

Habitat Management Plan for Lakeview Wildlife Management Area 2018 – 2027



Pond view at Lakeview WMA.

Photo: James Canevari, NYSDEC

Division of Fish and Wildlife
Bureau of Wildlife

317 Washington Street, Watertown, New York 13601

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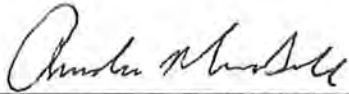
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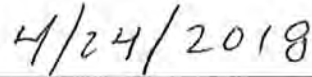
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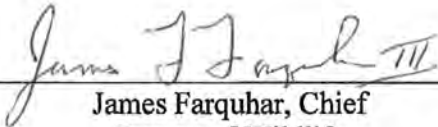
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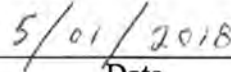
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SUMMARY

The majority of Lakeview Wildlife Management Area (WMA) was acquired in 1962 using funds from the Park and Land Acquisition Bond Act of 1960. An additional area of barrier beach was acquired in 1968 through a transfer agreement with the Thousand Island State Park Commission. More land acquisitions occurred in 1978 and 1999. The WMA is a natural wetland complex consisting of a long barrier beach, dunes, marshes, and swamps with cold-water streams. It is prone to seasonal flooding during heavy rain or snow melt events. The WMA is part of the largest natural fresh water barrier beach system in New York State. Since lakeshore barrier beach complexes such as this are rare, the area has been designated as a National Natural Landmark. In 2007, as part of the Eastern Lake Ontario Barrier Beach and Wetland Complex, it was also designated as a Natural Heritage Area. In addition, the WMA has been designated as a significant coastal fish and wildlife habitat by the New York Department of State. The WMA was designated a Bird Conservation Area (BCA) by the state as part of the Eastern Lake Ontario Marshes BCA on August 31, 1998. Lakeview WMA is managed for open water, shoreline, and wetland habitats and preservation of unique ecological resources within the WMA.

Key habitat management goals include:

- Maintaining 65% of the WMA as open water and wetland habitat to provide high-quality migratory waterfowl nesting, resting, and foraging habitat; prime waterfowl hunting, furbearer trapping, and fishing opportunities; and breeding habitat for endangered, threatened, or Species of Greatest Conservation Need (SGCN) bird species;
- Managing approximately 2% of the WMA (10% of the forested acres) as young forest (0-10 years) to promote habitat for American Woodcock, Ruffed Grouse, Wild Turkey, white-tailed deer, migratory songbirds, and other SGCN;
- Maintaining approximately 17% as intermediate and mature forest;
- Maintaining approximately 3% as agricultural lands to provide forage for many wildlife game and non-game species;
- Managing approximately 2% as early successional shrublands and grasslands; and
- Protecting approximately 9% as Lake Ontario beaches and dunes.

I. BACKGROUND AND INTRODUCTION

PURPOSE OF HABITAT MANAGEMENT PLANS

BACKGROUND

Active management of habitats to benefit wildlife populations is a fundamental concept of wildlife biology, and has been an important component of wildlife management in New York for decades. Beginning in 2015, NYS Department of Environmental Conservation (DEC) Division of Fish and Wildlife (DFW) initiated a holistic planning process for wildlife habitat management projects. Habitat Management Plans (HMP) are being developed for WMAs and other properties administered by DFW Bureau of Wildlife, including select Multiple Use and Unique Areas. The

goal of HMPs is to guide habitat management decision-making on those areas to benefit wildlife and facilitate wildlife-dependent recreation. HMPs guide management for a ten-year time frame, after which the plans and progress on implementation will be assessed and HMPs will be modified as needed.

HMPs serve as the overarching guidance for habitat management on WMAs. These plans incorporate management recommendations from Unit Management Plans (UMPs), existing WMA habitat management guidelines, NY Natural Heritage Program's WMA Biodiversity Inventory Reports, Bird Conservation Area guidelines, and other documents available for individual WMAs.

SCOPE AND INTENT

Primary purposes of this document:

- Provide the overall context of the habitat on the WMA and identify the target species for management and/or protection;
- Identify habitat goals for WMA-specific target species, contemplating juxtaposition of all habitat types to guide the conservation and management of sensitive or unique species or ecological communities;
- Identify acreage-specific habitat goals for the WMA to guide management actions;
- Provide specific habitat management prescriptions that incorporate accepted best management practices;
- Establish a forest management plan to meet and maintain acreage goals for various forest successional stages;
- Address management limitations such as access challenges (e.g., topography); and
- Provide the foundation for evaluating the effectiveness of habitat management.

Within the next five years, this HMP will be integrated into a comprehensive WMA Management Plan that will include management provisions for facilitating compatible wildlife-dependent recreation, access, and facility development and maintenance.

Definitions are provided in Appendix A.

The effects of climate change and the need to facilitate wildlife adaptation under expected future conditions will be incorporated into the habitat management planning process and will be included in any actions that are recommended in the HMPs. For example, these may include concerns about invasive species, anticipated changes in stream hydrology, and the desirability for maintaining connectedness on and permeability of the landscape for species range adjustments.

This plan and the habitat management it recommends will be in compliance with the State Environmental Quality Review Act (SEQRA), 6NYCRR Part 617. See Appendix B. The recommended habitat management also requires review and authorization under the Endangered Species Act (ESA), National Environmental Policy Act (NEPA), and State Historic Preservation Act (SHPA), prior to implementation.

WMA OVERVIEW

LOCATION

Lakeview WMA is located in DEC Region 6, Town of Ellisburg, Jefferson County (Figure 1).

TOTAL AREA

3,444 acres

HABITAT INVENTORY

A habitat inventory of the WMA was completed in 2015 and is proposed to be updated every ten to fifteen years to document the existing acreage of each habitat type and to help determine the location and extent of future management actions. Table 1 summarizes the current acreage by habitat type and the desired acreage after management. Desired conditions were determined with consideration of habitat requirements of targeted wildlife, current conditions on the WMA, and conditions in the surrounding landscape (see Landscape Context section below).

Table 1. Summary of current and desired habitat acreage on Lakeview WMA.

| Habitat Type | Current Conditions (as of 2015) | | | Desired Conditions | |
|----------------------------------|------------------------------------|-------------------|-------|--------------------|-------------------|
| | Acres | Percent of WMA | Miles | Acres | Percent of WMA |
| Forest ^a | 650 | 19% | | 598 | Decrease to 17% |
| Young forest | 0 | 0% | | 65 | Increase to 2% |
| Shrubland | 5 | < 1% | | 5 | No change |
| Grassland (open field) | 50 | 1% | | 54 | Increase to 2% |
| Agricultural land | 136 | 4% | | 102 | Decrease to 3% |
| Wetland (natural) ^b | 1,584 | 46% | | 1,601 | Slight increase |
| Wetland (impounded) ^b | 0 | 0% | | 0 | No change |
| Open water | 659 | 19% | | 659 | No change |
| Other (Great Lakes dunes) | 327 | 9% | | 327 | No change |
| Roads and parking areas | 33 | 1% | 7 | 33 | No change |
| Rivers and streams | | | 8 | | No change |
| Total Acres: | 3,444 | 100% | | 3,444 | |

^a Forest acreage includes all mature and intermediate age classes of natural forest, plantations, and forested wetlands. Young forest is reported separately. Definitions are provided in the Forest section of this plan.

^b Wetland acreage does not include forested wetlands, since they are included in the Forest category.

ECOLOGICAL RESOURCES

Wildlife Overview:

Wildlife present on Lakeview WMA includes many species commonly found throughout northern New York and the lake plains of eastern Lake Ontario, such as:

- Beaver, muskrat, mink
- Red-winged Blackbird, Common Yellowthroat, Song Sparrow, Marsh Wren, Wood Duck

- White-tailed deer, Wild Turkey
- Painted turtle, snapping turtle
- Bullfrog, northern leopard frog, green frog, eastern American toad, spring peeper
- Northern water snake, garter snake
- Spotted salamander

Wildlife and Plant Species of Conservation Concern:

The following federal or state listed Endangered (E), Threatened (T), or Special Concern (SC) species and/or SGCN may occur on the WMA (Table 2).¹ SGCN listed below include species that have been documented on or within the vicinity of the WMA that are likely to occur in suitable habitat on the WMA. Other SGCN may also be present on the WMA. Data sources include: the NY Natural Heritage Program, NY Breeding Bird Atlases,² NY Reptile and Amphibian Atlas,³ DEC wildlife surveys and monitoring, and eBird.⁴

Table 2. Species of conservation concern that may be present on Lakeview WMA, including state and federal Endangered (E) and Threatened (T) species, state Species of Special Concern (SC), High Priority SGCN (HP), and SGCN (x).

| Species Group | Species | Federal Status | NY Status | NY SGCN |
|---------------|-----------------------------|----------------|-----------|---------|
| Birds | American Black Duck | | | HP |
| | American Bittern | | SC | x |
| | American Kestrel | | | x |
| | American Woodcock | | | x |
| | Bald Eagle | | T | x |
| | Black-billed Cuckoo | | | x |
| | Black Tern | | E | HP |
| | Black-throated Blue Warbler | | | x |
| | Blue-winged Teal | | | x |
| | Blue-winged Warbler | | | x |
| | Brown Thrasher | | | HP |
| | Canada Warbler | | | HP |
| | Caspian Tern | | | x |
| | Common Tern | | T | x |
| | Eastern Meadowlark | | | HP |
| | Great Egret | | | x |
| | Greater Yellowlegs | | | x |
| | Least Bittern | | T | x |
| | Northern Harrier | | T | x |
| | Olive-sided Flycatcher | | | HP |
| | Pied-billed Grebe | | T | x |
| | Piping Plover | E | E | HP |

¹ The 2015 New York State Wildlife Action Plan identifies 366 Species of Greatest Conservation Need (SGCN) including 167 High Priority SGCN. Available online at <http://www.dec.ny.gov/animals/7179.html>.

² Available online at <http://www.dec.ny.gov/animals/7312.html>.

³ Available online at <http://www.dec.ny.gov/animals/7140.html>.

⁴ Available online at <http://ebird.org/content/ebird/about/>. © Audubon and Cornell Lab of Ornithology.

Table 2. Continued

| Species Group | Species | Federal Status | NY Status | NY SGCN |
|-------------------------|--|----------------|-----------|---------|
| | Prairie Warbler | | | x |
| | Ruffed Grouse | | | x |
| | Scarlet Tanager | | | x |
| | Sedge Wren | | T | HP |
| | Semipalmated Sandpiper | | | HP |
| | Wood Thrush | | | x |
| | | | | |
| Mammals | Indiana myotis | E | E | HP |
| | Little brown myotis (little brown bat) | | | HP |
| | Northern myotis (long-eared bat) | T | T | HP |
| | | | | |
| Amphibians and reptiles | Blanding's turtle | | T | HP |
| | Blue-spotted salamander | | | HP |
| | Common ribbon snake | | | x |
| | Eastern musk turtle | | | HP |
| | Smooth green snake | | | x |
| | Snapping turtle | | | x |
| | Spotted turtle | | | HP |
| | Western chorus frog | | | x |
| | Wood turtle | | | HP |
| | | | | |
| Fish | Iowa darter | | | x |
| | Western pirate perch | | | x |
| | Blackchin shiner | | | x |
| | | | | |
| Invertebrates | Hairy-necked tiger beetle | | | x |
| | | | | |
| Plants | Champlain beachgrass | | E | |
| | Sand dune willow | | T | |
| | Woodland bluegrass | | E | |
| | Wormwood | | | x |
| | Marsh horsetail – historical record | | T | |

Significant Ecological Communities:

There are three rare and significant natural communities located on Lakeview WMA as identified by the NY Natural Heritage Program. The state rank reflects the rarity within NY, ranging from S1, considered the rarest, to S5, considered stable; definitions are provided in Appendix A. The following significant ecological communities occur on the WMA; community descriptions are from *Ecological Communities of New York State, Second Edition*⁵ (Figures 3a and 3b):

⁵ Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero. 2014. Ecological Communities of New York State, Second Edition. New York Natural Heritage Program, NYS Department of Environmental Conservation, Albany, NY. Available online at <http://www.dec.ny.gov/animals/97703.html>.

- **Great lakes dunes** (S1S2) - a community dominated by grasses and shrubs that occurs on active and stabilized sand dunes along the shores of the Great Lakes. The composition and structure of the community is variable depending on stability of the dunes, the amount of sand deposition and erosion, and distance from the lake. Unstable dunes are sparsely vegetated, whereas the vegetation of stable dunes is denser, and can eventually become forested. Great Lake dunes can be divided into six physiographic zones: 1) beach (see sand beach), 2) foredune front, 3) foredune back and swale, 4) secondary dunes, 5) last lee face of high dune, and 6) last lee face of low dune. Each of these zones may develop any one to several vegetation associations or “community types” (Bonanno 1992).
- **Sand beach** (S3) - a sparsely vegetated community that occurs on unstable sandy shores of large freshwater lakes, where the shore is formed and continually modified by wave action and wind erosion.
- **Shallow emergent marsh** (S5) - a marsh meadow community that occurs on mineral soil or deep muck soils (rather than true peat), that are permanently saturated and seasonally flooded. This marsh is better drained than a deep emergent marsh; water depths may range from 15 cm. to 1 m. (6 in. to 3.3 ft.) during flood stages, but the water level usually drops by mid to late summer and the substrate is exposed during an average year. This is a very broadly defined type that includes several distinct variants and many intermediates. Shallow emergent marshes are very common and quite variable. They may be co-dominated by a mixture of species, or have a single dominant species.

Additional information about significant ecological communities is available in the Lakeview WMA Biodiversity Inventory Final Report (1993) prepared by the NY Natural Heritage Program.

Special Management Zones:

Special Management Zones (SMZs) are areas adjacent to wetlands, perennial and intermittent streams, vernal pool depressions, spring seeps, ponds and lakes, recreational trails, and other land features requiring special consideration. SMZs on Lakeview WMA include:

- One large wetland regulated by Article 24 of the Environmental Conservation Law and several additional wetlands shown on the National Wetlands Inventory (NWI; Figures 4a and 4b). Each state-regulated wetland is protected by a buffer zone of 100 feet from the delineated wetland boundary, known as the adjacent area. There may be forestry prescriptions associated with forested wetlands and adjacent areas, and each management prescription will be reviewed individually for determination of impacts.
- Ten streams (a watercourse entirely within the WMA) or segments of streams (a stream that meanders in and out of the WMA). The highest stream classification is Class C(t) therefore one stream is regulated by Article 15 of the Environmental Conservation Law, and water quality standards will be adhered to.⁶
- There are five ponds within Lakeview WMA. They are Lakeview Pond, Floodwood Pond, Goose Pond, North Colwell Pond, and South Colwell Pond.

⁶ Information about stream classification is available online at <http://www.dec.ny.gov/permits/6042.html>.

- A dune system is found within Lakeview WMA. This dune system with the sandy shoreline has recently (2015 and 2016) supported nesting Piping Plovers which are listed as both state and federally endangered species.
- Several recreational walking trails are located within Lakeview WMA.

Guidelines for habitat management projects within most of these areas are outlined in the Division of Lands and Forests *Rules for Establishment of Special Management Zones on State Forests and Wildlife Management Areas*.⁷ Some habitat management activities may either be prohibited or restricted in order to protect these features. Any deviations from these guidelines will be addressed in the individual stand prescriptions or habitat summary.

Soils:

The soil across much of Lakeview WMA is deep but poorly drained, which limits the establishment and growth of non-wetland plant species. The majority of the WMA is wetlands, where the soil is ponded Saprists and Aquents. The western boundary of the WMA is the dune system with sandy beaches. The non-wetland soils, primarily around the edges of the WMA, are sand or silt loams, with a few areas of very stony silt loam. These soil types include, but are not limited to: Galway, Wayland, Massena, Windsor, and Deerfield.

LANDSCAPE CONTEXT

The goals of this HMP have been developed with consideration of surrounding landscape features, such as the availability of habitats and other conservation lands adjacent to Lakeview WMA (Figures 5 and 6). The landscape within a three-mile radius of the WMA is primarily privately-owned land including:

- Open water (49%)
- Cultivated crops (13%)
- Pasture/hay and grassland (11%)
- Deciduous forest (8%)
- Wetlands (6% combining emergent and woody wetlands)
- Early successional shrubland (6%)
- Development (3%)
- Evergreen forest (2%)

Lakeview WMA is surrounded by heavily utilized agricultural areas with little forested uplands. Disconnected or fragmented forested areas were observed around the WMA with 2015 National Agriculture Imagery Program (NAIP) imagery.

National Land Cover Data (NLCD) used to analyze the surrounding landscape does not depict the beach/dune system within the three-mile radius surrounding Lakeview WMA. There are 17 miles of Lake Ontario shoreline dunes within and adjacent to the WMA. The total area of the

⁷ Available online at <http://www.dec.ny.gov/outdoor/104218.html>.

dunes within three miles of the WMA is approximately 745 acres. This area is important because of the value of the unique habitat on the Lake Ontario shoreline.

Currently, the forested land on Lakeview WMA includes no young forest, well under DFW's Young Forest Initiative (YFI) goal of managing at least 10% of the forested landscape on most WMAs as young forest.⁸ There is very little mature forest on the WMA and in the surrounding landscape, emphasizing the importance of a well thought out habitat management plan when creating young forest for an area of this makeup. The goal and value of creating young forest needs to be weighed against the unique habitat of the area and the lack of mature forest on the surrounding landscape. The young forest management proposed in this plan aims to improve poor quality forest, promote regeneration of native species, and establish a healthy mature forest for the future. This will benefit wildlife and provide additional recreational opportunities, like hunting, wildlife observation, and trapping without jeopardizing the unique habitat of this WMA, especially the dune ecosystem.

Nearby conservation lands include:

- Southwick Beach State Park (481 acres) along the northern boundary of the WMA.
- El Dorado Beach Preserve (262 acres) managed by The Nature Conservancy.
- Black Pond WMA (547 acres) located a couple miles to the north.

II. MANAGEMENT STRATEGIES BY HABITAT TYPE

DEC will continue active management of wildlife habitats on Lakeview WMA to provide the following benefits:

- Maintain habitat characteristics that will benefit wildlife abundance and diversity within the New York landscape.
- Promote Best Management Practices for targeted wildlife and habitats.
- Provide opportunities for wildlife-dependent recreation such as trapping, hunting, and bird watching that are compatible with the ongoing habitat management practices and species management considerations.
- Improve habitat quality by reducing or eliminating invasive species, if present and identified for treatment.

FOREST

Forested acreage includes the following forest types:

Natural forest: naturally forested acres, including hardwoods and softwoods. Includes any upland forested acreage that is not young forest, i.e., pole stands, other intermediate forest age classes, mature forest, and old growth forest.

⁸ Additional information about DEC's Young Forest Initiative and the YFI Strategic Plan is available online at <http://www.dec.ny.gov/outdoor/104218.html>.

Plantation: planted forested acres, generally planted in rows dominated by one or two species.

Forested wetland: wetland acres where forest or shrub vegetation accounts for greater than 50% of hydrophytic vegetative cover and the soil or substrate is periodically saturated or covered with water.

Young forest: young or regenerating forested acres, which are typically aged 0-10 years since a disturbance or regeneration cut, depending upon the site conditions. May include both natural forest and plantations.

Young forest (forested wetland): young, regenerating forested wetland acres.

Forest management on Lakeview WMA incorporates an approach to create and/or maintain the diversity of forest age classes that are required to support a diversity of wildlife. In 2015, DEC launched the YFI to increase the amount of young forest on WMAs to benefit wildlife that require this transitional, disturbance-dependent habitat.

MANAGEMENT OBJECTIVES

- Increase young forest from 0 to 65 acres (10% of the forested area) to improve habitat for young forest-dependent wildlife, specifically focusing on American Woodcock, Ruffed Grouse, Wild Turkey, and white-tailed deer.
- Retain 598 acres of existing mature forest and forested wetlands to protect sensitive resources located within the WMA.
- Encourage dispersal of native hardwoods and softwoods to promote regeneration and increase availability of mast and cover for wildlife.



Northern hardwood forest at Lakeview WMA.

Photo: James Canevari, NYSDEC

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are currently 650 forested acres on Lakeview WMA. The forested areas are primarily deciduous natural forests, with a few forested wetlands and plantations (Table 3). The majority of the forested areas are located in patches around the perimeter of the WMA, as the central part of the WMA is natural wetlands with open water.

The natural forest stands, mostly in the eastern section of the WMA, consist of a diverse blend of trees including pockets of aspen and white birch; mixed stands of oak, maple, and hickory; patches of mature hemlock and white pine; and low areas of silver maple, red maple, and green ash. The trees on the inland side of the dunes are primarily oak, cottonwood, black cherry, and

maple with a thick honeysuckle understory. On the dunes closer to the shoreline of Lake Ontario, the trees become sparse and are primarily red cedar and cottonwood. The forested wetlands are mainly black willow, green ash, and boxelder maple with thick brush and tall wetland grasses and forbs.

There are three plantations on the WMA: two white spruce plantations and one white spruce/Scotch pine plantation. The two white spruce plantations (Stands 17 and 44.2) are in good health. The white spruce/Scotch pine plantation (Stand 10) is declining and converting to a mix of hardwoods and brush with a few pockets of apple trees.

Table 3. Summary of the acreage and dominant overstory species for each forest type present on Lakeview WMA.

| Forest Type | Acres (as of 2015) | Desired Acres | Overstory species |
|--------------------------------------|--------------------|---------------|------------------------------|
| Natural forest (mature/intermediate) | 516 | 498 | ash, red maple, black cherry |
| Plantation | 54 | 20 | Scotch pine, white spruce |
| Forested wetland | 80 | 80 | black willow, boxelder maple |
| Young forest | 0 | 52 | |
| Young forest (forested wetland) | 0 | 13 | |
| Total Forested Acres: | 650 | 663* | |

* Includes 13 acres of current agricultural land that will be converted to young forest as part of a proposed mitigation project.

Target species for young forest habitat management include American Woodcock, Ruffed Grouse, Wild Turkey, and white-tailed deer. These species rely on forest and young forest areas for nesting, foraging, and cover and will benefit from management that creates the following habitat requirements:

- American Woodcock:
 - Singing/peenting ground – Open areas from 1 to >100 acres, usually in an abandoned field.
 - Foraging – Moist, rich soils with dense overhead cover of young alders, aspen or birch.
 - Nesting – Young, open, second growth woodlands.
 - Brood rearing – Similar to nesting except also including bare ground and dense ground cover.
 - Roosting – Open fields (minimum of 5 acres) and reverting farm fields.⁹
- Ruffed Grouse:
 - Drumming areas – Downed trees surrounded by small diameter woody cover.
 - Foraging – Open areas with dense overhead cover of young forest with good mast production.
 - Nesting – Young, open forest stands or second growth woodlands.

⁹ US Department of Agriculture, Natural Resources Conservation Service. 2010. American Woodcock: Habitat Best Management Practices for the Northeast by S.J. Williamson. Wildlife Insight. Washington, DC.

- Brood rearing – Herbaceous ground cover with a high midstory stem density.^{10, 11}
- Wild Turkey (in northern hardwood forests):
 - Strutting areas – Open fields with short vegetation, <12 inches preferred, and mature hardwoods.
 - Nesting cover – Blowdowns and the bases of trees and stumps in open hardwoods and brushy cover in early successional habitats and field edges.
 - Brood rearing – Best brooding cover are fields with herbaceous vegetation from 12-18 inches preferred.
 - Foraging – The habitat required ranges from open old-field areas to mature forests:
 - Spring diet – Tubers and invertebrates.
 - Summer diet – Poult diets consist primarily of invertebrates. Adult diets consist of invertebrates and tubers, switching over to herbaceous vegetation and soft mast as summer progresses.
 - Fall diet – Hard and soft mast, seeds, and invertebrates.
 - Winter diet – Hard and soft mast, seeds (birch if available) and hardwood buds.
 - Winter cover – Mature conifer stands.
 - Roosting – Mature hardwoods and softwoods. Adults with poults tend to roost on the ground under large trees with a dense understory of young trees, shrubs, downed trees, rock outcrops, or brushy fields.^{12, 13}
- White-tailed Deer (in northern hardwood forests):
 - Fawning areas – Vary from open forest to hay fields to brushy cover.
 - Spring/summer diet – Primarily herbaceous vegetation (clover, *Rubus* sp., forbs, etc.), hardwood foliage, soft mast, and agricultural crops where available.
 - Fall diet – Hard mast, preferably acorns, hardwood foliage, and agricultural crops where available.
 - Winter diet – Hardwood buds, fallen leaves, hard mast and conifers, preferably white cedar.
 - Bedding cover – Varies from open hardwoods with laydowns to dense thickets of early succession shrublands or hard and softwood regeneration.¹⁴

MANAGEMENT HISTORY

Since the key features of Lakeview WMA are the dune system and the wetland complex, the limited forested acres are not the focus of this WMA and have not seen significant management in recent years. Small firewood sales have occurred and several larger timber sales took place in the 1990s including hardwood sawtimber sales in Stands 37 and 40 and a spruce thinning in Stand 17 (Figures 7a and 7b).

¹⁰ Dessecker, D. R., G. W. Norman, and S. J. Williamson. 2006. Ruffed Grouse Conservation Plan. Association of Fish & Wildlife Agencies: Resident Game Bird Working Group. 94 pp.

¹¹ Jones, B. C. et al. Habitat Management for Pennsylvania Ruffed Grouse, Pennsylvania Game Commission. 10 pp.

¹² USDA – NRCS. 1999. Wild Turkey (*Meleagris gallopavo*) Fish and Wildlife Habitat Management Leaflet. 12 pp.

¹³ Dickson, J. G. 1992. The Wild Turkey: Biology and Management. National Wild Turkey Federation and USDA Forest Service. Stackpole Books, PA. 480 pp.

¹⁴ Halls, L. K., ed. 1984. White-tailed Deer: Ecology and Management. The Wildlife Management Institute. Stackpole Books, PA. 864 pp.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed for the next ten years, including a young forest acreage goal of reaching approximately 65 acres:

- **Management planned for 2018-2022** (Table 4, Figures 7a and 7b):
 - Seed tree cut white spruce and Scotch pine plantation in Stand 10 (15 acres).
 - Clearcut hardwoods in Stand 40 (approximately 7 acres).
 - Thin hardwoods in Stand 40 (approximately 5 acres).
- **Management planned for 2023-2027** (Table 5, Figures 7a and 7b):
 - Patch clearcut hardwoods and alder in Stand 18 (20 acres).
 - Seed tree cut hardwoods in Stand 27 (10 acres).
- The remaining 13 acres needed to reach the young forest goal of 65 acres will be achieved as part of the proposed Development Authority of the North Country (DANC) wetland mitigation project in Stand 12. This mitigation project will convert 34 acres of agricultural land in Stand 12 to roughly 13 acres forested wetlands, 17 acres wetland, and 4 acres grassland. The remaining acreage in Stand 12 will remain agricultural habitat.

Table 4. Forest management schedule for the first five-year period of this HMP (2018-2022).

| Stand | Acres | Size Class | Forest Type | | Management Direction | Treatment Type |
|-------|-------|------------------------|--------------------------------|--------------------------|----------------------|----------------|
| | | | Current | Future | | |
| 10 | 15 | Pole Timber 6"-11" DBH | Plantation: Scotch Pine-Spruce | Seedling-Sapling-Natural | Wildlife | Seed Tree |
| 40 | 7 | Pole Timber 6"-11" DBH | Northern Hardwood | Seedling-Sapling-Natural | Wildlife | Clearcut |
| 40 | 5 | Pole Timber 6"-11" DBH | Northern Hardwood | Northern Hardwood | Wildlife | Thinning |

Table 5. Forest management schedule for the second five-year period of this HMP (2023-2027).

| Stand | Acres | Size Class | Forest Type | | Management Direction | Treatment Type |
|-------|-------|------------------------|-------------------|--------------------------|----------------------|-----------------|
| | | | Current | Future | | |
| 18 | 20 | Pole Timber 6"-11" DBH | Northern Hardwood | Seedling-Sapling-Natural | Wildlife | Patch Clearcuts |
| 27 | 10 | Pole Timber 6"-11" DBH | Northern Hardwood | Seedling-Sapling-Natural | Wildlife | Seed Tree |

Stand locations and planned management actions are also summarized in Figures 7a and 7b. Specific forest stand descriptions and detailed management prescriptions will be prepared for each proposed forest management area prior to implementation (see template, Appendix C). Briefly, habitat management for each of these stands will include the following:

- **Stand 10** (34 acres) is a poor-quality Scotch pine/white spruce plantation mixed with hardwoods, apples, and buckthorn. Black willow and patches of wetland grasses and forbs can be found along the edges of the stand. A seed tree cut, with reserves, will be conducted in the 15-acre plantation part of the stand to release the apple trees and encourage regeneration of hardwoods such as oak, aspen, maple, and black cherry.

Invasive brush including buckthorn, honeysuckle, and multiflora rose will be removed or treated, where possible. Once the plantation has been cut, the stand will be reclassified as natural forest rather than a plantation.

The portion of the stand that borders the wetland is poorly drained and already has fewer trees and less canopy cover than the plantation part of the stand along the road. Therefore, harvesting will be limited to the drier areas where the softwoods are located. Herbicide treatment, brush clearing, and limited tree felling may be completed in the unharvested parts of the stand in order to encourage regeneration of native hardwood and softwood species.

- **Stand 18** (113 acres) is a blend of hardwoods, softwoods, and patchy poorly drained areas with an old trail meandering through the western part of the stand. Patch clearcuts will be made, ranging in size from 2 to 5 acres, for a total of 20 acres. Several of these patch cuts will be located in parts of the stand where aspen or alder are growing, in order to encourage regeneration of these species for American Woodcock and Ruffed Grouse habitat. The remaining patches will be located on higher ground, with the goal of encouraging oak, hickory, white pine, and hemlock regeneration. Sections of the stand with thick honeysuckle in the understory may need to be treated before cutting begins.
- **Stand 27** (91 acres) is a relatively flat, poorly drained hardwood stand consisting mostly of white ash and black cherry, with small sections of upland hardwoods including oak, hickory, and sugar maple. A 10-acre seed tree cut will focus on regenerating aspen and mast-producing species such as black cherry, oak, and hickory. Due to the poorly drained soils, harvesting may be limited to frozen conditions to reduce the risk of damage to soil and water quality.
- **Stand 40** (78 acres) is a mix of mature sugar maple, oak, and hickory in the western section and intermediate hardwoods and invasive shrubs in the eastern section. A roughly 7-acre area near the observation tower on Montario Point Road will be cleared to provide improved viewing opportunities. While the primary goal of this treatment is to improve wildlife viewing, it will also provide important habitat for young forest-dependent species.

A thinning is planned for approximately 5 acres near the middle of Stand 40. The purposes of the thinning are to encourage hardwood regeneration, improve the health of the remaining trees, shift the species composition toward mast-producing species, and provide growing space for the apple trees in the stand.

BEST MANAGEMENT PRACTICES

Forest management on all WMAs follows Best Management Practices to protect soil and water resources, promote quality wildlife habitat, and establish healthy forests (Table 6).

Table 6. Best Management Practices for forest management on WMAs.

| Resource | Guidance Document ¹⁵ |
|-----------------|--|
| Soils | <i>Rutting Guidance on Wildlife Management Areas</i> |
| Water quality | <i>NYS Forestry Best Management Practices for Water Quality</i> |
| Wildlife | <i>Retention Guidance on Wildlife Management Areas</i> |
| Plantations | <i>Plantation Management Guidance on Wildlife Management Areas</i> |

¹⁵ All guidance documents referenced here are available online at <http://www.dec.ny.gov/outdoor/104218.html>.

Wildlife Considerations:

Lakeview WMA supports multiple state listed threatened and endangered bird, insect, and plant species. Recently it has also supported the Piping Plover, a state and federally listed endangered species. Many of the threatened or endangered bird species on the WMA are associated with the emergent marsh, beach (shoreline), and open water habitat. To protect these species, cutting trees in wetland areas will be avoided during the breeding season. Due to the occurrence of Indiana bats and northern long-eared bats within Jefferson County, tree selection for cuts and the timing of cuts will be evaluated and BMP's will be implemented to protect the bats.



Forest Health Considerations:

Overall, the forested stands on Lakeview WMA are in moderately good health. The greatest long-term forest health concern is invasive species such as honeysuckle, buckthorn, multiflora rose, and pale swallow-wort. Several of these species already dominate parts of the understory, greatly limiting forest regeneration. A small area (0.4 acres) of pale swallow-wort has been treated by the Saint Lawrence Eastern Lake Ontario Partnership for Regional Invasive Species Management (SLELO PRISM) from 2012 thru 2017. During forest management, inspection of equipment, plant/debris removal, and/or equipment cleaning will be implemented to prevent the spread of invasive species and to protect the rare plants found within the WMA.

The ash trees on the WMA are at risk from the emerald ash borer (EAB), an invasive beetle which is steadily making its way towards the area and kills all species of ash trees. Significant ash mortality is anticipated if EAB reaches the WMA. In 2017, DEC wildlife staff along with members of the SLELO PRISM began monitoring on the WMA and surrounding areas for EAB by placing purple prism traps out on the landscape. EAB was recently detected within three miles of the WMA. It is anticipated that, in the future, green funnel traps will be used to monitor for EAB.

Pre- and Post-treatment Considerations:

Hardwood regeneration is often out-competed by invasive honeysuckle and buckthorn. Treatment of the interfering vegetation may be required to promote desired regeneration and to achieve habitat goals. Pre- and post-treatment actions to promote the desired forest regeneration will be addressed in more detail in the silvicultural prescriptions.

MANAGEMENT EVALUATION

In order to determine whether the desired forest regeneration and wildlife responses have been achieved by the management outlined above, pre- and post-management assessments will be conducted in accord with guidelines in the *Young Forest Initiative Monitoring Plan: 2016-*

2025.¹⁶ The Monitoring Plan establishes statewide standards for evaluating vegetation and target wildlife responses to forest management to determine if the outcome is as prescribed. Regeneration assessments will be conducted within one year of harvest completion, three, and five years after the harvest or until the forester determines adequate natural or artificial (i.e., planting) regeneration has been securely established. YFI target species selected for Lakeview WMA, which may be assessed to determine response to management, include:

- American Woodcock
- Ruffed Grouse
- Wild Turkey
- White-tailed deer

SHRUBLAND

Shrublands are early successional habitats dominated by woody plants typically less than ten feet tall with scattered open patches of grasses and forbs that provide floristic diversity. Shrublands are typically characterized by >50% cover of shrubs and <25% canopy cover of trees.

MANAGEMENT OBJECTIVES

- Maintain 5 acres of shrubland habitat for foraging, singing, and nesting areas for wildlife.

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

Lakeview WMA currently contains 5 acres of shrubland (Figures 7a and 7b). The primary species found within the shrublands include honeysuckle and red cedar. Many species benefit from shrubland habitat including YFI target species:

- White-tailed deer
- Ruffed Grouse
- Wild Turkey

MANAGEMENT HISTORY

No management of the shrubland has occurred in recent years.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Figures 7a and 7b, Table 7):
 - Maintain shrubland by periodic brush mowing to prevent succession to forested habitat.



¹⁶ Available online at <http://www.dec.ny.gov/outdoor/104218.html>.

BEST MANAGEMENT PRACTICES

Brush hogging will be conducted from mid-August until October when dry conditions normally persist and there is minimal interference with nesting or wintering wildlife.

MANAGEMENT EVALUATION

Future surveys may include Ruffed Grouse drumming surveys and/or Wild Turkey counts (pre- and post- treatment) to document any response to habitat management for shrublands.

GRASSLAND

Grasslands are open, grassy areas with a minimal amount of shrub and tree cover (<35%) that are maintained, or could be maintained, without significant brush cutting. Grassland management provides important habitat for migratory birds and nesting grassland and game bird species. The quality of grasslands on Lakeview WMA are relatively poor and are small in size and therefore do not support many of the grassland bird species of concern.

MANAGEMENT OBJECTIVES

- Maintain and enhance the existing 50 acres of grassland fields for breeding, nesting, and wintering grassland species.
- Convert 4 acres of agricultural land to grassland as part of the DANC wetland mitigation project.
- Continue to monitor and improve the quality of grassland fields by removing shrubs or dense vegetation from the fields (e.g., brush hogging, disking and seeding, and/or hydro-axing), depending on the species the habitat is being managed to support.
- Provide nesting habitat and cover for waterfowl.
- Monitor fields for invasive species and eradicate where feasible.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

Currently there are approximately 50 acres of grasslands or open fields on Lakeview WMA (Figures 7a and 7b). Grasslands on this WMA are managed (mowed) by DEC Division of Operations staff or through co-operative agreements with local farmers.

Species that benefit from grassland best management practices include:

- Bobolink
- Northern Harrier
- Sedge Wren
- White-tailed deer
- Ruffed Grouse
- Wild Turkey
- Multiple pollinators (insects)

MANAGEMENT HISTORY

Historically Stands 3.2, 22.2, and 26 (totaling 50 acres of the WMA) were mowed and continue to be mowed for open field habitat (grassland).

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Figures 7a and 7b):
 - Continue mowing grassland fields as mentioned above.
 - Begin to convert row crop fields to hay or grassland fields.
 - Convert 4 acres of agricultural land to grassland as part of the DANC wetland mitigation project.

BEST MANAGEMENT PRACTICES

Guidelines for grassland habitat management on WMAs are found in the *A Plan for Conserving Grassland Birds in New York*.¹⁷

In particular, refer to the plan for species-specific habitat requirements and detailed recommendations regarding grassland management and restoration techniques. Upland-related species will be protected by implementing late season mowing after the nesting birds fledge their chicks.

MANAGEMENT EVALUATION

Currently, no official grassland surveys are conducted on Lakeview WMA, due to the lack of large (>25 acres) quality grassland fields on the area.



Open field habitat at Lakeview WMA.

Photo: James Canevari, NYSDEC

AGRICULTURAL LAND

Agricultural lands on WMAs include any acreage on which crops are grown, primarily areas that are under cooperative agreements or farming contracts, but also including wildlife food plots.

MANAGEMENT OBJECTIVES

- Evaluate the wildlife value of maintaining 102 acres of agricultural habitat. Although agricultural crops can provide forage opportunities and cover for wildlife, these lands might be more valuable as early successional or grassland habitat.
- Convert 34 acres of agricultural land (Stand 12) to wetland, young forested wetland, and grassland habitats as part of the proposed DANC mitigation project.

¹⁷ Morgan, M. and M. Burger. 2008. *A Plan for Conserving Grassland Birds in New York: Final Report to the New York State Department of Environmental Conservation under Contract #C005137*. Audubon New York, Ithaca, NY.

DESCRIPTION OF EXISTING AGRICULTURAL LANDS HABITAT

Currently there are approximately 136 acres of agricultural land on Lakeview WMA (Figures 7a and 7b), but at least 34 acres will be converted to other habitat types in the near future. Maintaining the agricultural aspect provides forage and cover for multiple wildlife species including:

- White-tailed deer
- Ruffed Grouse
- Wild Turkey



Agricultural area at Lakeview WMA.

Photo: James Canevari, NYSDEC

MANAGEMENT HISTORY

The agricultural lands on the WMA area in cooperative agreement for crops such as corn, soybeans, oats, and hay and are grown on a rotational basis by the co-operators. These cooperative agreements are beneficial and can be very cost effective in helping to maintain habitat diversity on the WMA; however, future agricultural practices on this WMA will target reduced row crop planting and more management practices aiming for creating quality grassland habitat.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Figures 7a and 7b):
 - DANC wetland mitigation project (Stand 12, 71 acres). Convert approximately 34 acres of agricultural land to 4 acres of grassland, 17 acres of wetland, and 13 acres of young forested wetland.

WETLANDS (NATURAL AND IMPOUNDED)

Natural wetlands are areas where the soil or substrate is periodically saturated or covered with water, including emergent (perennial herbaceous vegetation accounts for >50% of hydrophytic vegetative cover) and scrub-shrub wetlands (woody vegetation under 20 feet tall accounts for >50% of hydrophytic vegetative cover). Impounded wetlands are areas similar to natural wetlands, but where water is held back by a berm, road, or other structure. Forested wetlands are addressed in the Forest section above.

MANAGEMENT OBJECTIVES

- Maintain or enhance 1,584 acres of non-forested wetlands.
- Create an additional 17 acres of wetland as part of the proposed DANC wetland mitigation project.
- Maintain habitat for wetland-dependent wildlife such as waterfowl, Black Tern, Least Bittern, muskrat, and beaver.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

The 1,584 acres of natural wetlands on Lakeview WMA (Figures 4a and 4b) consists of scrub-shrub, emergent, and open water wetlands. The wetlands are diverse and provide habitat for species such as:

- American Woodcock
- Beaver, muskrat
- Black Tern, Pied-billed Grebe, Least Bittern, Marsh Wren
- Midland painted turtle
- Chorus frog, bullfrog, northern leopard frog, green frog, eastern American toad, spring peeper
- Migratory waterfowl



Least Bittern at Lakeview WMA.

Photo: Irene Mazzocchi, NYSDEC

MANAGEMENT HISTORY

As part of a 2011 Great Lakes Restoration Initiative (GLRI) project, pot holing and channelization were used within dense cattails to create hemi-marsh conditions. Creation of hemi-marsh conditions was geared towards enhancing habitat for species such as the Black Tern, Least Bittern, and northern pike. This GLRI grant included restoration of approximately one acre of spawning pools and approximately 9,000 feet of meandering connecting channels. The channels were about 6 feet wide and 3 feet deep. Approximately three to four small oxbows, totaling 0.94 acres, were created. Excess material from excavation was used to create habitat mounds and was not removed from the site. This project was possible due to a partnership between Ducks Unlimited (DU) and DEC.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Figures 4a and 4b):
 - Maintain Southwick Beach marsh outlet structure.
 - Create roughly 17 acres of wetlands by converting a section of Stand 12 as part of the proposed DANC wetland mitigation project.
 - Potentially enhance hemi-marsh conditions by increasing muskrat populations via trapping restrictions.



Wetland work at Lakeview WMA.

Photo: Sarah Fleming, Ducks Unlimited

BEST MANAGEMENT PRACTICES

A species that is not common in New York and not listed as Endangered, Threatened, Special Concern or SGCN, but has been observed on the WMA is the Sandhill Crane. If Sandhill Crane nesting occurs, management activities will be sensitive to this species. Date restrictions for work or equipment in wetlands will be implemented as necessary to protect listed species such as Least Bittern, Black Terns and Blanding's turtle.

MANAGEMENT EVALUATION

Continue to monitor Black Terns as part of the Black Tern Statewide Survey that is conducted approximately every three years since 1989. These surveys are used for trend analysis and occur in mid to late June during the peak nesting season. If suitable habitat is present, then the number of active nests and/or breeding adults are counted twice at each site within the survey period (Black Tern 2018 unpublished DEC report).



Manmade pothole and gabion rock water control structure at Lakeview WMA.

Photo: Irene Mazzocchi, NYSDEC

OPEN WATER (WATERBODIES AND WATERCOURSES)

Open water is defined as any area of open water, generally with less than 25% cover of vegetation or soil and typically named (e.g., South Colwell Pond).

MANAGEMENT OBJECTIVES

- Maintain 659 acres of open water habitat.
- Maintain high water quality to protect spawning habitat for various fish species such as northern pike and black bass.

DESCRIPTION OF EXISTING OPEN WATER HABITAT AND TARGET SPECIES

There are ten streams or segments of streams on Lakeview WMA totaling eight miles (Figures 4a and 4b). There are five ponds within Lakeview WMA, which are Lakeview Pond, Floodwood Pond, Goose Pond, North and South Colwell Ponds. These ponds and their tributaries act as resting, nesting, and foraging areas for:

- Beaver, muskrat
- Pied-billed Grebe
- Midland painted turtle
- Chorus frog, bullfrog, northern leopard frog, green frog, eastern American toad, spring peeper
- Migratory waterfowl
- Iowa darter, western pirate perch, blackchin shiner, northern pike, and black bass

Two cold water streams, Sandy and South Sandy Creeks, flow through the WMA and merge prior to flowing into Lake Ontario. The WMA experiences a considerable spring flush from

water flow from these creeks, much of which comes from the Tug Hill Plateau.

MANAGEMENT HISTORY

Water levels in the extensive wetlands and open water habitat of the WMA are strongly influenced by the level of Lake Ontario. Lake Ontario water level fluctuations have been reduced since the construction of the Power Authority's Robert Moses-Robert H. Saunders Power dam in 1958, altering the habitat of some of the lakeshore marshes such as Lakeview WMA. These marshes are becoming less diverse with increasing stands of solid cattail mats. In order to create more of the hemi-marsh conditions, projects such as those supported by the GLRI are encouraged.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027:**
 - Maintain and protect buffers such as the barrier beach around the open water resources.
 - Maintain water flow through outlet of Southwick Beach marsh.
 - Continue water chestnut pulls as necessary and/or practical with hopes of eliminating the invasive species.

BEST MANAGEMENT PRACTICES

Continue monitoring of invasive species. Conduct water chestnut pulls to control spread and possibly eradicate. Consider chemical control in addition to hand removal if necessary.

LAKE ONTARIO DUNE SYSTEM

An ecosystem comprised of a beach, foredune, swale, interior dune and back dune. Sand and wind play a major role in the formation and existence of a dune system. The coastal barrier ecosystem (dunes, wetlands, and waters) is currently under NYS regulation through Article 34-0108 of the Environmental Conservation Law, Part 505, Coastal Erosion Management. The stretch of dune system on Lakeview WMA is approximately 4.3 miles long and comprises about 327 acres. This unique system supports several rare bird and plant species and functions as a migratory stopover for many species of shorebirds.



Dune walkover at Lakeview WMA.

Photo: Irene Mazzocchi, NYSDEC

Species of interest include:

- Piping Plover and migrating shorebirds
- Wormwood, sand dune willow, Champlain beach grass

DESCRIPTION OF EXISTING DUNE HABITAT AND TARGET SPECIES

Lakeview WMA is located within a 17-mile stretch of the Eastern Lake Ontario Dune and Wetland System (ELODWS). This ELODWS is a natural blend of sand dunes, freshwater wetlands, ponds, and creeks. This ecosystem serves as vital habitat for a diversity of plant and wildlife species and is an important coastal barrier between Lake Ontario and the marshes, rivers, waterways, and homes that reside on the other side of the dunes. Protection of this dune system and the rare plants and wildlife that are associated with this ecosystem is a high priority on this WMA.

MANAGEMENT HISTORY

In 1973, Lakeview WMA was designated as a National Natural Landmark by the Secretary of the Interior. The National Natural Landmarks Program recognizes and encourages the conservation of sites that contain outstanding biological and geological resources. The National Park Service administers the program and works cooperatively with landowners, managers, and partners to promote conservation and appreciation of our nation's natural heritage. In 1985, the dune steward program was launched in an effort to educate the public about the importance of the dune system. The Ontario Dune Coalition was successful in putting its first intern on the beach in 1986 to interact with recreational visitors. The effort grew in time until a coordinated seasonal Dune Steward Program (DSP) was put in place in 2000. It has always been a collaborative effort, depending on the resources and support of several partners, working together through what is now called the Eastern Lake Ontario Dune Coalition (ELODC).



IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

Continue to participate in the ELODC outreach activities and meetings and support the dune steward program. As part of the DSP, dune stewards are hired to provide protection to the dune system by educating the public, reinforcing WMA regulations, and assisting in erecting physical barriers (i.e. snow fence) to keep people off the dunes. In addition to the dune steward program, monitoring and protecting the beach habitat for the Piping Plover will be a priority on this WMA. Sections of the beach will be secured and off limits to the public as required for nesting habitat. This will vary from year to year depending on the lake levels and bird behavior.

BEST MANAGEMENT PRACTICES

Continue to protect the sand dunes by installing snow fence and educational signs, planting beach grass, maintaining the dune walkovers, and patrolling the area especially during heavy public use. Combat invasive species as is practical.

MANAGEMENT EVALUATION

As part of the DSP, dune stewards record the daily number of visitors, violations, and any meaningful experience they encounter in the field. This helps to determine the management needs or areas that need to be addressed. Monitoring nesting of the Piping Plover will also help to determine possible habitat management needs.

HABITAT MANAGEMENT SUMMARY

In summary, Table 7 lists the habitat management actions planned for Lakeview WMA over the next ten years. Any substantive changes will be appended to this HMP annually or as needed (Appendix D).

Table 7. Summary of habitat management actions recommended for Lakeview WMA, 2018-2027. (Also see Figures 4a, 4b, 6a, and 6b.)

| Habitat | Management Action | Acres | Timeframe |
|--|---|--------------|--------------------------------|
| Forest | Seed tree cut in Stand 10 | 15 | 2018-2022 |
| Forest | Clearcut a portion of Stand 40 | 7 | 2018-2022 |
| Forest | Thin a portion of Stand 40 | 5 | 2018-2022 |
| Forest | Patch clearcut portions of Stand 18 | 20 | 2023-2027 |
| Forest | Seed tree cut part of Stand 27 | 10 | 2023-2027 |
| Grassland | Continue mowing parts of Stands 3.2, 22.2, and 26 | ± 50 | Annual, biennial, or triennial |
| Grassland | Implement seeding, disking, cultipacking, and other treatments to improve grassland quality. | ± 50 | 2018-2022, as needed |
| Agricultural, Forest, Grassland, Wetland | DANC wetland mitigation project. Convert 34 acres in Stand 12 from agricultural fields to roughly 13 acres forested wetland, 17 acres wetland, and 4 acres grassland. | 34 | 2018-2027 |
| Wetland | Continue routine monitoring of invasive species, conduct water chestnut pulls and spot treat infected areas. | 1,584 | Annual |

III. FIGURES

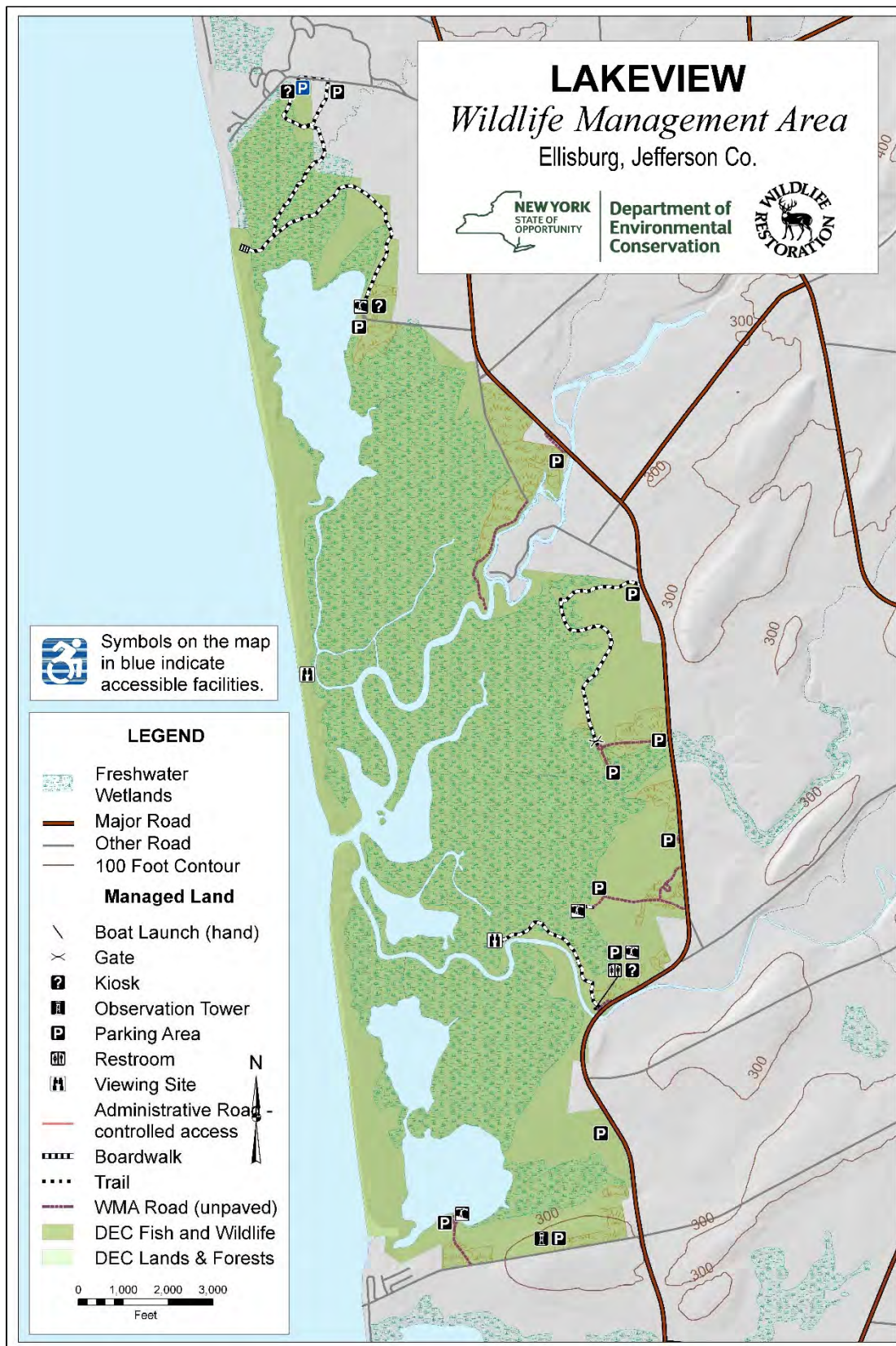


FIGURE 1. Location and access features at Lakeview WMA.

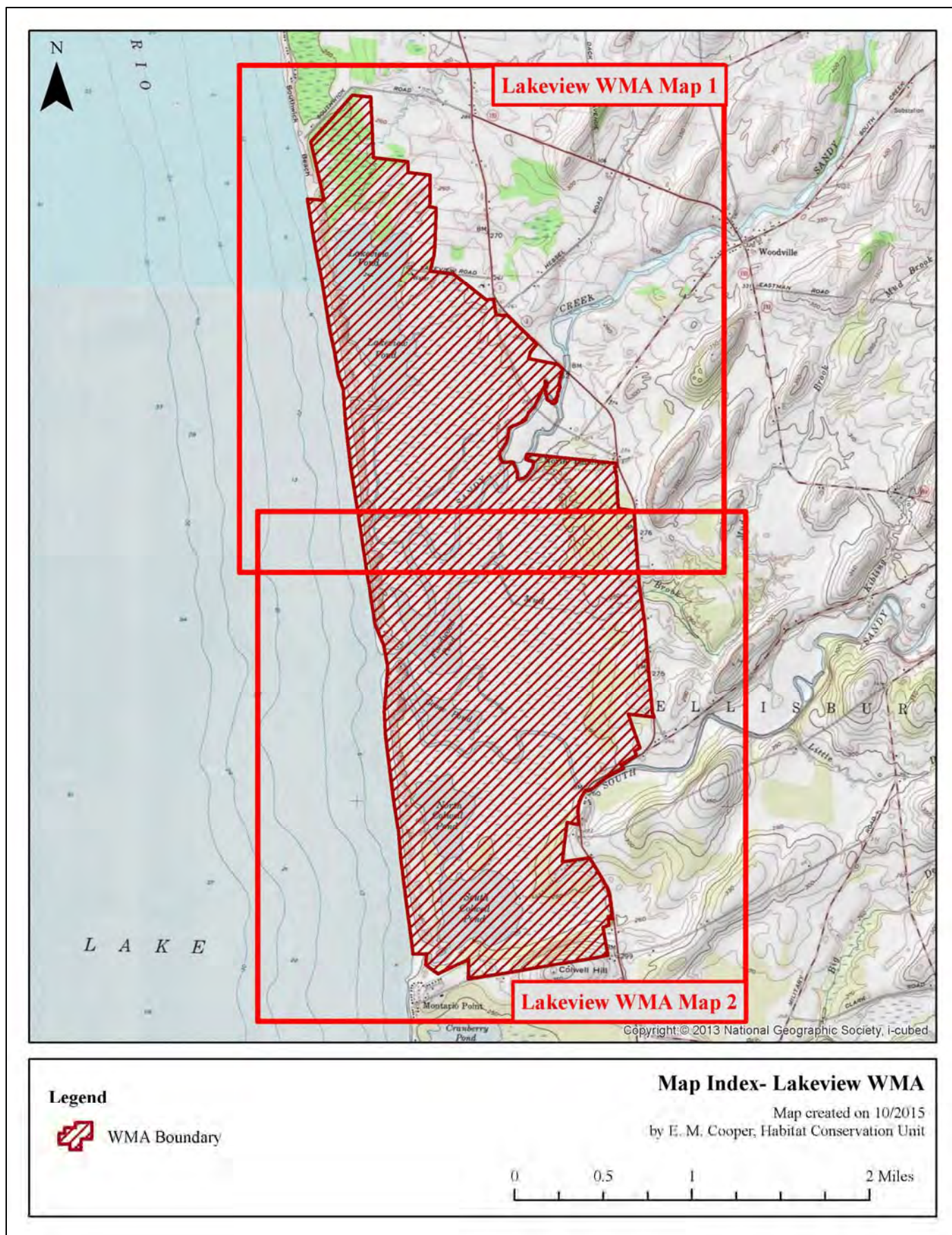


FIGURE 2. Lakeview WMA map index.



Legend

-  Shallow Emergent Marsh
-  Great Lakes Dunes
-  Sand Beach
-  WMA Boundary

*From community delineations in the 1990's, conditions may have changed.

Lakeview WMA (Map 1)

Map created on 10/2015
by E. M. Cooper, Habitat Conservation Unit

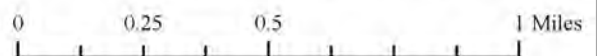


FIGURE 3A. Significant ecological communities on Lakeview WMA (Map 1 of 2). Data is from the NY Natural Heritage Program.

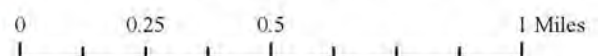


Legend

- | | | |
|--|---|--|
|  Shallow Emergent Marsh |  Great Lakes Dunes |  WMA Boundary |
|  Sand Beach |  Medium Fen | |

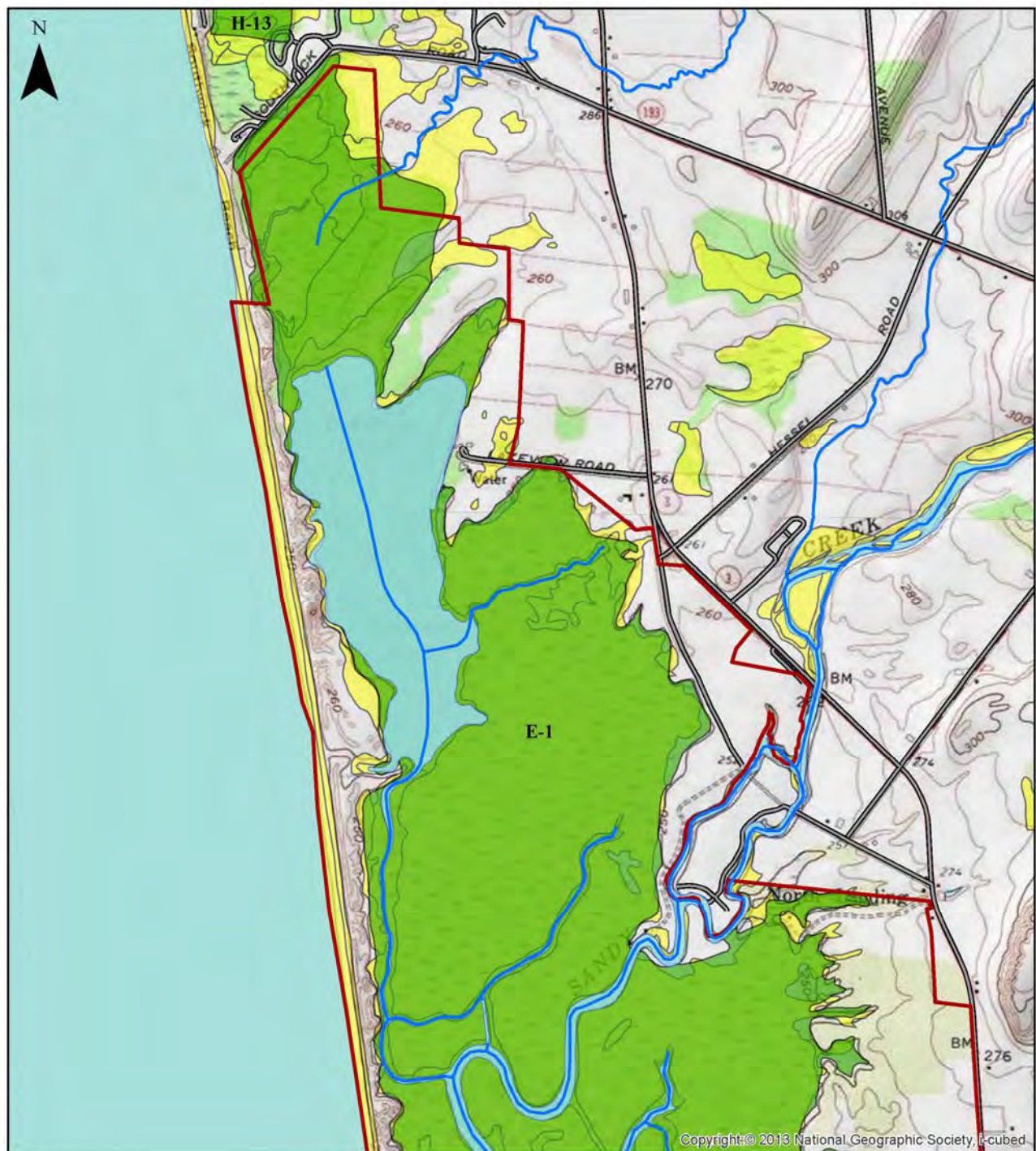
Lakeview WMA (Map 2)

Map created on 10/2015
by E. M. Cooper, Habitat Conservation Unit



*From community delineations in the 1990's, conditions may have changed.

FIGURE 3B. Significant ecological communities on Lakeview WMA (Map 2 of 2). Data is from the NY Natural Heritage Program.



Legend

- Article 24 Freshwater Wetlands
- National Wetlands Inventory
- Impoundment/pond
- Stream
- Dike
- ★ Water Control Structure

— WMA Boundary

Lakeview WMA (Map 1)

Map created on 10/2015
by E. M. Cooper, Habitat Conservation Unit

0 0.25 0.5 1 Miles

FIGURE 4A. Wetlands, open water, and streams of Lakeview WMA (Map 1 of 2). Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

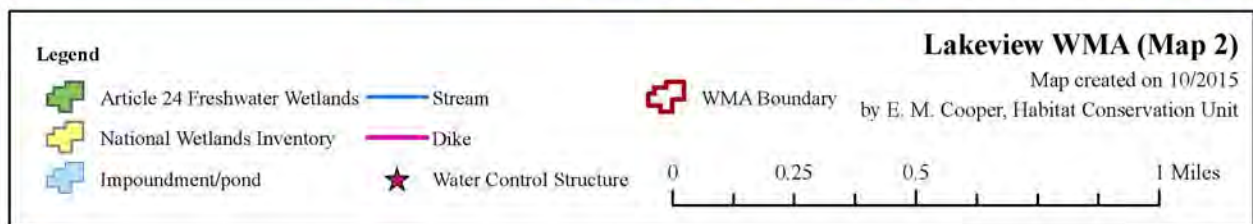


FIGURE 4B. Wetlands, open water, and streams of Lakeview WMA (Map 1 of 2). Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

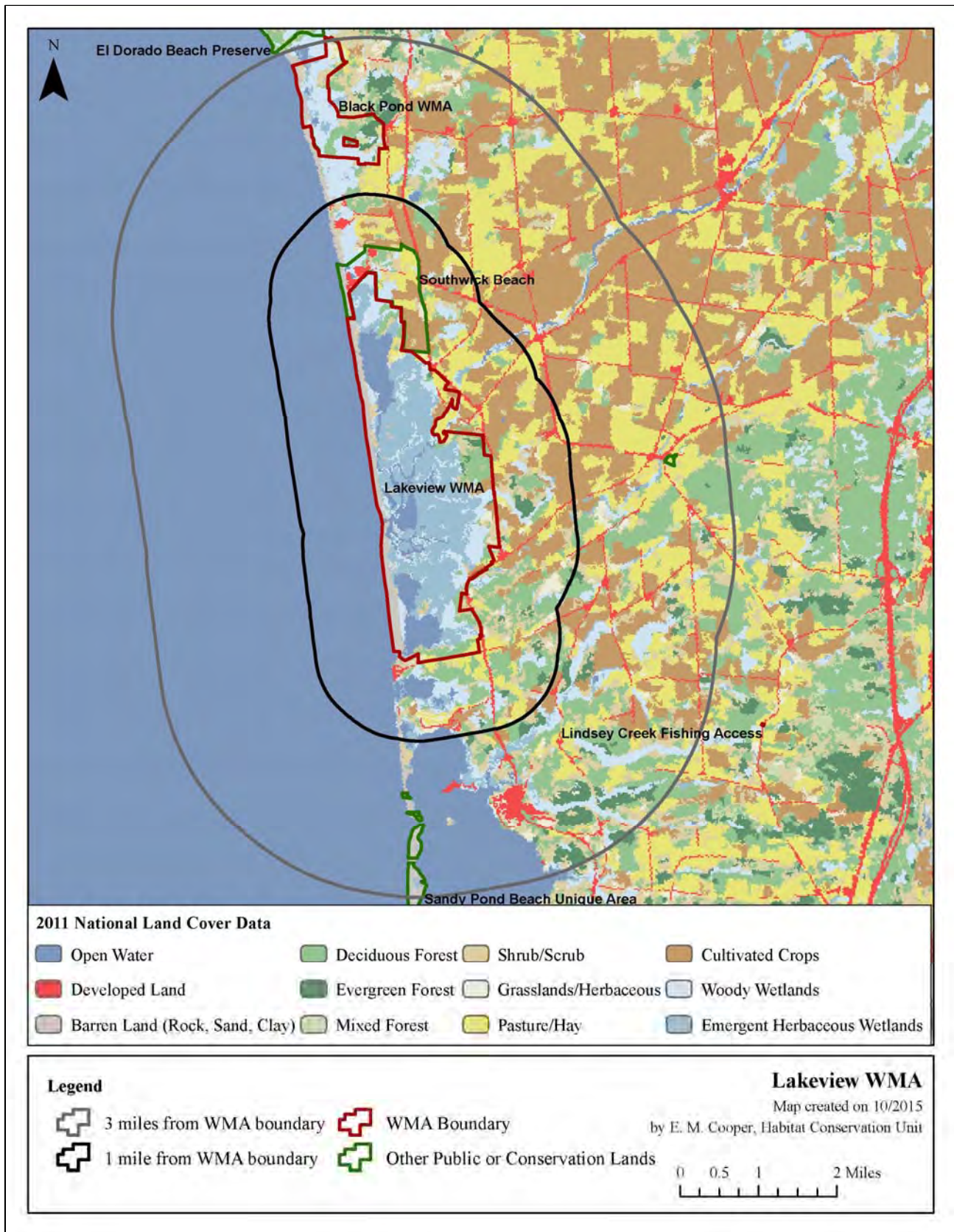


FIGURE 5. Land cover types and conservation lands in the landscape surrounding Lakeview WMA. Conservation lands are from the NY Protected Areas Database available online at <http://www.nypad.org/>. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at <http://www.mrlc.gov/nlcd2011.php>.

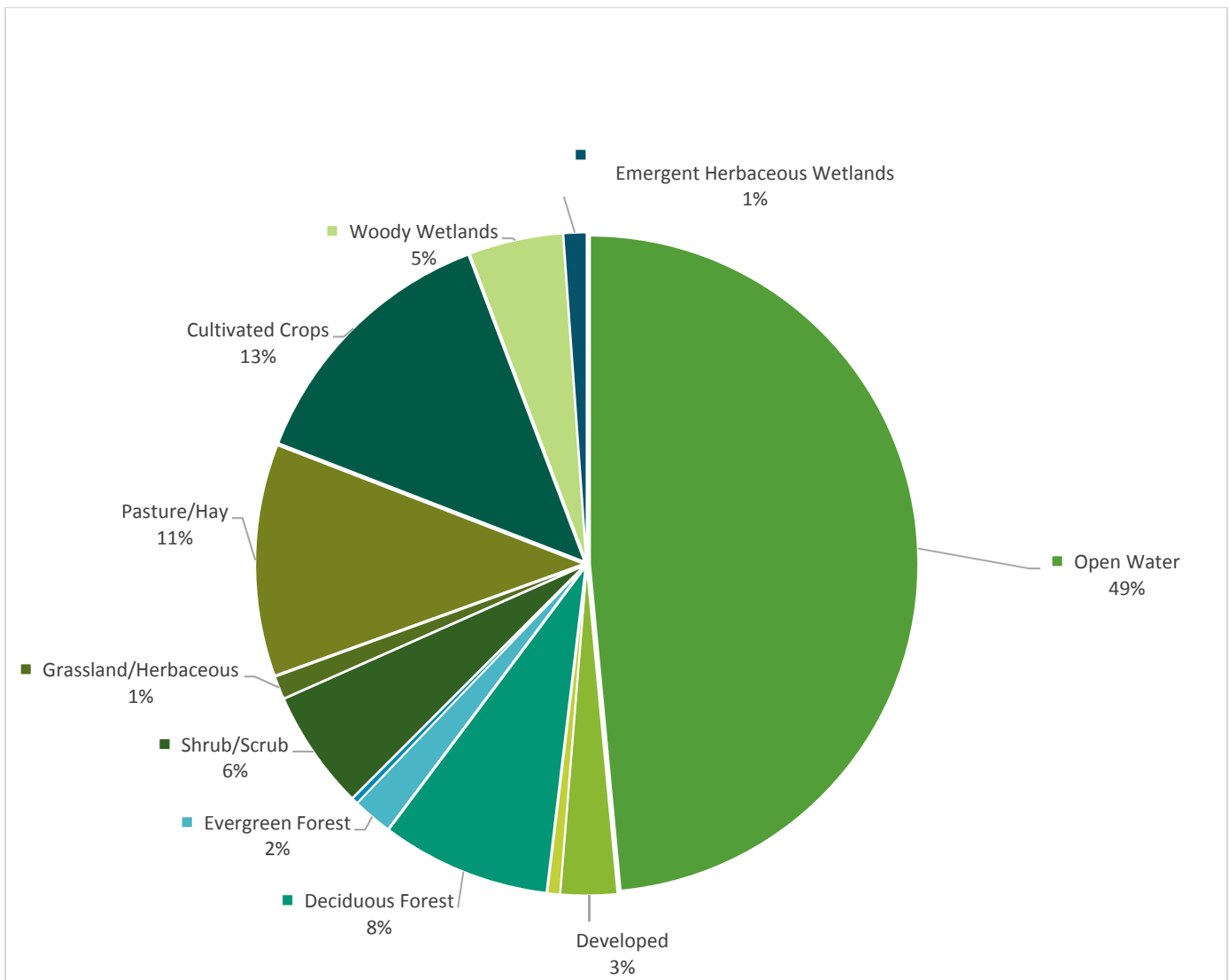


FIGURE 6. Percent cover of land cover types within three miles of Lakeview WMA.

Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at <http://www.mrlc.gov/nlcd2011.php>.

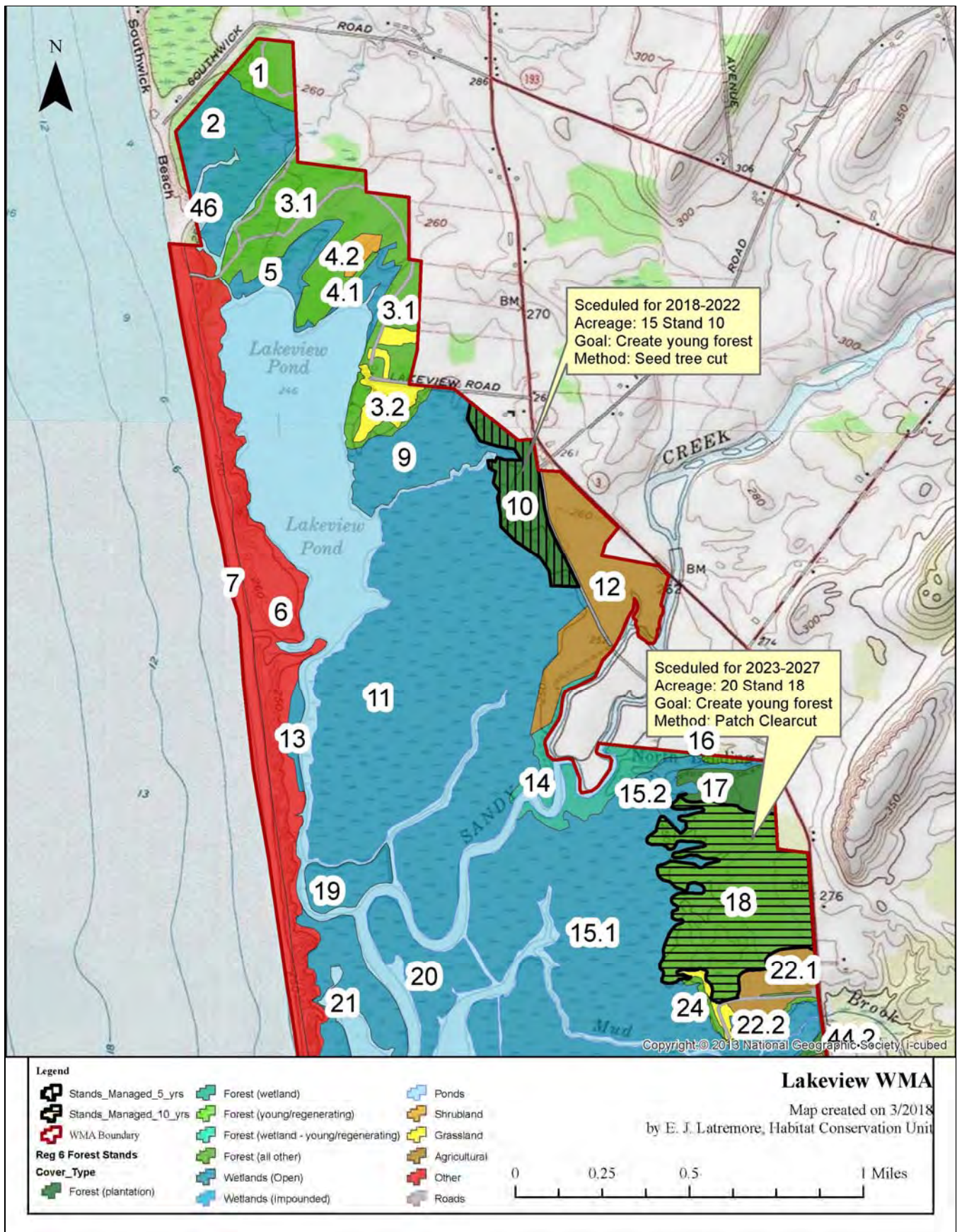


FIGURE 7A. Habitat types and locations of proposed management on Lakeview WMA (Map 1 of 2). Numbers indicate the stand number from habitat inventory.

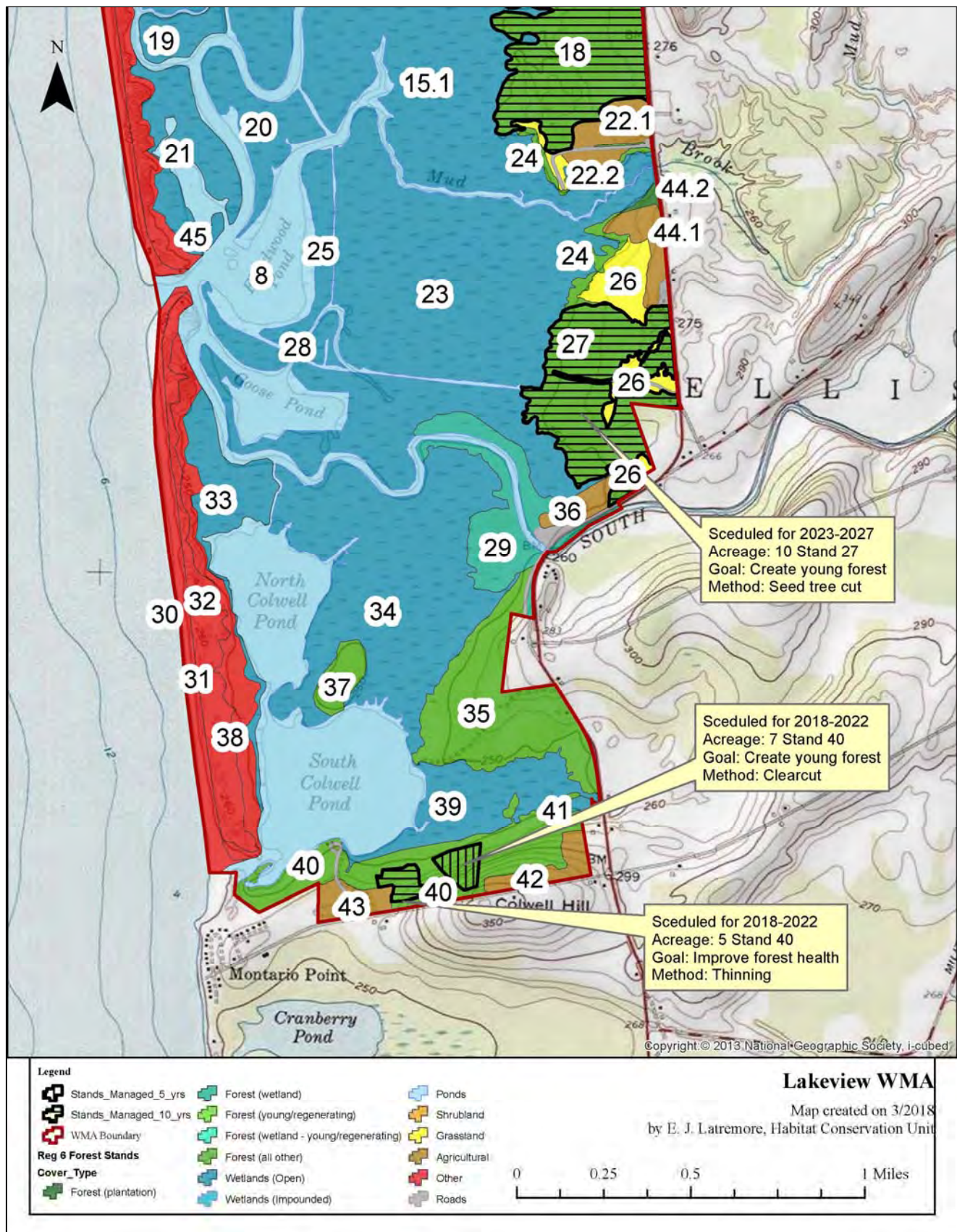


FIGURE 7B. Habitat types and locations of proposed management on Lakeview WMA (Map 2 of 2). Numbers indicate the stand number from habitat inventory.

IV. APPENDICES

APPENDIX A: DEFINITIONS

The following key words were used in the development of this Habitat Management Plan. Definitions are from The Dictionary of Forestry, Society of American Foresters, J. A. Helms, Editor, unless otherwise noted.

Best Management Practices: (BMP) A practice or combination of practices that are determined to be the most effective and practicable means of avoiding negative impacts of habitat management.

Biodiversity: The variety and abundance of life forms, processes, functions, and structures of plants, animals, and other living organisms, including the relative complexity of species, communities, gene pools, and ecosystems at multiple spatial scales.

Clearcut: A forest regeneration or harvest method that entails the cutting of essentially all trees, producing a fully exposed microclimate for the development of a new age class. Depending on management objectives, a clearcut may or may not have reserve trees left to attain goals other than regeneration.

Community: An assemblage of plants and animals interacting with one another, occupying a habitat, and often modifying the habitat; a variable assemblage of plant and animal populations sharing a common environment and occurring repeatedly in the landscape. (NY Natural Heritage Program)

Endangered Species: Any species listed on the current state or federal endangered species list as being in danger of extinction throughout all or a significant portion of its range.

Forb: Any broad-leaved, herbaceous plant other than those in the Poaceae (Gramineae), Cyperaceae, and Juncaceae families (i.e., not grass-like).

Forest: An ecosystem characterized by a dense and extensive tree cover, often consisting of stands varying in characteristics such as species composition, structure, age class, and associated processes, and commonly including meadows, streams, fish, and wildlife.

Forest Health: The condition of a forest derived from concerns about such factors as its age, structure, composition, function, vigor, presence of unusual levels of insects or disease, and resilience to disturbance.

Grassland Focus Area: Regions of NY that support key, residual populations of grassland birds. There are currently eight focus areas, within which there is a concentrated conservation effort for these species. (A Plan for Conserving Grassland Birds in New York, Audubon NY.)

Habitat: A place that provides seasonal or year round food, water, shelter, or other environmental conditions for an organism, community, or population of plants or animals.

Hardwood: A broad leaved, flowering tree belonging to the botanical group Angiospermae, such as red maple, yellow birch, American beech, black cherry, etc.

Impoundment: A pond caused by a dam across a stream and used for purposes such as water supply, water power, or wildlife habitat. (Edinger et al. 2002. Ecological Communities of New York State, Appendix B)

Landscape: A spatial mosaic of several ecosystems, landforms, and plant communities across a defined area irrespective of ownership or other artificial boundaries and repeated in similar form throughout.

Mast: The fruit of trees considered as food for wildlife. Hard mast is the fruits or nuts of trees such as oak, beech, walnut, and hickories. Soft mast is the fruits and berries from plants such as dogwood, viburnum, elderberry, huckleberry, hawthorn, grape, raspberry, and blackberry.

Multiple Use Area: Lands that were acquired by DEC to provide outdoor recreation and wherever possible the conservation and development of natural resources. As their name suggests, they are to be managed for a broader range of public use. (Public Use of Lands Managed by the Bureau of Wildlife)

Native: A plant or animal indigenous to a particular locality.

Old Growth Forest: Forest with an abundance of late successional tree species, at least 180 - 200 years of age in a contiguous forested landscape that has evolved and reproduced itself naturally, with the capacity for self-perpetuation, arranged in a stratified forest structure consisting of multiple growth layers throughout the canopy and forest floor, featuring canopy gaps formed by natural disturbances creating an uneven canopy, and a conspicuous absence of multiple stemmed trees. (Adapted from the NYS Strategic Plan for State Forest Management)

Pole: A tree of a size between a sapling (1" to 5" diameter at breast height) and a mature tree.

Regeneration Cut: A cutting procedure by which a new forest age class is created; the major methods are clearcutting, seed tree, shelterwood, selection, and coppice. The Young Forest Initiative includes these silvicultural treatments: clearcuts, seed tree cuts, and shelterwood cuts. Salvage (following a natural disturbance) will be considered based on the size and scope of the disturbance.

Seed Tree Method: A forest regeneration or harvest method that entails cutting of all trees except for a small number of widely dispersed trees retained for seed production and to produce a new age class in fully exposed microenvironment.

Shelterwood Method: A forest regeneration or harvest method that entails the cutting of most trees, leaving those needed to produce sufficient shade to produce a new age class in a moderated microenvironment.

Shrubland: A community dominated by woody plants typically less than ten feet tall with scattered open patches of grasses and forbs that provide floristic diversity. Typically characterized by >50% cover of shrubs and <25% canopy cover of trees. (Adapted from Edinger et al. 2002. Ecological Communities of New York State, Appendix B).

Softwood: A coniferous tree belonging to the botanical group Gymnospermae, such as white pine, Eastern hemlock, balsam fir, red spruce, etc.

Special Management Zone: A vegetation strip or management zone extending from wetland boundaries, high-water marks on perennial and intermittent streams, vernal pool depression, spring seeps, ponds and lakes, and other land features requiring special consideration. (Adapted from DEC Division of Lands and Forests Management Rules for Establishment of Special Management Zones on State Forests)

State Rank of Significant Ecological Communities:

S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

S2 = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.

S4 = Apparently secure in New York State.

S5 = Demonstrably secure in New York State.

SH = Historically known from New York State, but not seen in the past 15 years.

SX = Apparently extirpated from New York State.

SE = Exotic, not native to New York State.

SR = State report only, no verified specimens known from New York State.

SU = Status unknown.

(Edinger et al. 2002. Ecological Communities of New York State, Appendix A)

Stand: In forestry, a contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable and manageable unit. In this HMP, the term “stand” is also applied to other habitat types (e.g., grassland, shrubland) to describe an area composed of similar vegetation composition and structure, as delineated during the habitat inventory.

Stand Prescription: A planned series of treatments designed to change current stand structure to one that meets management goals. Note: the prescription normally considers ecological, economic, and societal constraints.

Target Species: A suite of high priority wildlife species of conservation interest that are being targeted to benefit from management of a particular habitat type. For example, young forest target species at Lakeview WMA include: American Woodcock, Ruffed Grouse, Wild Turkey, and white-tailed deer.

Unique Area: Lands that were acquired by DEC for their special natural beauty, wilderness character, geological, ecological, or historical significance for inclusion in the state nature and historical preserve. The primary purpose of these lands is to protect the feature of significance that led to the land being acquired by the state. (Public Use of Lands Managed by the Bureau of Wildlife)

Upland: Sites with well-drained soils that are dry to mesic (never hydric). (Edinger et al. 2002. Ecological Communities of New York State, Appendix B)

Wetland: “Freshwater wetlands means lands and waters of the state as shown on the freshwater wetlands map which contain any or all of the following:

- (a) lands and submerged lands commonly called marshes, swamps, sloughs, bogs, and flats supporting aquatic or semi-aquatic vegetation of the following types: wetland trees, wetland shrubs, emergent vegetation, rooted, floating-leaved vegetation, free-floating vegetation, wet meadow vegetation, bog mat vegetation, and submergent vegetation;
 - (b) lands and submerged lands containing remnants of any vegetation that is not aquatic or semi-aquatic that has died because of wet conditions over a sufficiently long period, provided that such wet conditions do not exceed a maximum seasonal water depth of six feet and provided further that such conditions can be expected to persist indefinitely, barring human intervention;
 - (c) lands and waters substantially enclosed by aquatic or semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semi-aquatic vegetation; and
 - (d) the waters overlying the areas set forth in (a) and (b) and the lands underlying.”
- (Refer to NYS Environmental Conservation Law, Article 24 § 24-0107 for full definition.)

Wildlife Management Area: Lands that were acquired by DEC primarily for the production and use of wildlife, including hunting and trapping. These areas provide and protect wildlife habitats that are particularly significant in their capacity to harbor rare, threatened or endangered species, host unusual concentrations of one or more wildlife species, provide an important resting and feeding area for migratory birds, provide important nesting or breeding area for one or more species of wildlife, or provide significant value for wildlife or human enjoyment of wildlife. (Public Use of Lands Managed by the Bureau of Wildlife)

Young Forest: Forests that result from a regeneration cut, typically having a dense understory where tree seedlings, saplings, woody vines, shrubs, and herbaceous vegetation grow together. Young forests are typically 0-10 years old. (Adapted from www.youngforest.org). It is acknowledged that “young forests” will differ in their character in different ecological areas of the state and that 0-10 years is a continuum into more mature forest types. (Refer to: A DEC Strategic Plan for Implementing the Young Forest Initiative on Wildlife Management Areas 2015-2020)

APPENDIX B. COMPLIANCE WITH STATE ENVIRONMENTAL QUALITY REVIEW

This plan identifies habitat management activities to be conducted on the Wildlife Management Area. These activities were analyzed in the 1979 *Programmatic Environmental Impact Statement on Habitat Management Activities of the Department of Environmental Conservation; Division of Fish and Wildlife* (PEIS), as updated and amended in 2017 by the *Supplemental Final Environmental Impact Statement* (SFEIS).¹⁸ Any activity that exceeds the thresholds of, or was not analyzed in the 1979 PEIS as amended in 2017, will require individual, site-specific environmental review. Environmental assessment forms prepared as a result of this review will be posted on the Environmental Notice Bulletin (ENB).¹⁹

The activities recommended in this plan:

- Will not adversely affect threatened or endangered plants or animals or their habitat.
 - Prior to implementation of any activity, staff review the NY Natural Heritage Program's "Natural Heritage Element Occurrence" database and perform field surveys when necessary. If a protected species is encountered in a project area, staff may establish buffer zones around the occurrence, move the project area, follow time-of-year restrictions, or cancel the project.
- Will not induce or accelerate significant change in land use.
 - All lands and waters within the WMA system are permanently protected as wildlife habitat.
- Will not induce significant change in ambient air, soil, or water quality.
 - Activities are designed to protect air, soil, and water quality through careful project planning, use of appropriate Best Management Practices, and establishment of Special Management Zones around sensitive land and water features requiring special consideration.
- Will not conflict with established plans or policies of other state or federal agencies.
 - Activities will follow established plans or policies of other state and federal agencies, including all relevant U.S. Fish and Wildlife Service rules and regulations.
- Will not induce significant change in public attraction or use.
 - The WMA system is part of a long-term effort to establish permanent access to lands in New York State for the protection and promotion of its fish and wildlife resources. Proposed activities will continue to protect, promote, and maintain public access to WMAs and their wildlife resources.
- Will not significantly deviate from effects of natural processes which formed or maintain an area or result in areas of significantly different character or ecological processes.
 - Activities will be conducted in a manner that maintains, enhances, or mitigates ecological processes and/or natural disturbances as appropriate for each WMA and habitat type. Some activities, such as even-aged forest management, intentionally result in areas of different character and ecological processes; however, they are not considered significant because they are ephemeral or transitional and will not permanently alter the landscape.
- Will not affect important known historical or archeological sites.
 - Activities that may result in ground disturbance are reviewed by DEC's State Historic Preservation Officer (SHPO) and/or the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) to identify potential impacts to historical or archeological sites. Sensitive sites will be protected under the direction of DEC's SHPO and the OPRHP Archaeology Unit.
- Will not stimulate significant public controversy.
 - It is not anticipated that activities on WMAs will stimulate significant public controversy. A public comment period was held during development of both the PEIS and the SFEIS; no relevant comments in opposition of proposed management activities were received during the SFEIS public comment period. Staff also hold a public information session upon completion of each HMP, consider comments gathered during these sessions, and may adjust management as deemed appropriate. Kiosks, signs, webpages, articles, demonstration areas, and other outreach materials also raise awareness about habitat management activities.

¹⁸ Available online at <http://www.dec.ny.gov/regulations/28693.html>.

¹⁹ Available online at <http://www.dec.ny.gov/enb/enb.html>.

APPENDIX C: FOREST MANAGEMENT PRESCRIPTIONS

PRESCRIPTION FOR WILDLIFE MANAGEMENT AREA TIMBER HARVEST

Region: **Wildlife Management Area:** **Stand number:** **Stand acreage:**

Species composition:

Basal area: **Trees per acre:** **Mean stand diameter:**

Stand inventory or analysis date:

Regeneration data:

Natural Heritage Element Occurrence layer review:

SMZ layer review:

Retention data:

Soil types and drainage:

Interfering vegetation:

Acres to be treated: **Target basal area:**

Technical guidance/stocking guide:

Treatment purpose:

Management Objective: Even aged or Uneven Aged

-If even aged, specify treatment (i.e. shelterwood, seed tree, clearcut)

Clearcut acreage and configuration: (if applicable)

Natural Heritage /MHDB considerations and mitigation: (if applicable)

Retention considerations and adjustments:

Treatment descriptions:

Name and Title of Preparer:

Central Office Lands and Forests Staff

Date

Regional Wildlife Manager

Date

PRESCRIPTION NOTES

Species Composition: At a minimum, the three most common species found in the overstory should be included, assuming at least three species comprise the stand. Species that individually constitute less than 5% of the stand may be lumped together as “Other” or “Miscellaneous.” For instance, if beech, hemlock and yellow birch each make up 3% of the stand, they may be lumped together as “Other – 9%.”

Natural Heritage Element Occurrence layer review: List those species that the Natural Heritage Element Occurrence (EO) data layer indicates are or were known to be present in the stand, or could be affected by treatments to the stand. For instance, if a rare fish was indicated in a water body that is a short distance downstream of a creek that flows through the stand, it should be listed in the prescription.

SMZ layer review: The SMZ data layer includes Special Management Zones around all streams and wetlands, as well as vernal pools, spring seeps and recreation areas that staff have mapped and digitized. If any of these features are mapped incorrectly or are missing from current data layers, staff can correct their locations by editing their office layers.

Retention data: Include numbers of existing snags, cavity trees, Coarse Woody Material, Fine Woody Material, and legacy trees. Ocular estimates are acceptable.

Soil types and drainage: Specifically named soil types are useful, but not necessarily required. “Flat, sandy, well-drained hilltop” or “Steep, gravelly, moderately well-drained mid-slope” may be just as useful as “Hershisier-Koufax Sandy Silt Loam” in describing the soil conditions as they relate to management decisions. The important point is to note those characteristics that may limit equipment operation or establishment of regeneration. Soil type data is available for some counties on the Data Selector.

Interfering vegetation: Indicate the existing amount of interfering vegetation such as beech, striped maple, fern, etc. This may be quantified using mil-acre plots or by ocular estimate.

Technical guidance used: This may include stocking guides, articles found in technical journals, textbooks or other silviculture-related publications. Other sources of guidance may be acceptable as well.

Treatment purpose: As used here, “treatment purpose” and “management objective” (see below) are two different things. Also, “treatment purpose” is not what is to be done (i.e., “reduce basal area by 25%” or “remove every third row”), but rather is an explanation of why it is being done (i.e., “stimulate regeneration and increase growth of residual stand” or “regenerate current stand and convert to young forest”).

Management objective: As used here, the term “management objective” is somewhat general. At a minimum, the prescription should indicate the desired future age structure and stand type. An entry as general as “Even aged hardwood” is acceptable, but regional staff may be more specific if they so choose. The management objective for a stand may be specified in the Habitat Management Plan (HMP) for the Wildlife Management Area in question. If the existing HMP does not specify the management objective regional staff should choose the management objective when the prescription is written.

Clearcut acreage and configuration: If the harvest involves one single clearcut, indicate the total contiguous area, in acres. If the harvest comprises more than one clearcut, indicate the total combined area of clearcuts, as well as the area of the largest clearcut.

Natural Heritage/MHDB considerations: Indicate what measures will be taken to protect those elements or features that were found in the review of the Natural Heritage Element Occurrence and Special Management Zone (not applicable yet) layers.

Retention considerations: Indicate whether or not existing levels meet the standards set forth in the Division’s policy on Retention on State Forests, or whether they are expected to do so as a result of the proposed treatment. Also indicate if or how the treatment was adjusted in order to improve compliance with the policy standards.

Treatment description: The intended treatment should be clearly described. The amount of information necessary to accomplish this will vary greatly. For instance, in a row thinning of a pole timber sized plantation that had no SMZs or other special features, it may be sufficient to simply indicate “Remove two out of every six rows, taking two adjacent rows and leaving four rows between successive pairs being removed.” An intermediate thinning in a sawtimber sized hardwood stand with a recreational trail, two streams and a known occurrence of an endangered plant community would require significantly more detail. One rule of thumb that could be used is to describe the treatment so that a qualified forestry professional could use it to assist in marking the harvest.

Additionally, since we are focused on creating young forests you should also address the presence/absence of advanced regeneration. If you are planning on clearcutting without advanced regeneration, address how you are going to mitigate that. For example, “This aspen stand will be clearcut and it is anticipated that future regeneration will be established through aspen root sprouting”. Or, “This stand will be clearcut and replanted with Norway spruce to establish conifer cover.”

Furthermore, if you are planning on conducting a shelterwood or seed tree cut, please indicate when you are planning on returning to the stand to conduct the final harvest (overstory removal).

APPENDIX D: AMENDMENTS

Any substantive changes to the habitat management described in this plan will be amended to the plan annually or as needed. Such changes may include: land acquisition, unforeseen natural disturbance, or any other change that alters the need for or the scope, method, or timing of management.