

Chapter 2



Snow geese
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Alternatives

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Introduction

This chapter presents our process for formulating the alternatives, actions that are common to all the alternatives, actions or alternatives we considered but did not fully develop, and a description and rationale for the key measures in the three alternatives we analyzed in detail. At the end of the chapter, you will find a tabular matrix that compares and contrasts each alternative by their specific management actions and strategies. We organized that table to show how those actions and strategies address the significant issues chapter 1 identifies.

Formulating the Alternatives

Developing goals for the Complex was one of the first steps in our planning process. Those goals, common to all of the alternatives, are intentionally broad, descriptive statements of the desired future conditions for Complex lands. They articulate the principal elements of refuge purposes and our vision statement, and provide the foundation for developing specific management objectives. After developing our goals, we considered a wide range of possible management actions or strategies that could help us meet them. Then we began the process of creating alternatives.

Essentially, objectives are incremental steps we take to achieve a goal, and they further define management targets in measurable terms. Objectives can often provide the basis for determining more detailed strategies, and monitoring and evaluating refuge management performance. Alternatives achieve the missions of the Service and the Refuge System, refuge establishment purposes, and the vision and goals for the Complex. They also respond to issues and opportunities identified during the planning process.

NEPA requires our analysis of a “No Action” alternative, which can be defined as continuing our current management. In this draft CCP/EA, alternative A fulfills that definition. It provides the baseline for comparing and contrasting the other two action alternatives, and is the focus of chapter 3, “Affected Environment.” Readers should refer frequently to chapter 3 for detailed descriptions and maps of current resources at the Complex.

Alternative A differs from alternatives B and C because it describes established management activities that implement agency regulations, policy, and guidance under our current levels of staffing and funding. Unless otherwise noted, Complex staff will implement all of the actions in all of the alternatives. All alternatives work under the assumption that appropriate staffing will be available.

**Actions
Common to all
Alternatives**

All of the alternatives share some actions. Some may be required by law or policy, or represent NEPA decisions that have recently undergone public and agency review. Others are administrative actions that do not necessarily require public review but we wanted to highlight in this document. Still others are considered so fundamentally important in achieving the purposes and goals of the Complex refuges that we determined they should happen regardless of the alternative selected.

Please note that some of the strategies associated with common actions vary among the alternatives. We describe those variations under the appropriate alternative heading and also in the alternatives matrix. Detailed descriptions and background information for current management actions common to all alternatives can be found in chapter 3. Also, some actions may be applicable to more than one goal. For example, biological monitoring appears under Goal 1, but also applies to Goals 2 and 3.

Goal 1. Improve the biological diversity and integrity of upland cover types to sustain high-quality habitat for migratory passerine birds.

Biological monitoring

Staff and volunteers perform surveys of breeding land birds and salt marsh birds at Wertheim, including salt marsh sharp-tailed sparrows and seaside sparrows, under a region-wide protocol. Those surveys provide an index of species occurrence, highlight areas used by declining species, and prove valuable in the analysis of regional breeding concentration areas. Six fenced deer exclosures at Wertheim help us evaluate forest regeneration in the absence of deer herbivory. Regeneration is important for the long-term resilience of a forest and for ground-nesting birds.

Managing land with prescribed burns

The Brookhaven Fire District has become more engaged with the refuge in participating in prescribed burns and discussing lesser impact wildfire suppression techniques. We will negotiate similar cooperative agreements with the other six Fire Districts that provide protection for the other refuges as time allows.

Fire is part of a natural process that shaped the North American landscape over thousands of years (Patterson and Sassman 1988), and is recognized as one of the primary historic disturbances on Long Island that contributed to controlling or influencing the structure and composition of native vegetative communities. Early- to mid-successional habitats in northeastern North America, such as pine barrens and maritime heath, developed over time on coastal areas from southern Maine to the mid-Atlantic, as a result of infrequent natural fires, and frequent fires set by Native Americans

(Patterson and Sassman 1988, Vickery and Dunwiddie 1997). More recently, however, humans have suppressed wildfires aggressively, particularly in densely populated areas. When fire is excluded from a fire-dependent ecosystem, the vegetation in those communities is either altered to favor species that dominate under longer disturbance intervals for that ecosystem, or the plant community may be completely converted to a non-fire-dependent type. Because the restoration of the influence of natural wildfires is often not possible to restore or maintain those communities, the fire period that supports them has to be determined, and then mimicked with prescribed fire.

Prescribed fire is a management tool involving the closely controlled ignition, monitoring, and suppression of fire to attain a habitat goal. Prescribed fire has been used successfully on Long Island since the early 1990s to maintain and enhance woodlands, grasslands, and marshlands, including endangered fire-dependent plant communities. While ensuring public safety and minimizing habitat destruction and property damage will receive top priority, we will encourage Fire Departments to use Minimum Impact Suppression Techniques, which will allow fires to burn under certain conditions and extinguish them with minimal residual adverse effects on the environment.

Protecting amphibians and reptiles

At Wertheim, we will confirm the presence of the state-endangered mud turtle, and survey anurans under a region-wide protocol.

Managing overabundant wildlife populations

Overabundant populations of white-tailed deer reduce forest regeneration, impact woody understories, eliminate many herbs, minimize plant diversity, and impact habitats for songbirds (Healy et al. 1997). The impacts of overabundant deer populations on public health and safety include tick-borne disease and vehicle collisions. The economic impacts of overabundant deer include negative effects on timber resources and ornamental and agricultural plantings (Woolf and Harder 1979, Cypher and Cypher 1988).

We will continue to monitor deer populations and their effects on wildlife habitats at Wertheim and Seatuck refuges. We initiated a controlled public deer hunt at Wertheim in the 2005 deer hunting season, and will continue the annual deer cull at Seatuck as needed.

Goal 2. Restore the biological health of aquatic habitats to high-quality conditions on the Complex salt marshes, bays, tidal tributaries, and impoundments to benefit waterfowl and shorebirds dependent on these systems, while also supporting other native, wetland-dependent species.

Managing for black duck and other wintering waterfowl

We continue to maintain waterfowl nesting structures at the Wertheim, Morton, and Conscience Point refuges.

We manage the Big Fish Creek impoundment at Wertheim for waterfowl and shorebirds, and conduct waterfowl and shorebird surveys there. Because invasive species impact black ducks and other wintering waterfowl, we control common reed (*Phragmites australis*) with chemical and mechanical treatments, and limit mute swan populations by adding eggs.

At Oyster Bay refuge, we continue to implement the 1989 decision document regarding private structures and dredging; work with the DEC and the ACOE to review construction and dredging projects; participate in the long-range planning coalition; and survey the refuge boundaries to minimize impacts on its aquatic habitats. We also have a MOU with the Friends of the Bay for monitoring water quality. The data collected by the organization will help with management decisions. We have also established partnerships with the Long Island Wetland Restoration Initiative, Ducks Unlimited, and others to restore wetlands and other habitats on Long Island for the benefit of wildlife.

Water quality

We will continue to support the Friends of the Bay in monitoring water quality at Oyster Bay by providing and maintaining a Hydrolab® water quality surveyor. Receiving information from county and state workers, volunteers, legislators, and the general public will keep us apprised of water quality conditions.

We also monitor all dock structures on the refuge annually, and extensively review all special use permit requests according to our revised policy.

Enhance brook trout

Yaphank Creek at Wertheim refuge is recognized as one of the few locations on Long Island that supports a native population of sea-run brook trout. Organizations like Trout Unlimited have been charting trends in this population for several years, and have a great interest in its long-term well-being. To satisfy angler demand, the DEC stocks hatchery-raised rainbow and brown trout in the Carmans River several times each year. The stocked fish are part of a “put-and-take” fishery, whereby the fish are of “legal” size.

We will continue to monitor the size, age, and geographic distribution of the native population at least once every 5 years and restore

habitat degraded by Phragmites and mute swans along the shoreline of Yaphank Creek. We will also continue monitor the effects of stocking hatchery-reared brown and rainbow trout to ensure native brook trout populations are not put at risk. This will be accomplished with the assistance of FWS Fisheries, NOAA Fisheries, and the DEC.

Controlling invasive species

We have kept strategic pristine areas such as forest interiors free of exotic plants by hand-pulling and applying an herbicide to cut stumps. In 2003, the Challenge Cost Share Program provided matching funds for controlling 4 acres of black locust at Conscience Point, 12 acres of Asiatic bittersweet and black locust at Wertheim, and 2 acres of black locust at Seatuck.

The Complex is a founding member of the Long Island Weed Management Area. Networking with other members and attending periodic meetings has helped us recognize the most problematic species, develop mapping standards, prioritize treatment regimes, and prepare outreach materials. Our staff will continue to collaborate in both field projects and meetings.

Aerial photography interpretations revealed that common reed at Wertheim increased from 155 acres in 1974 to 335 acres in 2000. It now dominates virtually all of the brackish intertidal marsh (Batcher 2003). To limit its spread, we work with the DEC to encourage permitting for the use of herbicides, mowing, burning, and manipulating water levels in Wertheim impoundments.

We initiated a control project at Wertheim's Big Fish Creek impoundment in 2001, and expanded it in 2002 to the sub-impoundment nearby. The treatments included the application of the herbicide Rodeo® by a certified contractor and the prescribed burning or mowing of dead canes. That treatment regime is repeated annually for 3 to 4 years to improve its effectiveness. Approximately 45 acres are now free of common reed. We will continue to treat previously treated areas until our restoration objectives have been met, and in 2005 we spot treated the headwaters of Yaphank Creek and Little Neck Run, both at Wertheim refuge.

Controlling mosquitoes

We are working with partners to reduce the amount of spraying on refuge lands and ensure activities are consistent with the Service's interim and future mosquito control guidance. The Service's interim mosquito Guidance (2005) states that "when necessary to protect human, wildlife, or domestic animal health, the Service will reduce

mosquitoes associated health threats using an integrated pest management approach, including when practical compatible, non-pesticide actions that reduce mosquito production. Except in officially determined health emergencies, any procedure the Service uses to reduce mosquito production will meet compatibility requirements as found in 603 FW 2 and must give full consideration to the safety and integrity of non-target organisms and communities, including federally listed threatened and endangered species.”

We need more information before implementing any new management strategies for controlling mosquitoes. We are assessing the results of an open marsh water management (OMWM) pilot study conducted at Wertheim and considering its potential as both a mosquito control mechanism and a wetlands restoration tool. We will also be evaluating the results of a 5-year region-wide OMWM study recently completed by the Service. We are sensitive to concerns about the health risks that mosquitoes pose, the impact of pesticides on water quality, habitats, and human health and the impact of OMWM techniques on the present marsh landscape. The results of the studies, public concerns, and any new information our biologists have gathered will guide our future mosquito and marsh management strategies.

Goal 3. Restore and increase the biological diversity and integrity of native grasslands to foster endangered plant recovery and the communities upon which they depend.

Sandplain gerardia

We will consider current and future access in order to protect plants from accidental harm from public.

More than 85 percent of the New York State population of federal-listed endangered sandplain gerardia grows at a 101-acre site adjacent to the Sayville Unit of Wertheim refuge. Although the Federal Aviation Administration owns that site, we assist The Nature Conservancy in managing it. It represents one of the top three most important populations of sandplain gerardia in the Northeast, and is quite possibly the most viable of the three.

Although we do not own that property, we will continue to assist TNC in its management. Refuge staff will mow the grassland at Sayville annually to discourage the growth of woody plants. We will also continue the translocation in plots at Conscience Point and Seatuck that we started in 2001 and evaluate the current and future access to the site to protect the plants from accidental harm from the public. We will collaborate with TNC and the DEC on periodic, prescribed burns at Sayville, Conscience Point, and Seatuck. Once the Sayville FAA site has been transferred to us, we will develop and implement a prescribed burn regime and remove the intruding, non-native vegetation. Our goal is to restore that site to its natural habitat.

Goal 4. Enhance the functionality of coastal strand habitats as they relate to beach-nesting colonial water birds and shorebirds to meet optimal population levels.

Protecting piping plover, roseate tern, and least tern

Piping plovers, which can be found breeding at the Complex, are federal-listed as threatened and state-listed as endangered. Roseate terns are federal- and state-listed as endangered. They feed and rest on the refuges during winter migration. Least terns, a federal-listed endangered and state-listed threatened species, rest on refuge units while migrating in the winter.

We close sections of beach at the Morton and Target Rock refuges for the plover and tern nesting season. At Morton, we prohibit public access to the peninsula, and at Target Rock, we prohibit access to portions of beach. We enforce the closure at Morton with the daily presence of seasonal plover stewards and periodic patrols by a refuge officer. The plover stewards erect predator exclosures for piping plover and the least tern colony, monitor nesting success, and assess the relative abundance of potential predators. Parts of the Morton, Target Rock, and Amagansett refuges remain open during those beach closures. We install symbolic fencing to restrain public use on beaches above mean high tide line. We will install artificial nest structures for roseate terns at Morton.

To raise public awareness of threatened or endangered species and other species of concern, volunteers and seasonal staff meet and educate beach visitors; interpretive signs are available at Morton; and the public can participate in the beach clean-up program at Target Rock. At both refuges, signs and press releases inform the public about beach closures.

Goal 5. Provide priority wildlife-dependent recreational and educational opportunities when compatible with the resource and available funding.

Establishing hunting and fishing opportunities

We evaluated and approved a controlled public deer hunt in an environmental assessment and through its public input. That hunt began at Wertheim in the fall 2005. We will continue to evaluate the effectiveness of the hunt.

Fishing areas are available at Target Rock, Amagansett, Wertheim, Morton, and Oyster Bay. See table 3.5 for details.

Wildlife observation, photography, and interpretation

We will maintain existing opportunities in wildlife observation, photography, and interpretation as described in chapter 3. Cross-country skiing, snowshoeing, and non-motorized boating are activities that can help facilitate these priority public uses. For example, cross-country skis and snowshoes allow visitors to access existing trails at Wertheim, Morton, and Target Rock during the winter months when there is snow on the ground. Similarly, non-motorized boats allow

visitors at Wertheim and Oyster Bay a means to engage in wildlife observation and other priority wildlife-dependent public uses in areas inaccessible by foot. Since skiing and snowshoeing are winter activities that require snow, there are fewer adverse impacts to the Complex's species of concern compared to activities like jogging, bicycling, and horseback riding.

Maintenance dredging at Seatuck and Morton refuges provides boat access to navigable waters. Maintenance dredging is not a priority public use of the System. However, it does allow access for other priority public uses, including wildlife observation and photography. Refuge staff will evaluate all requests for maintenance dredging before allowing them on refuge property. No dredging project will be allowed if the refuge manager has not issued a special use permit (SUP), or if the refuge manager determines that dredging may adversely affect wildlife, wildlife habitat, on-going or planned refuge management activities, approved priority public uses, or public health and safety. We will also require any dredging project applicant to obtain all federal, state, and local permits applicable before we issue a SUP.

Goal 6. Communicate and collaborate with local communities and partners throughout Long Island to promote the National Wildlife Refuge System and the Complex.

Increasing opportunities for public stewardship and improving outreach

All of the alternatives will promote our existing partnerships, new partnerships, and volunteer opportunities. Those relationships are vital for success in managing all aspects of the refuge, from protecting land to managing habitat and species or providing wildlife-dependent recreation.

Volunteers and partners have opportunities to lead interpretive tours, conduct teacher workshops, maintain trails, and update interpretive materials. Refer to the matrix at the end of this chapter and chapter 3 for details, more volunteer opportunities, and how we maintain and improve our volunteer and partner relations. Table 3.7 lists many of our established partnerships.

We update elected officials, partners, and other agencies with what we are doing at the Complex. News releases, fact sheets, brochures, our website, and participating in local events all improve our outreach.

Developing a headquarters and visitor center

The current headquarters office at Wertheim refuge is small, needs repairs and upgrades, and possibly could become a costly health and safety problem. The Complex will initiate actions to move some staff from existing trailers to refuge quarters that will be temporarily utilized as an administrative office.

We cannot accommodate the public at that site, given its remote location from public use trails and facilities. Therefore, we will continue to use the present office site as a visitor contact station that will also support some office and maintenance staff. The strategies for a permanent visitor center/headquarters can be found in our preferred alternative B.

Land Acquisition

We will continue to acquire refuge inholdings within approved refuge boundaries as willing sellers become available. We will also continue to consider minor acquisitions adjacent to existing refuges that are biologically important or provide connections with other protected lands of our conservation partners, e.g. the FAA site adjacent to Sayville, the Shinnecock wetlands east of Wertheim, and Lloyd Harbor and the private beach at Target Rock. These situations will be handled on a case by case basis as they become available.

Actions Considered but Eliminated from Further Evaluation

Wilderness

We conducted a wilderness review under Service policy to determine if any lands and waters of the Complex were suitable for proposed designation as a Wilderness Area. Appendix D reports the results of that review. The planning team determined that none of the nine units met the minimum criteria due to their small size and many permanent roads. Therefore, this CCP/EA does not further evaluate wilderness designation or management as a suitable action.

Land Protection Planning

Because of the limited number of undeveloped tracts in the vicinity of the refuges on Long Island, we are not planning any major refuge expansions with a land protection plan. Reduced land acquisition funding coupled with escalating land prices have also made it difficult for the Service to undertake large land preservation, especially on Long Island. However, we will continue to consider minor acquisitions adjacent to the refuges if they are biologically important or provide connections with other lands protected by our conservation partners. See “Land Acquisition” under “Actions Common To All Alternatives.”

Elimination of the Hunt

In the early phases of the planning process, we received some comments that opposed hunting on any national wildlife refuge. Because of the overpopulation of deer at Wertheim and its negative impacts, refuge staff developed an environmental assessment to consider options for controlling that population, including a public hunt. We consider that assessment sufficient; thus, this draft CCP/EA will not reassess deer hunting on Wertheim.

Alternative A. Current Management

This alternative serves as a baseline against which we compare the other alternatives. It also describes projects planned, funded, or underway. Additional projects and more detailed information can be found in chapter 3, “Affected Environment.”

Our partnerships with federal, state, county, town, and non-governmental organizations and volunteers will continue to form the core of our current management. The priorities of the biological program will continue to focus on threatened and endangered species, habitat restoration, and the management of invasive or nuisance species. Those projects include vegetation and pest management to maintain high-quality habitat. We will continue to conduct baseline biological inventories as funding and staffing allow.

We will continue to promote white-tailed deer management at Wertheim refuge with a controlled public hunt. Fishing opportunities will remain as they are, but with improvements to the fishing access site at Wertheim. Other priority public use programs will continue—primarily wildlife observation, nature photography, and interpretation. Those will focus on units in the Complex that offer such visitor facilities as parking, nature trails, information kiosks, and restrooms. We will design all trail improvements to comply with the Americans with Disabilities Act, and expect about a 10 percent increase in annual visitation based on recent local trends. However, increasing visitation is not an objective of this alternative.

Plans for an interim headquarters office/residence and a new headquarters/visitor center will continue. Both will involve the habitat restoration of the current office site and new trail infrastructure, as well as the construction of the buildings and the production of interpretive materials.

We will maintain current staffing levels. See appendix F and the descriptions in chapter 3.

Goal 1. Improve the biological diversity and integrity of upland cover types to sustain high-quality habitat for migratory passerine birds.

Actions are described in “Actions Common to All Alternatives” and in chapter 3.



Black-capped chickadee
S. Pollack/USFWS

Goal 2. Restore the biological health of aquatic habitats to high-quality conditions on the Complex salt marshes, bays, tidal

Marsh and wetlands

Between the late 1980s and mid-1990s, we plugged the mouths of mosquito drainage ditches at Wertheim and Seatuck refuges to reclaim some of the surface waters lost with open ditches. Muskrat burrows or tidal energy have since breached many of the plugs; we will not make provisions for repairing them.

Our current open marsh water management status is described in “Actions Common to All Alternatives.”

Mosquitoes

In the past refuge staff monitored mosquito larval production in salt marshes at Wertheim and Seatuck weekly from May through September. We conveyed that information to SCVC and, pursuant to the National Mosquito Management Guidance, permission was granted to spray larvicide when necessary. We are currently phasing out our role in collecting data. Rather, SCVC will collect and compile data then provide the information to the refuge. We will then authorize spraying if necessary.

We will continue to work with Suffolk County in advancing a plan to install a marsh restoration project that incorporates OMWM techniques on the east side of Wertheim. Those techniques rely more heavily on predaceous fish native to the salt marsh to control mosquitoes. We intend to restore the marsh to its natural condition for the benefit of waterfowl and shorebirds, while also eliminating the need to spray larvicide.

Staff will also participate in developing the “Suffolk County Vector Control and Wetlands Management Long-Term Plan.” That multi-year plan will identify in detail the environmental consequences of chemical and physical methods of mosquito control and recognize more appropriate options for county-wide implementation.

The USFWS has a draft National Mosquito Management Policy. The Complex will comply with this policy when it is finalized.

Tidal rivers and mudflats

Due to inadequate funding, we anticipate no action under this objective, with the exception of discussing proposals with such entities as the U.S. Army Corps of Engineers and Ducks Unlimited.

Goal 3. Restore and increase the biological diversity and integrity of native grasslands to foster endangered plant recovery and the communities upon which they depend.

Actions are described in “Actions Common to All Alternatives” and chapter 3.

Goal 4. Enhance the functionality of coastal strand habitats as they relate to beach-nesting colonial water birds and shorebirds to meet optimal population levels.

In addition to the description in “Actions Common to All Alternatives,” we close portions of the beaches at Morton and Target Rock from April 1 to August 31. Parts of Morton, Target Rock, and Amagansett remain open for public use during beach closures. We install symbolic fencing to restrain public use on beaches above mean high tide line.

Goal 5. Provide priority wildlife-dependent recreational and educational opportunities when compatible with the resource and available funding.

Map 2-1 on the next page shows current public use opportunities available at the Complex. Please refer to chapter 3 for more information and detailed maps of refuges open to public use.

Access

To minimize the disturbance of nesting wildlife, we will continue to partially close beach areas to public use at Morton, Target Rock, and Amagansett from April 1 to August 31 each year for beach-dependent nesting birds. Only Wertheim, Target Rock and Morton refuges now provide facilities for public visitation, including parking, restrooms, and an information kiosk. Those refuges also have nature trails with a self-guided interpretive brochure and some interpretive signs. Oyster Bay and Amagansett are open to visitors, but no onsite Complex facilities exist. Conscience Point, Sayville, and Lido Beach are closed to the public. We will maintain these levels of access under this alternative.

At Amagansett and Morton, sunbathing and beach use are allowable activities. These activities are traditional beach-refuge uses and have been determined to be compatible at current levels of use with the stipulations listed in the compatibility determination. See appendix C for details.

We will continue to grant special use permits for access to closed areas on a case-by-case basis for research, environmental education, and photography that benefit the Complex. We will also grant such access to certain partners involved in cooperative agreements or memorandums of understanding. Those partnerships are formed for resource protection or habitat enhancement. Law enforcement patrols will address trespassing problems.

Interpretation

We will continue to maintain the information kiosks and trail systems at the Morton, Target Rock, and Wertheim refuges. As funding allows, we will keep hiring student interns to provide in-person



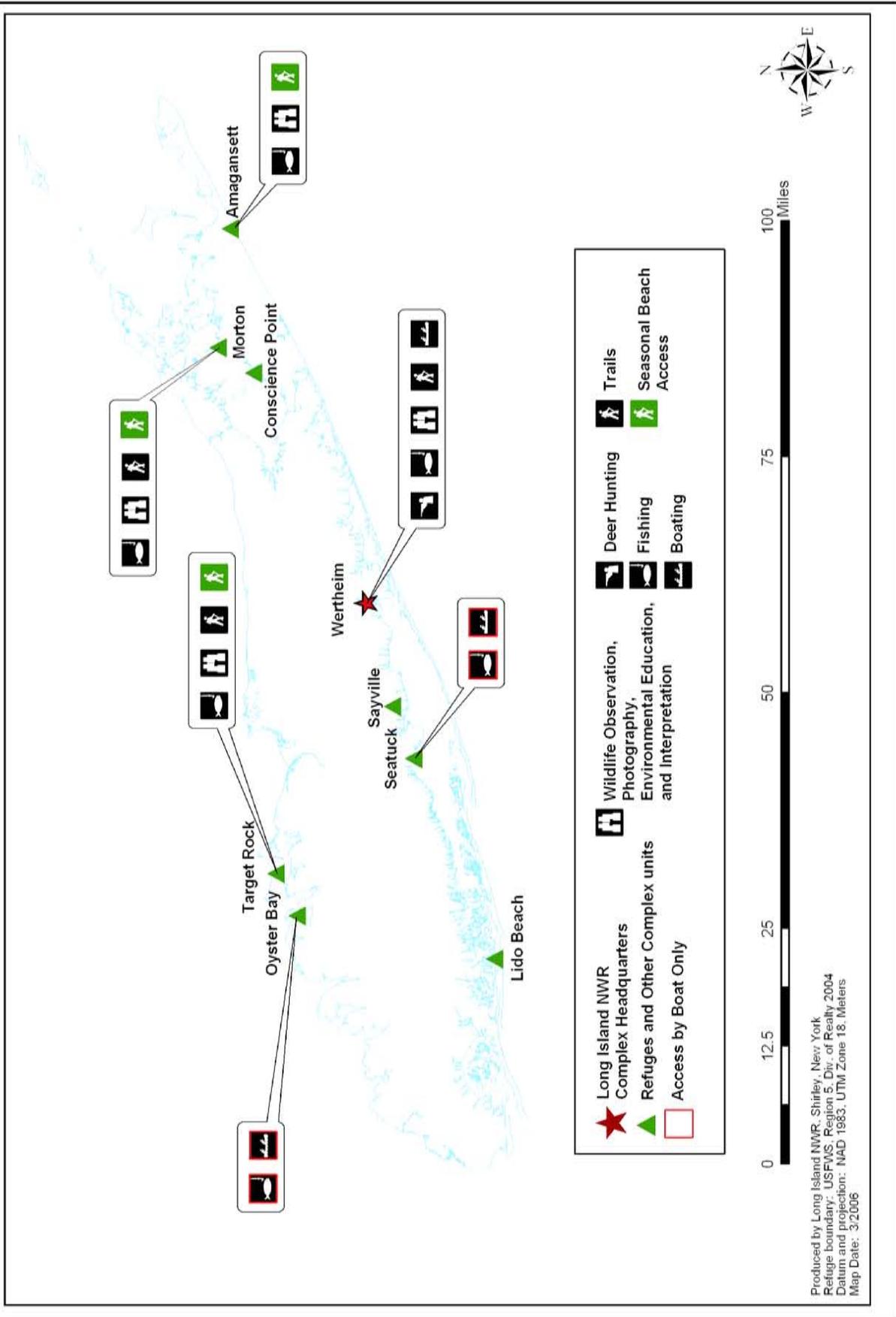
U.S. Fish & Wildlife Service

Long Island National Wildlife Refuge Complex

Nassau and Suffolk Counties, New York

Map 2-1

Current Public Use Opportunities



Produced by Long Island NWR, Shirley, New York
 Refuge boundary: USFWS, Region 5, Div. of Realty 2004
 Datum and projection: NAD 1983, UTM Zone 18, Meters
 Map Date: 3/2006

interpretation to visitors. The Friends of Wertheim Programs Committee will proceed with providing additional interpretive opportunities and assistance to programs and events hosted by refuge staff. Partnerships with environmental education organizations that regularly use the Complex nature trails will continue. We will also maintain our relationship with the Long Island Visitors Bureau & Sports commission, and keep the Complex website up-to-date.

Wildlife observation and photography

The Complex will maintain the existing observation blinds and platforms along nature trails at Wertheim, Target Rock and Morton. We will also encourage nature photography along trails, and will continue to allow it in closed areas and at closed Complex units on a case-by-case basis by special use permit or by volunteers providing direct service to the Complex. Occasional photography workshops and birding programs will also be held on Complex units open for public use.

Environmental education

The Complex annually provides environmental education activity packets, either in their entirety or as excerpts, during our field environmental education programs and teacher workshops. We will continue to support classroom programs by lending video copies of satellite broadcasts provided by our National Conservation Training Center and sending notices of Web-based programs offered by the Service. At Wertheim, we will continue to work with Ducks Unlimited in coordinating New York State Federal Junior Duck Stamp Program. That program has the largest response of all environmental education programs at the Complex. We will maintain our relationship with Cornell University by special use permit.

Fishing

For fishing on the Complex, the methods of access will still be by foot from selected nature trails or by boat. Freshwater and saltwater fishing will remain available at Wertheim and Oyster Bay. Saltwater fishing from shore will remain available at Target Rock, Morton and Amagansett. See chapter 3, page 66 and table 3.5 for more information.

The Complex does not maintain boat launching facilities. The exception is the fishing access site at Wertheim, which we maintain in cooperation with the DEC, Department of Transportation and the Town of Brookhaven. Plans to update the official agreement and improve the site are underway, and include measures for complying with ADA standards for wheelchair accessibility.

Goal 6. Communicate and collaborate with local communities and partners throughout Long Island to promote the National Wildlife Refuge System and the Complex.

Outreach

Our attempts to work with major television affiliates in New York City require a more sophisticated approach and more staff time and expertise than is now available. We will continue sending them our media releases. We provide at least two presentations each year to local civic organizations, and work a booth at two or three fairs, sporting shows, or other community events as time allows. The refuge manager regularly contacts elected officials or their staff at all levels of government to keep them informed about our current projects and proposals. We will continue to inform our neighbors about certain management activities in their communities.



Fishing opportunities will remain available at Wertheim and Oyster Bay.
USFWS

Alternative B. The Service- Proposed Action

This alternative represents our proposed action, the alternative we recommend for our Director's approval. Selecting this alternative would increase our protection and management of endangered, threatened or other species of concern, including migratory wildlife. It would also increase the number and quality of opportunities for compatible, wildlife-dependent, public recreation, and allow the Complex to benefit from its proximity to New York City and urban communities.

Please use the matrix at the end of this chapter to further compare and contrast the different alternatives.

Goal 1. Improve the biological diversity and integrity of upland cover types to sustain high quality habitat for migratory passerine birds.

Objective 1: White-tailed deer management

Within 10 years, reduce deer densities at Wertheim and Seatuck so that they do not exceed 20-30 deer/square mile. This will improve conditions for ground nesting birds by promoting forest regeneration and increasing vegetation diversity.

As we discussed in "Actions Common to All Alternatives," overabundant deer populations disrupt ecosystems, threaten public health and safety, and negatively impact the economy.

In addition to the actions in alternative A, we will expand deer population monitoring onto the remaining upland units in the Complex.

Strategies

Manage deer populations exceeding 20–30 deer/square mile with lethal controls.

- Implement improved public hunting programs at Wertheim; the only Complex unit sizeable enough, larger than 50 acres, to support such activities.
- Accurately estimate deer densities through the use of ground-based and aerial counts and establish monitoring plots to assess the effects of deer browsing on forest regeneration.
- Assess what ground-nesting bird species use forested habitat communities at the Complex and the current status of those species.
- Develop a monitoring regime to follow species response to deer management practices at Wertheim.
- Improve and extend fencing along the western refuge boundary at Seatuck.
- Encourage deer management programs on state lands in the immediate vicinity of refuges: e.g., Target Rock and Seatuck.

Objective 2: Invasive plant management

Within 5 years, complete mapping of upland invasive plant species including Asiatic bittersweet, black locust, Japanese barberry, Japanese honeysuckle, and multiflora rose, and develop stand-specific strategies for management. Within 10 years, implement the management strategies to treat 30% of the stands dominated by invasive species.

Invasive plants are nationally recognized as threats to ecosystems. We propose the following strategies in addition to those in alternative A.

Strategies

- Identify and map invasive plant locations and their approximate acreage at each refuge by 2010.
- Develop a treatment prioritization that accounts for the “invasability” of a species, resources at risk of invasion (e.g. federal-listed species), extent of spread, and ease of control.

Objective 3: Restore and maintain fire dependent native plant communities

By 2008, map vegetation communities that are fire-dependent, describe their current and future desired conditions, develop a strategy to restore and maintain these communities, and begin implementing the strategy.

Strategies

The primary purpose of using prescribed fire is to restore and maintain fire-dependent native plant communities. Thus, it is important to first have a precise vision of the historic fire regimes that shaped the native pine barrens and maritime grasslands in central and eastern Long Island, and the probable distribution of those habitat types on existing refuge lands.

- Determine the historic fire return interval, seasonality of natural fires, and fire intensity for pitch pine forest, hardwood forest, shrubland, and grassland communities (Jordan et al. 2003).
- Use fire history information, USDA soils databases for Long Island, and historical information on vegetation community distribution for Long Island to estimate the types and possible proportions of fire-dependent vegetation communities that historically existed at each refuge unit.
- Use that information as an “ecological roadmap” to evaluate maps of existing vegetation communities and soil types per refuge unit. Assign areas for restoration or maintenance of fire-dependent habitat types. Develop a “future conditions map.”

- Evaluate that future conditions map in light of constraints posed by adjacent private properties and Wildland Urban Interface (WUI) issues. Move target areas which may be subject to high intensity crown fires away from WUIs.
- Group target vegetation communities into logical burn units by fire regime. For example, group all areas scheduled for top-killing, high intensity fires, surface fires, of return interval 5 to 20 years into one burn unit. Likewise, group all areas scheduled for low-intensity, dormant season surface fires of return interval 2 to 10 years into a separate burn unit.
- Cooperate with local fire departments and partner agencies with regard to suppressing wildfires and supporting prescribed fires.
- Begin implementing prescribed fire and other associated treatments at a refuge level scale on the highest priority units and rotation.
- Conduct stand and fuel inventories for each refuge as a baseline for fire management treatments.
- Identify priority systems and units based on age class, stand condition, time since last fire, threatened and endangered species, etc.
- Develop an equipment cache adequate to support fire-related activities of Complex and Central Pine Barrens Commission partners.
- Develop outreach programs to educate the public about fire issues.

Objective 4: Restore and enhance bird populations

Initiate a biological monitoring program that assesses bird populations and habitat conditions within upland cover types for the breeding and non-breeding seasons. By 2010 complete assessments on 50% of upland stands.

Rigorous, appropriate, and habitat-specific surveys and monitoring regimes for bird species need to be developed. We are primarily interested in enhancing breeding and non-breeding habitat community functions for migratory birds in forest and grassland communities. Analyzing data from breeding land bird surveys at Wertheim will focus our contribution to regional, national, and Bird Conservation Region 30 goals. We will also develop or adopt appropriate surveying and monitoring protocols for those species using habitats we have not previously assessed.

In addition to those in alternative A, we will apply the following strategies to each refuge as appropriate, depending on its habitats.

Strategies

- Develop baseline surveying and monitoring regimes and adopt or develop protocols for the Complex's habitat communities for breeding and non-breeding seasons and initiate the surveys.
- Analyze baseline data for each community and determine where to focus specifically designed monitoring efforts to help track changes in species/habitat communities. This may be on a particular species guild, bird species, or habitat community of concern which supports a group of species.
- Determine what intervals we need for continued surveys on breeding land birds at Wertheim. Initially, surveys will focus on salt/brackish marsh and pitch pine-scrub oak habitat communities at Wertheim and Sayville. Additional surveys will take place at Seatuck as grassland area is expanded for rare and endangered plant and lepidopteron species.
- Initiate surveys at other refuges in the Complex where restoration, management, or public use occurs.
- Develop an atlas of lepidoptera and odonata for the Complex with the assistance of volunteers and interested associations like the Dragonfly Society of America.
- Continue to monitor forest regeneration plots at Wertheim and establish plots at Seatuck, which also has an overabundant deer population.
- Establish and maintain surveillance programs for forest pest species like the gypsy moth, emerald ash borer, orange-striped oakworm, and the Asian long-horned beetle.

Objective 5: Increase grassland size to benefit nesting grassland birds

By 2010, expand the effective area of grasslands at Conscience Point, Seatuck, and Sayville to the minimum area required by Savannah, Vesper, and Grasshopper sparrows, Eastern Meadowlark, and Bobolink. Ensure that habitat conditions such as vegetation type and density, coverage of woody stems, perch availability etc., are suitable for use by these species.

Goal 2. Restore the biological health of aquatic habitats to high quality conditions on the Complex salt marshes, bays, tidal tributaries, and impoundments to benefit waterfowl and shorebirds dependent on these systems, while also supporting other native, wetland-dependent species.

Objective 1: Reduce Phragmites

By 2007, prevent the expansion of *Phragmites australis* and, by 2010, reduce its overall distribution to 75% of 2005 levels.

The invasive plant common reed (*Phragmites australis*) has overtaken and dominated once-prized freshwater marsh communities throughout much of the coastal northeast. Compared to native marsh plants, *Phragmites* is of no food value and provides only limited cover for marsh-dwelling birds. The presence of such dense, monotypic growth severely impacts such species as American black duck (Audubon 2003), other dabbling ducks, least sandpiper, semi-palmated sandpiper, willet, and great egret. This plant now dominates roughly 335 acres of coastal marsh at Wertheim. That acreage is greater than half of the marsh and virtually all the tidal-freshwater marsh at the refuge.

Strategies

- Use 2005 aerials to accurately identify and map *Phragmites* distribution at all refuge units by 2007.
- Develop a species specific treatment plan basing priorities on the resources at risk of invasion, and ease of control. At Wertheim, part of the treatment plan will involve restoring tidal inundation, therefore increasing salinity which discourages *Phragmites* growth.
- Implement a treatment plan that controls problematic invasive plants with hydrologic restoration, herbicide application, mechanical removal, and/or prescribed fire with the intent of re-establishing native plants. Such a treatment plan will help eradicate at least 25 acres/year of invasive upland species, including at least 5 acres of invasive wetland plants.

Objective 2: Enhance salt marsh sharp-tailed sparrow and seaside sparrow

Improve habitat conditions for salt marsh sharp-tailed sparrow and seaside sparrow populations at Wertheim, Morton, Seatuck and Lido Beach through invasive species control (objective 1).

Since the 1930s, most of Long Island's salt marshes have been ditched for mosquito control purposes (see objective 3 on the following page for a more detailed discussion on mosquito control). The intent was to eliminate shallow ponds or pannes and other areas of standing water in which female mosquitoes deposit their eggs. The extensive network of parallel and grid ditches at the refuges in the Complex have effectively removed those aquatic features. Some bird, insect, mollusk, crustacean, and plant species flourish only in

those communities. The bird species at highest risk that depend on this habitat community are the salt marsh sharp-tailed and seaside sparrows. However, it also provides high-quality feeding and resting habitat for many wading birds, shorebirds, and waterfowl.

Strategies

- Collaborate with the New York Department of State, the New York Department of Environmental Conservation, The Nature Conservancy, Ducks Unlimited and others to perform new tidal wetland mapping and digitizing to serve as a basis for management planning, trends analysis, monitoring baseline, and plan for sea-level rise.
- Assess the hydrologic condition of each salt/brackish marsh system at the Complex to determine the factors that altered the tidal exchange.
- Develop salt/brackish marsh restoration plans specific to each marsh system. The plans will outline the impacts that altered each marsh system and the methods to be utilized for restoration.
- Implement the restoration plan to restore 600 acres of salt/brackish marsh at the Complex by the year 2020.
- After we complete our evaluation of OMWM (see “Actions Common to All Alternatives,” page 2-6), revise mosquito control practices within Wertheim and Seatuck to incorporate OMWM techniques, if appropriate.

Objective 3: Decrease insecticide use in marsh communities

By 2015, enhance the biotic integrity of salt and brackish marshes by decreasing the use of mosquito control chemicals at Wertheim, Seatuck and Lido Beach by 75%.

Mosquito management is complicated because many refuges in the Complex are adjacent to residential communities where disease vector and nuisance issues are amplified. A conflict of interests arises between protecting public health and protecting and restoring the salt/brackish marsh community. Additionally, OMWM techniques are not favored by everybody because of their initial impact on existing wetlands.

Residents near refuges create pressure to manage mosquito populations. As a result, local governments spray areas of marsh both inside and outside refuge lands by helicopter during the spring-summer mosquito breeding season. The two compounds typically used are methoprene (Altosid®), a growth regulator, and *Bacillus thuringiensis* (Bti), a bacterial pathogen. Past sprayings occurred as often as weekly in August and September at Wertheim, Seatuck, and

Lido Beach. More recently, refuge negotiations with local governments have reduced that spraying.

Spraying larvicides may adversely affect non-target wildlife like fish, birds, reptiles, mollusks, and other insects. The long-term effects of those compounds on non-target salt marsh species are not fully known (Brown; date unknown). However, killing mosquito larvae can alter the benthic community and potentially impact the food base of marsh-dependent migratory birds. As a result, the future productivity of the birds may be reduced. In addition, low-flying helicopters have been observed disturbing nesting osprey, and may also stress less visible marsh-nesting birds.

Mosquitoes serve as a valuable food source for many insect and bird species in the salt/brackish marsh community. Although we wish to eliminate mosquito spraying on refuges for the sake of wetlands and wildlife, we still recognize the need to protect public health. Therefore, when public health is at stake, we have authorized the use of an environmentally benign larvicide that specifically targets mosquito larvae. The use of larvicide is less damaging to the environment than adulticide.

Implementing OMWM techniques will also reduce mosquito larvae numbers and decrease the risk to public health. However, OMWM does not eliminate all mosquitoes, so nuisance mosquitoes may persist, and it is also not favored by all. We are currently evaluating OMWM techniques (see "Actions Common to All Alternatives," page 2-6). We do not support spraying for nuisance mosquitoes, because the cumulative negative impacts of the compound on the environment do not warrant its use.

Strategies

- Study and document the effects of larvicide on aquatic insects by comparing communities within sprayed and unsprayed marshes.
- Eliminate the routine spraying of mosquito larvicides. Revise special use permits to allow spraying on refuges only during public health emergencies and not for public health nuisances.
- Continue OMWM restoration at Wertheim.
- After evaluating the results of the OMWM study, explore the possibility of returning marshes back to "pre-ditching" state, with active and widespread creation of shallow ponds, pannes, and natural tidal creeks instead of ditches to substantially reduce mosquito population.
- Gain the support of wetland regulatory agencies, such as the DEC and DOS for such restoration projects.

- Develop and enhance outreach efforts for neighbors in mosquito-prone areas. Inform them of the impacts of mosquito spraying on non-target insects, mollusks, crustaceans, fish, and birds. As new information becomes available, we will educate neighbors about alternative control measures like OMWM.

Objective 4: Shoreline restoration

By 2012, where practical, restore shorelines of tidal rivers and creeks to native emergent vegetation and mud flats.

The zone between the aquatic environment and the adjoining upland is especially important for wildlife, given its diversity of plant cover and rich food resources. Unfortunately, those zones typically border rivers and bay shores, and therefore, are often human-altered sites such as bulkheads and dredge dumps. The strategies in this objective are intended to restore the habitat functions associated with such areas.

Strategies

- Remove the bulkheaded segments of shoreline on Wertheim's Carmans River and Seatuck's Champlin Creek. Grade upland to a 10:1 slope and establish native emergent plant communities.
- Control *Phragmites* along tributary creeks through hydrologic, chemical, and mechanical means.
- Remove deposits of dredged material to reclaim the former native emergent marsh at Seatuck.

Objective 5: Oyster Bay

Within 15 years, revise Oyster Bay policy to clarify the criteria for legal private structures and the refuge's authority and responsibility over them. We will ensure that the policy addresses construction and expansion of un-permitted docks and other shoreline structures on refuge property and is also consistent with the intentions of the original deed, the Refuge Improvement Act, and other Service mandates.

Strategies

- Produce compatibility determinations for all private structures and activities in the refuge by year 5 (i.e., 5 years after plan approval).
- Inventory all private docks in the refuge and determine the legality of each by year 5.

- Inventory all moorings in the refuge and determine the legality of each by year 10.
- Inventory all other private structures in the refuge, including boat ramps and bulkheads, and determine the legality of each by year 10.
- Expand on the definition of each criterion from the 1989 Decision Document to clarify the policy for private structures by year 2. Incorporate that clarification into the Code of Federal Regulations under Oyster Bay National Wildlife Refuge.
- Work with the town to clarify all boundary issues, including the location of the corners and any private, pre-existing riparian rights by year 5.
- Work with the town, villages, and other pertinent entities to assess the current number of moorings and which entities are authorizing moorings in the refuge by year 5.
- Develop and finalize MOU with the town, villages, etc. by year 10.
- Develop outreach materials on the private structure policy in Oyster Bay by year 3. Conduct briefings for all levels of elected officials and send a refuge letter to each landowner with property adjacent to the refuge, and to applicable realty offices.
- Remove all illegal structures, docks, and moorings from the refuge by year 15.
- Restore all intertidal areas that have been denuded of vegetation by year 15.
- Initiate the sensitive and controversial issue of moorings with the town, elected officials, etc. around year 5. Develop a MOU regarding the number, type, and location of moorings and the fee procedure and ownership associated with them.
- Work with DOI solicitor's office and DOJ's AUSA to develop a resolution regarding the Pascucci dock matter and serve the FWS letter by year 2.
- Complete the land transfer of the refuge beach property for the town wetland acreage by year 2.

Objective 6: Enhance brook trout

In addition to "Actions Common to All Alternatives," by 2015, survey the native sea-run brook trout population that exists in Yaphank Creek at Wertheim. Develop and implement habitat enhancement strategy to remove invasive vegetation and maintain water quality, working with off-refuge landowners within the watershed. Remove passage barriers such as LI Railroad culverts.

Goal 3. Restore and increase the biological diversity and integrity of native grasslands to foster endangered plant recovery and the communities upon which they depend.

Objective 1: Sandplain gerardia

Maintain and enhance the existing sandplain gerardia population at Sayville FAA site.

Sandplain gerardia is a federal-listed endangered plant that ranges from northern Maryland through Cape Cod. On Long Island, it occurs at 11 sites, including Sayville and Conscience Point, although only five, including Sayville, are viewed as being viable over the long term. The native population Sayville constitutes by far the greatest number of plants of any site on Long Island. In contrast, seeds successfully sown at Conscience Point resulted in the germination of two plants in 2003. Seatuck has soils similar to those on which sandplain gerardia thrives, and may constitute a suitable establishment site.

Strategies

- Incorporate a tree/shrub clearing where necessary, and mowing/prescribed fire regimes that increase and maintain maritime grasslands on refuge units, representing a diversity of native grass and herb species.
- Protect the establishment sites from unwanted wildfires and soil-disturbing activities like unauthorized ATV use, excavations.
- Identify appropriate sites in these refuges for endangered plant establishment based on soils and dominant grassland vegetation.
- Coordinate establishment efforts with Recovery Team.
- Monitor the establishment plots for germination/survival rate each September.

Objective 2: Grasslands

Within 10 years, maintain adequate interspersions of successional stages and plant diversity within the Complex's grasslands to maintain the State-listed rare plant and lepidopteron component.

The maritime grasslands at Sayville and Conscience Point are considered globally rare (NYSDEC 2004), and support several species of grassland-dependent state-listed endangered or threatened plants and butterflies. The long-term viability of such communities depends upon active habitat management.

Strategies

- Implement a periodic monitoring program for state-listed plants and animals in collaboration with NY Natural Heritage Program.
- Treat invasive plants aggressively with herbicides, mowing, and/or prescribed fire to limit their spread.

- Clear areas of recently established (less than 20 years old) young pitch pine, pitch pine scrub oak woodlands, and scrub oak thickets, to allow for the reestablishment of maritime grassland habitats, and implement a 2- to 10-year, low-to-moderate intensity surface fire regime for grassland habitats (Jordan et al. 2003).
- Maintain areas of young pitch pine, pitch pine scrub oak woodlands, and scrub oak thickets by intermittent mowing combined with scorching moderate intensity surface fire about every 10 years (Jordan et al. 2003).

Goal 4. Enhance the functionality of coastal strand habitats as they relate to beach-nesting colonial water birds and shorebirds to meet optimal population levels.

Objective 1: Assess plover/tern breeding potential

Assess the condition of coastal strand communities and determine the number of piping plover, roseate tern, and least tern breeding pairs that can be supported at Morton, Target Rock, and Amagansett.

Although nesting has not been observed at Target Rock, adjoining stretches of beach generally support 1 to 2 plover pairs annually. One nesting pair was observed at Amagansett in 2005.

Strategies

- Assess habitat conditions for plovers and terns as well as the limiting factors affecting productive breeding seasons at the above refuge units with species experts and refuge staff.
- Determine an appropriate goal for the number of nesting pairs at each refuge.
- Identify limiting factors that may be influencing colonial water bird productivity.
- Develop cooperative agreements with partners and adjacent landowners.

Objective 2: Active management of habitat/predator/public use

Actively manage habitat, predators, and public use, where necessary, to improve nesting and foraging habitat conditions for piping plover and least tern. Establish breeding common terns by 2010 and roseate terns at Morton by 2020.

The level of nesting success by colonial water birds may be influenced by several factors, including the quality of nesting and foraging habitat, the degree of human activity, and the presence of predators. The habitat factors relate to the physical environment; its limitations will constrain any proposed modifications. Human use and predators can be managed by several means, depending on socially acceptable practices.

Strategies

- Reduce the density of beach grass adjacent to current and future nesting areas on all refuge beaches.
- Create new intertidal foraging areas where foraging opportunities are limiting piping plover use.
- Assess red fox, raccoon, Norway rat, crow, and gull populations at each refuge, and develop a predator management plan in collaboration with USDA Wildlife Services.
- Patrol nesting areas during the mid-May to late July peak breeding season to keep refuge visitors out of closed areas at Morton.
- Further restrict areas accessible by the beach-going public and/or limit the allowable range of human activities, including picnicking, canoe portaging, and beach driving.
- Manage dredge spoil and identify sediment sinks that adversely affect beach strand habitat.
- Initiate discussion or consultation with appropriate parties to mechanically modify beach habitat to create extensive shallows. Possible techniques may include manipulating dunes and beach grass to decrease hiding cover for predators and increase opportunities for overwash, and excavating shallow mud flat foraging areas for plover at Morton.

Goal 5. Provide priority wildlife-dependent recreational and educational opportunities when compatible with the resource and available funding.

Objective 1: Visitor Service Plan

Within two years, develop and implement a Visitor Services Plan according to the Visitor Service Requirements. The plan will function as a step-down plan for this document and replace the outdated public use plan.

More than 40 million people visit units of the Refuge System each year to enjoy a wide range of wildlife related opportunities; nearly 500,000 visit Long Island's national wildlife refuges. As its organic law states, any recreational use on areas of the Refuge System must be compatible with the primary purpose(s) for which the area was acquired or established.

Strategies

- Within 2 years, formally evaluate the Complex visitor services program and wildlife-dependent recreational opportunities.
- Within 4 years, conduct visitor surveys to aid in planning visitor services.

- Within 5 years, make management recommendations and incorporate them into a step-down Visitor Services Plan for the management of the Complex wildlife-dependent public uses and related infrastructure.

Objective 2: Headquarters/Visitor Facility

Within 7 years, develop, implement and complete the design, construction, and staffing of an office headquarters and visitor facility.

The existing administrative office space for the Complex is a converted hunting lodge of approximately 1,200 square feet constructed in the early 1900s. It was first used as office space by two refuge staff members in 1974. Since then, the scope of operation and responsibility has increased, and the Complex has grown to encompass nine refuge units, up to 12 permanent employees and varying numbers of seasonal employees, student interns, volunteers and partners. The headquarters facility now consists of the original converted hunting lodge, two office trailers, and three desks in the maintenance shop; however, there is only one restroom, located in the main building. The present office space is severely inadequate, not to mention unsafe, to serve the mission of the refuge, the Complex, the Refuge System, or the needs of the public.

Given the presence of more than 30 million residents and visitors to Long Island, a headquarters and visitor center is essential to achieving the mission of the Service, the Refuge System, and the Complex. A new visitor center for the Complex was most appropriately located at Wertheim because of its central location among the refuge units, its larger size, and its accessibility by major roads. Of the nearly 500,000 annual visitors to the Complex, more than 90,000 visited Wertheim in 2004. The Complex staff examined the potential for a visitor center on lands owned by other agencies. Those sites included the Southaven School, owned by the South Country School District, and the Robinson Duck Farm, owned by Suffolk County Parks. In both cases, the properties were not available for sale; therefore, they were eliminated from further consideration.

In 2000 and 2001, the Service evaluated four alternatives for a visitor center/staff office at Wertheim. An environmental assessment prepared in compliance with the NEPA and the Council on Environmental Quality Regulations provided a description of the purpose and need for the project, a brief background, the features of each alternative, the affected environment, and the effects and consequences of each alternative.

The selected alternative in that EA was a 6 acre site and residence adjacent to Wertheim on its eastern boundary. Our Regional Director approved the EA in February 2001, with the selection

based on factors that included lower costs, less disturbance to the resources, and a relatively shorter time frame to complete the project. However, that site is no longer favored. The location of the new site can be found on map 2-2 on page 2-40, and an aerial photograph is available in appendix G.

In our current analysis of site selection (see map 2-2 on page 2-40) for the headquarters and visitor center, we applied this set of general criteria.

- Large enough site for all proposed facilities.
- On or easily accessible from Montauk Highway.
- Relatively close to the existing refuge entrance road to minimize additional costs and traffic impacts.
- Safe ingress/egress to the site for employees and visitors.
- Safe, adequate parking for employees and visitors.
- Located on refuge-owned property to improve the visibility of the Service and refuge, facilitate public contact, and eliminate the hassle of a difficult real estate market.
- Reasonable site development costs.
- Low ecological, cultural, and esthetic impacts.

The proposed visitor center will also serve as office space for refuge employees. This action will involve constructing a new building at Wertheim across the Carmans River from the present office site. See Appendix G, “Conceptual Plans” for perspectives and floor plans for the proposed facility and an aerial view of the site. The site will have to be cleared of approximately 9 acres of pioneer hardwood vegetation, as well as a 30-vehicle parking lot. The proposed site currently has no structures. We will construct the entrance road on existing refuge lands where it cannot be seen from Smith Road residences. The visitor center will include 1,000 square feet of display area, an auditorium, classroom, and staff offices.

Telephone and electric utilities will be brought onto the site from Smith Road, 0.1 miles distant. The public will gain access via the present refuge entrance at Smith Road, 0.3 miles south of Montauk Highway. The old office and the two office trailers now used as office space will be removed.

Access to the site by the public will remain as is. From the William Floyd Parkway or Montauk Highway, visitors will take Smith Road to the present refuge entrance. Smith Road is a secondary, neighborhood road. Visitors to the site will travel less than 0.3 miles on Smith Road until they enter the refuge, thus minimizing safety issues. Access for emergency responses by fire, medical and law

enforcement agencies will still be available by all of the existing refuge entrances and fire roads. No government quarters will be located at the site of the proposed visitor center.

Visitors to the proposed visitor center will include students, natural resource groups, and members of the public interested in wildlife-dependent recreation, education, and interpretation. The refuge hours of daily operation from 8:00 a.m. to 4:30 p.m. will continue. In consideration of wildlife, local residents, and staff constraints, groups will be restricted to one bus per day, Tuesday through Saturday. Current sites of access to the refuge will also remain in operation, including the White Oak Nature Trail, the fishing access site maintained by the DEC on Montauk Highway, and the Beaver Dam/Squassux Landing site maintained by the Town of Brookhaven and a local community group.

Environmental education and interpretation sites accessible at the center will include a 0.5 mile nature trail through a mixed hardwood forest and on an existing fire road to an observation platform for viewing the refuge impoundment. Visitors who wish to use the White Oak Nature Trail at the present headquarters will be routed back out to the present entrance road.

Strategies

- Within 1 year, plan for and implement the construction, interpretive design, and staffing of a new Complex visitor center/headquarters at Wertheim. The plans for the structure will follow closely those for a similar facility at the Rhode Island National Wildlife Refuge Complex. The building is slated for funding in 2010.
- Within 1 year, begin the permit application process necessary for building construction along the Carmans River.
- Within 1 year, update existing Project Identification Document to reflect changes in facility and site selection from the 2000 Draft Environmental Assessment.
- Within 1 year of funding, work with interpretive planners to finalize the conceptual design of interpretive exhibits including messages, types of exhibits, visitor flow patterns, visitor carrying capacity, etc.
- Within 4 years of funding, complete exterior and interior construction of facility; this includes utilities, access, linking to and updating the nature trail and trail guide.
- By the grand opening of the new facility, update Complex brochures and interpretive panels available at the information kiosk according to plans devised for the new facility.

- Within 2 years of completing the facility, staff it with an outdoor recreation planner, a volunteer coordinator, and a law enforcement officer, as well as volunteers.

Objective 3: Public Access to Refuge Lands

Allow public access to Complex units to the extent it will not adversely impact Federal trust resources or compromise human safety. At least 90% of refuge visitors and neighbors will be able to explain and support the purpose of access restrictions. Visitors will also be able to support habitat conservation by conducting themselves according to “Leave No Trace” principles.

Our primary responsibility is to protect wildlife and promote wildlife conservation. Some sensitive areas require us to restrict public access to minimize disturbance, especially during the nesting season. Beach areas for beach-dependent nesting birds are partially closed to public use from April 1 to August 31 each year. No matter the level of access granted, visitor safety and resource protection take priority over all other activities. We have set up facilities for public visitation, including parking, restrooms, information kiosk, nature trails and guides on three refuges: Wertheim, Target Rock and Morton. Oyster Bay and Amagansett are open to visitors, but lack onsite facilities.

We grant special use permits for access to closed areas and closed units for certain activities, including research and photography, on a case-by-case basis when the activity will benefit the Complex. Access to closed areas and units is also granted to certain partners involved in cooperative agreements and memorandums of understanding to protect resources or enhance habitat.

Problems with trespassing, littering, and feeding wildlife on the refuges have become increasing problems in recent years. They adversely affect wildlife and their habitat and can pose a threat to public safety.

Sunbathing and beach use at Amagansett and Morton are allowable activities (same as alternative A).

Strategies

- Continue to provide access to Complex units via visitor facilities, permits, and agreements as noted above.
- Continue to impose seasonal restrictions for the protection of shorebird nesting areas.
- Within 5 years, develop and implement a plan for increased patrols of refuge units, including strengthening and formalizing partnerships with local authorities, DEC Conservation Officers, and NYS Forest Rangers.

- Within 5 years, explore partnership with Long Beach School District, Nike Environmental Center, to provide facilities such as a boardwalk, and access to Lido Beach WMA for environmental education purposes.
- Within 15 years, provide access to the closed units of Seatuck, Sayville, and Conscience Point by exploring partnerships with the Towns of Islip and Southampton, where access will involve our providing interpretive information kiosks and observation areas on town properties adjacent to the refuges.

Objective 4: Interpretation

Enhance interpretive opportunities at the Complex and update them according to the Visitor Services Plan. 90% of visitors will be able to name the U.S. Fish and Wildlife Service as the agency managing the Complex, 80% will be able to identify at least one important Complex habitat type and relate its significance to migratory birds and other native wildlife, and 80% will make a positive connection with the Complex.

Interpretation is a priority public use in the Refuge System Improvement Act, and is one of the most important ways we can increase the visibility of the Complex, convey its mission, identify its significant contributions to wildlife conservation, and raise public understanding of the Service and its activities on Long Island. Complex visitors often confuse us with county, state, or national parks. Many are unaware of the Refuge System and its scope, and most do not understand the importance of the Complex in the conservation of migratory birds and threatened or endangered species.

Proposed future programs will raise the visibility of the Service, the Refuge System, and the Complex through increased visitor contacts, onsite programs, and new and improved infrastructure. We want

people to recognize that the Complex has as its priority managing a variety of habitats to benefit migratory birds, with particular emphasis on restoring habitat for threatened or endangered species. Expanding our interpretation program will give visitors a better understanding of that contribution.

We receive daily requests for guided interpretive programs. Although provisions for self-guided programs are available in an excellent nature trail guide and activity guides, most group leaders who request guided programs prefer not to lead a program themselves.



Mallard with brood
USFWS

Strategies

- Continue to provide facilities and materials including nature trails and guides, interpretive kiosks, activities guides to facilitate interpretation at Wertheim, Target Rock and Morton.
- Continue to provide support and guidance to the Friends of Wertheim Programs Committee.
- Within 5 years and every 3 years thereafter, evaluate the Complex interpretation program and update facilities and information to reflect its Visitor Services Plan.
- Within 5 years, coordinate with the Town of Oyster Bay, Friends of the Bay, The Waterfront Center and the Theodore Roosevelt Audubon Bird Sanctuary to develop interpretive exhibits and programs for Oyster Bay.
- Within 7 years, work with the National Park Service Sagamore Hill National Historic Site to develop a trail and interpretive overlook at Oyster Bay adjoining that property.
- Within 10 years, formalize partnerships with local Audubon Society Chapters to provide guided interpretive programs at Wertheim, Target Rock, and Morton refuges.
- Within 10 years, develop and implement portable displays and compact discs about refuge units and their management.
- Within 15 years, interpret Seatuck, Sayville, and Conscience Point by exploring partnerships with the Towns of Islip and Southampton wherein the Complex will provide interpretive information kiosks and observation areas on town properties adjacent to the refuge.
- Within 7 years, provide interpretation of all Complex units by constructing and maintaining a headquarters office/visitor facility that will host permanent and changing interpretive exhibits.
- As funds allow, hire and train student interns to provide guided interpretation to refuge visitors.

Objective 5: Wildlife Observation and Photography

Maintain the current wildlife observation and photography opportunities provided on the Complex. Provide at least one observation platform or photography blind at the Wertheim impoundment, and at Conscience Point, Seatuck and Sayville. Ensure that 80% of adult visitors report they will return to the Complex because it represents to them an ideal natural environment to observe and photograph wildlife.

Within 15 years

Wildlife observation and photography are two of six priority public uses. Nassau and Suffolk counties contain hundreds of photography groups. We regularly receive requests for access to closed areas of the Complex, and issue special use permits on a case-by-case basis. Permission to use the images for refuge purposes is one requirement of those permits. The occasional photography workshops and birding programs that have been presented on Complex units open for public use have met with great success and large attendance. Enhancing those opportunities not only will serve to update the Complex library of images for outreach, educational, and historical purposes, but also will help build public understanding and support of Complex management.

Strategies

Continue to maintain observation and photography platforms and blinds along the Complex nature trails at Wertheim, Target Rock and Morton; maintain and update spotting scopes at Wertheim, Target Rock and Morton as needed.

- Continue to issue special use permits on a case-by-case basis for nature photography of benefit to the resource.
- Continue to arrange photography and birding programs at Complex units as time and funding allow.
- Encourage the Friends of Wertheim Programs Committee to include at least one birding and one photography program every quarter.
- Within 10 years, provide at least one photography blind at closed units like Seatuck, Sayville, and Conscience Point, and implement a reservation system for each blind.
- Within 15 years, establish at least one photography blind in closed areas of Wertheim, Target Rock, and Morton, and follow the reservation system mentioned above.

Objective 6: Environmental Education

Expand opportunities for partner-led and self-guided environmental education programs on Complex lands. We want 75% of educators using Complex services to incorporate our environmental education programs into their annual science curricula.

Our staff encounters high demand for guided school programs and in-classroom programs, especially for Wertheim and Morton. During the school year, we receive at least three requests per week for

guided educational programs. Most educators or group leaders prefer not to guide their own programs related to environmental science. Although we have provided quality programs and materials to teachers and group leaders, comments from the public indicate improvements are needed. Because of staff limitations, that need can be met by longer, more intense teacher workshops and volunteer training.

Strategies

- Continue to partner with the Long Island Institute of Professional Studies to conduct environmental education curriculum-based teacher workshops on Complex lands.
- Continue to participate in and promote the Federal Junior Duck Stamp Program for New York State.
- Continue to issue a special use permit to Cornell University for their outdoor laboratory exercises at Wertheim.
- Enhance the promotion of materials available from the National Conservation Training Center's environmental education satellite broadcasts and Web-based events, as well as activity packets provided by the Complex.
- Within 3 years, develop and implement an outdoor classroom area at Wertheim adjacent to the current office headquarters/visitor contact station.
- Within 5 years, explore formalizing a partnership with Long Beach School District, Nike Environmental Center, to provide boardwalk facilities and access for environmental education purposes.
- Within 5 years, employ student interns, e.g., teachers seeking continuing education credit, as funding allows. These individuals may assist in updating and developing new Complex activity packets based on NYS curriculum guidelines at Wertheim, Target Rock and Morton.
- Within 7 years, plan and implement a series of teacher workshops to educate attendees about natural resources, as well as provide suggested activities for in-classroom and on-refuge lessons. Work with LIIPS to develop refuge-specific courses, including college level.
- Within 7 years, partner with Cornell Cooperative Extension's Master Birder and Master Naturalist programs to recruit trainers for teacher workshops. These volunteers, along with refuge staff, will educate teachers about the resource, while refuge and LIIPS staff will educate teachers about curriculum development for environmental education.

- Within 10 years, cooperate with towns of local schools to develop a detailed environmental education curriculum for the Complex that tiers to the Visitor Services Plan; consider developing a traveling classroom/"Refuge Mobile" or an activity trunk for lending.
- Within 15 years, develop and implement a teen docent program to train high school students to be refuge guides; these guides will become part of the volunteer force that leads school and scout programs.

Objective 7: Fishing

Promote fishing opportunities at Complex units through partnership with the New York State Department of Environmental Conservation, Suffolk and Nassau Counties, Town agencies and non-governmental organizations. We want 90% of partners and visitors, including those who visit our website, to be able to state that the Complex offers fishing on various units.

Both freshwater and saltwater fishing opportunities are available at Wertheim and Oyster Bay, and saltwater fishing is available at Target Rock, Morton and Amagansett. Those units offer fishing from shore, although some fishing at Wertheim and Oyster Bay is restricted to boat access. Wertheim offers boat launching at the fishing access site on Montauk Highway, Route 27A/CR 80 for canoes and kayaks, and at Squassux Landing at the end of Beaver Dam Road in Brookhaven. Boat access at Oyster Bay is from town launches or from the Long Island Sound. Sportsmen and fish conservation groups including the New York Fishing Tackle Trade Association, Trout Unlimited, and the Suffolk Alliance of Sportsmen have shown considerable interest in improving fishing access at various Complex units, especially Wertheim. Over the past three years, interest has also improved in fishing workshops for nontraditional anglers, including kids and families.

Strategies

- Within 3 years, formalize partnerships to promote fishing opportunities and habitat restoration projects on Complex units with state, county, town and non-government organizations. Promotion will include, but not be limited to, fishing events, media stories, and website information. Speaking engagements will be arranged as time and staffing allow.
- Within 3 years, develop fish species and fishing regulation rack cards for use at Complex information kiosks and outreach packets.
- Within 3 years and each year thereafter, develop and implement a family fishing event for at least one Complex unit.

- Within 5 years, evaluate the opportunities on the Complex for nontraditional anglers, and make recommendations for improving access and opportunities as part of the Visitor Services Plan.
- Within 8 years, implement the fishing opportunity and access recommendations of the Visitor Services Plan.

Objective 8: Hunting

Provide “safe” hunting opportunities on Complex lands as part of the effective and efficient management of upland and wetland habitats. “Safe” hunting entails that the number of accidents and incidents related to hunting on the Complex are less than New York State’s average number of hunting-related accidents and incidents per year.

Hunting is one of our six priority public uses. Hunting can be used as a tool for managing wildlife, unless we determine that safety concerns or overriding resource concerns will make hunting incompatible.

Reasons for establishing a hunt program are to (1) maintain a diversity of habitats in the Complex capable of supporting a diversity and abundance of wildlife species and, (2) provide wildlife-dependent recreational opportunities. The Service recognizes hunting as a healthy, traditional, outdoor pastime deeply rooted in our American heritage. When managed appropriately, hunting can instill a unique understanding and appreciation of wildlife, their behavior, and their habitat needs.

The draft policy for hunting on national wildlife refuges, issued in the Federal Register on January 16, 2001, describes a quality hunting experience. A quality hunting experience

- (1) maximizes safety for hunters and other visitors;
- (2) encourages the highest standards of ethical behavior in taking or attempting to take wildlife;
- (3) is available to a broad spectrum of the hunting public;
- (4) contributes positively to or has no adverse effect on population management of resident or migratory species;
- (5) reflects positively on the individual refuge, the System, and the Service;
- (6) provides hunters with un-crowded conditions by minimizing conflicts and competition among hunters;

- (7) provides reasonable challenges and opportunities for taking targeted species under the described harvest objective established by the hunting program;
- (8) minimizes the reliance on motorized vehicles and technology designed to increase the advantage of the hunter over wildlife;
- (9) minimizes habitat impacts;
- (10) creates minimal conflict with other priority wildlife-dependent recreational uses or Complex operations; and
- (11) incorporates a message of stewardship and conservation in hunting opportunities.

Alternative B will provide additional public hunting with an emphasis on waterfowl (i.e., early season/September resident Canada goose) hunting opportunities for youth and mobility-impaired hunters. This alternative may establish hunting along the refuge shoreline of Bellport Bay, west of the mouth of the Carmans River. At this location, hunters will be required to provide their own temporary blinds and remove them each day. We may also establish one or two resident Canada goose hunt blinds for waterfowl hunting at Wertheim located near the Big Fish Creek Impoundment. See map 2-2 on the following page for the proposed location. The blinds will be adequately placed to ensure a safe, quality experience and reduce the incidence of waterfowl being displaced from the refuge, and will be located a sufficient distance from nature trails to avoid visitor conflicts. Priority access to the blinds will be granted to youth and mobility-impaired hunters.

We are investigating the possibility of designing the blinds for multiple uses to include wildlife observation and photography.

The refuge will be closed to hunting except during specific “open” hunting dates between September 1 and September 30 established by annual rule. Hunting will occur on Wednesday and Saturday from one-half hour before sunrise until 12:00 noon. We will randomly select hunters for the program by lottery. The program will initially accommodate two hunters at each blind. We will allow hunting dogs for the purpose of retrieving birds, but they must be under the control of their owners at all times. Use of hunting dogs must also comply with state regulations.

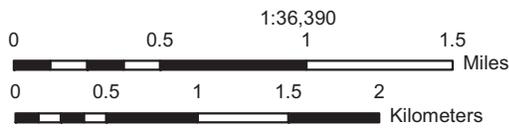
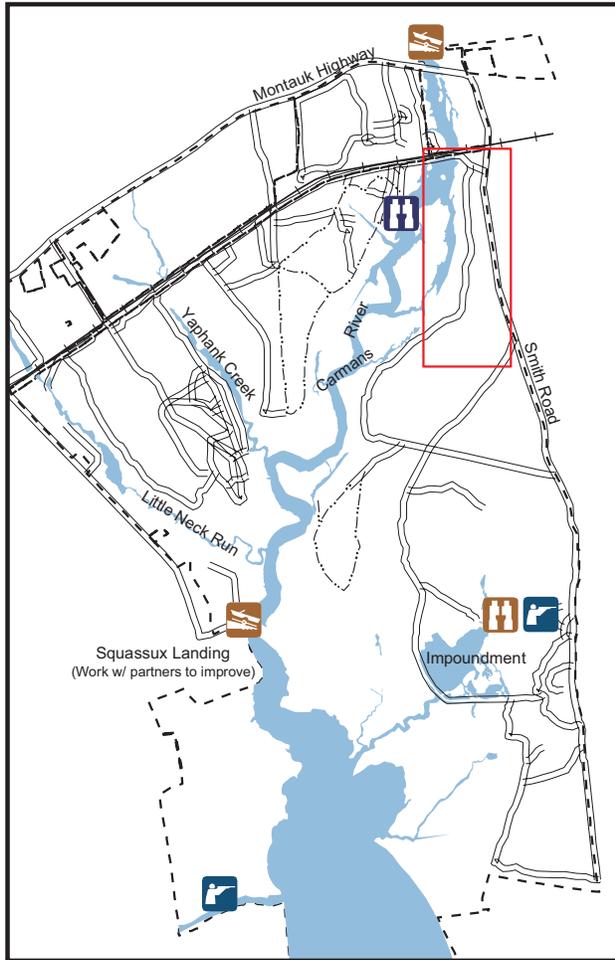
At Conscience Point we will work with towns and adjacent landowners to resolve the issue of hunters on neighboring lands that come on refuge property to retrieve waterfowl.



U.S. Fish & Wildlife Service
Wertheim National Wildlife Refuge
 Suffolk County, New York

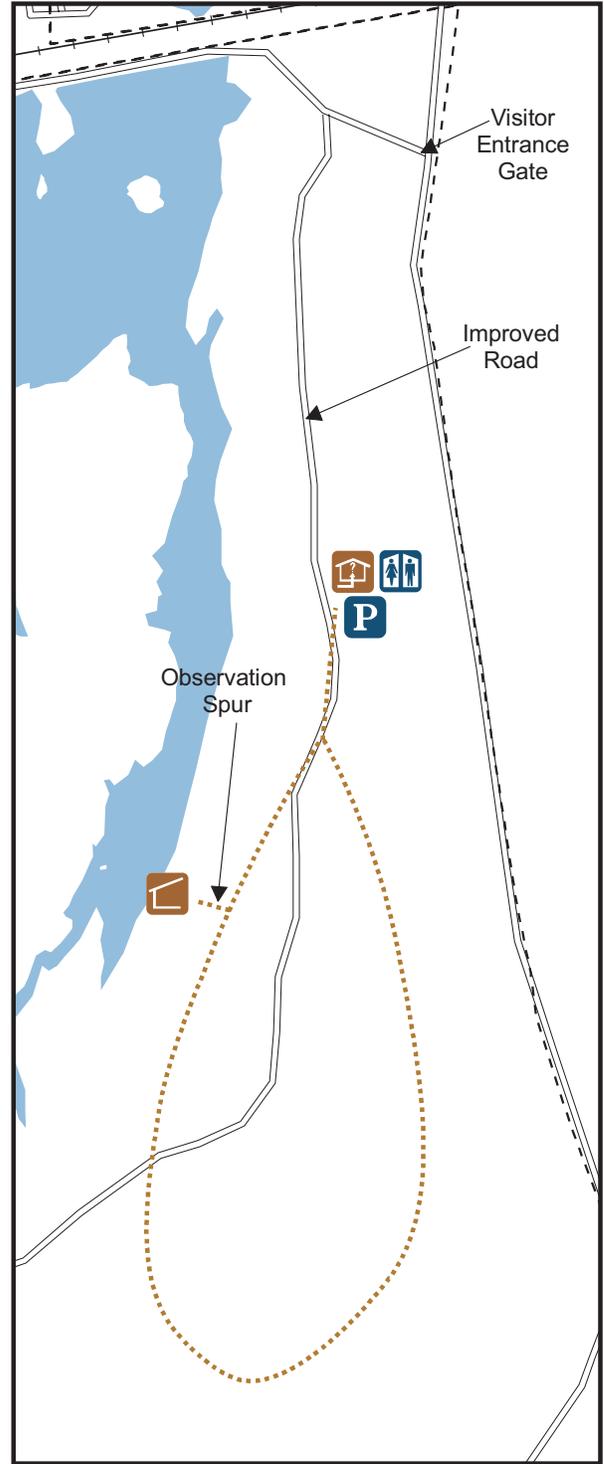
Map 2-2

Proposed Public Use Opportunities



- | | | | |
|--|--|--|--|
| | New Visitor Center/
Headquarters | | Proposed Waterfowl
(Resident Canada
Goose) Hunt Area |
| | Restrooms | | Parking |
| | Improved
Viewing Platform | | New Nature Trail |
| | Observation Blind/
Proposed Goose
Hunt Blind | | Access Road |
| | Boat Launch/
Fishing Access Site | | Railroad |
| | Education Pavillion/
Covered Shelter | | Water |
| | | | Refuge Boundary |

Produced by Long Island NWR, Shirley, New York
 Refuge boundary: USFWS, Region 5, Div. of Realty 2004
 Datum and projection: NAD 1983, UTM Zone 18, Meters
 Map Date: 3/2006



We prepared a compatibility determination (included in appendix C of this document) that evaluates if hunting is compatible with refuge purposes and the mission of the Refuge System. The opportunity for public review and comment on that compatibility determination will run concurrently with the release of this draft CCP/EA.

Strategies

- Within 1 year, develop and begin to implement an outreach plan to educate the public and our partners about hunting on national wildlife refuges. Produce a Complex hunting brochure, including refuge regulations and maps and post similar information on the Complex website.
- Continue to inform the public and our partners about hunting on Complex units by personal communication, letters, press releases, and special events.
- Establish a monitoring protocol for evaluating the quality of the experience for hunters and non-hunters during various hunting seasons.
- Within 1 year, formalize partnerships with the DEC, as well as local Audubon Society chapters and sportsmen groups, to offer annual hunter education courses and hunter orientation programs for the Complex.
- Conduct routine law enforcement patrols of Complex lands both open and closed to hunting.
- Annually review the Hunt Plan and institute changes as appropriate to better meet management and safety goals.
- Identify dates when state- and federal-listed species are present to avoid take.

Goal 6. Communicate and collaborate with local communities and partners throughout Long Island to promote the National Wildlife Refuge System and the Complex.

Objective 1: Outreach

Within 5 years, through community outreach, attain a 50% increase in the number of adults on Long Island that know the Complex exists and that it is part of the U.S. Fish and Wildlife Service's national system of refuges. These adults will also be able to identify our management priorities for migratory bird conservation and threatened and endangered species.

This objective aims at developing an effective outreach program targeted at Long Island communities whose residents may not be aware that a national wildlife refuge is nearby. It is particularly important that local residents understand, appreciate, and support the mission of the Refuge System and the unique contribution of the Complex to that mission.

Strategies

- Within 2 years, recruit a volunteer webmaster to maintain and update the Complex website.
- Maintain and regularly update contact information for partners, elected officials, the media, and the general public; keep the database current and user-friendly.
- Maintain refuge-specific fact sheets.
- Continue to inform refuge neighbors of refuge management activities via the website, press stories, and letters.
- Utilize volunteers to participate in community events on Long Island and in New York City where effective outreach of Complex programs can occur.
- Regularly work with media representatives to form personal working relationships; within 3 years, work with FWS External Affairs office to ensure that 6 articles or radio or TV spots about the Complex appear in national media highlighting refuge resources, issues, and management.
- Regularly promote successes via events, project demonstrations, and media stories.
- Within 3 years, develop survey protocol to measure success with meeting this objective.
- Within 3 years, develop an outreach plan, as part of the Visitor Services Plan, to outline direction for promoting the National Wildlife Refuge System and the Complex, and keeping neighbors and partners up to date about current projects and proposals. The plan could include provisions for publishing a newsletter or a regular column in a widely-read publication; utilize volunteers, interns and the Friends group for publication. Outreach will focus on recognized days such as, but not limited to, International Migratory Bird Day, National Wildlife Refuge Week, and National Boating and Fishing Week, as well as seasonal “happenings” on Complex units.
- Within 2 years, develop and implement an annual volunteer recruitment, training, and appreciation/recognition events.
- Within 3 years, develop and implement procedures to offer annual refuge “behind the scenes” tours to the media, elected officials, and the general public; for the general public, consider selection for a tour by free raffle drawings, website visitor number, etc.
- After the proposed headquarters and visitor center opens, develop and implement a video/DVD about the Complex.
- Within 7 years, initiate a Friends Group for Morton, while continuing to work closely with the Friends of Wertheim. Develop recruitment strategies with the regional Friends coordinator.

Alternative C

This alternative represents a stricter approach to managing the Complex and its biological resources with less emphasis on providing visitor services. It is designed to minimize human intrusion or intervention, except when necessary to protect threatened or endangered species, control invasive species, respond to natural disasters, or enforce regulations. It would focus on maintaining such public use infrastructure as nature trails and information kiosks, but would restrict access and the number of public programs offered.

The Complex will develop management activities to focus on those necessary to meet minimum compliance requirements, including threatened and endangered species, human health and safety, and historic preservation.

This alternative will combine some aspects of alternatives A and B, focusing on maintaining such public use infrastructure as nature trails and information kiosks. But it will take a more restrictive approach in offering programs and access. The protection and restoration of habitat for migratory waterfowl and federally listed species will remain a management priority. As with alternative B, priority biological programs will become more focused on benefiting species of concern: namely, migratory land birds, waterfowl and shorebirds.

As in alternative B, the implementation of alternative C will enhance local community outreach and partnerships, continue to encourage refuge Friends groups, and improve our relationships with our neighbors and elected officials. We believe that will strengthen support for the Service and the management priorities of the Complex in the communities its refuges serve.

Alternative C will continue the construction of the temporary and permanent headquarters, but no other infrastructure will be

planned. The Complex will maintain its current staffing level: that is, 12 permanent employees (see appendix F for details).

However, outreach and law enforcement efforts will have to be increased using current staff to communicate the changes in management under this alternative. The Complex will maintain a volunteer program, rely more on partners to help conduct biological inventories and monitoring and organize environmental education and interpretation programs, but limit the use of seasonal employees and interns.



Great egret
© Mark Wilson

Goal 1. Improve the biological diversity and integrity of upland cover types to sustain high quality habitat for migratory passerine birds.

In addition to the measures in alternative B, alternative C will more strictly limit and monitor visitor and commercial use on and around refuge lands near the habitat and nesting sites of threatened, endangered, and other species of concern. We will also restrict access to closed areas to volunteers who are assisting with refuge projects in need of observation data or photographic images or video footage.

We and our partners will attempt to eliminate all mute swans and inform the public of the problems they pose, and expand our control of invasive plants and deer population management techniques on non-Service property adjacent to refuge lands.

We will acquire land to protect Lloyd Harbor and the private beach at Target Rock.

Objective 1: White-tailed deer management

Same as in alternative B.

Objective 2: Invasive plant management

Within 10 years, eliminate the spread and reduce the percent cover of upland invasive plants to less than 10% of the acreage/occurrences present in 2006. These invasive plants include Asiatic bittersweet, black locust, Japanese barberry, Japanese honeysuckle, and multi-flora rose.

Strategies

- Implement a species-specific treatment regime that, at a minimum, controls problematic invasive plants with herbicide, mechanical removal, and/or prescribed fire over a 10-acre area each year.

Objective 3: Restore and maintain fire dependent native plant communities

Same as in alternative B.

Objective 4: Restore and enhance bird populations

Same as in alternative B.

Objective 5: Increase grassland size to benefit nesting grassland birds

Same as in alternative B.

Goal 2. Restore the biological health of aquatic habitats to high-quality conditions on the Complex salt marshes, bays, tidal tributaries, and impoundments to benefit waterfowl and shorebirds dependent on these systems, while also supporting other native, wetland-dependent species.

Same as in alternative B. However, we will attempt to reduce spraying and increase our reliance on OMWM, while monitoring the efficacy of various control techniques.

Objective 1: Restore hydrology within salt marshes

By 2020, restore hydrologic features and functions within ditched, drained, and tidally restricted salt/brackish marsh communities at Seatuck and Wertheim. Increase soil saturation and restore the amount and interspersion of open water to pre-ditched conditions.

Objective 2: Improve water quality

By 2020, improve water quality within the Carmans River and Oyster Bay by reducing inputs of nutrients, contaminants, and sediments, both through surface and groundwater sources.

The Carmans River is the defining natural feature of Wertheim, just as Oyster Bay Harbor, Cold Spring Harbor, and Mill Neck Creek define Oyster Bay. Achieving and sustaining a high level of water quality is essential, given the significance of those aquatic systems for wintering waterfowl and fisheries. The Carmans River is closed to shell fishing due to high fecal coliform counts and contaminant plumes in groundwater originating northwest of the refuge and progressing toward the river. The plumes are from the Brookhaven Landfill and a site near the landfill where dry cleaning solvents were dumped. The Environmental Protection Agency has identified waters in Oyster Bay as “impaired” under its 303(d) program. The contaminants listed are pathogens and PCBs (EPA 2002).

Refer to chapter 3 for more information, including special designations, on the Carmans River and Oyster Bay.

Strategies

- Collaborate with Suffolk County Department of Health Services and the DEC to monitor water quality parameters.
- Address road runoff-related contaminants through the installation of filter strips, etc.
- Assess the suitability of sites for submerged aquatic vegetation growth and establish populations within the Carmans River and Oyster Bay.
- In instances where waterfowl-generated coliform bacteria result in shell fishing closures, assess the relative role of mute swans. If non-native mute swans are largely responsible for closures, reduce the lower Carmans River wintering population from more than 100 to fewer than 10 swans.

Goal 3. Restore and increase the biological diversity and integrity of native grasslands to foster endangered plant recovery and the communities upon which they depend.

In addition to alternative B, conserve or acquire small, unprotected lands that currently or could potentially host sandplain gerardia, and expand habitat restoration efforts.

Objective 1: *Sandplain gerardia*

Establish self-sustaining populations of Sandplain gerardia at Conscience Point and Seatuck.

Work with the recovery team to determine which genotype to establish at Seatuck, or whether conditions are suitable for its re-establishment.

Objective 2: Grasslands

Same as alternative B.

Goal 4. Enhance the functionality of coastal strand habitats as they relate to beach-nesting colonial water birds and shorebirds to meet optimal population levels.

In addition to alternative B, expand the seasonal beach closure to span the arrival and departure of nesting shorebirds at Morton and Target Rock: i.e., piping plover, tern species, and bank swallows. Consider partial beach closures from March 1 through September 30.

Goal 5. Provide priority wildlife-dependent recreational and educational opportunities when compatible with the resource and available funding.

In addition to alternative A, we will not provide any additional hunting opportunities beyond the recently approved hunt at Wertheim. However, we will explore the possibility of sharing resources with partner groups to assist in opportunities for hunting. We will adopt a stricter approach to managing opportunities for fishing to favor our biological resources.

Opportunities for environmental education and interpretation will focus on reaching the greatest number of visitors with the least impact on refuge resources.

We will reclaim unnecessary trails and restrict public use to designated trails only.

Sunbathing and beach use at Amagansett and Morton are allowable activities (same as alternative A).

Goal 6. Communicate and collaborate with local communities and partners throughout Long Island to promote the National Wildlife Refuge System and the Complex.

Relations with Friends groups, other volunteer opportunities, and partnerships will be the same as those in alternative B. Outreach and office and visitor contact site relocations will be the same as in alternative A.

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
Managing threatened or endangered species and other species and habitats of special concern			
<p>How will we enhance piping plover productivity within the Complex where plovers exist? (Morton, Target Rock, and Amagansett) Note. Management strategies will also benefit roseate terns and least terns.</p>	<p>Portions of the beaches at Morton and Target Rock remain closed to the public during nesting season, April-August. Parts of Morton, Target Rock, and Amagansett remain open for public use during beach closures with symbolic fencing installed to restrain public use on beaches above mean high tide line.</p> <p>Control predators. Erect predator exclosures and utilize electric fencing to keep predators from disturbing nesting areas.</p> <p>Continue monitoring of plover nesting and fledge success.</p> <p>Conduct reactive patrols with law enforcement staff to enforce closures and ensure species protection.</p> <p>Install artificial nest structures for roseate terns at Morton.</p>	<p>In addition to alternative A:</p> <p>Within 5 years, expand innovative fencing techniques, increase artificial nesting structure program for terns, and use auditory attraction.</p> <p>By 2010, hire a minimum of 3 seasonal employees to manage active nesting sites and support other priority biological program activities as needed.</p> <p>Work with Morton neighbors to reduce trespass incidents. Establish volunteer plover steward program. Implement outreach program to limit disturbance and trespass of closed areas. Within 5 years, develop written cooperative agreements with partners and adjacent landowners to insure adequate management of existing plover nesting sites.</p> <p>Work with private landowner adjacent to Target Rock to establish and manage nesting plovers.</p> <p>Develop contingency planning for oil spills by year 15.</p> <p>Support Long Island Field Office with implementing their piping plover recovery plan.</p>	<p>In addition to alternative B:</p> <p>Develop a cooperative agreement with the DEC and Suffolk County to limit boaters at plover sites.</p> <p>Amagansett: Evaluate value of refuge to T&E waterbirds, and if appropriate habitat exists, work with LIFO, Town, and TNC to manage plover. Partnership with TNC, Town of Easthampton and LIFO to expand area of influence for plovers.</p> <p>Sunset to sunrise patrols of beach at plover sites.</p> <p>Develop land acquisition proposal to acquire and protect Lloyd Harbor and private beach at Target Rock.</p> <p>Participate in the state's annual colonial water bird survey.</p>
<p>How can piping plover habitat be improved?</p>	<p>No existing activity to actively improve plover habitat.</p>	<p><u>Morton</u> By 2007, initiate discussion or consultation with appropriate parties to mechanically modify beach habitat to create extensive shallows i.e., excavate little basins, bowls. Work with LIFO and the DEC to ensure support and compliance with Coastal Zone Management Act.</p> <p>Evaluate prey availability.</p> <p><u>Target Rock</u> Coordinate with endangered species biologist regarding what can be done for plovers on refuge lands.</p>	<p>Near Morton, use dredged materials for nesting islands off-refuge.</p> <p>Within 5 years, at Morton or Amagansett, consider area for a plover experimental site. Consult with piping plover recovery team.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
<p>How will the Complex increase public awareness of piping plover issues through outreach and education?</p>	<p>Use volunteers and seasonal staff to meet and educate beach visitors.</p> <p>Maintain beach clean-up program at Target Rock.</p> <p>At Morton and Target Rock, information is posted seasonally with beach closure. Press releases also inform the public of closures.</p> <p>Maintain informational signs and interpretive displays at Morton.</p>	<p>In addition to alternative A:</p> <p>Within 10 years, develop an Education and Outreach Plan for the piping plover program. Utilize the new Friends Group (see "Establishing increased opportunities for public stewardship") and other partners to develop and implement the plan.</p> <p>Within 5 years, develop, install, and/or update interpretive panels on refuge beaches, a "mock" nest enclosure, and install informational signs restricting public use.</p> <p>By 2008, develop and install informational signs and interpretive displays at Target Rock.</p> <p>Develop and implement an environmental education and interpretive brochure about plovers.</p>	<p>Same as alternative B, plus:</p> <p>Develop "barrier beach education kit" and other curriculum projects for use by local teachers.</p>
<p>How will refuge staff protect and manage rare plant habitat, i.e. Sandplain gerardia, on the Complex?</p>	<p>Continue use of enclosures, transplantation, mowing, raking, and monitoring at FAA site adjacent to Sayville. TNC partnership has been crucial in plant's management. Monitor populations at Conscience Point and Seatuck.</p> <p>Consider current and future access in order to protect plants from accidental harm from public.</p> <p>Continue to work with FAA on transfer of lands to FWS. Actual bill language for the transfer will be inserted in text. Until the transfer is completed, assist TNC in their cooperative agreement with FAA for management of sandplain gerardia.</p> <p>Evaluate suitability of other refuges for transplantation.</p> <p>Expand habitat for sandplain gerardia by clearing encroaching pitch pine and scrub oak and mowing old field habitats on the FAA site.</p>	<p>In addition to alternative A:</p> <p>Within 2 years, complete previously legislated transfer of FAA site adjacent to Sayville to the FWS.</p> <p>Work with recovery team to implement recovery plan.</p> <p>Utilize prescribed burning program for greater plant response.</p> <p>By 10th year, with partners, assess potential for establishing or restoring other plant species of concern on and off refuge lands.</p> <p>By 15th year, expand habitat for sandplain gerardia and associated plant community at Sayville by clearing encroaching pitch pines and seeding with local seed from FAA site.</p> <p>Upon completion of Sandplain gerardia recovery plan, implement guidelines and procedures to establish viable populations at Conscience Point, Seatuck, and Wertheim. See text for additional strategies.</p>	<p>Same as alternative B, plus:</p> <p>Conserve or acquire unprotected lands that currently or could potentially host sandplain gerardia.</p> <p>Expand habitat restoration efforts, e.g., partners, to private lands that do or can support sandplain gerardia.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
Managing threatened or endangered species and other species and habitats of special concern			
<p>How will each refuge manage habitat to benefit black duck and other wintering waterfowl at the Complex - specifically Wertheim and Oyster Bay?</p>	<p><u>Wertheim</u> Conduct waterfowl and shorebird surveys at the Big Fish Creek impoundment at Wertheim.</p> <p>Manage Big Fish Creek and sub-impoundments for waterfowl and shorebirds e.g. water level management and seeding of waterfowl plants.</p> <p>Continue with limited <i>Phragmites</i> control using chemical and mechanical treatments.</p> <p>Law enforcement patrols/Special Agents during waterfowl opening.</p> <p><u>Oyster Bay</u> Continue to implement 1989 decision document regarding private structures/dredging.</p> <p>Work with the DEC and ACOE to review construction and dredging projects.</p> <p>MOU with Friends of the Bay to monitor water quality.</p> <p>Continued participation on long-range planning coalition.</p> <p>LI Wetland restoration initiative on Federal, state and private lands</p> <p>Continue boundary surveys.</p> <p>Continue DU partnerships, and open water partnerships.</p> <p>Work with Ducks Unlimited to support ongoing research of overwintering and food resources.</p>	<p>In addition to alternative A:</p> <p><u>Oyster Bay</u> Study potential for marine protected area.</p> <p>Within 5 years, clarify and codify the 1989 Oyster Bay decision document; complete implementation e.g., illegal dock removal, mooring cap and location.</p> <ul style="list-style-type: none"> - Then work with Towns to address number of boat moorings at Oyster Bay and fee structure. - Then complete removal of illegal docks and moorings. <p>Within 2 years, complete boundary survey and post refuge signage.</p> <p><u>Seatuck</u> In consultation with NOAA, research potential for designation of existing Marine Managed Area to a Marine Protected Area.</p> <p><u>All Refuges</u> Establish/maintain submerged aquatic vegetation beds and introduce seed-producing emergent plants like sedges and rushes along shorelines at Wertheim, Oyster Bay, Seatuck, and Morton.</p> <p>Develop and implement waterfowl and shorebird surveys at refuges as needed.</p> <p>Within 10 years, initiate program with Ecological Services for off-refuge wetland restoration projects for up to 50 acres/year. Refuge will provide technical expertise in this partnership to benefit waterfowl and other migratory trust resources. Use of dedicated "1121" funding will assist this crucial partnership.</p> <p>Establish and emphasize partnerships to conduct marsh and beach cleanups.</p> <p>Establish NPS, state, county, and local partnerships to increase LE patrols during waterfowl season.</p>	<p>In addition to alternative A:</p> <p><u>Wertheim</u> Within 10 years, modify Little Neck Run, degraded from former duck farm, by excavation. Bring in new substrate, recontour bottom, and plant emergents.</p> <p><u>Oyster Bay</u> Negotiate with Town of Oyster Bay to modify shellfishery pattern, timing, and location to minimize effects to wintering waterfowl food base.</p> <p>Within 5 years, develop and implement waterfowl and shorebird surveys.</p> <p><u>All Refuges</u> Remove bulkhead and establish native shoreline at Wertheim and Seatuck.</p> <p>Work with the state to develop pilot study to monitor effectiveness of banning lead sinkers.</p>
<p>How will the Complex identify habitat management needs for neotropical migratory birds?</p>	<p>Continue to implement Regional Office guidelines for conducting salt marsh bird surveys.</p> <p>Conduct land bird surveys at Wertheim.</p>	<p>In addition to alternative A:</p> <p>Conduct land bird surveys at Seatuck.</p> <p>Evaluate habitat quality and restoration needs for salt marsh birds at Wertheim.</p> <p>Initiate inventories for salt marsh sparrows at Seatuck.</p>	<p>Same as alternative B.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
<p>How will the Complex improve diadromous fish habitat?</p>	<p>Allow DEC monitoring of American eel at Wertheim.</p>	<p>Within 15 years, initiate agreement with FWS Fisheries and other partners to develop an integrated habitat management, monitoring, and inventory plan for the Complex.</p> <p>Consult with FWS Fisheries, National Marine Fisheries Service, and the state to evaluate necessity of restoring anadromous fish runs on Complex units.</p> <p>Monitor both surface and ground water quality, especially at Wertheim.</p> <p>Within 15 years, integrate NY DOS report on south shore estuary into refuge management.</p> <p>Study population of sea-run brook trout in Yaphank Creek, and enhance habitat.</p> <p>Initiate consultation with FWS fisheries, NOAA fisheries, and the DEC to determine the appropriateness of stocking the Carmans River.</p>	<p>In addition to alternative B:</p>
<p>How will the Complex protect amphibian and reptile populations and habitats on refuge lands?</p>	<p>Investigate mud turtle presence at Wertheim.</p> <p>Evaluate results of telemetry study of box turtle movement at Wertheim.</p> <p>Conduct Region 5 anuran protocols at Wertheim in 2006.</p>	<p>In addition to alternative A:</p> <p>Support research of mud turtles at Wertheim (Species of Special Concern).</p> <p>Review results of university research on mud turtles at Wertheim. If warranted, continue monitoring mud turtle population.</p> <p>By 5th year, identify monitoring and research needs for T&E species and Species of Special Concern (amphibians and reptiles) on the Complex.</p>	<p>In addition to alternative A:</p> <p>Within 5 years, with partners, determine if there are opportunities on and adjacent to the refuges in the Complex to reduce amphibian and reptile road mortality during spring migration.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
Controlling invasive species			
How will refuge staff control <i>Phragmites</i> on the Complex?	<p>Reduce <i>Phragmites</i> at Wertheim impoundment via cutting, spraying, burning and manipulating water levels.</p> <p>Continue to monitor and document extent of <i>Phragmites</i> at Wertheim.</p> <p>Work with the DEC to encourage permitting for use of herbicides, mowing, burning, and water level manipulation in Wertheim impoundments.</p>	<p>In addition to alternative A:</p> <p>Within 2 years of CCP completion, identify and map current distribution of <i>Phragmites</i> on each refuge using aerial photography or satellite imagery.</p> <p>Develop plan to prioritize treatment sites to prevent new invasions or eradicate recently-established plants.</p> <p>Treat an average of 25 acres/year of invasive species, including at least 5 acres of wetland plants, using chemical, mechanical, prescribed fire and biological treatments, as necessary. Hire additional maintenance worker to administer treatments.</p> <p>Work with the DEC to continue permitting use of herbicides in marsh lands—outside of manipulated areas.</p> <p>At Wertheim, restore tidal inundation, as higher salinity discourages <i>Phragmites</i>.</p> <p>Support research related to managing/controlling invasive species. Experiment with cutting-edge biological controls, as available.</p> <p>Remove stand of <i>Phragmites</i> at Conscience Point.</p> <p>Work with neighbors/partners to study and develop control methods that address invasive plants in off-refuge areas.</p>	Same as alternative B.
How will refuge staff manage mute swans?	<p>Currently manage nuisance individuals that affect safety of canoeists with lethal and non-lethal methods</p> <p><i>Note: More than 100 mute swans winter at the mouth of the Carmans River, with ~5 breeding pairs at Wertheim. Swans winter at all aquatic refuges within Complex.</i></p> <p>Continue to monitor and track populations on refuge lands and waters.</p>	<p>Collaborate with Suffolk County Parks at Southaven to discourage public feeding of swans, and implement program to addle eggs on park property.</p> <p>Implement policy using cutting-edge techniques that prevent the establishment of mute swans at refuge units. Objective is zero productivity on the Complex. Adult swans will be controlled when habitat degradation occurs or swan numbers become excessive.</p>	<p>In addition to alternative B, implement the following.</p> <p>By year 5, cooperate with the DEC to remove all mute swans through lethal and non lethal means, to the extent practicable. Objective is to eliminate the presence of mute swans.</p> <p>Collaborate with Suffolk County Parks at Southaven on program to discourage public feeding of swans, addle eggs, and lethally-control swans on park property.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
<p>How will refuge staff manage Asiatic bittersweet and other invasive upland plant species?</p>	<p>Continue with mowing, discing, uprooting, herbiciding, and fire techniques, as species are currently expanding into forested areas and choking out native species.</p> <p>Partner with other agencies/individuals in LI Weed Management Area.</p> <p>Support local research on invasives control.</p>	<p>In addition to alternative A:</p> <p>Within 10 years, complete mapping the distribution of upland invasives at Wertheim, Morton, Seatuck, and Conscience Point.</p> <p>Expand participation in Weed Management Area and volunteer network. Support implementation of Weed Management Area's outreach efforts to neighboring homeowners.</p> <p>Seek out additional research opportunities to support, and seek additional funding for management of invasives.</p> <p>Make use of bio-controls, as available.</p>	<p>Same as alternative B, plus:</p> <p>Expand invasives control by partnering with other agencies to control invasive plant species on non-FWS lands.</p>
<p>Managing overabundant wildlife populations</p>			
<p>How will the Complex attain a "balance" in the white-tailed deer population on refuge units?</p>	<p>Continue on-going monitoring program to determine population levels, at Seatuck and Wertheim.</p> <p>Reduce damage to habitat by providing a managed public hunt at Wertheim.</p> <p><i>Note: Hunting is covered on page 53.</i></p> <p>Maintain fencing, annual deer drive, and agency cull as needed at Seatuck.</p>	<p>In addition to alternative A:</p> <p>Evaluate effects of current population to vegetation at Target Rock and Sayville using deer exclosures and photo study.</p> <p>Encourage deer management programs on state lands adjoining Target Rock, Seatuck, and other refuges.</p> <p>Increase annual cull quota at Seatuck and evaluate effect of cull on deer population.</p> <p>Explore the possibility of a hunt at Seatuck.</p> <p>Conduct surveys to determine deer population at Conscience Point and Morton.</p> <p>Evaluate need to manage deer population at Conscience Point and Morton.</p> <p>Present lists of landscape plants that are more deer tolerant to refuge neighbors.</p>	<p>Same as alternative B, plus:</p> <p>Encourage deer management programs on lands adjoining national wildlife refuges.</p>
<p>How will the Complex maintain populations of resident Canada geese?</p>	<p>No action.</p>	<p>Work with DEC and other partners to initiate a resident Canada goose hunt at Wertheim; specifically along the shoreline of Bellport Bay, and at the impoundment during early goose season. Encourage participation of youth/disabled hunters.</p> <p>Initiate egg addling.</p>	<p>Same as alternative B.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
Controlling Mosquitoes			
<p>How will the Complex manage for mosquito problems?</p>	<p>100 acres at Seatuck, and 350 acres at Wertheim completed with ditch plugging.</p> <p>Cooperation with partners to provide habitat in marshes for mosquito-consuming fish i.e. Long Island Wetland Restoration Initiative.</p> <p>Work with Suffolk County to monitor mosquito larvae production during breeding season at Wertheim and Seatuck.</p> <p>Investigate and apply pilot study of true Open Marsh Water Management project to concentrated breeding areas at Wertheim. The refuge will strive to minimize, and hopefully eliminate, spraying through habitat manipulation.</p> <p>Give approval to Suffolk County Vector Control to spray with larvicide when levels exceed established thresholds.</p> <p><i>Note: The use of adulticide is not permitted unless the state declares a health emergency that includes the refuge area.</i></p> <p>Participate in SCVC long-term vector management plan development.</p>	<p>Ensure consistency with Regional and national management guidance.</p> <p>Establish MOU with Nassau County Vector Control regarding any potential vector issues at Lido Beach and Oyster Bay.</p> <p>Complete OMWM pilot study at Wertheim.</p> <p>Evaluate the effectiveness of OMWM pilot study at Wertheim and the USFWS region-wide OMWM study. Use the results of the studies, and consider concerns about OMWM, and any new information our biologists have gathered to guide future mosquito management.</p> <p>Establish new spray criteria and effectiveness monitoring in accordance with FWS policy.</p> <p>Support Region 5 research related to the impacts of mosquito control on fish and wildlife resources.</p> <p>Implement new management techniques, as developed.</p>	<p>Same as alternative B, plus:</p> <p>Offer less spraying, more "on-the-ground" changes.</p> <p>Experimental plots to evaluate various control techniques.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service’s Proposed Action	Alternative C
Establishing hunting opportunities at the Complex			
<p>What hunting opportunities will be available at the Complex?</p>	<p>Prior to 2005, hunting has not been allowed on any refuge lands. The compliance process has recently been completed to allow a managed public deer hunt on Wertheim beginning in fall 2005.</p> <p>Continue archery and firearm deer hunts at Wertheim, assuming sufficient staff and resources are available to administer a safe and effective hunt.</p> <p>Continue to evaluate effectiveness of controlled public hunt to reduce overpopulation of deer at Wertheim.</p>	<p>In addition to alternative A:</p> <p>Work with DEC and other partners to initiate a resident Canada goose hunt at Wertheim; specifically along the shoreline of Bellport Bay, and at the impoundment during early goose season. Encourage participation of youth/disabled hunters.</p> <p>Within 5 years, work with partners to evaluate the feasibility of a limited duck hunt at Wertheim. Priority access will be granted to youth or disabled hunters.</p> <p>Within 5 years, work with the State/DU and other partners including adjacent landowners to resolve problems with waterfowl hunting on properties adjacent to Conscience Point.</p> <p>Announce current hunting opportunities and season openings through news releases, websites, postings to local media, and contacts with sportsmen groups, surrounding communities, and visitors.</p> <p>Within 5 years, work with the DEC, DU and other partners to promote current hunting programs for non-traditional sportsmen including disabled people, women and youth.</p>	<p>In addition to alternative A:</p> <p>Work with DEC and other partners to initiate a resident Canada goose hunt at Wertheim to maintain the population. Otherwise, no additional hunting opportunities permitted on any refuges, per “closed until opened” policy.</p> <p>Explore possibility of sharing resources with partnering groups like DU and the DEC to assist in hunting opportunities</p>
Establishing increased opportunities for public stewardship			
<p>How will the refuge promote and cultivate the relationship with the Friends of the National Wildlife Refuges of Long Island?</p>	<p>Maintain partnership with Friends of Wertheim group, including technical, administrative, and resource support.</p> <p>Actively support and promote the Friends group’s vital efforts in funding and implementing outreach and environmental education programs, which enhance our capability to achieve refuge goals.</p>	<p>In addition to alternative A:</p> <p>Within 5 years, establish a Friends group for Morton and Target Rock.</p> <p>Expand outreach to ensure visitors become more aware of Friends group, and how people can join.</p> <p>Continue active support of FOW and attendance at board meetings.</p> <p>Formally recognize the contributions by Friends group.</p> <p>Provide office and retail space, with cooperating agreement, for Friends groups at the proposed headquarters/visitor center at Wertheim. See “Developing a Headquarters and Visitor Center.”</p> <p>Inform Friends group membership of opportunities to participate in biological and public use activities.</p> <p>Increase staff involvement with friends group and vice versa.</p>	<p>Same as alternative B.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
<p>How will the Long Island National Wildlife Refuge Complex improve outreach?</p>	<p>Maintain an ongoing dialogue, in person & via informational releases, with elected and appointed officials at the local, county, state, and federal governments.</p> <p>Partnerships with other agencies and NGOs.</p> <p>Participate in civic events, and nature festivals.</p> <p>Develop website for Complex w/ technical assistance from FOW volunteer.</p> <p>Develop & issue news releases re: refuge matters.</p> <p>Develop refuge-specific fact sheets and brochures.</p>	<p>In addition to alternative A:</p> <p>Develop & implement an outreach plan for Congressional/Elected/Appointed Officials, NGOs, Agencies, Schools, and general public.</p> <p>Conduct periodic public informational meetings throughout key locations on Long Island.</p> <p>Develop and implement a media outreach plan to capitalize on the Complex's close proximity to the nation's media capital, New York City.</p> <p>Within 10 years, recruit Friends Groups & volunteers to host annual events at Morton, Wertheim, and Target Rock.</p> <p>Outreach to local kayak rental & sporting entities to limit trespass and related problems at the refuges.</p> <p>Within 3 years, work with FWS External Affairs office to ensure that 6 articles, or radio or TV spots about the Complex appear in national media highlighting refuge resources, issues, management.</p>	<p>Same as alternative A.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
<p>How will refuge staff improve existing or develop new partnerships with groups involved in or influencing public use and resource conservation activities on and off the refuges?</p>	<p>Maintain existing partnerships, see Table 3-6.</p> <p>Continue to cooperate informally with partners such as respective tourism bureaus.</p> <p>Establish cooperative agreement with Brookhaven Volunteer Fire Department to support fire operations at Wertheim.</p> <p>Continue to work towards re-opening railway crossing at Wertheim.</p>	<p>In addition to alternative A:</p> <p>Within 5 years, evaluate partnerships to identify those that will benefit from formal MOUs/MOAs or cooperative agreements. This will help identify mutual goals, cost sharing, technical exchange, and environmental education and interpretation opportunities.</p> <p>Establish joint programs with other visitor centers/community gathering places and partners to support mutual work in natural resources i.e. NPS, towns.</p> <p>Work with partners to highlight work and successes; use media links e.g., websites.</p> <p>Initiate new partnerships that facilitate achievement of refuge goals/purposes.</p> <p>Maintain cooperative agreement with Brookhaven Volunteer Fire Department.</p> <p>Establish partnerships /programs with surrounding Universities and Colleges e.g. Columbia University, New York University, Yale, University of Massachusetts, State University of New York, Cornell University.</p> <p>Establish headquarters /visitor's center as meeting space for partners.</p> <p>Partner with the Cornell Cooperative Extension to use the Complex units as sites for their Master Birder and Master Naturalist Programs.</p>	<p>Same as alternative B.</p>
<p>Developing a Headquarters and Visitor Center</p>			
<p>How will the Complex address its need for adequate office and visitor contact space?</p>	<p>Initiate immediate actions to temporarily move some staff from existing trailers to refuge quarters. The quarters would only be used as a temporary administrative office until a new headquarters is constructed.</p>	<p>In addition to alternative A:</p> <p>Initiate development of a permanent headquarters/visitor center at Wertheim in accordance with the Region 5 family of buildings (medium model).</p> <p>Work with the Town of Oyster Bay and the DEC to create a staffed Oyster Bay office.</p> <p>Update existing buildings and have additional staff dedicated to Morton and Target Rock on a seasonal basis.</p>	<p>Same as alternative A.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
Other Issues			
<p>What fishing opportunities will be available at the Complex?</p>	<p>Some areas are currently open for fishing: shore fishing at Target Rock, Amagansett, Wertheim, and Morton; water-based fishing at Wertheim, Oyster Bay; shore and water based fishing at Mill Pond area of Oyster Bay.</p> <p>The DEC stocks the Carmans River with non-native brown and rainbow trout. Work with state and fishery experts to evaluate impacts of trout stocking.</p> <p>Participate in annual fishing clinic in partnership with Suffolk County Parks, NYFTTA, NYSDEC, LIFO.</p>	<p>In addition to alternative A:</p> <p>Explore opportunity and evaluate sites to provide shore-based public fishing opportunities where compatible and feasible.</p> <p>Construct at least one "barrier free" fishing structure.</p> <p>Improve fishing access site(s) at Wertheim north of Montauk Highway in partnership with the DEC, NYFTTA, and NY Department of Transportation.</p> <p>Within 5 years, improve the fishing access site at the end of Beaver Dam Road in partnership with the Town of Brookhaven.</p> <p>Integrate NY Department of State report on the south shore estuary.</p> <p>Work with Environmental Defense Fund, DEC, Trout Unlimited, and Suffolk County to restore anadromous fish runs and consider historic/native populations, rather than stocking with non-natives.</p> <p>Develop and promote annual youth fishing programs and events on refuge lands e.g. fly-tying, fish derby, etc.</p> <p>Design and develop interpretive displays or kiosks at fishing locations teaching visitors about responsible fishing, sensitive habitats, and the importance of a healthy ecosystem of fish and their associated habitats.</p> <p>Develop and distribute fishing rack cards to promote the refuge and fishing.</p>	<p>By 2008, work with town to close all refuge beaches and shoreline above mean low tide line to surf fishing during plover, heron, and other waterbird nesting seasons, and shorebird migration—approx. April 1 to Sept 30/yr. Allow fishing the remainder of the year, per state regulations.</p> <p>Establish "marine protected areas" in cooperation with the DEC.</p> <p>Ban lead sinkers on all refuge waters.</p> <p>Develop a study & protocol for control of the large carp population.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
<p>What kind of interpretive opportunities will be available at the Complex?</p>	<p>Encourage partners –Friends, volunteers, special interest groups– to conduct interpretive programs on refuges.</p> <p>Maintain existing 3 kiosks, self-guided trails, and viewing platforms at Morton, Target Rock, and Wertheim.</p> <p>Participate in locally- sponsored events.</p> <p>Update interpretive signs, brochures, and trail guides.</p> <p>Hold an event to promote the Carmans River and the Carmans River Guide brochure.</p>	<p>In addition to alternative A:</p> <p>By year 5, with partners, develop a detailed interpretive program for the refuge that tiers to the Visitor Services Plan.</p> <p>By year 10, work with partners to design and construct interpretive kiosks on those refuge lands without existing or with outdated interpretive opportunities. Work with partners to place a kiosk and/or interpretive signs on town property adjacent to Amagansett, Seatuck, Sayville and Conscience Point.</p> <p>Within 10 years, develop docent program with volunteers to staff visitor contact station at Morton and conduct interpretive programs.</p> <p>Within 10 years, coordinate with the Town of Oyster Bay, Friends of the Bay, and Waterfront Center to partner in developing interpretive exhibits and programs for Oyster Bay.</p> <p>Within 5 years, work with NPS Sagamore Hill to develop a trail and interpretive overlook at Oyster Bay.</p> <p>Within 10 years, re-evaluate and renovate trails to make barrier free, and develop self guided interpretive signs, including at restoration sites.</p> <p>Develop an accessible trail and education pavilion on the east side of the Carmans River in conjunction with the new headquarters/visitor center at Wertheim.</p> <p>Work with local canoe/kayak vendors to develop an interpretive self-guided tour of the Carmans River with an accompanying brochure.</p>	<p>In addition to alternative A:</p> <p>Within 5 years, develop comprehensive Long Island interpretive programs at off-refuge locations with partners, likely to reach the greatest number of visitors with least impact to refuge.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
<p>What curriculum-based environmental education opportunities will be available at the Complex?</p>	<p>Select published wetland EE activities/curricula pertinent to the Complex for the development of teacher packets. Wertheim, Morton.</p> <p>Partnership with LIIPS to conduct teacher workshops and promote national wildlife refuges to continuing education students.</p> <p>Active participation in Federal Junior Duck Stamp program with DU and others.</p> <p>Participation in environmental education events–Nassau BOCES, Town of Oyster Bay.</p>	<p>In addition to alternative A:</p> <p>Within 10 years, partner with NGOs and academic institutions to develop a detailed, self-guided environmental education program for opened refuge units that tier to Visitor Services Plan.</p> <p>Within 10 years, expand teacher workshops to Target Rock and Morton.</p> <p>Develop education kits for scout leaders to use in conducting education programs at the Complex. Encourage use of refuge by scouts to earn official badges.</p>	<p>In addition to alternative A:</p> <p>Environmental education activity packets available to local educators. Wertheim, Morton.</p> <p>Develop “barrier beach education kit” and other curriculum projects for use by local teachers as related to piping plover protection.</p>
<p>What kind of wildlife observation and photography opportunities will be available at the Complex?</p>	<p>Continue to maintain existing trail systems at Wertheim, Target Rock and Morton.</p> <p>Maintain viewing/ photography blinds at Wertheim, Target Rock, and Morton.</p> <p>Wildlife photography permitted in closed areas by special use permit only.</p> <p>Conduct periodic wildlife photography workshops.</p>	<p>In addition to alternative A:</p> <p>Within 5 years, initiate partnership with towns to plan new observation platforms at Seatuck and Conscience Point.</p> <p>Within 5 years, construct photo blind at Wertheim impoundments for guided use.</p> <p>Within 3 years, Develop a nature photography club that can provide annual wildlife photography workshops. Offer an annual Friends Group-sponsored wildlife photography contest.</p> <p>Review SUP fee policy for commercial wildlife photography primarily on closed refuge property.</p>	<p>In addition to alternative A:</p> <p>Within 5 years, eliminate unnecessary or redundant trails, and restrict public use to designated trails only.</p> <p>Maintain public use closure at Sayville, Seatuck and Conscience Point, except for seasonal environmental education programs. Restrict access to closed areas to only volunteers who are assisting with refuge projects in need of observation data or photographic images and/or video footage.</p> <p>Hold an annual nature photography contest, where photos must be taken on the Complex; consider partnering with the Long Island Convention and Visitors Bureau and corporate sponsors.</p>
<p>How will refuge staff improve Visitor Services?</p>	<p>Maintain existing trails and facilities.</p> <p>Update interpretive media.</p> <p>Enlist and train interns and volunteers for visitor contact and personal interpretation.</p> <p>Develop environmental education activity packets and workshops, and obtain educator feedback.</p> <p>Conduct visitor surveys.</p>	<p>In addition to alternative A:</p> <p>Within 5 years, complete a needs assessment and subsequent step-down Visitor Services Plan for the Complex to establish strategic priorities, target audiences, capacity limits, and implementation schedules.</p> <p>Add sales outlets at Wertheim and Morton.</p> <p>Initiate development of a permanent headquarters/visitor center at Wertheim in accordance with the Region 5 family of buildings (medium model).</p>	<p>Same as alternative A.</p>

Alternatives Comparison Matrix

Resource Issue	Alternative A Current Management	Alternative B Service's Proposed Action	Alternative C
Land acquisition	Continue to acquire refuge inholdings within approved refuge boundaries as willing sellers become available.	<p>In addition to alternative A:</p> <p>Explore a partnership with The Nature Conservancy to enhance the resources on Amagansett and explore the potential of improving the site for the federally listed threatened piping plover to nest.</p> <p>Explore the potential to acquire approximately 75 acres of quality wetlands adjacent to Lido Beach in fee title or with the establishment of a cooperative agreement with the Town, for the benefit of migratory birds.</p> <p>Within the first year, re-establish a dialogue with FAA to affect the congressional act which directs FAA to transfer the 98-acre site to the FWS. This property abuts the current 26-acre Sayville unit of Wertheim. The acquisition of the 98-acre FAA site is critical for the future delisting of the federally listed endangered sandplain gerardia. The FAA site accounts for 90% of the plant in NY and is the sole population that is viable for translocation to other areas.</p> <p>When the 98-acre FAA site is acquired, the adjacent 26-acre FWS Sayville unit will be prepared to provide additional habitat for the endangered plant.</p> <p>Explore the no-cost transfer of ~86 acres of native grassland from Suffolk County Parkland to Wertheim in order to fully manage the site for sandplain gerardia. If the transfer is not implemented, establish a MOU which documents refuge efforts to re-establish native grasslands and another viable population of the federally listed endangered plant.</p>	In addition to alternative A: Develop a land acquisition proposal to acquire and protect Lloyd Harbor and the private beach at Target Rock.
Staffing	See staffing charts, appendix D.	<p>In addition to alternative A:</p> <p>Phase in plans for increases in law enforcement and visitor services staff.</p>	Same as alternative A.