) of the Endangered Species Act, federal agencies are directed to use their authorities to conserve federally-listed endangered and threatened species. Pursuant to section 7(a)(2) of the ESA and the associated implementing regulations (50 CFR part 402), federal agencies must also ensure their actions do not jeopardize the continued existence of those species. Regardless of whether proposed actions are beneficial or adverse, the federal action agency is directed to consult with the Fish and Wildlife Service.

The Fish and Wildlife Service's Division of Refuges proposes several actions which may affect federally-listed species, including 1) establishment of a National Wildlife Refuge in Cherry Valley, Pennsylvania; 2) adoption of Alternative B (i.e., the "Diverse Habitat Complex" alternative) in the *Final Cherry Valley National Wildlife Refuge Feasibility Study and Environmental Assessment* (Final EA), creating a refuge acquisition boundary of up to 20,466 acres within the 31,500 acre Study Area; and 3) and implementation of activities on the refuge in accordance with the Final EA's Conceptual Management Plan. This attachment documents the Service's evaluation of the effects of these actions on federally-listed species.

Federally-listed species that occur or may occur within the refuge acquisition boundary include the bog turtle, Indiana bat, northeastern bulrush, small-whorled pogonia, and dwarf wedgemussel. Effect determinations for these species are presented below, along with the rationale for those determinations.

## Refuge and Acquisition Boundary Establishment

The Service has determined that the establishment of a National Wildlife Refuge along with its associated acquisition boundary (as detailed in Alternative B of the Final EA) is wholly beneficial for federally-listed endangered and threatened species. As discussed in the Final EA, one of the primary goals for a Cherry Valley National Wildlife Refuge is to "(P)rotect and enhance habitats for federal trust species and species of management concern, emphasizing migratory birds and species listed under the federal Endangered Species Act, along with protection of wetlands and Kittatinny Ridge habitats." This goal is fully consistent with the mandate in section 7(a)(1) of the ESA to use our authorities to conserve federally-listed species. It guided the Service in identifying an appropriate acquisition boundary, and will be a leading factor in identifying and prioritizing specific land parcels for protection (via acquisition or conservation easement) and management.

While the establishment of a refuge and its associated acquisition boundary (as detailed in Alternative B of the Final EA) will not, in and of itself, result in any direct or indirect effects on federally-listed species, it is a precursor to land acquisition and land management actions which will be undertaken to benefit federally-listed species and their habitats. Consequently, as discussed above, we have determined the effect of

refuge establishment to be beneficial. If a refuge were not established (no action alternative), adverse effects to federally-listed species, particularly the bog turtle, would occur at a greater level than under the preferred alternative, as various forms of development and land use contribute to the destruction, degradation, and fragmentation of habitat. Threatened and endangered species habitat on refuge lands is expected to benefit not only from protection which precludes development activities resulting in adverse effects, but also from proactive species and habitat management efforts which may not otherwise take place.

### Conceptual Management Plan

The Conceptual Management Plan (CMP) identifies activities that will be undertaken on refuge lands, pending establishment of a National Wildlife Refuge in Cherry Valley. These activities are summarized below. For each activity category, a preliminary endangered and threatened species effect determination is included. Considering a wide range of activities could occur at multiple locations on the refuge under any one of these category types, these categorical effect determinations do not necessarily encompass every possible circumstance or action. Consequently, as site-specific activities are planned, the Service will conduct intra-Service consultations on those activities that may affect federally-listed species to ensure listed species are considered and conserved.

- Monitor, inventory, and conduct surveys for threatened and endangered species and their habitats.
  - Determination – not likely to adversely affect (all listed species)
  - Rationale – Monitoring, survey and inventory activities will be done by qualified surveyors in accordance with the most recent Service-approved guidelines, which are developed to avoid potential adverse effects. Where guidelines do not exist, or where monitoring, survey or inventory methods are proposed that will deviate from Service-approved guidelines, further intra-Service consultation will occur.
- Manage threatened and endangered species and their habitats.
  - Determination – not likely to adversely affect (Indiana bat, dwarf wedgemussel, northeastern bulrush, small-whorled pogonia); likely to adversely affect (bog turtle)
  - Rationale – In most cases, we anticipate management activities will be planned and carried out in a manner that considers and avoids adverse effects to listed species, while providing a beneficial effect. For example, the *Forest Management Guidelines* detailed in the CMP are expected to

provide high quality roosting and foraging habitat for Indiana bats while avoiding the potential for adverse effects.

In the case of bog turtle habitat management, some management activities have the potential to adversely affect individual turtles, while benefitting the population as a whole. To minimize the potential for adverse effects, invasive plant control in known or potential bog turtle habitat will be carried out in accordance with the Northeast Region's intra-Service Biological Opinion (BO) dated March 10, 2006, entitled "Effects of the Implementation of Habitat Restoration Projects on the Northern Population of the Bog Turtle." Any management or restoration activities in bog turtle habitat that are not covered by the BO will be addressed in a separate intra-Service consultation, as needed.

- Conduct fish and aquatic macroinvertebrate inventories in Cherry Creek and other watersheds within the acquisition boundary.
  - Determination – not likely to adversely affect (dwarf wedgemussel); no effect (bog turtle, Indiana bat, northeastern bulrush, small-whorled pogonia)
  - Rationale – Preliminary surveys have not documented the presence of dwarf wedgemussels in Cherry Creek, although some potential habitat does exist in a few stream segments. We anticipate fish and aquatic macroinvertebrate inventories in Cherry Creek will be designed in a manner that would avoid death or injury to federally-listed mussels, should they occur in the sampling area. The remaining watersheds do not have appropriate habitat for dwarf wedgemussel. Regardless, we anticipate fish and aquatic macroinvertebrate inventories conducted in waters within the acquisition boundary will be designed in a manner that would avoid negative effects to federally-listed mussels, should the mussels occur in the sampling area.

While bog turtles may occasionally use Cherry Creek or other watersheds as a travel corridor, they are not likely to spend a significant amount of time in the creeks, nor are they likely to be affected by the techniques used to sample for fish or macroinvertebrates. Consequently, no adverse effects to bog turtles are expected.

Inventory methods for fish and aquatic macroinvertebrates will not target plants or terrestrial animals and will be designed to avoid any effects on other federally-listed species. Therefore, these inventories should have no effect on small-whorled pogonia, northeastern bulrush, or Indiana bat.

- Inventory and monitor neotropical migratory birds, waterfowl, mammals, amphibians, and reptiles of concern.
  - Determination – no effect (northeastern bulrush, small-whorled pogonia, dwarf wedgemussel); not likely to adversely affect (Indiana bat, bog turtle)
  - Rationale – Inventory and monitoring activities in bog turtle habitat will be reviewed by refuge staff to ensure sampling techniques for non-listed species do not have adverse effects on listed species. In some cases, the presence of federally-listed species may preclude sampling for other species. Inventory and monitoring activities for bats will be done in accordance with established mist-netting and hibernacula survey protocols, ensuring adverse effects to any Indiana bats are avoided. Use of qualified personnel to conduct surveys will minimize the risk of adverse effects to both listed and non-listed animal species of concern.

Inventory and monitoring methods will not target plants or mussels, therefore no adverse effects to the northeastern bulrush, small-whorled pogonia, or dwarf wedgemussel are expected.

- Monitor and control exotic or invasive plant and animal species to preclude threats to the integrity of the ecosystem.
  - Determination – likely to adversely affect (bog turtle); no effect or not likely to adversely affect (Indiana bat, dwarf wedgemussel, northeastern bulrush, small-whorled pogonia)
  - Rationale – In bog turtle habitat, these activities have the potential to adversely affect individual turtles, while benefitting the population as a whole. To minimize the potential for adverse effects, invasive plant control in known or potential bog turtle habitat will be carried out in accordance with the Northeast Region’s intra-Service Biological Opinion (BO) dated March 10, 2006, entitled “Effects of the Implementation of Habitat Restoration Projects on the Northern Population of the Bog Turtle.” Any management or restoration activities in bog turtle habitat that are not covered by the BO will be addressed in a separate intra-Service consultation, as needed.

Invasive plant control in habitat occupied by the northeastern bulrush or small-whorled pogonia will be designed and implemented in a manner that avoids adverse effects to these species.

At this time, we do not expect that invasive plant or animal control measures will adversely affect the Indiana bat or dwarf wedgemussel, provided control measures do not substantially affect the prey base for Indiana bats or host fish for the dwarf wedgemussel. Use of chemical or biological methods to control forest and other pests (e.g., gypsy moths, blackflies) will be subject to intra-Service consultation to ensure potential adverse effects to listed species are avoided or minimized.

- Inventory vegetative communities and develop a vegetation map of habitats within the refuge's approved acquisition boundary using GIS tools.
  - Determination – no effect (all listed species)
  - Rationale – Inventory and mapping techniques are not likely to have any direct or indirect adverse effects on listed animal or plant species.
- Coordinate with landowners and other partners to protect and enhance the health and integrity of Cherry Creek and other watersheds within the acquisition boundary.
  - Determination – no effect (northeastern bulrush, small-whorled pogonia); beneficial effect (bog turtle, Indiana bat, dwarf wedgemussel)
  - Rationale – Protection and enhancement of water quality in Cherry Creek may have beneficial effects on down-stream populations of the dwarf wedgemussel. Maintenance or improvement of water quality is also expected to conserve foraging habitat, drinking water, and insect availability for any Indiana bats that may be present. Protection of Cherry Creek and its riparian corridor is expected to conserve bog turtle travel corridors and retain habitat connectivity between bog turtle wetlands in Cherry Valley, provided any stream restoration or stabilization methods to not disrupt bog turtle dispersal. Protection of other watersheds within the acquisition boundary and the associated riparian corridors is expected to protect any existing bog turtle habitat and may provide opportunities for bog turtles to expand into additional habitat, provided appropriate habitat is available and any stream restoration or stabilization methods to not disrupt bog turtle dispersal.

There is one known population of northeastern bulrush. No activities are currently planned near this population. As mentioned previously, as site-specific activities are planned, the Service will consult on those activities that may affect federally-listed species to ensure listed species are considered and conserved. Activities that protect and enhance Cherry Creek and other watersheds within the acquisition boundary are not

expected to affect the habitat for small-whorled pogonia, therefore no effects are expected on this species.

- Monitor deer populations and minimize deer impacts on vegetation.
  - Determination – no effect (bog turtle, Indiana bat, dwarf wedgemussel); beneficial effect (northeastern bulrush, small-whorled pogonia)
  - Rationale – These activities are not expected to affect bog turtles, Indiana bats or dwarf wedgemussels.

Where deer densities are above levels compatible with ecosystem management objectives, deer may have a detrimental effect on native plant species, including the northeastern bulrush and small-whorled pogonia. Herbivory, primarily related to deer, has been documented as a threat to both species, so a reduction in deer densities may reduce this threat. In addition, deer exclusion fencing may be effective in protecting populations of federally-listed plant species.

- Conduct research that contributes to refuge goals and objectives, increases understanding of refuge resources, or facilitates resource management.
  - Determination – no effect or not likely to adversely affect (all listed species)
  - Rationale – Research will be designed and implemented in a manner that considers and avoids adverse effects to federally-listed species.
- Provide opportunities for priority public uses, including hunting, fishing, wildlife observation and photography, and environmental education and interpretation, where compatible with the goals and purposes of the refuge and mission of the National Wildlife Refuge System.
  - Determination – no effect or not likely to adversely affect (all listed species)
  - Rationale – In much of the proposed refuge area, these activities are compatible with the conservation of federally-listed species and will have no effect on these species. Where any of the priority public uses may conflict with the conservation of federally-listed endangered or threatened species, appropriate measures (e.g., buffers, seasonal restrictions, etc.) will be identified and implemented to avoid adverse effects.

- Construct, operate and maintain facilities, potentially including buildings, trails, parking areas, fishing access, interpretive outlooks, observational platforms, and roads. This may also include conversion of existing trails, roads, or buildings for public use.
  - Determination – no effect or not likely to adversely affect (all listed species)
  - Rationale – Where facility construction, operation or maintenance may affect federally-listed species, appropriate measures (e.g., buffers, seasonal restrictions, etc.) will be identified and implemented to avoid adverse effects.