

Appendix G



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Grassland habitat bordered by a forest benefits foraging raptors as well as a variety of mammal species.

Land Protection Plan

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Introduction and Purpose

This draft Land Protection Plan (draft LPP) identifies the expanded boundary for the Wallkill River National Wildlife Refuge (refuge) we propose in the Service-preferred alternative, (alternative B), in the draft Comprehensive Conservation Plan/Environmental Assessment (draft CCP/EA) for the refuge. Working with others, we delineated four focus areas totaling 9,550 acres of biologically significant land in the Wallkill River watershed. We propose to acquire land in all four of those focus areas. Of their total acres, we recommend acquiring 4,763 acres in fee title and 4,585 acres in conservation easements. We propose to acquire the remainder, 197 acres, in either fee or easement.

The purpose of this LPP is to

- provide landowners and the public with an outline of U.S. Fish and Wildlife Service (Service, we, our) policies, priorities, and protection methods for land in the project area.
- assist landowners in determining whether their property lay within the proposed boundary.
- inform landowners about our long-standing policy of acquiring land only from willing sellers. [We will not buy land or an easement if the owner is not interested in selling.]

The draft LPP presents the methods the Service and interested landowners can use to accomplish their objectives for wildlife habitat in the proposed boundary. The maps (attachment G.1) show the existing refuge, our proposed acquisition boundary, and the land parcels in that boundary. A corresponding table identifies each parcel, its tax map number, acreage, and our priority and recommended option for protecting its habitat. Attachment G.2 relates our draft LPP for the refuge to the threshold standards under consideration by the Service Director for determining the strategic growth of the National Wildlife Refuge System (Refuge System).

Project Description

❖ Existing Refuge

The Wallkill River refuge lies approximately 60 miles northwest of New York City, in the northeastern section of Sussex County, N. J. (Wantage, Hardyston, and Vernon), and in southern Orange County, N.Y. (Minisink and Warwick). The refuge protects a combination of wetland and upland habitat supporting migratory birds, federal- and state-listed species, and regionally significant wildlife and plant communities in the Wallkill River watershed. A rolling valley between the Kittatinny Ridge and the Hudson Highlands contains the Wallkill River valley habitat complex: headwater wetland complexes of riverine habitats, ponds, emergent marshes, fens, scrub-shrub wetlands, wooded swamps, mixed hardwood upland forests, grasslands and farmlands. The Service designated the Wallkill River a priority wetland under the Emergency Wetland Resources Act of 1986.

Migratory bird habitat is among the primary reasons for creating the refuge and guiding its management. Signature species include black ducks, wood ducks, woodcocks, and a number of raptors. The refuge falls in the Northern Highlands Zone identified by the New Jersey State Wildlife Action Plan (WAP). In the grassland habitats, the state would like to increase and stabilize the populations of three state-listed endangered species and five state-listed threatened species. State-listed endangered species include the northern harrier, vesper sparrow and arogos skipper. State-listed threatened species include the bobolink, grasshopper sparrow and savannah sparrow.

Project Description

Congress established the refuge by law on November 16, 1990 (Section 107 of H.R. 3338; P.L. 101-593), for the following purposes

- (1) to preserve and enhance the refuge’s lands and waters in a manner that will conserve the natural diversity of fish, wildlife, plants, and their habitats for present and future generations;
- (2) to conserve and enhance populations of fish, wildlife, and plants in the refuge, including populations of black ducks and other waterfowl, raptors, passerines, and marsh and water birds;
- (3) to protect and enhance the water quality of aquatic habitats in the refuge;
- (4) to fulfill international treaty obligation of the United States with respect to fish and wildlife and their habitats; and
- (5) to provide opportunities for compatible scientific research, environmental education, and fish and wildlife-oriented recreation (104 Stat. 2955).

The law that created the refuge established a boundary of approximately 7,500 acres. That acreage came from a compilation of tax maps from the townships of Wantage, Vernon, and Hardyston in Sussex County, N.J., and the township of Minisink in Orange County, N.Y. Subsequent GIS calculations and surveys of the tax parcels that make up the refuge estimate the original defined boundary at closer to 6,700 acres. Our acquisition of parcels categorically excluded from NEPA compliance has expanded that boundary by approximately 350 acres, bringing the current boundary to approximately 7,100 acres. Most of that is located in Sussex County, N.J.; 147 acres is located in Orange County, N.Y.

The Service has acquired 5,106 acres, but has not acquired 93 ownerships in the current approved refuge boundary. An ownership is one or more parcels of land owned by a legal entity. Of those 93 ownerships, New Jersey Green Acres, the County Farmland Protection Program or the local municipality, permanently protect 17. That leaves only 76 ownerships, or approximately 1,200 acres, without permanent protection in the current refuge boundary. We are now negotiating to protect eight additional ownerships, or about 250 acres. Table G.1 summarizes our recent acquisitions on the refuge.

Table G.1. Recent land acquisition activity at Wallkill River refuge.

<i>State</i>	<i>County</i>	<i>Date</i>	<i>Tract</i>	<i>Acres</i>	<i>Amount</i>
NJ	SUSSEX	02/04/2005	53	45.17	\$158,095.00
NJ	SUSSEX	02/28/2005	41	31.85	36,627.50
NJ	SUSSEX	02/28/2005	41a	13.50	15,525.00
NJ	SUSSEX	02/28/2005	41R	0.00	0.00
NJ	SUSSEX	01/04/2006	15v	83.30	674,612.10
NJ	SUSSEX	01/04/2006	15w	0.13	387.90
NJ	SUSSEX	03/10/2006	45	111.66	0.00
NJ	SUSSEX	03/10/2006	45a	10.72	0.00
NJ	SUSSEX	03/10/2006	45-I	7.27	0.00
NJ	SUSSEX	06/13/2007	125	36.73	130,000.00
NJ	SUSSEX	06/15/2007	29	21.49	\$190,000.00

Please note that many of the refuge boundaries do not line up well with the geographic or ecological boundaries in and around the refuge. In addition, numerous people who own property adjoining the current approved

acquisition boundary have approached the refuge as willing sellers. A good deal of that land would be appropriate for addition to the refuge; however, we cannot expand the boundary further without our director's approval. Our highest priority for land acquisition will be to acquire the parcels remaining in private ownership in the current approved acquisition boundary.

❖ **Proposed Expansion**

The proposed expansion area contains some of the region's most important wetland areas, which serve as high quality migratory waterfowl stopover habitat. The Atlantic Coast Joint Venture of the North American Waterfowl Management Plan identifies the Wallkill River a priority area. The proposed expansion area also includes migratory songbird and raptor breeding habitat and endangered species habitat for three federal-listed species and dozens of state-listed species. The Bog Turtle Recovery Plan (USFWS 2001) identifies the Wallkill River watershed as a recovery subunit. We will protect up to five bog turtle population analysis sites (PAS) in the proposed expansion area in New Jersey, thus working toward achieving one recovery objective for the Wallkill River subunit (USFWS 2001). Bog turtles serve as a keystone species for habitats that are important to a diverse assemblage of species, including state-listed invertebrates, birds, amphibians and reptiles. The proposed expansion area also provides potential habitat for two additional federal-listed endangered species, the dwarf wedge mussel and the Indiana bat.

The proposed expansion area would also establish a viable biological corridor between the Appalachian Ridge and Valley province and the Hudson Highlands, and would protect the water quality of the upper Wallkill River watershed. In conjunction with our partners, we will protect both valley and upland habitats and, with coordinated management, will support many of the goals identified in the New Jersey WAP and endangered species recovery plans.

Status of Resources to be Protected

❖ **Wildlife and Habitat Resources**

In 1994, the New Jersey Division of Fish, Game and Wildlife Endangered and Nongame Species Program (ENSP) adopted a landscape-level approach to rare species protection. Its goal is to protect New Jersey's biological diversity by maintaining and enhancing rare wildlife populations in healthy, functioning ecosystems. Five landscape regions were identified.

The Wallkill River refuge lies in the Skylands Region, which includes all or part of Hunterdon, Somerset, Warren, Morris, Passaic and Sussex counties. Using an extensive database that combines rare species location information with land cover data, the ENSP has identified and mapped areas of critical habitat for rare species (state- and federal-listed threatened or endangered species) in each landscape region, and ranks those critical areas by priority. A GIS database provides conservation partners with baseline information to help in prioritizing habitat protection, acquiring open space, and planning land management. That information was used in developing the New Jersey WAP, and in planning our land protection.

The Skylands are dominated by about 625,000 acres of contiguous northern mixed-hardwood forests on the mountaintops, and about 105,700 acres of hemlock ravines alongside mountain streams. The valleys that lie between the ridges consist of about 225,500 acres of cultivated fields, grasslands and meadows. Wetlands total about 36,000 acres, and include limestone fens, floodplains, spring-fed wetlands, and the largest concentration of glacial lakes in New Jersey.

The New Jersey WAP also identifies seven Priority Conservation Zones in the Skylands Region, delineated by the similarity of their habitat types. The refuge and its proposed expansion area lie in the conservation

zone identified as the Kittatinny Valley. The valley lies in Sussex and Warren counties, between the Kittatinny Ridge and the northern extent of the Highlands Mountain ridges. That broad valley in the Ridge and Valley physiographic province contains fertile soils, and has a history of agricultural activity. Its grassland habitat includes natural grasslands, croplands, pastures, old farm fields, hedgerows, and wood lots. The valley also contains the headwaters and associated freshwater wetlands of the Paulins Kill, Pequest, and Wallkill rivers. Old farm ponds, limestone fens, wet meadows, and swamps dot the landscape. Although grasslands and open habitats dominate much of the valley, large parcels of forest also are scattered throughout. The upland forest and forested wetland habitats includes stands of deciduous hardwood forest, scrubland and scrub-shrub wetland, vernal pool, and hardwood swamp dominated by red maples.

Kittatinny Valley habitats support 5 federal-listed endangered or threatened species, 13 state-listed endangered species, 16 state-listed threatened species, and 77 species of special concern or regional priority, in addition to 5 game species of regional priority and 3 nongame fish species currently without state or regional status. The dwarf wedge mussel is federal-listed as endangered, and the bog turtle is federal-listed as threatened. The state-listed endangered species are the American bittern, northern goshawk, northern harrier, red-shouldered hawk, sedge wren, vesper sparrow, and blue-spotted salamander. The state-listed threatened species are the barred owl, black-crowned night heron, bobolink, Cooper's hawk, grasshopper sparrow, long-eared owl, red-headed woodpecker, savannah sparrow, wood turtle, long-tailed salamander, eastern lamp mussel, triangle floater, and silver-bordered fritillary. Wildlife of special concern in the valley is colonial waterbirds, forest passerines, freshwater wetland birds, grassland birds, scrub-shrub birds, reptiles, amphibians, and mollusks.

Migratory colonial waterbirds, songbirds, raptors, freshwater wetland birds, and waterfowl funnel through the valley to take refuge in its forest and wetland habitats. Forests, forested wetlands, and vernal pools also provide habitat important for a diverse group of reptiles and amphibians, including eastern box turtles, spotted turtles, wood turtles, blue-spotted salamanders, Fowler's toads, Jefferson salamanders, long-tailed salamanders, marbled salamanders, and northern spring salamanders. Due to the proximity of known hibernacula, the forests of this zone likely provide summer foraging and roosting habitat for the federal-listed endangered Indiana bat. Bog turtles are found in the fens and wet meadows associated with valley pastures. The valley also contains one of the state's only two known wetland habitats for the Mitchell's satyr butterfly. The valley's grasslands are crucial for grassland birds and foraging raptors.

The biological resources in this valley landscape have the greatest need of protection. Most public lands already protected in the Skylands lay in the upper valley and ridge top zones around the Kittatinny Valley. The only significant expanse of permanently protected public land in the valley is the Wallkill River refuge. The proposed refuge expansion provides us the opportunity to protect additional wildlife resources in the valley and connect it with the large sections of publicly protected forested lands around it. Although that promises to be a challenging undertaking in the rapidly developing northwest corner of New Jersey, adding those lands to the refuge will provide the region's only feasible preserved corridor connecting the Kittatinny Ridge with the Hudson Highlands.

Most of the resources that need protection in the valley are associated with wetlands. The federal-listed threatened bog turtle, for example, depends on the specific hydrologic regime of continual, clean water springs, making the protection of associated water sources a critical component of land protection. Habitat for the dwarf wedge mussel, unknown to inhabit the refuge or the proposed expansion area, depends on clean water to survive. The primary actions in the New Jersey WAP emphasize the importance of protecting wetlands in the Kittatinny Valley by including the following

- "Identify critical wetland habitats and assess their suitability for bog turtles and/or other wetland dependent species. Develop and implement strategies to restore, maintain and/or enhance populations and habitat, as appropriate. Actions can include landowner incentives to manage or protect habitat, fencing and grazing, maintaining protective buffers, eliminating invasive, non-native vegetation and controlling water levels in impoundments."
- "Maintain connectivity between wetland habitats by identifying important corridors to maintain a system of large, connected wetland habitats. Target these areas for acquisition or work with public and private landowners to maintain the corridors."

- “Work with the USFWS, NGO’s and private landowners to protect and manage critical bog turtle sites on public and private lands in the Wallkill National Wildlife Refuge and Wallkill River Watershed.”
- “Continue to support the protection of the large wetland complex of the Wallkill National Wildlife Refuge, Wallkill River Watershed, White Lake, and Johnsonburg Preserve.”

❖ **Threats to the Resource**

The loss, alteration and fragmentation of habitat all pose the greatest threats to wildlife in the upper Wallkill River Valley and the Skylands Region. Habitat loss results from development, which is occurring at a rapid rate in northern New Jersey. Fragmentation alters the habitat by breaking up large, contiguous blocks into smaller patches that are unsuitable for area-sensitive species. New roads fragment habitats and create barriers to animal movements between habitats. Preserving the large, contiguous blocks of habitat that remain in the Skylands and maintaining their connectivity are crucial for the long-term viability of populations of area-sensitive wildlife. The discontinuity of emergent and forested wetlands, along with the loss of other suitable corridors, may lead eventually to the genetic bottlenecking of both bog turtles and spotted turtles. The contamination and alteration of waterways and wetlands, in combination with increased human encroachment into those riparian areas, affect all wetland-dependent species and species groups.

Those threats are particularly common in the Kittatinny Valley, where low-lying areas are more conducive to development. Commuting from this area to New York City is now commonplace. Opportunities to protect large tracts of land and minimize habitat fragmentation steadily decline as suburban sprawl overtakes the rural, agricultural landscape. The proposed development of new malls, housing, and golf courses is now commonplace, and continuous. The fragmentation and alteration of grasslands due to development, as well as agricultural practices and the reversion of fields and scrub-shrub habitats to forest, threaten grassland birds with specialized habitat needs and birds that depend on scrub-shrub or open field habitat. Deleterious invasive plants and groundwater degradation have altered the fens and wet meadows inhabited by bog turtles. Beavers, although generally considered beneficial, may cause local concern when their dams flood bog turtle habitat. Road mortality and illegal collection threaten bog and wood turtles, and over-collection has seriously reduced or possibly extirpated populations of the Mitchell’s satyr butterfly. Dam construction and water quality degradation threaten riverine habitats that support populations of mussels, nongame fish and native trout. Development continues to fragment the large forest parcels inhabited by area-sensitive species of raptors and passerines.

New Jersey’s burgeoning population of white-tail deer poses a significant threat to forest health and forest regeneration. Deer damage, coupled with human factors, has severely affected some of New Jersey’s remaining public and private natural lands. High numbers of deer take refuge in residential areas or on public or private lands where hunting is not allowed. Their over-browsing can eliminate native shrub layers and damage breeding habitat for many species, particularly shrub-nesting birds. In addition, over-browsing can create an environment conducive for invasive plants germinating and crowding out native species, thereby eliminating rare plant communities.

The increased use of caves and mines for recreational activities poses a major threat to hibernating Indiana bats (a threatened species) and other cave-dwelling bats, because it forces them to use crucial fat reserves needed to survive the winter. The area around the refuge is known to support the bats’ mature tree hibernacula. During hibernation, cave-dwelling bats are highly susceptible to large-scale mortality due to human disturbance.

The recent passage of New Jersey’s Highlands Water Protection and Planning Act (Highlands Act) will afford additional protection to areas that lie in the designated Preservation Area. In the short term, this will be accomplished in part through strict limitations on development in some areas. However, those strict limitations will put additional development pressure on areas that lay just outside the Preservation Area, such as the proposed refuge expansion area. The present refuge and its proposed expansion areas lie directly west of the Highlands protection area. Townships hosting the refuge, such as Hardyston and Wantage, have already dealt with the displaced development from the Highlands Region.

Continuing Partnership Effort

The threats to the resource described above make preserving land in northwest New Jersey and southeast New York both crucial and challenging. As real estate values increase due to the influx of people from the New York metropolitan area, the need to act quickly to preserve key remaining parcels in Sussex and Orange counties becomes more acute. For that reason, we recognize the need to collaborate with other conservation organizations in the region. In July 2005, the Service met with representatives from the State of New Jersey, The Nature Conservancy, the Trust for Public Land, New Jersey Audubon Society, New Jersey Conservation Foundation, Morris Land Conservancy, and municipal, county and state officials to discuss and define the role each agency could play in protecting wildlife habitat in the Kittatinny Valley. Each partner uses its agency's individual mission statement to focus its protection efforts. Taken together, those mission statements cover the protection of farmland, threatened and endangered species, scenic areas, grassland habitats, and open space that the local community has identified as significant.

After each agency outlined its areas of protection interest, we had identified more than 61,743 acres worthy of protection in the Kittatinny Valley and surrounding uplands (see map G-1). As we mention above, the Service proposes to focus on 9,550 acres, or 15 percent of the total area identified as worthy of protection. Those 9,550 acres, which lie next to the current approved refuge acquisition boundary and encompass the main tributary of the Wallkill River, are the most critical in maintaining the biological diversity, integrity and environmental health of the present refuge. Our partners would take the lead in protecting an additional 52,193 acres in the valley and surrounding uplands. Only with partners working to preserve the uplands and tributary valleys along the expansion area will the refuge be able to maximize the valley's potential to function as a viable ecosystem.

The New Jersey WAP specifically identifies the Wallkill River refuge as an area of conservation opportunity, with its ability to link the low-lying valley habitat with the upland forests already protected. Almost half of the acreage in the Skylands Region (625,000 acres) is upland forest. Only 8 percent (106,000 ac) is forested wetland, and 3 percent (36,000 ac) is emergent wetland. This land protection plan will help achieve the state's land protection goals. By expanding the refuge acquisition boundary, the Service would become a catalyst for land protection in the Kittatinny Valley. Expanding the refuge boundary would forge the way toward protecting rare habitats in the Skylands Region, and is crucial for the state to achieve its recommendation to protect more than 56,000 acres of forested wetlands and 7,000 acres of emergent wetlands in that region.

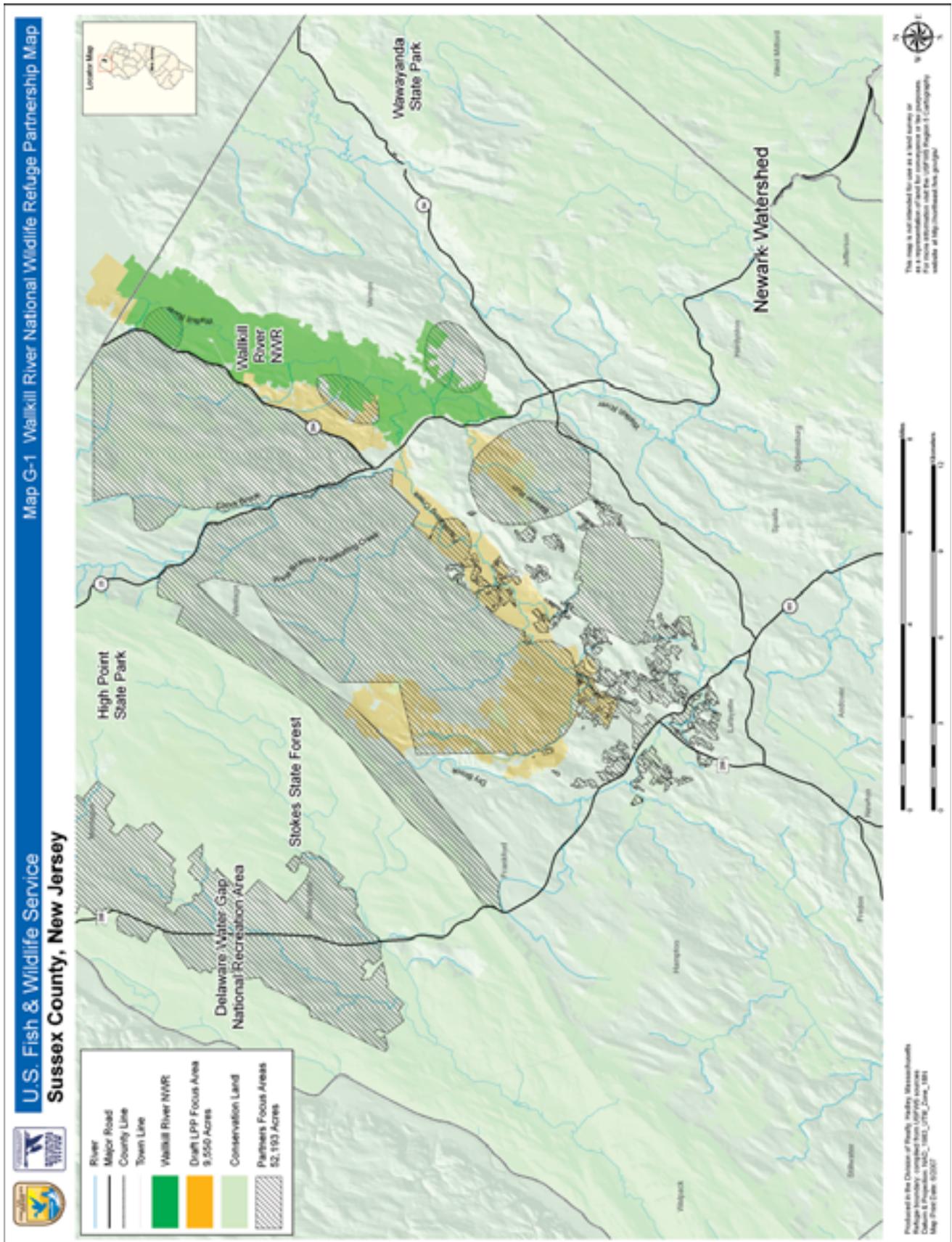
The proposed acquisition area would also further the refuge purposes, by preserving and enhancing lands and waters in a manner that will conserve the natural diversity of fish, wildlife, plants, and their habitats for present and future generations. The wetlands along Beaver Run and Papakating Creek will allow the refuge to conserve and enhance fish and wildlife populations, including populations of black ducks and other waterfowl, raptors, passerines, and marsh and water birds. By re-establishing healthy forests and reducing erosion, sedimentation and non-point source pollution, we will be able to maintain and enhance habitats for migratory birds, fish, and state- and federal-listed species. Furthermore, adding trails, wildlife observation areas, fishing and hunting access points and lands, and interpretation and education would increase the opportunities for public, wildlife-dependent recreation. Without protection, those lands undoubtedly will no longer support fish and wildlife populations and, by default, will no longer support opportunities for compatible, wildlife-dependent recreation.

Proposed Action and Objectives

❖ Proposed Acquisition Area

The proposed acquisition area includes the following four focus areas: Papakating Creek (7,079 acres), Beaver Run (849 acres), Wallkill Adjoining West (1,092 acres) and Wallkill Adjoining North (530 acres) depicted in the maps at the end of this document. Approximately 500 ownerships lie in the proposed refuge expansion area.

The Papakating Creek Focus Area encompasses the entire Papakating Creek, which is about 15 miles long. It runs through three townships: Wantage, Frankford, and Hardyston. The focus area contains tremendous



wetland resources, and offers a key corridor connecting preserved habitats on the Kittatinny Ridge and Pochuck Mountain. The wetlands in the Papakating Creek drainage area, however, have been degraded by poor agricultural practices, and are threatened by commercial and residential development. The Service is the one agency in the best position to preserve those wetlands and their associated habitats for the federal-listed threatened bog turtle and for migratory birds, reptiles, mammals and endangered species. Protecting the uplands and wetlands around the creek will significantly improve the quality of water in the Wallkill River, as well as in the creek, thus providing improved habitat conditions for many of the species mentioned above. In addition, those wetland areas will directly promote the ideals expressed in the legislation founding the refuge.

The Beaver Run Focus Area encompasses part of the Beaver Run stream, a tributary of the Wallkill River. It nestles on the west side of route 23, about halfway between the boroughs of Hamburg and Sussex. This focus area contains at least one bog turtle site. Protecting this area would connect with a piece of state-protected land that has another bog turtle site.

The Wallkill Adjoining West Focus Area is bounded by the present refuge and route 284. Protecting its additional uplands and streams that drain into the Wallkill River will maintain the integrity of the current refuge. This area also contains some historical bog turtle sites.

The Wallkill Adjoining North Focus Area extends into New York. Protecting it will allow us to create a more extensive system of moist soil management units in the northern part of the refuge. We now manage about 335 acres of moist soil management units in the current boundary at the north end of the refuge. Those lands are well suited for moist soil management units because they are close to a direct water source (the Wallkill River). This northern area includes what would become an expansion of the Liberty Marsh impoundments, one of the region’s highest quality habitats for migratory waterfowl and shorebirds.

We are not interested in acquiring developed land near villages or subdivisions. We are interested in protecting and restoring wildlife habitat. Therefore, we have excluded certain lands from the refuge acquisition area.

❖ **Land Cover/Land Use**

Table G.2 summarizes the general types of land cover and land use in the proposed acquisition area. In general, the land is a mix of forested and non-forested wetlands, forested uplands, fallow fields, pasturelands, and a sprinkling of early successional habitats. Most of those lands, which are fragmented, could benefit from large-scale management.

Table G.2. Acreages by focus area.

<i>Land Cover Type</i>	<i>Adjoining North</i>	<i>Adjoining West</i>	<i>Papakating Creek</i>	<i>Beaver Run</i>	<i>Total:</i>
1-Grassland	401.90	7.30	120.68	2.24	532.12
2-Early Successional	70.30	277.60	1,147.46	102.19	1,597.55
3-Forested Wetland	3.52	23.65	677.54	47.20	751.91
4-Non-Forested Wetland	15.10	120.78	774.84	143.66	1,054.38
5-Forested Upland	10.20	142.03	1,472.22	243.89	1,868.34
6-Open Water	.86	7.38	67.20	12.38	87.82
7-Other	28.14	38.97	277	26.27	370.38
8-Cropland and Pastureland	0.00	474.24	2,541.90	271.64	3,287.78
Total	530.02	1,091.95	7,078.84	849.47	
Grand Total					9,550.28

❖ Maps and Ownership Table

Attachment G.1 provides maps and a table listing all land parcels. Both the maps and the table were produced using the New Jersey Association of County Tax Boards on-line database. We provide this information to inform landowners of our interest in lands in that area.

A number keyed to the table identifies each parcel on the maps. That number appears in the first column as LPP number (LPP Number). The table provides the following information:

- Tax map, or “insert” number
- Block Number (from county tax map)
- Lot Number (from county tax map)
- Acreage of the parcel*
- Service priority for acquisition (the importance of the parcel to the project)
- Proposed method of acquisition or protection

*The acreage we derived from our GIS database may differ from the acreage on the county tax map.

❖ Land Protection Priorities

All of the lands we included in this expansion proposal have significant resource values and high potential for ensuring habitat connectivity between the refuge and surrounding conservation lands. In general, the availability of land from willing sellers, and the availability of funding at that time will influence the actual order of land acquisition. However, as landowners offer us parcels in the proposed acquisition area, and as funds become available, we will base the priority for acquisition on several factors. We have assigned one of the following four priority categories to those lands.

Priority 1: Priority 1 parcels contain most of the lands and habitats that meet the threshold for federal protection. Priority 1 lands mostly are located along County Route 565, along Beaver Run, or along the northern edge of the present refuge, and are

- parcels that contain a significant amount of functioning undisturbed or relatively undisturbed wetlands of significant importance that support federal trust species (federal-listed species, migratory birds);
- parcels that are of significant importance to the Wallkill River watershed;
- parcels that border the Papakating Creek or Beaver Run;
- parcels at the northern tip of the refuge that would be prime candidates (after enhancement) for addition to the waterfowl impoundments at Liberty Marsh;
- parcels that contain known bog turtle habitat or prime bog turtle habitat;
- parcels that have a significant value for migratory birds, with prime nesting and foraging habitats for federal- or state-listed species.

Priority 2: Priority 2 parcels are located throughout the expansion area, but tend to cluster around priority 1 lands or along the smaller tributaries of the Wallkill River or Papakating Creek and contain

- wetlands associated with or hydrologically connected to priority 1 wetlands;

- areas of high potential for wetland restoration or enhancement not directly connected with the Liberty Marsh impoundment complex;
- currently functioning but moderately disturbed wetlands;
- parcels of moderate value to a variety of migratory bird species or of significant value to a limited number of migratory bird species;
- parcels that contain potentially significant habitat for endangered species found in close proximity to the refuge (dwarf wedge mussel and Indiana bat).

Priority 3: Most priority 3 parcels are on uplands in the area west of the current refuge or in higher lands along the Papakating Creek and contain

- undeveloped upland habitats associated with federal trust species;
- areas directly draining into or with significant ecological connections to a priority 1 wetland;
- undeveloped upland habitats associated with federal- and state-listed species habitats.

Priority 4: Priority 4 lands are scattered throughout the expansion area. Our intention is to minimize the need to acquire residences and buildings on these lands, while protecting and restoring habitat, so we will evaluate those parcels on a case-by-case basis:

- parcels adjacent to the refuge and important for current refuge management;
- areas that would create administrative efficiency and contribute to the ecological integrity of the current and expanded refuge boundaries.

With the criteria above in mind, we configured our proposed boundaries for fee and easement areas. The Service reserves the right to be flexible with the detailed priority list above, because a number of factors also influence the priority of acquisition, including the availability of willing sellers and the availability of funding. In addition, the Service must be flexible in its methods and priorities of acquisition to meet the needs of individual landowners.

Protection Options

We considered the following options in developing our proposed action.

Option 1: no Service action

Option 2: management or acquisition by others

Option 3: less-than-fee acquisition by the Service

Option 4: fee acquisition by the Service

Service policy in acquiring land is to acquire only the minimum interest necessary to meet refuge goals and objectives, and acquire it only from willing sellers. Our proposal includes a combination of options 2, 3 and 4 above. We believe that approach offers a cost-effective way of providing the minimal level of protection needed to accomplish refuge objectives while also attempting to meet the needs of landowners.

❖ Option 1. No Action

Under option 1, we would maintain present refuge acquisition boundaries; we would not expand the refuge or protect additional habitat. Our draft CCP/EA evaluates this option as alternative A, “No Action (Current Management).” We did not recommend alternative A, because

- it would not adequately protect federal trust resources on and next to the refuge;
- most of the public did not support it;
- most of the land it identified as needing protection likely would be developed;
- many of the lands identified as needing protection could be used in such a way as to degrade current lands and habitats.

❖ **Option 2. Management or Acquisition by Others**

As we mention above, the Service and its partners identified more than 61,743 acres worthy of protection in the Kittatinny Valley and surrounding uplands. The Service proposes to focus its limited financial resources on 9,550 acres, or 15 percent of the total area identified as worthy of protection. Our partners would take the lead in protecting the remaining 52,193 acres in the larger Kittatinny Valley and surrounding uplands. The Service would work with such partners as the New Jersey Green Acres, The Nature Conservancy, New Jersey Audubon Society, Trust for Public Land, and local land trusts to support their land protection and management in the areas around our proposed 9,550-acre expansion area. Only by working with partners to preserve the uplands and tributary valleys along the expansion area will the refuge be able to maximize the valley's potential to function as a viable ecosystem.

❖ **Option 3. Less-than-fee Acquisition**

Under option 3, we would protect and manage land by purchasing only a partial interest, typically in the form of a conservation easement. This option leaves the parcel in private ownership, while allowing us control over the land use in a way that would allow us to meet our goals for the parcel or that would provide adequate protection for important adjoining parcels and habitats. The structure of such easements would provide permanent protection of existing wildlife habitats while also allowing habitat management or improvements and access to sensitive habitats, such as for endangered species or migratory birds. It would also allow for public use where appropriate. We would have to determine, on a case-by-case basis, and negotiate with each landowner the extent of the rights we would be interested in buying. Those may vary, depending on the configuration and location of the parcel, the current extent of development, the nature of wildlife activities in the immediate vicinity, the needs of the landowner, and other considerations.

In general, any less-than-fee acquisition would maintain the land in its current configuration with no further subdivision. Easements are a property right, and typically are perpetual. If a landowner later sells the property, the easement continues as part of the title. Properties subject to easements generally remain on the tax rolls, although the change in market value may reduce the assessment. The Service does not pay refuge revenue sharing on easement rights. Where we identify conservation easements, we would be interested primarily in purchasing development and some wildlife management rights. Easements are best when

- only minimal management of the resource is needed, but there is a desire to ensure the continuation of current undeveloped uses and to prevent fragmentation over the long-term and in places where the management objective is to allow vegetative succession;
- a landowner is interested in maintaining ownership of the land, does not want it to be further developed, and would like to realize the benefits of selling development rights;
- current land use regulations limit the potential for adverse management practices;
- the protection strategy calls for the creation and maintenance of a watershed protection area that can be accommodated with passive management; or
- only a portion of the parcel contains lands of interest to the Service.

The determination of value for purchasing a conservation easement involves an appraisal of the rights to be purchased, based on recent market conditions and structure in the area. “Acquisition Methods,” below, further describes the proposed conditions and structure of easements.

❖ **Option 4. Fee Acquisition**

Under Option 4, we would acquire parcels in fee title from willing sellers, thereby purchasing all rights of ownership. This option provides us the most flexibility in managing priority lands, and ensuring the protection in perpetuity of nationally significant trust resources.

Generally, the lands we would buy require more than passive management (e.g., controlling invasive species, mowing or prescribed burning, planting, or managing for the six priority public uses). We propose fee acquisition only when adequate land protection was not assured under other ownerships, active land management was required, or we determined the current landowner would be unwilling to sell a partial interest like a conservation easement.

In some cases, it may become necessary in the future to convert a conservation easement to fee acquisition: for example, when an owner is interested in selling the remainder of interest in the land on which we have acquired an easement. We will evaluate that need on a case-by-case basis.

Acquisition Methods

We may use three methods of acquiring either a full or a partial interest in the parcels identified for Service acquisition: (1) purchase (e.g., complete title, or a partial interest like a conservation easement), (2) donations, and (3) exchanges.

❖ **Purchase**

For most of the tracts in the boundary, the proposed method is listed as *Fee* or *Easement*; however, the method we ultimately use depends partly on the landowner’s wishes.

Fee purchase involves buying the parcel of land outright from a willing seller in fee title (all rights, complete ownership), as the availability of funding allows.

Easement purchase refers to the purchase of limited rights (less than fee) from an interested landowner. The landowner would retain ownership of the land, but would sell certain rights identified and agreed upon by both parties. The objectives and conditions of our proposed conservation easements would recognize lands for their importance to wildlife habitat or outdoor recreational activities, and any other qualities that recommend them for addition to the Refuge System.

❖ **Donation**

We generally encourage donations in fee title or conservation easement in the approved areas. We are not currently aware of any formal opportunities to accept donations of parcels in our proposed boundary.

❖ **Exchange**

We have the authority to exchange land in Service ownership for other land that has greater habitat or wildlife value. Inherent in this concept is the requirement to get dollar-for-dollar value with, occasionally, an equalization payment. Exchanges are attractive because they usually do not increase federal land holdings or require purchase funds; however, they also may be very labor-intensive and take a long time to complete.

❖ **Service Land Acquisition Policy**

Once a refuge acquisition boundary has been approved, we contact neighboring landowners to determine whether any are interested in selling. If a landowner expresses an interest and gives us permission, a real estate appraiser will appraise the property to determine its market value. Once an appraisal has been approved, we can present an offer for the landowner's consideration.

Our long-established policy is to work with willing sellers as funds become available. We will continue to operate under that policy. Appraisals conducted by Service or contract appraisers must meet federal as well as professional appraisal standards. Federal law requires us to purchase properties at their market value, which typically is based on comparable sales of similar types of properties.

We based the acquisition boundary on the biological importance of key habitats. That gives the Service the approval to negotiate with landowners that may be interested or may become interested in selling their land in the future. With those internal approvals in place, the Service can react more quickly as important lands become available. Lands in that boundary do not become part of the refuge unless their owners sell or donate them to the Service.

A landowner may choose to sell land to the Service in fee simple and retain the right to occupy an existing residence. That is a "life use reservation." It applies during the seller's lifetime, but can also apply for a specific number of years. At the time we acquire the parcel, we would discount from the appraised value of the buildings and land the value of the term of the reservation. The occupant would be responsible for the upkeep on the reserved premises. We would own the land, and pay revenue sharing to the appropriate taxing authority.

In rare circumstances, at the request of a seller, we can use "friendly condemnation." Although the Service has a long-standing policy of acquiring land only from willing sellers, it also has the power of eminent domain, like other federal agencies. We use friendly condemnation when the Service and a seller cannot agree on property value, and both agree to allow a court to determine fair market value. When we cannot determine the rightful owner of a property, we also may use friendly condemnation to clear title. We do not expect to use friendly condemnation very often, if at all. We would not use condemnation otherwise, as it runs counter to good working relations with the public.

❖ **Funding for Fee or Easement Purchase**

Much of our funding to buy land comes from the Land and Water Conservation Fund (LWCF), which derives 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. About 90 percent of that fund now derives from Outer Continental Shelf oil and gas leases. The federal government receives 40 percent of that fund to acquire and develop nationally significant conservation lands. Another source of funding to purchase land is the Migratory Bird Conservation Fund (MBCF), which derives from Federal Duck Stamp revenue.

We plan to use both funds to buy either full or partial interests in lands in the project area. We will use LWCF funds to acquire land and easements that consist mainly of upland forest, which represents most of the proposed expansion area. We may use MBCF funds for properties that include large tracts of forested, shrub or emergent wetlands and waters important for waterfowl. Another potential source for funding in that category is the North American Wetland Conservation Act.

Coordination

Throughout our draft CCP/EA planning process, we solicited and carefully considered public comments on Service land acquisition. We worked with the states of New Jersey and New York, seven municipalities, local

land trusts, and local and national conservation organizations who are directly involved in land protection strategies in New Jersey and New York. The proximity of the federal-designated Highlands Preservation Area has led to additional coordination.

We will distribute the draft LPP to all affected landowners, our conservation partners, State of New Jersey, State of New York, county offices and local agency and town offices for a 30-day comment period. We will also hold public comment meetings during the public comment period for the draft CCP/EA and LPP.

Socioeconomic and Cultural Impacts

We do not predict any significant adverse socioeconomic or cultural impacts. We believe a net positive benefit to the communities in New York and New Jersey will result. Towns will benefit from increased refuge revenue sharing payments and lower potential costs from these parcels, savings on the cost of community services, increased property values, increased watershed protection, maintenance of scenic values, and increased revenues to local businesses from refuge visitors who participate in bird watching, hunting and wildlife observation. Our draft CCP/EA describes those benefits in detail.

Voters consistently have supported additional land protection. During our public involvement for the draft CCP/EA, local residents and town officials were enthusiastic about Service land acquisition. Many people encouraged us to develop a larger proposal. Acquisition by the Service, while aimed at protecting trust resources, watersheds, and other natural resource values, would also maintain the rural character of the area. Local reaction to proposed development next to the refuge tends to be negative and this is an increasing trend. Local residents and conservation organizations come to the refuge for support in opposing development projects, both near the current refuge and in the proposed expansion area.

The only concern we heard expressed about Service land acquisition was the likelihood of its reducing public access. Although it is true that we would eliminate non-wildlife-dependent activities, we would continue to promote the six priority wildlife-dependent uses of the Refuge System, including hunting, fishing, wildlife observation and photography, and environmental education and interpretation. In addition, the refuge is working closely with state, county and local officials to promote development of a multi-use Rail Trail. Although the Service would object to motorized vehicles, a partnership that shares responsibility for the trail would lead to consideration of additional non-priority public uses on the trail such as jogging, in-line skating, cross-country skiing, snowshoeing horseback riding, dog walking and biking.

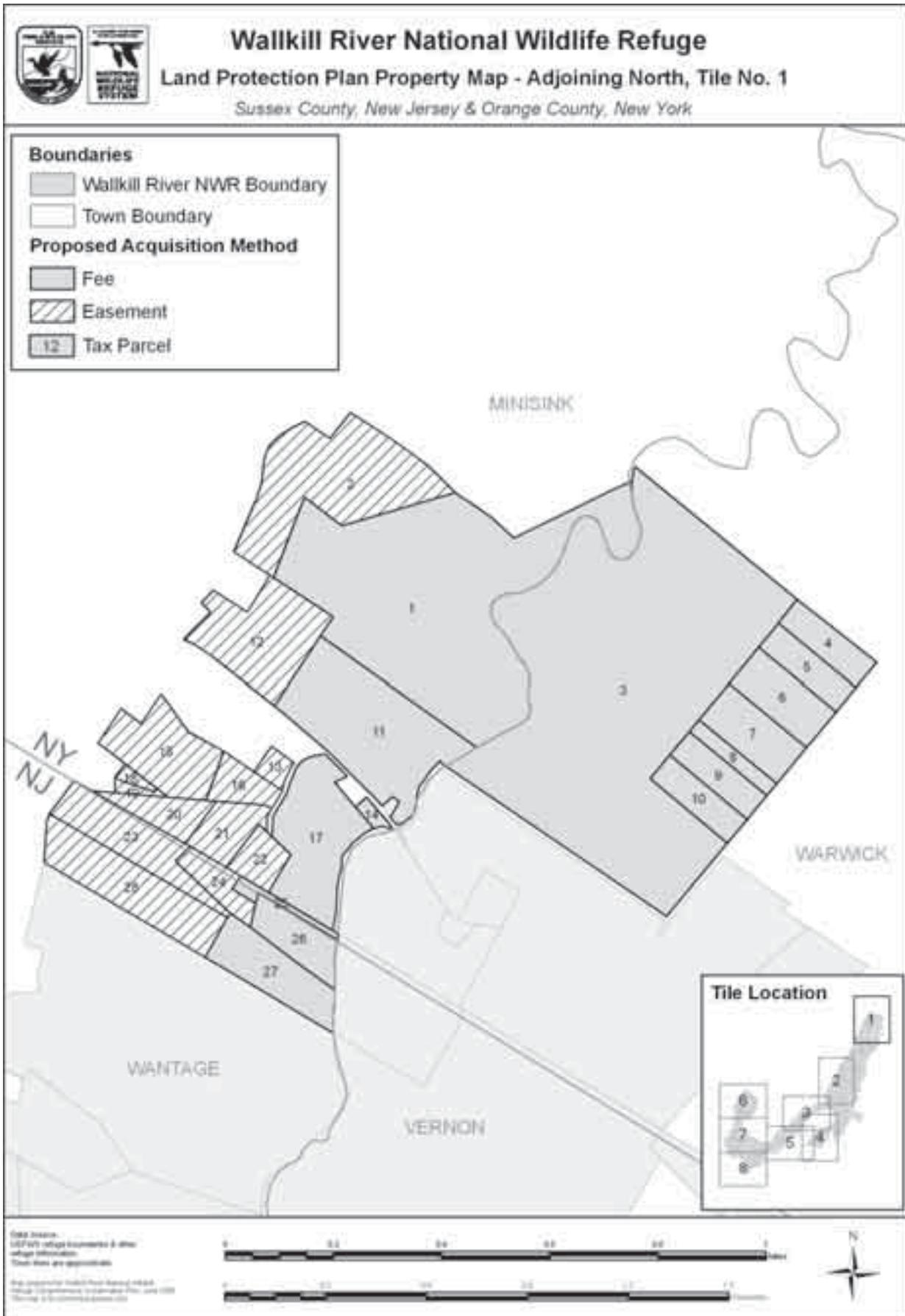
Refuge lands would increase protection for cultural resources in the area. Service ownership would protect known cultural sites against vandalism, and would protect as yet unidentified or undeveloped cultural sites from disturbance or destruction. The relatively wide and fertile Papakating Valley is likely to hold many cultural sites of a nature similar to those found in the adjoining Wallkill Valley. Our interpretation and environmental education programs will continue to promote public understanding and appreciation of the area's rich cultural resources.

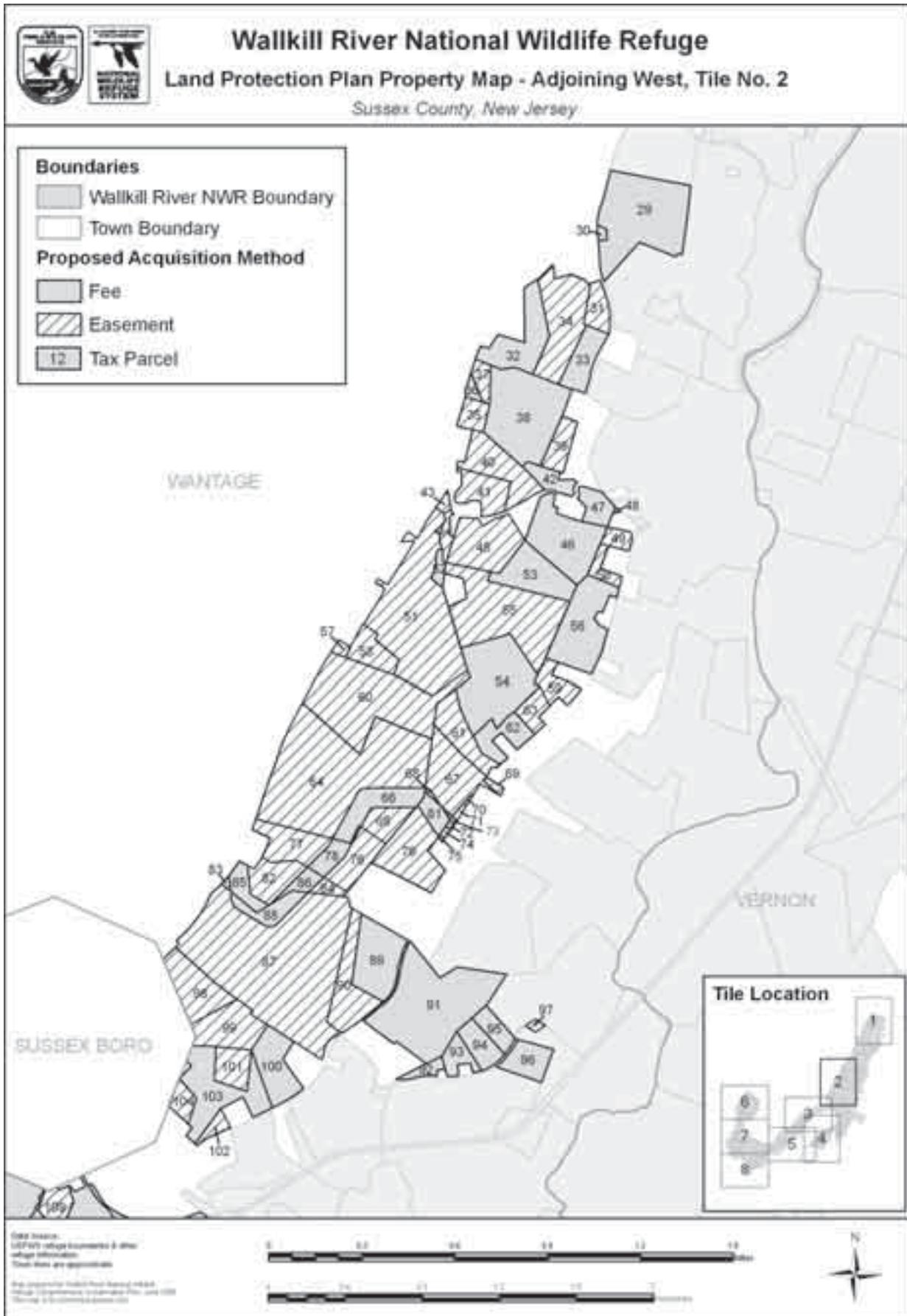
Attachment G.1. Parcel Maps and Table

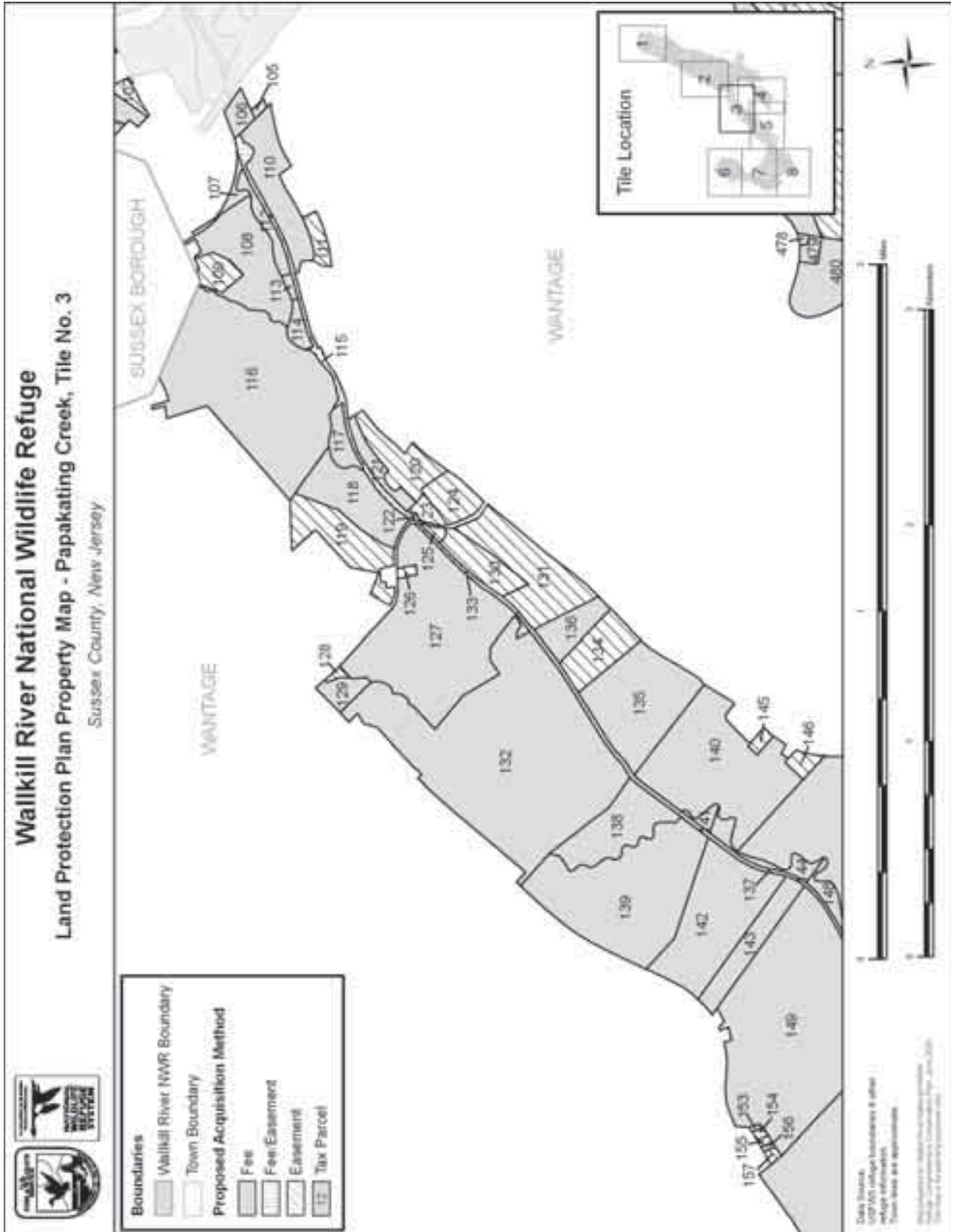
The maps show existing refuge lands, our acquisition area, and all land parcels in that area. The corresponding table lists each parcel, its tax map, block and lot number, acreage, our priority and recommended method for acquisition. The information is based on the New Jersey Association of County Tax Boards on-line database.

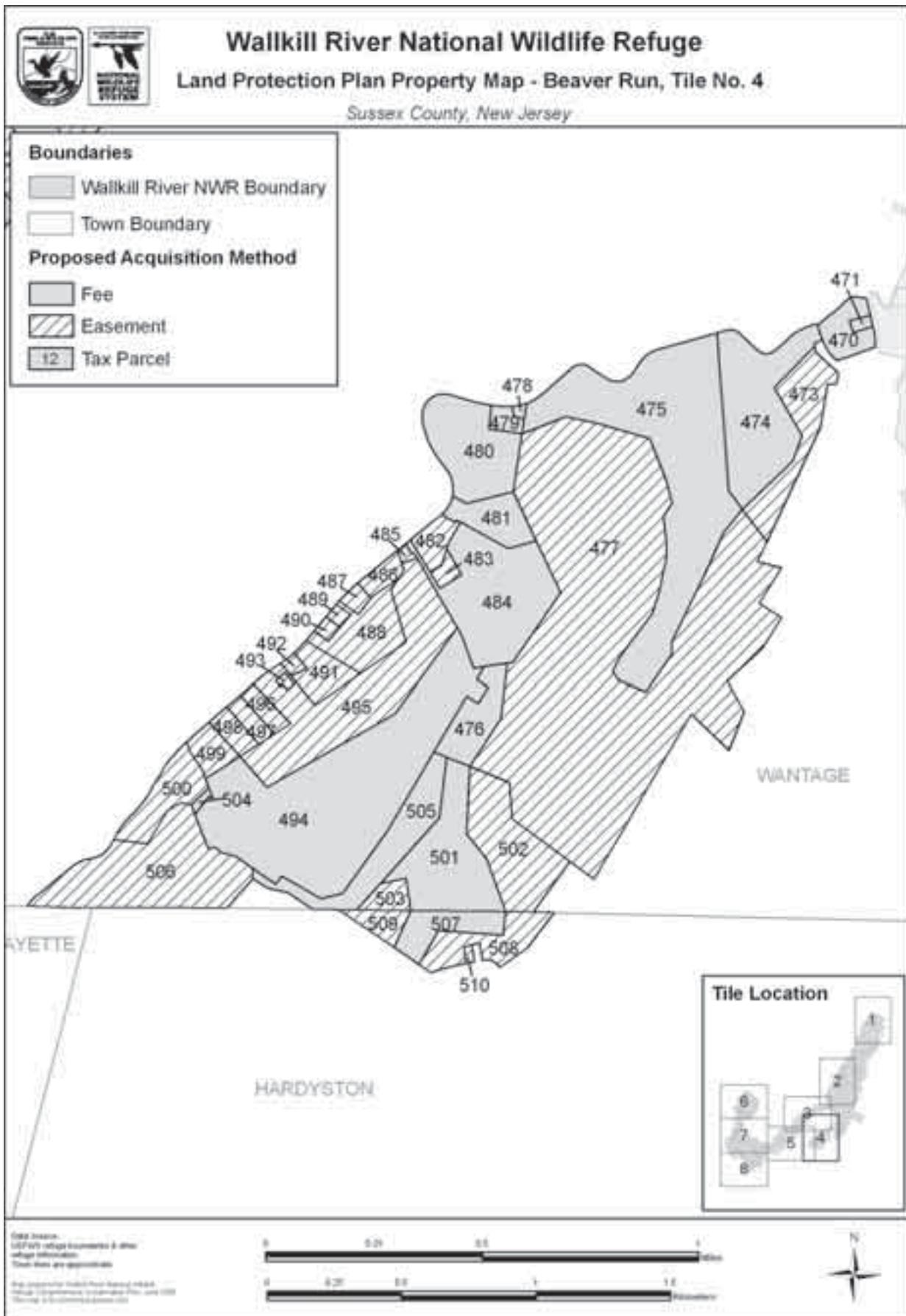
We will acquire either full or partial interest in land parcels by fee purchase, as available from willing sellers over time and as the availability of funding allows. We also propose to develop cooperative management agreements with the county and several state agencies for public lands in the project area. The definitions of each table column head follow.

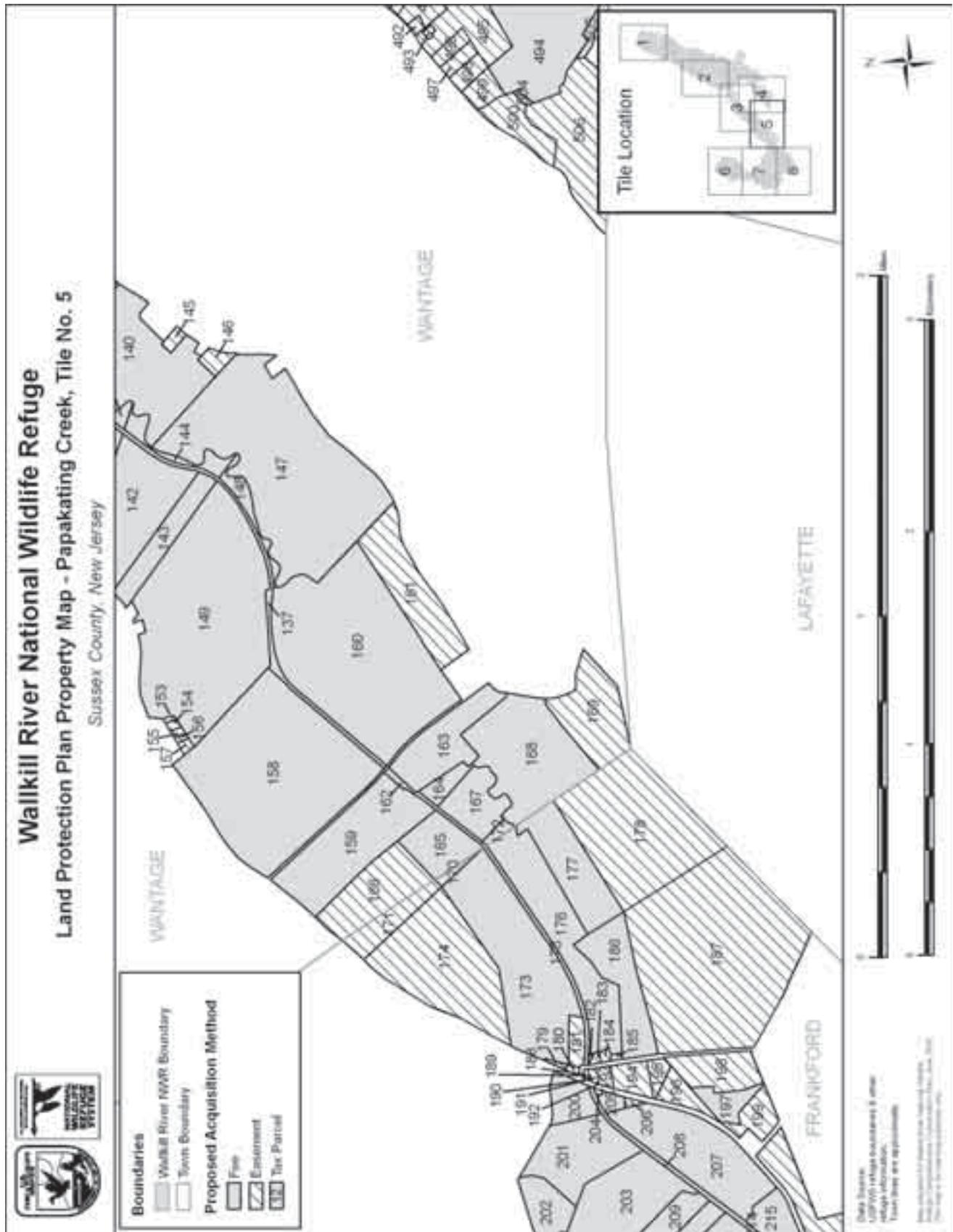


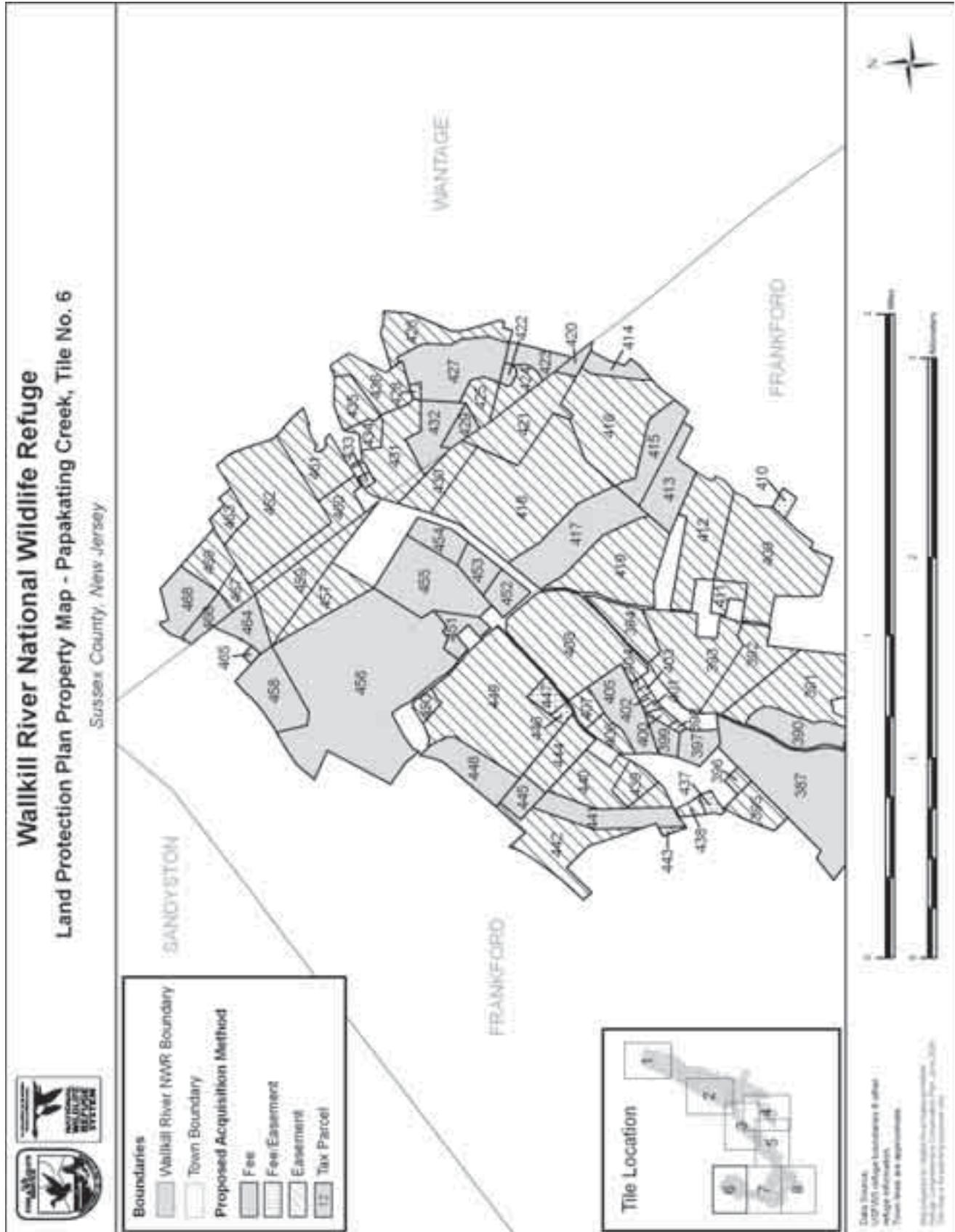


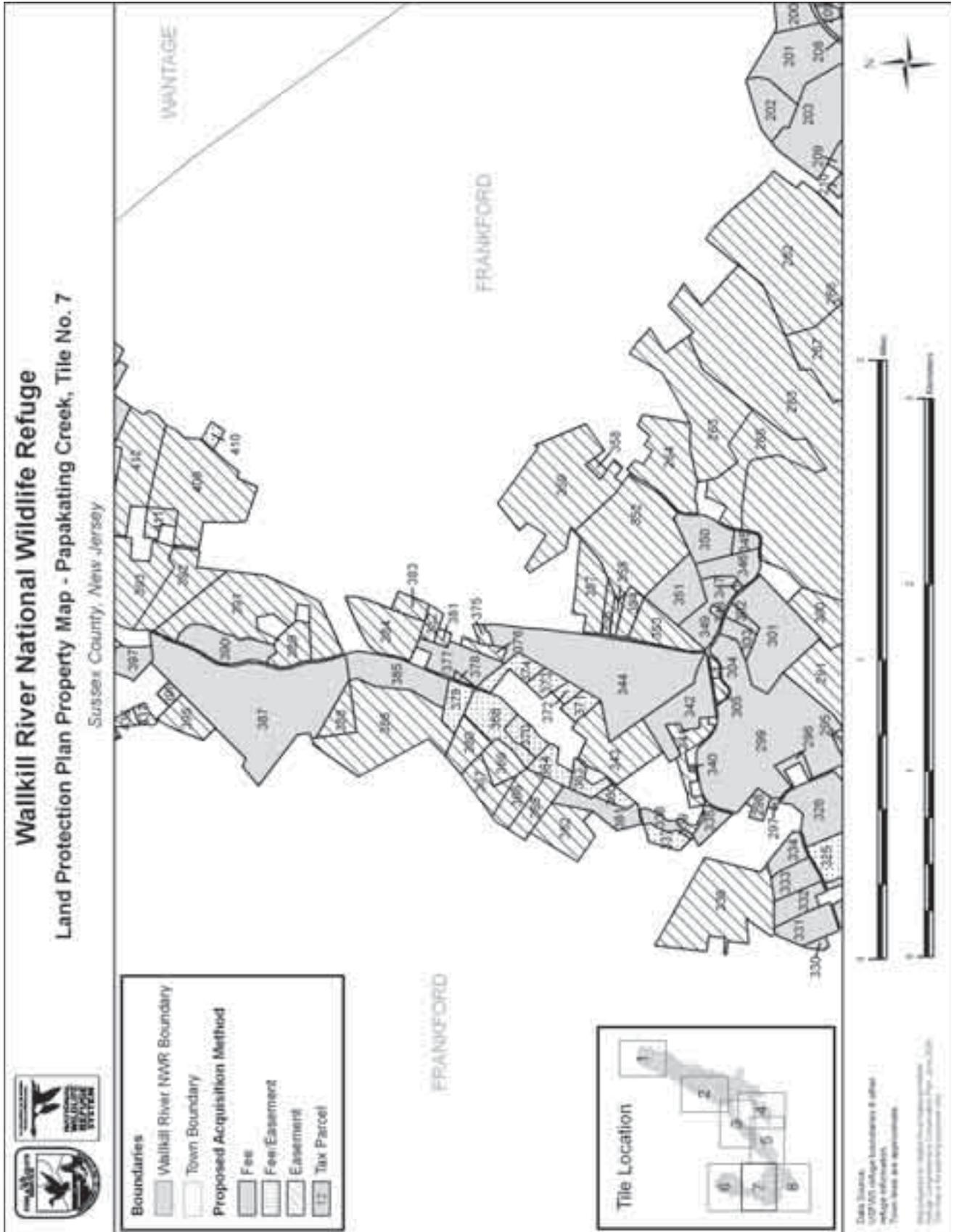


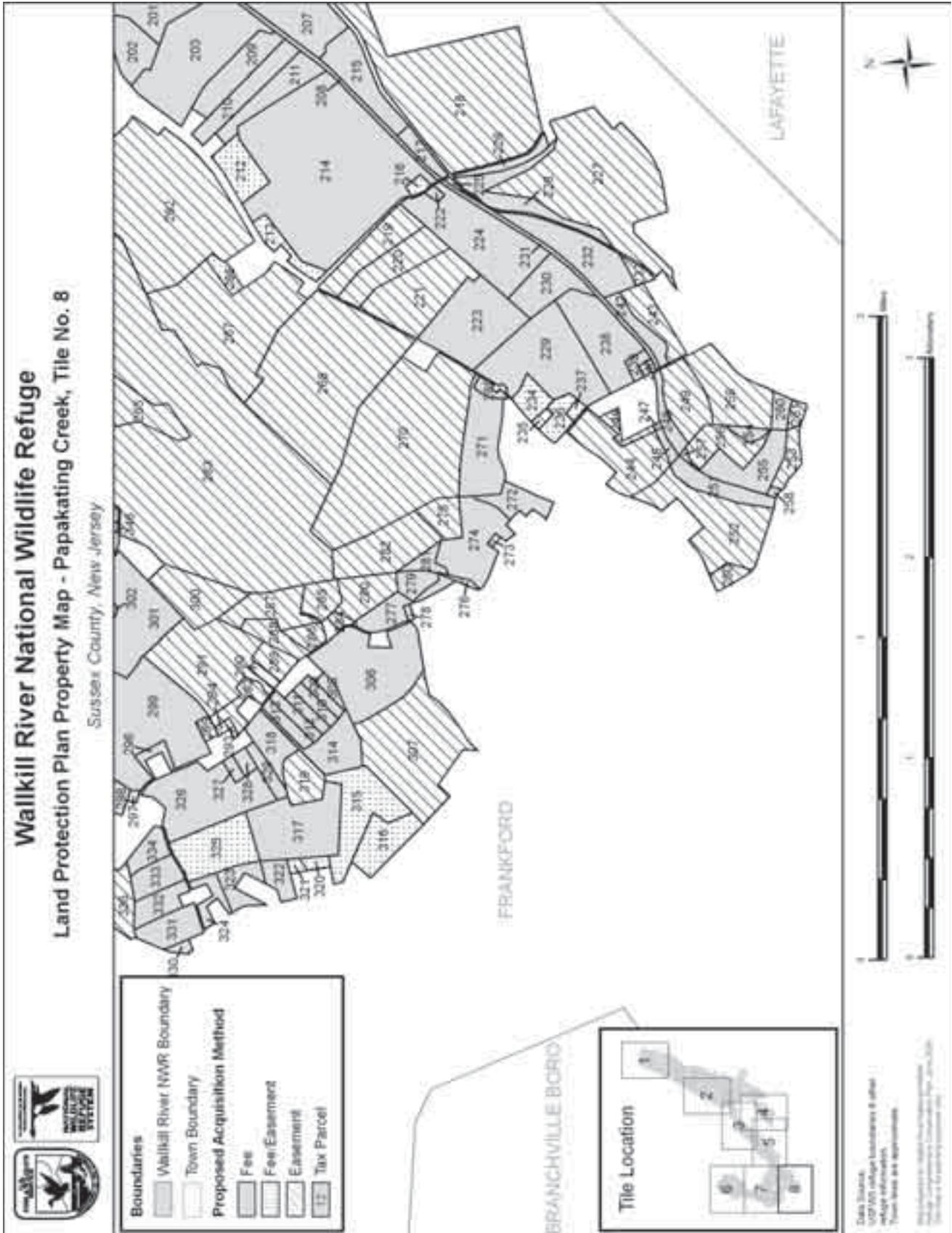












Guide to Land Protection Table

LPP Number	Our numerical identifier for each parcel in the proposed acquisition boundary
Tax Map	County tax map number
Block Number	The block number on the tax map
Lot Number	The lot number on the tax map
Acres	GIS acres generated by Service cartographer
Priority	<p>Priority 1: Priority 1 parcels contain the majority of the lands and habitats that meet the threshold for federal protection by including them in the NWRs. Priority 1 lands are mostly located along County Route 565, along Beaver Run, or along the current refuge’s northern edge. They include:</p> <ul style="list-style-type: none"> ▪ Parcels that contain a significant amount of functioning undisturbed or relatively undisturbed wetlands of significant importance that support federal trust species (federal-listed species, migratory birds); ▪ Parcels that are of significant importance to the Wallkill River watershed; ▪ Parcels that border the Papakating Creek or Beaver Run; ▪ Parcels at the northern tip of the refuge that would be prime candidates (after enhancement activities) for addition to the waterfowl impoundments at Liberty Marsh; ▪ Parcels that have known bog turtle habitats or contain prime bog turtle habitat; ▪ Parcels that have a significant value to migratory birds with prime nesting and foraging habitats for federal- and state-listed species. <p>Priority 2: Priority 2 parcels are located throughout the expansion area but tend to be clustered around Priority 1 lands or along the smaller tributaries of the Wallkill River or Papakating Creek. The include:</p> <ul style="list-style-type: none"> ▪ Wetlands associated with or hydrologically connected to Priority 1 wetlands; ▪ Areas with high potential for wetland restoration or enhancement not directly connected with the Liberty Marsh impoundment complex; ▪ Currently functioning but moderately disturbed wetlands; ▪ Parcels of moderate value to a variety of migratory bird species or of significant value to a limited number of migratory bird species; ▪ Parcels potentially of significant habitat value to endangered species found in close proximity to the refuge (dwarf wedge mussel and Indiana bat). <p>Priority 3: Most Priority 3 parcels are on uplands in the area west of the current refuge or in higher lands along the Papakating Creek. The include:</p> <ul style="list-style-type: none"> ▪ Undeveloped upland habitats associated with federal trust species; ▪ Areas directly draining into or with significant ecological connections to a Priority 1 wetland; ▪ Undeveloped upland habitats associated with federal- and state-listed species habitats. <p>Priority 4: Priority 4 lands are scattered throughout the expansion area. Our intention is to minimize the need to acquire residences and buildings on these lands, while protecting and restoring habitat, so these parcels will be evaluated on case-by-case basis. Priority 4 parcels include:</p> <ul style="list-style-type: none"> ▪ Parcels adjacent to and important for the current refuge; ▪ Areas that would create administrative efficiencies and ecological integrities with the current and expanded refuge.
Acquisition Method	For lands in the proposed boundary, whether we would acquire fee title or conservation easement (see discussion in “Acquisition Method”), or if we are proposing to develop a management agreement

Table G.3. Wallkill River NWR Land Protection Parcel List.

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
1	14	1	12	98.96	1	Fee
2	14	1	12	35.13	1	Easement
3	1	1	84	160.06	1	Fee
4	1	1	73	6.97	1	Fee
5	1	1	74	6.82	1	Fee
6	1	1	75	10.16	1	Fee
7	1	1	76	10.29	1	Fee
8	1	1	77	3.38	1	Fee
9	1	1	78	6.77	1	Fee
10	1	1	79	6.80	1	Fee
11	14	1	20.21	35.23	1	Fee
12	14	1	20.21	21.34	1	Easement
13	14	1	18.121	2.00	4	Easement
14	14	1	15	1.09	1	Fee
15	14	1	75.45	15.42	4	Easement
16	14	1	75.43	5.10	4	Easement
17	14	1	76	22.18	1	Fee
18	14	1	75.31	0.98	4	Easement
19	14	1	75.32	0.92	4	Easement
20	14	1	17	6.13	3	Easement
21	14	1	75.44	6.90	3	Easement
22	14	1	16	4.96	4	Easement
23	1	1.02	3.02	14.26	3	Easement
24	1	1.02	2.02	5.16	3	Easement
25	1	1.02	1	2.02	1	Fee
26	1	1.02	3.03	8.13	1	Fee
27	1	1.02	3.05	13.35	1	Fee
28	1	1.02	3.05	19.56	1	Easement
29	2	2	7	44.57	2	Fee
30	2	2	8	0.84	2	Fee
31	12	22	7	6.48	4	Easement
32	12	22	11.01	19.16	2	Fee
33	12	22	11.01	10.61	2	Fee
34	12	22	11.01	26.51	2	Easement
35	12	22	12	5.20	3	Easement
36	12	22	13	1.65	2	Fee
37	12	22	13	3.92	2	Easement
38	12	22	13	39.38	2	Fee
39	12	22	13	7.20	2	Easement
40	12	22	13	17.37	2	Easement
41	12	22	1.01	11.11	3	Easement
42	12	22	2	5.61	2	Fee
43	11	21	23	1.17	3	Easement
44	11	21	22	2.91	3	Easement
45	11	21	21.01	21.10	3	Easement
46	11	21	18.03	25.60	2	Fee

Attachment G.1. Parcel Maps and Table

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
47	11	21	18.01	6.55	2	Fee
48	11	21	17	0.15	4	Fee
49	11	21	16.02	3.42	4	Easement
50	11	21	16.01	3.83	4	Easement
51	11	21	25.01	63.46	3	Easement
52	11	21	25.02	2.08	2	Fee
53	11	21	25.02	17.35	2	Fee
54	11	21	25.02	35.05	2	Fee
55	11	21	25.02	44.72	2	Easement
56	11	21	15	25.54	2	Fee
57	11	21	33.03	1.27	3	Easement
58	11	21	33.01	8.78	3	Easement
59	11	21	13.02	6.83	4	Easement
60	11	21	33.02	51.50	3	Easement
61	11	21	13.01	12.92	2	Easement
62	11	21	13.03	9.69	2	Fee
63	11	21	13.04	5.46	4	Easement
64	11	21	34	85.49	4	Easement
65	11	21	34	7.60	4	Easement
66	11	21	34	13.34	4	Fee
67	11	21	12.02	19.53	3	Easement
68	11	21	12.02	0.45	3	Fee
69	11	21	12.03	0.94	3	Easement
70	11	21	12.01	0.23	3	Easement
71	11	21	11.04	0.63	3	Easement
72	11	21	11.02	0.29	3	Fee
73	11	21	11.02	0.22	3	Easement
74	11	21	11.05	0.45	3	Fee
75	11	21	11.05	0.15	3	Easement
76	11	21	35.01	11.00	3	Easement
77	11	21	35.01	13.82	3	Easement
78	11	21	35.01	5.47	3	Fee
79	11	21	11.01	21.45	3	Easement
80	11	21	11.01	0.19	3	Easement
81	11	21	11.01	4.47	3	Fee
82	11	21	25.06	11.06	3	Easement
83	11	21	25.06	0.46	3	Easement
84	11	21	25.06	2.55	3	Easement
85	11	21	25.06	5.52	3	Fee
86	11	21	25.06	3.79	3	Fee
87	11	21	9	112.42	3	Easement
88	11	21	9	7.39	3	Fee
89	11	21	10	20.56	2	Fee
90	11	21	10	17.27	2	Easement
91	4	2	20.01	53.89	2	Fee
92	4	2	21.01	2.90	2	Fee
93	4	2	21.02	5.80	2	Fee

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
94	4	2	21.03	7.92	2	Fee
95	4	2	21.04	5.87	2	Fee
96	4	2	21.06	9.31	2	Fee
97	4	2	22.02	0.86	4	Easement
98	11	21	43	16.47	3	Easement
99	11	21	8	16.57	1	Easement
100	11	21	8	15.40	1	Fee
101	11	21	7	8.70	1	Easement
102	11	21	7	2.92	1	Easement
103	11	21	7	24.54	1	Fee
104	11	21	7	4.48	1	Easement
105	4	2	40	0.74	2	Fee
106	4	2	41	4.34	2	Fee
107	10	18	39	3.08	1	Fee
108	10	18	44	31.96	1	Fee
109	10	18	44	6.53	1	Easement
110	10	18	36.01	23.52	2	Fee
111	10	18	36.01	4.37	2	Easement
112	10	18	38.01	5.96	1	Fee
113	10	18	38.03	1.13	1	Fee
114	10	18	38.02	3.75	1	Fee
115	10	18	14	11.23	2	Fee/Easement
116	10	18	1.01	111.56	1	Fee
117	10	18	15	6.14	1	Fee
118	10	18	12.01	24.49	2	Fee
119	10	18	12.08	22.58	3	Easement
120	10	18	25	15.49	3	Easement
121	10	18	25	6.45	3	Fee
122	10	18	22	0.21	4	Easement
123	10	18	23	3.06	3	Easement
124	10	18	24	9.93	3	Easement
125	10	17	9.02	1.19	4	Easement
126	10	17	10.02	1.04	4	Easement
127	10	17	10.01	90.74	1	Fee
128	10	17	11	0.87	4	Easement
129	10	17	12	5.55	2	Fee
130	10	17	9.01	12.31	3	Easement
131	10	17	8	33.80	3	Easement
132	10	17	13	171.86	1	Fee
133				2.75	2	Fee/Easement
134	10	17	7	15.99	2	Easement
135	10	17	7	45.15	2	Fee
136	10	17	7	11.25	2	Fee
137	9	17	28	16.64	1	Fee
138	9	17	21	26.02	1	Fee
139	9	17	22	79.04	1	Fee
140	9	17	4.01	69.27	1	Fee

Attachment G.1. Parcel Maps and Table

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
141	9	17	6	2.04	1	Fee
142	9	17	23.01	50.19	1	Fee
143	9	17	23.02	16.91	1	Fee
144	9	17	5	6.87	1	Fee
145	9	17	4.03	1.70	4	Easement
146	9	17	4.02	3.11	4	Easement
147	9	17	2	139.26	1	Fee
148	9	17	3	6.00	1	Fee
149	9	17	27	131.05	1	Fee
150				0.00	4	Easement
151	9	17	32	0.00	4	Easement
152				0.00	4	Easement
153	9	17	32	0.30	4	Easement
154	9	17	33	0.61	4	Easement
155	9	17	34	0.50	4	Easement
156	9	17	35	0.40	4	Easement
157	9	17	36	0.84	4	Easement
158	9	17	38	125.93	1	Fee
159	9	16	5	50.14	1	Fee
160	9	17	1	126.84	1	Fee
161	9	17	1	32.77	1	Easement
162	9	16	4	2.83	1	Fee
163	9	16	3	26.12	1	Fee
164	9	16	7	5.06	1	Fee
165	9	16	6	16.66	1	Fee
166	9	16	6	28.05	1	Easement
167	9	16	8	16.37	1	Fee
168	9	16	2	54.38	1	Fee
169	9	16	2	28.57	1	Easement
170	1	1	1	1.56	1	Fee
171	1	1	1	11.37	1	Easement
172	9	16	9	1.67	1	Fee
173	1	1	2	69.74	1	Fee
174	1	1	2	61.05	1	Easement
175	1	1	4	5.46	1	Fee
176	1	1	5	45.86	1	Fee
177	1	1	13	29.39	1	Fee
178	1	1	13	79.15	1	Easement
179	1	1	15	0.51	4	Easement
180	1	1	14	0.54	3	Easement
181	1	1	3	4.27	3	Easement
182	1	1	6	0.19	4	Easement
183	1	1	7	0.54	4	Easement
184	1	1	8	0.70	4	Easement
185	1	1	9	0.39	4	Easement
186	1	1	10	26.59	1	Fee

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
187	1	1	10	142.03	1	Easement
188	1	4	12	0.05	4	Easement
189	1	4	11	0.24	4	Easement
190	1	4	10	0.05	4	Easement
191	1	4	8	0.64	4	Easement
192	1	4	9	0.02	4	Easement
193	1	4	7.01	1.52	3	Easement
194	1	4	6	6.34	3	Easement
195	1	4	5	3.04	3	Easement
196	1	4	4	6.25	1	Easement
197	1	4	2	7.66	1	Fee
198	1	4	2	15.96	1	Easement
199	1	4	3	7.98	1	Easement
200	1	3	1	9.82	1	Fee
201	1	3	2	31.09	1	Fee
202	1	3	3	13.54	1	Fee
203	1	3	4	50.97	1	Fee
204	1	3	14	0.23	4	Easement
205	1	3	13	2.26	1	Fee
206	1	3	12	0.68	4	Easement
207	1	3	11	46.12	1	Fee
208	1	3	10	8.87	1	Fee
209	1	3	5	16.16	1	Fee
210	1	3	5.01	14.59	1	Fee
211	1	3	5.02	15.02	1	Fee
212	1	3	6	11.80	3	Fee/Easement
213	1	3	7	6.66	3	Fee/Easement
214	1	3	8	132.91	1	Fee
215	1	3	9	18.28	1	Fee
216	1	3	8.01	1.83	2	Fee/Easement
217	1	3	9.01	4.73	1	Fee
218	1	6	1	111.06	1	Easement
219	2	9	6.02	17.19	2	Easement
220	2	9	6.01	18.24	2	Easement
221	2	9	6	31.20	2	Easement
222	2	9	5.01	1.04	1	Fee
223	2	9	7	34.72	1	Fee
224	2	9	5	42.86	1	Fee
225	2	9	4	0.74	1	Fee
226	2	8	1	4.53	4	Fee
227	2	8	2	83.63	1	Easement
228	2	8	2	16.56	1	Fee
229	2	9	9	43.86	1	Fee
230	2	9	3	15.06	1	Fee
231	2	9	10	7.17	1	Fee
232	2	9	2	24.15	1	Fee
233	2	9	2	2.52	1	Easement

Attachment G.1. Parcel Maps and Table

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
234	2	9	9.01	6.21	3	Fee/Easement
235	2	9	9.05	1.32	4	Easement
236	2	9	9.04	5.84	3	Fee/Easement
237	2	9	9.03	1.34	3	Fee/Easement
238	2	9	9.07	26.41	1	Fee
239	2	9	9.06	2.42	1	Fee
240	2	9	9.02	0.61	4	Easement
241	2	9	9.02	0.44	4	Fee
242	2	9	11	7.03	1	Fee
243	2	9	11	10.45	1	Easement
244	3	10	3.050	25.16	1	Easement
245	3	10	3.050	1.89	1	Fee
246	3	10	4	3.41	1	Easement
247	3	10	4	0.32	1	Fee
248	3	10	2.000	5.28	1	Fee
249	3	10	2.000	16.54	1	Easement
250	3	10	4.000	3.87	3	Easement
251	3	10	3.000	10.80	1	Fee
252	3	10	3.000	36.93	1	Easement
253	3	10	6.000	5.83	1	Easement
254	3	10	6.000	2.43	1	Fee
255	3	10	6.000	16.13	1	Fee
256	3	10	6.000	12.59	1	Easement
257	3	10	6.000	0.64	1	Fee
258	3	10	6.000	0.61	1	Fee
259	3	10	1	25.58	1	Easement
260	3	10	1	3.71	1	Fee
261	3	10	1	2.31	1	Easement
262	7	29	1	110.91	2	Easement
263	7	29	6	49.92	3	Easement
264	7	29	9	29.51	3	Easement
265	7	29	10	31.80	3	Easement
266	7	29	18.02	3.71	3	Fee/Easement
267	7	29	18	70.08	2	Easement
268	7	29	17	103.35	2	Easement
269	7	29	19	2.13	1	Fee
270	7	29	16	114.21	1	Easement
271	7	29	16	24.28	1	Fee
272	7	29	14.06	8.59	1	Fee
273	7	29	14.04	0.51	4	Easement
274	7	29	14.03	23.75	1	Fee
275	7	29	14.03	8.24	1	Easement
276	7	29	13	1.02	4	Easement
277	7	28	1	9.96	1	Fee
278	7	28	1.03	0.61	2	Fee
279	7	28	2	5.44	1	Fee
280	7	28	2	12.21	1	Easement

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
281	7	29	12	3.97	2	Fee
282	7	29	12	25.49	2	Easement
283	7	29	11	302.89	2	Easement
284	7	28	2.01	1.57	2	Easement
285	7	28	2.02	7.58	2	Easement
286	8b	30	2.02	4.48	3	Easement
287	8b	30	2.01	14.87	2	Easement
288	8b	30	2	7.22	2	Easement
289	8b	30	3.06	5.89	3	Easement
290	8b	30	3.05	1.89	3	Easement
291	8b	30	3.04	41.30	3	Easement
292	8b	30	3.03	7.01	3	Easement
293	8b	30	3.02	0.74	4	Easement
294	8b	30	3.01	0.71	4	Easement
295	8b	30	4.02	1.88	3	Easement
296	8b	30	4.01	3.01	1	Fee
297	8b	30	5.01	0.71	1	Fee
298	8b	30	5	3.42	1	Fee
299	8b	30	4	98.32	1	Fee
300	8b	30	1	20.07	2	Easement
301	8b	30	6	35.14	1	Fee
302	8b	30	6.02	2.81	3	Fee
303	8b	30	6.01	4.84	3	Fee
304	8b	30.01	1.01	1.15	4	Easement
305	8b	30.01	2	1.99	4	Easement
306	6	25	15	42.12	1	Fee
307	6	25	15	56.10	1	Easement
308	6	25	14.04	2.38	1	Fee
309	6	25	14.05	3.36	1	Fee
310	6	25	14.06	3.68	1	Fee
311	6	25	14.07	3.67	1	Fee
312	6	25	14.08	4.37	1	Fee
313	6	25	14.03	4.55	1	Fee
314	6	25	14.02	14.81	1	Fee
315	6	25	11	25.07	3	Fee/Easement
316	6	25	10.000	14.31	3	Fee/Easement
317	6	25	14	32.06	1	Fee
318	6	25	14	10.02	1	Fee
319	6	25	14	10.31	1	Easement
320	6	25	10.040	2.01	3	Fee/Easement
321	6	25	10.030	1.33	3	Fee/Easement
322	6	25	12.030	5.92	1	Fee
323	6	25	12.02	7.64	1	Fee
324	6	25	12.000	5.16	1	Fee
325	6	25	12.010	22.61	3	Fee/Easement
326	6	25	13	36.63	1	Fee
327	6	25	13.04	1.77	1	Fee

Attachment G.1. Parcel Maps and Table

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
328	6	25	13.03	2.26	1	Fee
329	6	25	14.03	4.67	1	Fee
330	12	44.01	5.01	1.44	1	Fee
331	12	44.01	4.01	11.19	1	Fee
332	12	44.01	4	8.40	1	Fee
333	12	44.01	4.02	8.68	1	Fee
334	12	44.01	3.05	6.68	1	Fee
335	12	44.01	3	4.99	3	Fee
336	12	44.01	3	51.42	3	Easement
337	12	44.01	1.04	4.94	2	Fee/Easement
338	12	44.01	1.04	3.98	2	Fee
339	12	44.01	2	1.36	2	Fee/Easement
340	8b	31	2	0.30	4	Easement
341	8b	31	12	9.87	3	Easement
342	8b	31	5	20.83	1	Fee
343	8b	31	10	26.27	3	Easement
344	8b	31	6	77.69	1	Fee
345	8b	32	10	3.59	1	Fee
346	8b	32	9	10.05	1	Fee
347	8b	32	8	0.51	4	Easement
348	8b	32	7.01	0.76	4	Easement
349	8b	32	7	13.79	1	Fee
350	8b	32	11	14.30	1	Fee
351	8b	32	12	16.90	1	Fee
352	8b	32	12	57.72	1	Easement
353	8b	32	6.01	12.82	3	Easement
354	8b	32	6.05	5.48	3	Easement
355	8b	32	6.08	2.07	3	Easement
356	8b	32	6.06	3.09	3	Easement
357	8b	32	6.07	15.46	3	Easement
358	8b	32	16.05	1.56	4	Easement
359	8b	32	16	63.36	3	Easement
360	12	44	9	3.51	2	Fee/Easement
361	12	44.01	9.040	10.99	2	Fee
362	12	44.01	9.040	16.01	2	Easement
363	12	44	9.06	5.07	2	Fee/Easement
364	12	45	9.07	6.76	2	Fee/Easement
365	12	44	9.0000	9.29	3	Easement
366	12	44	9.060	9.77	3	Easement
367	12	44	9.070	9.32	3	Easement
368	12	45	8.01	14.59	2	Fee/Easement
369	12	45	8.01	8.61	2	Easement
370	12	45	8	6.35	2	Fee/Easement
371	8b	31	9.03	4.56	3	Fee/Easement
372	8b	31	9.04	2.53	3	Fee/Easement
373	8b	31	9	4.68	3	Fee/Easement
374	8b	31	9.05	7.09	3	Fee/Easement

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
375	8b	31	6.02	1.68	3	Easement
376	8b	31	6.01	3.31	3	Easement
377	8b	31	13	14.90	1	Fee
378	8b	31	14	0.72	4	Easement
379	11	44	6	7.21	2	Fee/Easement
380	12	45	7	9.86	3	Easement
381	8b	31	8.01	1.42	3	Easement
382	8b	31	8	3.50	3	Easement
383	8b	31	7.05	4.52	3	Easement
384	8b	31	7	20.01	3	Easement
385	11	44	5	20.97	1	Fee
386	11	44	5	50.83	1	Easement
387	11	44	4	96.46	1	Fee
388	11	44	4	7.55	1	Easement
389	10	40	4.010	9.59	1	Easement
390	10	40	4	15.64	1	Fee
391	10	40	4	51.46	1	Easement
392	10	40	7	20.81	3	Easement
393	10	40	2	37.60	3	Easement
394	10	40	1	11.84	3	Easement
395	11	44	11.02	9.38	2	Easement
396	11	44	11.03	2.29	4	Easement
397	11	44	11.05	7.26	2	Fee
398	11	44	3	0.68	3	Fee/Easement
399	11	44	11.06	4.97	2	Fee
400	11	44	2	1.71	3	Easement
401	11	44	2.04	0.81	4	Easement
402	11	44	2.03	0.86	4	Easement
403	11	44	2.01	0.76	4	Easement
404	11	44	2.02	0.76	4	Easement
405	11	44	11.07	17.46	1	Fee
406	11	44	12	5.65	1	Easement
407	11	44	13	4.86	3	Easement
408	11	44	1	52.42	1	Easement
409	10	39	7.000	52.78	3	Easement
410	10	39	7.020	2.35	3	Fee/Easement
411	10	39	7.020	5.09	3	Easement
412	10	39	12	30.12	3	Easement
413	10	39	6.000	17.08	1	Fee
414	10	39	5.000	6.23	1	Fee
415	10	39	5.000	15.84	1	Fee
416	10	39	5.000	46.69	1	Easement
417	10	39	13	32.74	1	Fee
418	10	39	13	79.91	1	Easement
419	10	39	13	37.74	1	Easement
420	10	39	2.000	2.92	1	Fee
421	10	39	2.000	26.70	1	Easement

Attachment G.1. Parcel Maps and Table

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
422	34	126	1.01	1.71	1	Fee
423	34	126	1.01	7.57	1	Fee
424	34	126	1.01	7.30	1	Easement
425	34	126	2.000	7.39	1	Easement
426	34	126	2.000	18.16	1	Easement
427	34	126	2.000	29.46	1	Fee
428	34	126	2.000	0.97	1	Easement
429	34	126	13.000	4.68	2	Fee
430	10	39	17.000	12.76	3	Easement
431	34	126	12	24.29	2	Easement
432	34	126	12	13.87	2	Fee
433	34	126	11	0.95	4	Easement
434	34	126	9	4.47	4	Easement
435	34	126	8	9.76	4	Easement
436	34	126	6	15.37	2	Easement
437	11	43	2.01	2.23	2	Fee/Easement
438	11	43	2.06	2.21	2	Easement
439	11	42	19.02	6.97	3	Easement
440	11	42	19	20.94	2	Easement
441	11	42	19	17.51	2	Fee
442	11	42	19	26.09	2	Easement
443	11	42	19	0.82	2	Easement
444	11	42	19.01	14.53	1	Easement
445	11	42	19.01	6.41	1	Fee
446	11	42	20	1.57	3	Fee/Easement
447	11	42	21	4.62	3	Fee/Easement
448	11	42	1	17.15	1	Fee
449	11	42	1	70.36	1	Easement
450	11	42	2	3.29	4	Easement
451	10	41	7	6.93	1	Fee
452	10	41	7	7.27	1	Fee
453	10	41	7	7.07	1	Fee
454	10	41	7	8.86	1	Fee
455	10	41	7	33.36	1	Fee
456	10	41	8	131.57	1	Fee
457	10	41	8	15.42	1	Easement
458	10	41	11	20.18	1	Fee
459	10	41	1	22.97	3	Easement
460	44	161	1.03	16.02	3	Easement
461	44	161	3	19.46	3	Easement
462	44	161	2.03	56.79	3	Easement
463	44	161	4.01	6.80	3	Easement
464	10	41	12	9.82	1	Fee
465	10	41	12.02	0.99	1	Fee

LPP number	Tax Map	Block Number	Lot Number	Acres	Priority	Acquisition Method
466	44	161	7.02	5.75	1	Fee
467	44	161	7.02	5.36	1	Easement
468	44	161	7.01	14.81	1	Fee
469	44	161	7.01	10.84	1	Easement
470	5	6	3.01	7.62	1	Fee
471	5	6	3.02	0.87	1	Fee
473	6	11	9.01	18.00	1	Easement
474	6	11	9.01	36.62	1	Fee
475	6	11	10	87.95	1	Fee
476	6	11	10	11.79	1	Fee
477	6	11	10	245.37	1	Easement
478	6	11	11.02	0.55	1	Fee
479	6	11	11.03	2.51	1	Fee
480	6	11	11.07	24.62	1	Fee
481	6	11	11.04	10.08	1	Fee
482	6	11	11.05	4.89	3	Easement
483	6	11	11.06	1.90	3	Easement
484	6	11	11.01	38.72	1	Fee
485	6	11	15.02	0.68	4	Easement
486	6	11	12.02	3.35	4	Easement
487	6	11	12.01	1.74	4	Easement
488	6	11	13.01	14.32	4	Easement
489	6	11	13.04	0.98	4	Easement
490	6	11	13.02	1.07	4	Easement
491	6	11	13.05	7.40	4	Easement
492	6	11	13.03	1.03	4	Easement
493	6	11	14	0.53	4	Easement
494	6	11	15.01	98.16	1	Fee
495	6	11	15.01	49.56	1	Easement
496	6	11	16.02	3.29	4	Easement
497	6	11	16.01	3.09	4	Easement
498	6	11	16	3.72	4	Easement
499	6	11	17	5.22	4	Easement
500	6	11	18	12.33	4	Easement
501	6	11	23	28.99	1	Fee
502	6	11	23	25.58	1	Easement
503	6	11	23	3.85	1	Easement
504	6	11	19	0.68	1	Fee
505	6	11	19	20.67	1	Fee
506	6	11	19	43.27	1	Easement
507	26	68	11.01	10.21	1	Fee
508	26	68	11.01	12.65	1	Easement
509	26	68	11.01	4.61	1	Easement
510	26	68	11.02	0.48	4	Easement

Attachment G.2. Threshold Standards and Other Considerations

Introduction

This attachment relates our draft Land Protection Plan (draft LPP) for the Wallkill River National Wildlife Refuge (refuge) to the threshold standards under consideration by the Service Director for determining the strategic growth of the National Wildlife Refuge System (Refuge System). In addition, it relates our draft LPP to the Land Acquisition Priority System (LAPS), and describes operating and maintenance costs, land acquisition authorities and sources for funding, public support for the proposal, and our strategies for public use.

Our proposal for Service land acquisition, coupled with additional protection by our conservation partners, would ensure the conservation in perpetuity of the significant federal trust resources in the Kittatinny Valley and its environs.

Threshold Standards

Conserve Trust Species

Migratory Birds

The Atlantic Coast Joint Venture of the North American Waterfowl Management Plan identifies the Wallkill River as a priority area. Migratory colonial waterbirds, songbirds, raptors, freshwater wetland birds, and waterfowl funnel through the Kittatinny Valley to take refuge in the forest and wetland habitats. The valley's grasslands are crucial for grassland birds and foraging raptors.

The refuge lies 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 Northern Ridge and Valley physiographic area is forested; another 40 percent is in agricultural production consisting primarily of a mixture of pasture, hay fields, and corn. The refuge lies in one of the more non-forested landscapes in that physiographic area. Furthermore, much of the land already managed or protected in this physiographic area is forested (state forests and parks). Therefore, the refuge holds the unique position of being a large tract of public land with non-forested habitats that we could manage for grassland or shrubland birds; and, it lies in a landscape that has a significant proportion of open land, where it makes ecological sense to manage for those types of species (Dettmers 2000).

We propose to maintain 978 acres, or 10 percent of the proposed expansion area, in scrub-shrub habitat for shrub nesting land birds of concern, such as the golden winged warbler, prairie warbler, field sparrow, eastern towhee, and gray catbird. Scrub-shrub habitat is a high priority in the Northern Ridge and Valley, primarily because it still supports 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 (Dettmers 2000).

The landscape composition around the current refuge and expansion area also presents an opportunity for the refuge to make significant contributions to the conservation of grassland birds. We propose to maintain approximately 791 acres, or 8 percent of the proposed expansion area, in grassland habitat. For the grassland habitat suite, the PIF Bird Conservation Plan for Area 17 focuses on setting objectives for bobolinks, grasshopper sparrows, and upland sandpipers.

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 a rare commodity (Dettmers 2000). Managing for forested bottomland corridors along the Wallkill River and its tributaries would constitute a significant contribution to the overall goals for Area 17, especially its focus on cerulean warblers and Louisiana water thrushes. We propose to maintain approximately 2,455 acres (22 percent of the proposed expansion area) in forested upland habitat and 3,135 acres (34 percent of the proposed expansion area) in forested wetland habitat. Those would support nesting interior-forest-dwelling land birds of concern, such as the cerulean warbler, worm-eating warbler, wood thrush, eastern wood peewee, Baltimore oriole, Louisiana water thrush, Kentucky warbler,

and scarlet tanager. We also propose to maintain 1,904 acres, or 20 percent of the proposed expansion area, in non-forested wetland habitat to provide spring and fall migratory waterfowl and shorebird habitat.

Endangered and Threatened Species

Bog turtle

The Bog Turtle Recovery Plan (USFWS 2001) identified the Wallkill River watershed as a recovery subunit. Federal-listed threatened bog turtles live in sedge fens throughout the Papakating Creek Focus Area and in the Beaver Run Focus Area. These small patches of habitat generally occur as part of larger calcareous wetland complexes that include shrub and forested swamp, dwarf shrub bogs, marsh, and beaver ponds. They are commonly found in open wet meadow habitats associated with agricultural uses such as livestock grazing and haying. We will protect up to five bog turtle population analysis sites (PAS) in the proposed expansion area, working towards achieving one of the recovery objectives for the Wallkill River subunit. Bog turtles serve as a keystone species for habitats that are important to a diverse assemblage of species, including state-listed invertebrates, birds, amphibians and reptiles.

Other Threatened and Endangered Species

The dwarf wedge mussel, Indiana bat and Mitchell's satyr butterfly are three of the five species identified in the New Jersey Wildlife Action Plan (WAP) as "wildlife of greatest conservation need" in the Skylands Region, where the refuge is located. The other two species are the bog turtle, mentioned above, and the bald eagle, which is not suited for habitats on or near the expansion area.

The Papakating Creek Focus Area contains potential habitat for the federal-listed endangered dwarf wedge mussel. The New Jersey WAP identifies the dwarf wedge mussel as a "species of greatest conservation need" in the Kittatinny Valley. State biologists have surveyed refuge lands for dwarf wedge mussels. Although that species has not been found on the refuge, habitat conditions are optimal for introducing it.

Indiana bats were found in 2005, hibernating in three areas near Hibernia, New Jersey, about 20 miles south of the refuge. They also were found at the Great Swamp National Wildlife Refuge in Basking Ridge, south of Hibernia. Additional hibernacula sites have been found north of the refuge in Ulster County, N.Y.. No Indiana bats have been documented on the current refuge or in our proposed expansion area, but we have not conducted species-specific surveys. The lands in the current and expanded refuge boundaries contain riparian, forested, and upland habitats that have high potential for supporting wintering, foraging and roosting habitats for Indiana bats.

Two well-known sites in Sussex and Warren counties recently supported the Mitchell's satyr butterfly (USFWS 1998). The current and expanded refuge boundaries are located in Sussex County, and Warren County is immediately south of it. The confirmed sites are both fens, located in areas of limestone bedrock, the same habitat types bog turtles use on the refuge. The recovery plan goal for New Jersey is to establish one metapopulation in that state.

State-listed species

The Kittatinny Valley supports 13 state-listed endangered, 16 state-listed threatened, and 77 species of special concern and regional priority, in addition to five game species of regional priority and three nongame fish species currently without state or regional status. The state-listed endangered species are the American bittern, northern goshawk, northern harrier, red-shouldered hawk, sedge wren, vesper sparrow, and blue-spotted salamander. The state-listed threatened species are the barred owl, black-crowned night heron, bobolink, Cooper's hawk, grasshopper sparrow, long-eared owl, red-headed woodpecker, savannah sparrow, wood turtle, long-tailed salamander, eastern lamp mussel, triangle floater, and silver-bordered fritillary. Wildlife of special concern in the valley are colonial waterbirds, forest passerines, freshwater wetland birds, grassland birds, shrub-scrub birds, reptiles, amphibians, and mollusks.

Contributes to Habitat Goals

Our proposal would contribute to several national habitat directives or initiatives. The migratory bird species' already described are priority species under the North American Waterfowl Management Plan, Partners in

Flight Plan, and/or the Regional Birds of Conservation Concern List. Our proposal would ensure that migratory bird habitat in the wetlands and uplands of the Kittatinny Valley is protected in perpetuity. Many other birds of high conservation concern would benefit as well. The draft LPP explains in more detail how our proposal meets the objectives of these national directives and initiatives.

Provides Habitat Connections

Our proposal involves cooperating with our conservation partners, all of whom are instrumental in helping us accomplish habitat management goals and objectives. In July 2005, the Service met with representatives from the State of New Jersey, The Nature Conservancy, the Trust for Public Land, New Jersey Audubon Society, New Jersey Conservation Foundation, Morris Land Conservancy, and municipal, county and state officials to discuss and define the role each agency could play in protecting wildlife habitats in the Kittatinny Valley. Each partner uses its agency’s individual mission statement to focus its land protection. Taken together, those mission statements cover the protection of farmland, threatened and endangered species, scenic areas, grassland habitats, and open space that the local community has identified as significant.

When each agency had outlined its areas of protection interest on a map, we identified more than 61,743 acres worthy of protection in the Kittatinny Valley and surrounding uplands (see draft LPP for map). The Service proposes to focus its presently limited resources on 9,550 acres, or 15 percent of that total area. Those 9,550 acres are the most critical for maintaining the biological integrity, diversity and environmental health of the present refuge. They lay adjacent to the approved acquisition boundary, and encompass the 15-mile Papakating Creek, the main tributary of the Wallkill River. In addition, the proposed expansion area offers tremendous wetland resource values; it is a key corridor connecting the preserved habitats on the Kittatinny Ridge to the west and Pochuck Mountain to the east. It encompasses current or historic habitat sites for the federal-listed threatened bog turtle. Our expansion proposal, together with our partners’ commitment to protect the remaining 52,193 acres in the larger Kittatinny Valley and surrounding uplands, will enable us to maximize the potential of the valley to function as a viable ecosystem.

The New Jersey WAP specifically states that Wallkill River refuge is an area of conservation opportunity, with its ability to link the low-lying valley habitat with the already protected upland forests. Expanding the refuge boundary also offers the opportunity to protect rare habitats in the larger Skylands Region, identified in the New Jersey WAP. Almost half of the acreage in the Skylands Region (625,000 acres) is upland forest. Only 8 percent (106,000 acres) is forested wetland and 3 percent (36,000 acres) is emergent wetland. The state identified more than 56,000 acres of forested wetlands and 7,000 acres of emergent wetlands that need protection in that region. The draft LPP will help achieve the state’s land protection goals.

Table G.4. Habitat types of protected lands in the Skylands Region.

Habitat Type	Acres
Grassland	1,145
Early Successional	14,755
Forested Wetland	29,727
Non-Forested Wetland	8,963
Forested Upland	147,571
Open Water	12,126
Other	7,266
Cropland/Pastureland	45,693
Total protected lands	267,245

Many of the organizations with whom we are collaborating have already protected key habitats in the Kittatinny Valley and its environs. The New Jersey Natural Lands Trust owns several parcels in the Wallkill River watershed, including the Crooked Swamp Caves Preserve and the Wallkill River Preserve. The Hamburg Mountain Wildlife Management Area, Stokes State Forest, and High Point State Park are all state-protected lands directly adjacent to the habitat complex. The Appalachian Trail skirts the northern part of that complex. The New Jersey Division of Parks and Forests and the National Park Service own a buffer of land along the trail. The Nature Conservancy owns and manages one preserve, Sussex Swamp, and also has management agreements with several public and private landowners in the valley.

Promotes Biological Integrity and Diversity

In the late 1980s, the State of New Jersey and the federal government began to recognize the national significance of wildlife habitats along the Wallkill River. With resources tight and evolving community recognition of open space and ecology, initiatives aimed at protecting the river and surrounding valley began to take form. Issues related to migratory birds (i.e., the decline of duck species), the federal listing of the bog turtle as endangered in 1997, and water quality, elevated to a national level the political and resource management understanding of what is now the refuge.

Since Congress established the refuge in 1990, the Service has been protecting the river, its surrounding habitats and bog turtles. As development continues to move into the area, the growing block of unfragmented habitat on the refuge has become better known as an important regional asset. Furthermore, management actions by the Service have resulted in habitat enhancements that support greater numbers of migratory waterfowl and shorebirds and improve water quality and aquatic habitats. Biological surveys conducted by the Service have resulted in the documentation of more than 220 bird species, the location of various bog turtle populations and habitats, and a regional resource for invasive species information and management. Refuge data is now a significant part of biological studies in both New Jersey and New York. The new state wildlife plans also tap into refuge databases, and provide a new avenue for professional interaction.

The proposed expansion will provide the only “green” corridor between the Kittatinny Ridge and the Hudson Highlands. Crossing the more populated valley, this proposed refuge expansion will protect many of the wildlife populations that depend on the genetic variability offered by the subpopulations on each ridgeline. By addressing the Wallkill River and its protection priorities, the Service would contribute in protecting the biological integrity and diversity of an important wildlife corridor in northwest New Jersey.

Invests in Healthy Lands

Staff from our New Jersey Field Office completed a contaminants assessment protocol (CAP) for the Wallkill River refuge in 1999, and updated it in 2005. Starting in Sparta, N. J., the river flows north through Hardyston, Franklin and Hamburg before entering the refuge. The dominant contaminant pathways revealed in the CAP are the Papakating Creek and the Wallkill River. A number of industrial activities have occurred upstream from the refuge, especially along the Wallkill River. Papakating Creek and its tributary, Clove Brook, drain the area around Sussex before entering the southwest side of the refuge. Those two waterways then converge into the Wallkill River. Agricultural activities in the Papakating Creek watershed have contributed to notable, but not alarming, issues involving coliform bacteria, sedimentation, arsenic and phosphorus. Sussex Borough is the largest center of population close to the refuge. All of the Papakating’s tributaries have the potential to contribute contaminants to the refuge’s aquatic systems.

Pursuant to the water quality standards of the state and the purposes of the refuge established by Congress, the Service petitioned the New Jersey Department of Environmental Protection to upgrade the Category 2 anti-degradation designation of the Wallkill River to Category 1, which would forbid the degradation of its water quality. Although the state denied that request, it funded the development of the Wallkill River Watershed Plan. The refuge works closely with the Wallkill Watershed Management Group, the organization created as a result of the watershed plan, to sample and monitor water quality in the river.

Level 2 pre-acquisition contaminants surveys must be considered on a case-by-case basis for the proposed expansion area, because of historic agricultural uses that pose a potential threat of contaminants. Other historic

uses, such as mining and quarrying, could result in contamination by mine spoil, although that risk is low. If managed correctly, the refuge could increase the health of the lands in the expansion area and, by extension, in the approved acquisition boundary.

Other Considerations

Acquisition Authority and Sources of Funding

The refuge has acquired lands under the authority of the Migratory Bird Conservation Act of 1929, the Refuge Recreation Act, the Transfer of Certain Real Property for Wildlife Conservation Purposes Act, and the Emergency Wetlands Resources Act of 1986. Because the Refuge Recreation Act also authorizes the acquisition of lands for endangered and threatened species, we do not believe additional authorization is necessary to acquire the lands in our proposal.

Acquisitions for the refuge have been funded with monies from the Land and Water Conservation Fund and from the Migratory Bird Conservation Commission. As of Fiscal Year 2006, 3,672 acres in the approved acquisition boundary were purchased with funds from the Land and Water Conservation Fund and 1,305 acres were purchased with funds from the Migratory Bird Conservation Commission. About 130 acres were donated. We expect land acquisition in the proposed expansion boundary to be funded in a manner similar to land acquisition in the current approved boundary.

Ownership, Acquisition Method, and Acquisition Costs

We have not acquired 93 ownerships in the current approved refuge boundary. Of those, other entities permanently protect 17: New Jersey Green Acres, the County Farmland Protection Program, or the local municipality. That leaves 76 ownerships, or approximately 1,200 acres, that lack permanent protection in the current refuge boundary. We are now negotiating to protect nine ownerships, or 250 additional acres.

Although we expect that most landowners would want to sell all interests in their lands, we propose to acquire only the minimum interest necessary to manage the lands. We would pursue less-than-fee acquisition methods (e.g., a conservation easement) during negotiations if that were mutually agreeable, and we are confident we can accomplish our management objectives with less than full ownership.

Approximately 500 ownerships lie in our proposed expansion area. We estimate the cost of acquiring those 9,550 acres at \$54.48 million. We base that figure on the acquisition in full fee simple of 4,763 acres of wetlands at a cost of \$3,500/acre (\$16.67 million), and acquiring easements on 4,585 acres of uplands at an 80 percent cost of \$10,000/acre (\$36.68 million). We would acquire the remaining 197 acres in either fee or easement (\$1.13 million). We would need an additional \$3.5 million to purchase the privately owned inholdings in the approved refuge acquisition boundary.

Financial Strategy—Annual Operating and Maintenance (O&M), Staffing, and Refuge Operating Needs (RONs) Projects

Our proposal assumes the Service will acquire a number of structures, most of which will not support the refuge or Service mission and would be slated for demolition. Structures we are likely to obtain include single-family homes and farm buildings. Some buildings that are in excellent condition could be used for refuge quarters, equipment storage or a visitor contact facility, although we did not identify that as an objective in alternative B of the draft CCP/EA. Although we have not accomplished a facilities survey on all 9,550 acres in our proposal, we expect, on average, to have to demolish one building for every four parcels we purchase in fee. We will handle on a case-by-case basis the parcels we obtain by easement. The most cost-effective way to remove a structure is usually for the staff or a contractor to demolish it. Tables G-5 and G-6 below note those anticipated costs. We have also identified the costs associated with posting signs for boundaries and seasonal closures. We identify the contaminant costs as Level 1 surveys for most parcels, although we recommend some soil testing, because of the possibility of contamination from previous land uses such as agriculture. Although we do not anticipate acquiring any contaminated sites, they would require substantial funding for remediation.

Our preferred alternative (alternative B) in the draft CCP/EA identifies the area directly north of the present refuge as suitable for creating waterfowl impoundments. Ducks Unlimited has assisted in the funding and construction of impoundments on the refuge in the past, and we hope they will continue to do so in the future.

Adding new lands to the refuge would result in additional public use opportunities and costs to the refuge. In the proposed expanded boundary, we would plan to add approximately five parking areas, five fishing access points, three trails, and five observation areas. The refuge would also open approximately 6,500 acres of land for hunting.

Funding to support minimum operations would be diverted from the refuge complex. Alternative B of the draft CCP/EA proposes a staff of five full time employees to meet the refuge’s approved management requirements in the current and proposed expanded boundaries. If the refuge acquired all the new lands identified in the draft LPP, approximately 30 percent of staff time would be used to manage and protect the new areas.

Table G.5. One-time Costs Associated with Operating and Maintaining Lands in the LPP Proposal.*

Estimated <u>One-Time</u> Operating Costs	Costs in Dollars
Establish new impoundments north of Liberty Marsh	\$250,000
Post informational, regulatory, boundary signs	\$65,000
Demolition of houses/small buildings	\$5,000 to 15,000 per building
Demolition of barns	\$20,000 to \$75,000 per barn
Contaminant (level 1) studies and soil testing	\$10,000 to \$20,000
Construction of public use sites (trails, blinds)	\$170,000
Construction/improvement of parking areas	\$40,000
New kiosks/exhibits	\$50,000
Total Estimated One-Time Operations Cost	minimum of \$595,000 plus demolition costs

* These costs assume the full implementation of the draft CCP/EA preferred alternative.

Table G.6. Annual Costs Associated with Operating and Maintaining Lands in the LPP Proposal.*

Estimated <u>Annual</u> O&M Costs	Costs in Dollars
Waterfowl impoundment maintenance and management	\$5,000
Habitat inventories	\$25,000
General maintenance of public use facilities	\$5,000
Mowing and Grazing Informational, regulatory, and boundary signs	\$20,000
Total Estimated Annual O&M Cost	\$55,000
Estimated Annual Refuge Revenue Sharing Payment	\$90,000

* These costs assume the full implementation of the draft CCP/EA preferred alternative.

Public Attitude, Involvement, and Potential Partners

The supporters of refuge expansion include Senators Frank Lautenberg and Robert Menendez of New Jersey and Senators Charles Schumer and Hillary Clinton of New York; Representatives Scott Garrett (N.J. 5), Maurice Hinchey (N.Y. 22), and John Hall (N.Y. 19); Governor Jon Corzine of New Jersey, and Governor Elliot Spitzer of New York; the New Jersey Department of Environmental Conservation; the New York Department

of Environmental Conservation; both state's fish and wildlife agencies; Sussex County in N.J. and Orange County in N.Y.; the townships of Vernon, Wantage, Layfayette, Hardyston and Frankford in N.J. and Warwick and Minisink in N.Y.; a number of prominent conservation partners, including the Friends of the Wallkill River refuge, Morris Land Conservancy, Ducks Unlimited, Trust for Public Land, N.J. Audubon, Wallkill Watershed Management Group, and The Nature Conservancy; and the public. Because open space is a major issue in the region, developers and conservationists alike recognize the refuge role in preserving habitat (and, in many cases, enhancing property values). That recognition surfaced in our public scoping for the draft CCP/EA, our meetings with those individuals and groups, and our contacts with elected officials and their staffs.

By establishing and joining many valuable partnerships, we have enhanced our ability to protect and manage wildlife and habitats along the Wallkill River and its tributaries. Partners are integral in most refuge programs. Our partners assist us in activities including environmental education and interpretive programs, land acquisition, public relations, habitat evaluations, species inventories, nest site monitoring, and habitat restoration. In addition, a growing volunteer program supports refuge projects.

Due to the cyclical nature of funding for government agencies, land protection among public agencies and private organizations is vital for accomplishing refuge goals. Many people believe the only way to protect what is left of rural New Jersey for all parties—private owners, federal, state, and local agencies, and private organizations—is to join in partnerships and pool resources to accomplish common conservation goals. There is a great deal of support for an approach that focuses on voluntarily working together in the spirit of cooperation, combining resources, sharing information, keeping people informed, and simply being good neighbors. Our proposal is fully consistent with that approach.

Public Use

Collaborating can also help us provide high quality, wildlife-dependent, public use opportunities. Non-consumptive uses such as environmental education are excellent stages to grow and showcase partnerships. In addition, local hunting groups, fishing groups and birding groups work with the refuge on a continuing basis. We pursue opportunities as much as possible, given the limited resources of the refuge.

The preferred alternative in our draft CCP/EA projects a 15 percent increase in visitation on the refuge (approximately 36,000 people) over the next 15 years. That increase would result from the new trails, parking areas, boat ramps, fishing accesses, interpretive overlooks and observation platforms proposed in the preferred alternative.

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, based on the New Jersey State seasons, on newly acquired islands, consistent with the refuge Annual Hunt Plan. We would allow fishing and canoeing or kayaking along the Papakating Creek and Wallkill River. Working with state and local agencies, we would study the feasibility of converting an abandoned railroad bed into a multi-use trail. The refuge also would continue its limited interpretive and environmental education programs and increase partnership opportunities to interpret the refuge and the watershed.

Bibliography and References

Dettmers. 2000. Personal communication.

U.S. Fish and Wildlife Service. 1998. Recovery Plan for Mitchell's Satyr Butterfly *Neonympha mitchellii mitchellii* French (Lepidoptera: Nymphalidae: Satyrinae). http://ecos.fws.gov/docs/recovery_plans/1998/980402.pdf

U.S. Fish and Wildlife Service. 2001. Bog Turtle (*Clemmys mühlenbergii*), Northern Population, Recovery Plan. Hadley, Massachusetts. 96 pp.