Habitat Management Plan
for
Honeoye Creek Wildlife Management Area
2017 - 2026


Photo: Mike Palermo

Division of Fish and Wildlife
Bureau of Wildlife
6274 East Avon-Lima Road, Avon, New York 14414

October 16, 2017

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Prepared by:

Michael Palermo, Biologist 1 (Wildlife)
Emily Bonk, Forester 1
John Mahoney, Forestry Technician 1
Young Forest Initiative

Dana Hilderbrant, Fish & Wildlife Technician 3
Honeoye Creek WMA Management

Heidi Kennedy, Biologist 1 (Wildlife)
Land Management & Habitat Conservation Team

Reviewed and approved by:

Michael Wasilco, Regional Wildlife Manager
Bureau of Wildlife — Date: 10/17/2017

James F. Farquhar III, Chief
Bureau of Wildlife — Date: 10/23/17

Tony Wilkinson, Director
Division of Fish and Wildlife — Date: 10/26/17

Financial support for development of this Habitat Management Plan was provided by the Federal Aid in Wildlife and Sport Fish Restoration Program and non-federal funds administered by the New York State Department of Environmental Conservation including Habitat & Access Stamp funds.

TABLE OF CONTENTS

LIST OF FIGURES

SUMMARY

Honeoye Creek Wildlife Management Area (WMA) consists of 749 acres in the Town of Richmond, Ontario County and is composed of three parcels. The property was originally obtained to protect an expansive wetland system along Honeoye Creek; however, only a small portion of this wetland is part of the WMA. Over 100 acres of seasonally-flooded forested wetland are present on the WMA immediately north and south of County Road 15, and to a lesser extent emergent marsh and scrub/shrub wetlands are found on the two southern parcels. The majority of the property is grassland and provides important habitat to several rare and at-risk bird species. Other habitats present include early-successional shrubland, young forest, mature upland forest, and agricultural lands.

This plan elaborates upon habitat objectives described in the Northern Finger Lakes Unit Management Plan (UMP).[1] Honeoye Creek WMA is primarily managed to protect wetland habitats, provide grassland habitat important to dependent wildlife, and promote recreational opportunities such as hunting, trapping, and bird watching.

Habitat management goals for Honeoye Creek WMA include:

- Maintaining approximately 25% as intermediate and mature forest, including both upland and forested wetland, to provide diverse forest habitats for associated wildlife;
- Managing approximately 3% as young forest (12% of forested acreage) to promote American woodcock, wild turkey, and other young forest wildlife;
- Maintaining approximately 6% as early-successional shrubland to provide dense cover and soft mast for associated wildlife;
- Maintaining approximately 49% as grassland to benefit grassland-dependent birds, such as bobolink and eastern meadowlark, and popular game species, such as deer and turkey;
- Managing approximately 11% as food plots and other agricultural lands to provide diverse habitats for wildlife;
- Maintaining approximately 4% as natural wetlands and open water to benefit associated species of fish and wildlife, such as amphibians, reptiles, and warm water fish; and
- Maintaining approximately 2% as access features.

[1] Information on DEC Unit Management Plans is available online at http://www.dec.ny.gov/lands/4979.html

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 (HMPs) 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 period, 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 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;
- 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.

As of the writing of this HMP, the Northern Finger Lakes UMP has been drafted and is under review. The UMP addresses habitat objectives detailed in this HMP, as well as 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 storm intensity, 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

Honeoye Creek Wildlife Management Area is located in DEC Region 8, Town of Richmond in Ontario County (Image 1).

Total Area

749 acres

Habitat Inventory

A habitat inventory of the WMA was conducted in 2014 and will 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).

Image 1: Location of Honeoye Creek WMA

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

Habitat Type	Current Conditions (as of 2014)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest [a]	179	24%		189	Increase to 25%
Young forest	23	3%		26	3%
Shrubland	58	8%		42	Decrease to 6%
Grassland	272	36%		365	Increase to 49%
Agricultural land	172	23%		82	Decrease to 11%
Wetland (natural)	24	3%		24	3%
Wetland (impounded)	0	0%		0	0%
Open water	4	1%		4	1%
Roads and parking	17	2%	4.5	17	2%
Rivers and streams			4.5		
Total Acres:	749	100%		749	

[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.

ECOLOGICAL RESOURCES

Wildlife Overview:

Honeoye Creek WMA is primarily composed of grassland and agricultural fields interspersed with hedgerows and fragmented patches of shrubland and forest. Large grasslands are a relatively scarce habitat in western New York and those present on the WMA are important to several grassland-dependent bird species. Approximately 100 acres of an 800-acre wetland along Honeoye Creek also occurs on the WMA and provides valuable forested wetland and emergent marsh habitat. The surrounding landscape, aside from the wetland complex, is primarily composed of active agriculture and small woodlots, providing abundant habitat to most common wildlife species of western New York.

Species likely occurring on the WMA include:

- Grassland-dependent birds (e.g., bobolink, eastern meadowlark, grasshopper and savannah sparrows, northern harrier, and short-eared owl)
- Forest and shrubland songbirds (e.g., American goldfinch, barn and tree swallows, common yellowthroat, field and song sparrows, gray catbird, and yellow warbler)
- Small and big game (e.g., cottontail rabbit, coyote, gray and red foxes, gray and red squirrels, raccoon, white-tailed deer, and wild turkey)
- Furbearers (e.g., beaver, mink, muskrat, long and short-tailed weasels, and otter)
- Amphibians and reptiles (e.g., green frog, leopard frog, spring peeper, common garter snake, milk snake, painted turtle, and snapping turtle)

Wildlife and Plant Species of Conservation Concern:

There are no federally listed Endangered or Threatened species known to occur on the WMA. The following state listed Endangered (E), Threatened (T), or Special Concern (SC) species

and/or Species of Greatest Conservation Need (SGCN) may occur on the WMA (Table 2).[2] Species listed below have been documented on or within the vicinity of the WMA and are likely to occur in suitable habitat on the WMA. Other species of conservation concern may also be present. Data sources include: the NY Natural Heritage Program, NY Breeding Bird Atlases,[3] NY Reptile and Amphibian Atlas,[4] DEC wildlife surveys and monitoring, and eBird.[5]

Table 2. Species of conservation concern that may be present on Honeoye Creek 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 Status
Birds	American bittern		SC	x
	American kestrel			x
	American woodcock			x
	Black-billed cuckoo			x
	Blue-winged warbler			x
	Bobolink			HP
	Brown thrasher			HP
	Eastern meadowlark			HP
	Grasshopper sparrow		SC	HP
	Horned lark		SC	HP
	Northern harrier		T	x
	Pied-billed grebe		T	x
	Ruffed grouse			x
	Sandhill crane [a]			
	Scarlet tanager			x
	Short-eared owl		E	HP
	Wood thrush			x
Mammals	None known to occur			
Amphibians and reptiles	Eastern ribbonsnake			x
	Snapping turtle			x
	Western chorus frog			x
Fish	None known to occur			
Invertebrates	Eastern pondmussel			x
Plants	None known to occur			

[a] Although not a listed species or SGCN, the sandhill crane is a rare breeder in New York and is believed to nest in the wetlands complex on or near the WMA.

[2] 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.
[3] Available online at http://www.dec.ny.gov/animals/7312.html.
[4] Available online at http://www.dec.ny.gov/animals/7140.html.
[5] Available online at http://ebird.org/content/ebird/about/. © Audubon and Cornell Lab of Ornithology.

Significant Ecological Communities:

There is one significant natural community located on Honeoye Creek 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 community occurs on the WMA; community description is from *Ecological Communities of New York State, Second Edition* [6] (Figure 2):

- **Silver maple-ash swamp** (S3) – a hardwood basin swamp that typically occurs in poorly drained depressions or along the border of large lakes, and less frequently in poorly drained soils along rivers. These sites are characterized by uniformly wet conditions with minimal seasonal fluctuations in water levels.

Additional information about ecological communities is available in the Honeoye Creek WMA Biodiversity Inventory Final Report (1997) prepared by the NY Natural Heritage Program.

Soils:

Most of the soils on Honeoye Creek WMA are of the Schoharie-Odessa or the Palms-Edwards-Carlisle associations.[7] The majority of soils on the WMA are classified as prime farmland or farmland of statewide importance (66%), and most are either well-drained or moderately well-drained (70%). Nearly a third of the WMA contains poorly or somewhat poorly drained soils, some of which are within fields. Wet conditions in these fields have been a historic challenge for cultivating crops and management actions in areas that are poorly drained will use best management practices to avoid erosion. Slopes on the WMA are flat to gentle.

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. Approximately 315 acres of SMZs are on the WMA, including:

- One wetland (HO-4) regulated by Article 24 of the Environmental Conservation Law and ten wetlands shown on the National Wetlands Inventory (NWI; Figure 3). State-regulated wetlands are protected by a buffer zone of 100 feet (regulated adjacent area). There may be management actions within wetlands and adjacent areas, and each management prescription will be reviewed individually for determination of impacts.
- Approximately 4.5 miles of streams, composed of Honeoye Creek and its tributaries (Figure 3). These streams are classified as C and are not regulated by Article 15 of the Environmental Conservation Law; however, water quality standards will be adhered to.[8]

Guidelines for habitat management projects within 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.*[9] Some habitat management activities may either be prohibited or

[6] 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. Available online at http://www.dec.ny.gov/animals/97703.html.
[7] Soil classification information available from: US Department of Agriculture, Natural Resources Conservation Service. Available online at http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=NY.
[8] Information about stream classification is available online at http://www.dec.ny.gov/permits/6042.html.
[9] Available online at http://www.dec.ny.gov/outdoor/104218.html.

restricted in order to protect these features. Any deviations from these guidelines will be addressed in the individual stand prescriptions.

LANDSCAPE CONTEXT

The goals of this HMP have been developed with consideration of surrounding landscape features, the availability of habitats, and other conservation lands adjacent to Honeoye Creek WMA (Figures 4 and 5). The landscape within a three-mile radius of the WMA is primarily privately-owned land including:

- Pasture/hay (42%)
- Forest (30% combining deciduous, evergreen, and mixed)
- Cultivated crops (9%)
- Developed (6%)
- Early-successional shrubland (6%)
- Wetland (4% combining emergent and woody wetlands)
- Open water (3%)

Honeoye Creek WMA is within the Western New York Grassland Focus Area. Grassland Focus Areas are parts of New York State that are of special importance to grassland birds. In many areas, grasslands are fragmenting and disappearing due to changing land-use patterns, natural vegetative succession, and development. It is an important goal of this HMP to maintain and enhance the high habitat value of grasslands on the WMA.

The majority of the landscape within three miles of the WMA is used for agricultural purposes, with small woodlots interspersed throughout. A large percentage of these agricultural fields are used for hay or pasture, providing an expanse of open grassy habitat that attracts grassland birds. Fields on the WMA, where best management practices for grassland birds are implemented, have an even higher value to grassland birds because they are part of this large concentration of suitable habitat.

Most forest stands in the surrounding landscape are in areas less suitable for agriculture and are composed of a mature forest age structure. Areas of abandoned agriculture do exist and provide valuable shrubland and young forest habitat to the landscape; however, these areas are not anticipated to be maintained into the future and continued agricultural abandonment is unpredictable and unexpected. Thus a goal of this plan is to manage the WMA to provide a greater and continued component of this limited habitat type.

Three other conservation lands are near Honeoye Creek WMA; however, they comprise only 1% of the surrounding landscape (Figures 4 and 5). This includes:

- Sandy Bottom Park (60 acres) - forested wetland, developed recreation facilities.
- City of Rochester, Bureau of Water land (68 acres) - Hemlock Outlet, mature forest.
- Taylor Marsh Preserve (356 acres) - emergent marsh, scrub/shrub, and forested wetlands.

II. MANAGEMENT STRATEGIES BY HABITAT TYPE

DEC will continue active management of wildlife habitats on Honeoye Creek 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 compatible with the ongoing habitat management practices and species management considerations.
- Improve habitat quality by reducing invasive species.

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.
Plantation: planted forested acres, generally planted in rows dominated by one or two species.
Forested wetland: wetland acres where forest vegetation accounts for greater than 50% of hydrophytic vegetative cover and the soil or substrate is periodically saturated or inundated.
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 Honeoye Creek 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 Young Forest Initiative (YFI) to increase the amount of young forest on WMAs to benefit wildlife that require this transitional, disturbance-dependent habitat.[10]

MANAGEMENT OBJECTIVES

- Increase young forest from 23 to 26 acres (12% of WMA forested acreage) to improve stand quality and provide habitat for young forest wildlife species. Future management should maintain at least 10% of WMA forested acreage as young forest in perpetuity.
- Maintain 189 acres of forest in intermediate or mature age classes to provide a diversity of forest habitats to benefit associated wildlife.
- Promote persistence of the silver maple-ash swamp ecological community.
- Control invasive species and promote dominance of native hardwoods in upland stands.

[10] 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.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 202 acres of forest covering approximately 27% of Honeoye Creek WMA (Figure 7). Table 3 provides a summary of forest types, including the common tree species present in each.

Forest cover on the WMA is fragmented, composed of small stands ranging from just a few acres up to 60 acres. Nearly 60% of this is forested wetland and occurs along Honeoye Creek. Upland stands here are typically along drainages and on adjacent slopes.

Photo 1: More than half of forest cover on the WMA is a silver maple – ash swamp surrounding Honeoye Creek.

Photo: Michael Palermo, DEC

The most significant forest type on the WMA is the mature silver maple-ash swamp (Photo 1). This ecological community contains a high diversity of native plant species and provides important habitat for a variety of amphibians and invertebrates. Stand A02 contains approximately 80% silver maple, whereas Stand A01 contains approximately 70% green ash. Emerald ash borer (EAB), a non-native invasive insect, has the potential to cause widespread ash mortality in Stand A01. When this occurs, management actions may be necessary to ensure the regeneration of a forested wetland and prevent the establishment of invasive vegetation.

Upland stands on the WMA are mostly composed of pioneer hardwoods, including ash, aspen, and black walnut, with a lesser component of oak, hickory, and maple. Most of these stands are pole timber, while young forest (Photo 2) currently composes 11% of the WMA forested area. These young forest stands have reverted from abandoned fields and provide valuable habitat to a wide range of wildlife species. Young forest is temporary and without management will succeed into an intermediate forest type.

Table 3. Summary of the acreage and dominant overstory species for each forest type.

Forest Type	Acres (as of 2014)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	60	70	Aspen, ash, black walnut, hawthorn, hickory, oak
Forested wetland (mature/intermediate)	119	119	Green ash, silver maple, black willow, swamp white oak
Young forest	23	26	Ash, dogwood, hawthorn, aspen
Young forest (forested wetland)	0	0	Currently not present on WMA
Total Forested Acres:	202	215 [a]	

[a] Change in total acres is from reversion of shrubland to forest (16 acres) and conversion of forest to grass (3 acres).

Target Species:

Due to the predominance of mature forest, and lack of young forest on the landscape, there has been a decline of wildlife species dependent upon young forests. Target species for forest habitat management at Honeoye Creek WMA are American woodcock and wild turkey. Both of these species are experiencing population declines and are popular game animals.

Photo 2: Young forest currently present on the WMA originated from old field reversion.

Photo: Michael Palermo, DEC

These species rely on areas of young forest adjacent to mature forest for breeding, foraging, and cover and will benefit from management that creates the following habitat conditions:

- American woodcock (Photo 3):
  - Singing/peenting ground – Open areas from 1 to >100 acres.
  - Foraging areas – Moist, rich soils with dense overhead cover of young trees.
  - Nesting – Young, open, second growth woodlands.
  - Brood rearing – Similar to nesting, also including bare ground and dense cover.
  - Roosting – Open fields (minimum of 5 acres) or reverting farm fields.[11]
- Wild turkey:
  - Foraging – Mast producing hardwood stands and herbaceous fields.
  - Nesting – Hardwood forest, brushy cover, downed trees, and field edges.
  - Roosting – Mature hardwoods and softwoods.
  - Brood rearing – herbaceous fields and forest openings.

Management actions to create young forest will also benefit several SGCN known to occur on or near the WMA, including black-billed cuckoo, blue-winged warbler, and brown thrasher. Ruffed grouse are unlikely to become established on the WMA because the surrounding landscape does not provide enough contiguous forest habitat.

More common wildlife species, such as bobcat, eastern cottontail, and white-tailed deer are expected to benefit as well from the abundant food and cover found in young forests. A variety of pollinator species, such as bees and butterflies, are expected to benefit from the abundance of flowering plants in young forests. Pollination is critical to the reproduction of wild and cultivated plants and providing habitat to sustain these pollinator populations is important both ecologically and economically.

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

It is important to note that young forest habitat is also important to many species typically associated with mature forest. The abundant and diverse food (e.g., berries, catkins, and insects) present in young forests attract juveniles of mature forest bird species during critical growth periods, as well as juveniles and adults preparing for energy intensive migrations.

Photo 3: Woodcock require the dense cover of young forest for foraging and nesting.

Photo: Jeff Thompson, DEC

Mature forest on the WMA, both upland and wetland, currently provides valuable habitat for numerous species common to western New York. These stands are generally too small to provide significant habitat to species that require interior forest habitat, such as scarlet tanager and wood thrush. Over time, managing at least 10% of forest acreage as young forest, through the rotation of even-aged management throughout stands on the WMA, will ensure a diversity of forest age classes in perpetuity.

MANAGEMENT HISTORY

While in private ownership, the lands now comprising Honeoye Creek WMA were mostly utilized for agriculture, with the forested wetlands and small woodlots also being used for timber and fuelwood production.

State acquisition of the property began in 1982 and was completed in 1989. No habitat management has occurred within the forests of the WMA under DEC management. Existing young forest on the WMA is the result of old fields not being maintained and some that were intentionally planted with trees. In 2014, young forest stands A12 and A13 (grassland fields at the time) were planted with Norway spruce and apple seedlings to provide conifer cover and soft mast for wildlife.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed during the timeframe of this plan:

- **Management planned for 2017-2021** (Table 4, Figure 7):
  - Seed tree harvest of Stand A03 (10 acres).
  - Timber stand improvement of Stand A11 (13 acres).
  - Convert 3 acres of Stand A10 to grassland.
  - Plant additional conifer seedlings in Stands A12 and A13.
- **Management planned for 2022-2026**:
  - There is no management currently planned during this time period.

Table 4. Forest management schedule for the first five-year period of this HMP (2017-2021).

Stand	Acres	Size Class	Forest Type		Treatment Type
			Current	Future	
A03	10	Pole Timber 6”-11” DBH	Pioneer Hardwoods	Young Forest	Seed tree harvest
A10	12	Pole Timber 6”-11” DBH	Pioneer Hardwoods	Pioneer Hardwoods / Grassland	Convert 3 acres to grassland
A11	13	Seedling/Sapling <5” DBH	Young Forest	Young Forest	Timber Stand Improvement
A12	3	Seedling/Sapling <5” DBH	Young Forest	Young Forest	Plant additional conifers
A13	2	Seedling/Sapling <5” DBH	Young Forest	Young Forest	Plant additional conifers

Stand locations and planned management actions are also summarized in Figure 7. 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 will include the following:

- **Stand A03:** This stand is primarily composed of pioneer hardwoods and is dominated by aspen and white ash (Photo 4). Buckthorn, honeysuckle, and other undesirable vegetation occur in the understory and will likely require herbicide treatment to prevent interference with forest regeneration. A seed tree harvest in this stand will retain selective desirable trees (e.g., cherry, hickory, maple) as a seed/mast source while removing enough canopy to release any existing advanced regeneration and stimulate aspen root/stump sprouts. Approximately 8 acres of this stand will have most of the canopy removed, which will provide favorable conditions for young forest establishment.
- **Stand A10:** This stand is composed of pole-sized pioneer hardwoods and is an irregular shape, with three narrow sections that cover an intermittent stream and two ditches. The 3 acres to be converted to grassland are the higher reaches of the two ditches. These will be graded and seeded with grass, similar to the grass ditches located between Fields 11, 12, and 14 (Figure 6). This action will improve habitat connectivity between fields and should help slow water flow and reduce sediment transport into Honeoye Creek.
- **Stand A11:** This stand is existing young forest composed of saplings, pole timber, and shrubs. This stand originated from old field reversion and dominant tree species are ash and aspen, with some oak and hickory as well. Shrubs include a mix of native species and non-native invasives. Timber stand improvement is planned here to control invasives, release desirable tree species, and stimulate aspen resprouting. This treatment will knock back succession and provide continued young forest habitat.
- **Stands A12 and A13:** These stands are existing young forest composed primarily of natural ash and aspen seedlings as well as some Norway spruce and apple seedlings planted in 2014. These stands were previously grassland that was intentionally allowed

to revert. Conifer cover is mostly absent on the WMA and planting additional conifer seedlings in these stands will be beneficial to several wildlife. Conifers provide important insulating cover resulting in cooler summer and warmer winter temperatures. This is especially valuable to the short-eared owl, a state-endangered raptor that overwinters in large grasslands and sometimes roosts in conifers.

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 5).

Table 5. Best Management Practices for forest management on WMAs.

Resource	**Guidance Document** [12]
Soils	*Rutting Guidelines for Timber Harvesting on Wildlife Management Areas*
Water quality	*NYS Forestry Best Management Practices for Water Quality*
Wildlife	*Retention Guidance on Wildlife Management Areas*
Plantations	*Plantation Management Guidance on Wildlife Management Areas*

Wildlife Considerations:

Sensitive species known to be present on or near Honeoye Creek WMA that warrant special consideration include:

- *Forest raptors*. Surveys will be conducted prior to timber harvests and if nesting is documented, harvest activities nearby may be adjusted to occur outside the breeding season and nest buffers may be established.
- *Indiana, northern long-eared, and tri-colored bats*. There are no known occurrences of these species on the WMA. However, surveys will occur in suitable habitat prior to timber harvest activities to detect presence or probable absence, or harvests will take place in winter to avoid potential impacts.

Due to the sensitivity of endangered, threatened, and special concern species, and SGCN, special management guidelines may be implemented if additional species become known to occur in or within close proximity to a forest stand to be harvested.

Forest Health Considerations:

Forest pests and invasive vegetation are an ongoing problem for habitat management. When pests attack forests in high numbers and cause decline and mortality, habitat values can shift to the detriment of many resident wildlife species. Likewise, as invasive plants invade an area, outcompeting and dominating native vegetation, a lower diversity plant community is created. This decrease in habitat values means less wildlife may be able to utilize the area. All efforts to manage habitats on Honeoye Creek WMA must consider these forest pests and invasive species and ensure that measures are taken to control their presence or prevent their establishment.

Infestations of non-native insects such as emerald ash borer (EAB), gypsy moth, and pear thrips are of present concern and bear persistent monitoring. Gypsy moth and pear thrips densities fluctuate and can reach outbreak levels where complete defoliation of host trees can occur.

[12] All guidance documents referenced here are available online at http://www.dec.ny.gov/outdoor/104218.html.

Gypsy moth most commonly attacks oak and aspen species while pear thrips favors sugar maple. EAB is not yet known to be on the WMA; however, it has been found within a few miles and infestation on the WMA is considered imminent. EAB infests ash trees and causes mortality of host trees within a few years.

Native insect species such as eastern tent caterpillar and fall cankerworms are cyclic in population and may impact vegetation through defoliation at some time in the future. Both species feed on a wide-range of tree species including: ash, basswood, beech, black cherry, maples, and oaks.

Photo 4: A seed tree harvest is planned in Stand 03 to establish young forest while retaining mast producing hardwoods.

Photo: Michael Palermo, DEC

Oak wilt is a fungal disease that can infect and kill oak trees. The disease was identified in Ontario County in 2016 and although oaks are not a major component of forest stands on the WMA, they provide important hard mast where present. Oak wilt primarily spreads in two ways: 1) through root connections with adjacent oak trees, and 2) from beetles that spread spores to open wounds on other trees. Current recommendations for treating affected areas include removing infected trees and severing root connections to reduce the chance of spread. Monitoring of oak trees and seasonal timber harvest restrictions may be needed if oak wilt begins to spread throughout the region.

Invasive plants that are known to be in or near the forested areas of the WMA include: autumn olive, common buckthorn, garlic mustard, honeysuckle, multiflora rose, and Phragmites.

Pre- and Post-treatment Considerations:

Regeneration of a forest stand requires suitable conditions to ensure that desired species will succeed. Non-native invasive vegetation and undesirable native trees (e.g., hawthorn and ironwood) are present in the understory of many stands here and have the potential to interfere with forest regeneration. Although these native species have many beneficial qualities, they are considered undesirable in this context because they have the potential to interfere with forest regeneration. If invasives and other undesirable species become significantly abundant, pre-treatment herbicide application may be necessary.

Deer herbivory has potential to be an issue at Honeoye Creek WMA. If it is determined that herbivory is intense enough to prevent regeneration of desired tree species, fencing in of treatment areas or installation of tree shelters may be necessary. Efforts to promote deer hunting on the WMA to manage the local deer herd at desired levels will continue.

If it is concluded post-treatment that desired tree species are not regenerating in a high enough frequency, or that undesirable species are dominating the area and suppressing regeneration, then the stand may be re-treated. This may include mechanical and/or herbicidal control of undesirable species, removal of additional trees to increase available sunlight, scarification of forest floor to stimulate seedling establishment, and/or the direct seeding of desired tree species.

Pre- and post-treatment actions to promote the desired forest regeneration will be addressed in 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 established in the Young Forest Initiative Monitoring Plan.[13] The Monitoring Plan provides 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 wildlife target species selected for Honeoye Creek WMA, which may be assessed to determine response to management, include:

- American woodcock
- Wild turkey

Monitoring of these species may include woodcock singing-ground surveys and turkey spring gobbler surveys to determine habitat use and abundance in response to forest management. The establishment of periodic bird point counts and amphibian and reptile surveys in all forest types would be beneficial to better understand species diversity and use.

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 approximately 42 acres as shrubland habitat to provide dense cover, abundant soft mast, and an interspersion of grass and wildflowers that benefit associated wildlife.
- Control invasive vegetation and promote dominance of native shrub species.
- Allow 16 acres of shrubland to revert to forest.

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

There are 58 acres of shrubland on Honeoye Creek WMA (Figure 7, Photo 5). This is composed of several stands that range from just half an acre to 15 acres. These shrublands originated from

[13] Available online at http://www.dec.ny.gov/outdoor/104218.html.

grasslands not being maintained and naturally succeeding to a shrub-dominated plant community.

These stands vary from sparse shrubs and grasses to dense shrub thickets with scattered mature trees. Native shrubs found in these areas include species of dogwood, hawthorn, sumac, and viburnum, which provide valuable dense cover and soft-mast for wildlife. Non-native invasive shrub species, such as autumn olive, buckthorn, honeysuckle, and multiflora rose are established in most of these stands, as well, and in some areas are dominant.

Photo 5: Shrubland Stand 954 contains sparse low shrubs interspersed with grasses and wildflowers.

Photo: Michael Palermo, DEC

Shrublands contain unique food and cover options that differ from young forest and can often persist longer as a habitat type due to the exclusion of tree growth in shrub thickets. Shrublands provide habitat for many wildlife species, including several that also use young forests. Although young forest and shrubland provide habitats for similar species, both are needed to provide for the full range of disturbance-dependent wildlife species.

Target species for shrubland management on Honeoye Creek WMA are:

- American woodcock
- Brown thrasher

Both of these species are SGCN and the woodcock is a popular game species. Much of their habitat requirements overlap and they both use shrublands for breeding and foraging. A particular difference is the woodcock's need for herbaceous openings within a shrubland for singing and courtship.

Managing shrublands on the WMA targeting these species is expected to benefit numerous other species as well, including other SGCN, such as black-billed cuckoo and blue-winged warbler, and several popular

Photo 6: Shrubland Stand 951 is composed of tall dense shrubs with several sapling and pole black walnuts growing throughout.

Photo: Michael Palermo, DEC

game species, including eastern cottontail, white-tailed deer, and wild turkey.

MANAGEMENT HISTORY

Past DEC management of Honeoye Creek WMA has included the planting of wildlife food and cover shrubs. These were planted along woodland edges to enhance the transition zone between habitat types. Once considered benign and beneficial, non-native species were sometimes included in these plantings. This was likely a significant source of some invasive shrub species that have become established here.

Very little management has occurred within shrublands on Honeoye Creek WMA. These shrublands were established through a lack of management to maintain grassland and old agricultural fields. In some stands, mowing of small openings and around shrub clumps has occurred.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Figure 7):
    - Throughout all shrubland stands, perform maintenance actions as needed.
        - Selective cutting to remove young trees that would eventually dominate.
        - Small stands of trees may be left as islands of second growth.
        - Stumps should be removed or cut low to facilitate future maintenance.
        - Brush cutting using a rotary mower or forestry cutter will be utilized to create and maintain an interspersion of openings and travel corridors.
        - When and where practicable prescribed fire may be utilized.
        - Stand 954 should be maintained in an early shrubland stage, with a more frequent interval of brushhogging than other shrubland stands.
    - Throughout all shrubland stands, promote the dominance of native shrub species.
        - Control of invasive vegetation will be accomplished through mechanical removal, prescribed fire and/or herbicide application.
        - Habitat type conversion to grassland may be necessary to effectively control invasives. Either the converted stand or another area of grassland would then be planted or allowed to revert to a native shrubland to maintain acreage of each habitat type.
    - Allow 16 acres to revert to forest (Stands 951, 955, and 956, Photo 6).
        - These stands are composed of tall dense shrubs with an abundance of sapling and pole-sized trees scattered throughout. Shrubland habitat conditions will likely persist for several more years until trees grow large enough to create a closed canopy and shade out shrubs.

BEST MANAGEMENT PRACTICES

In order to minimize disturbance to shrubland wildlife species during management activities, brush-cutting and tree removal, if possible, should be done outside the bird nesting and brood rearing part of the year (April 15 to August 15). However, management may occur within this timeframe if it is to be done for long term benefits to the habitat/wildlife (such as invasive species management).

MANAGEMENT EVALUATION

Current monitoring of shrubland habitat use at Honeoye Creek WMA is informal and data are often derived opportunistically, and will be continued. However, the establishment of periodic bird point counts would be beneficial to better understand species diversity and habitat use.

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. Grasslands may include areas where hay is harvested by late season mowing once per year.

MANAGEMENT OBJECTIVES

- Convert 20 acres of grassland to crops to provide agricultural habitat for wildlife.
- Increase grassland acreage from 272 acres to 365 acres by converting 110 acres of agricultural land and 3 acres of forest to grassland.
- Maintain all grasslands to encourage favorable herbaceous species and prevent reversion to shrubland and forest.
- Identify and control invasive plant species to prevent their dominance in fields.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

There are currently 272 acres of grassland habitat on Honeoye Creek WMA (Figures 6 and 7). This is composed of several large fields (25+ acres) and a few small fields that are generally surrounded by forest or shrubland.

The entire WMA is within the Western New York Grassland Focus Area.[14] These focus areas are regions of the state that support key, residual populations of grassland birds. Grassland dependent bird species typically require large patches of grassland with low perimeter-to-area ratios in an open landscape. Habitat management in grasslands on the WMA should utilize best management practices for grassland birds and attempt to enhance and increase the size of available habitat patches.

Photo 7: The WMA provides several large fields important to grassland-dependent bird species, such as grasshopper sparrow.

Photo: Michael Palermo, DEC

The largest continuous patch of grassland habitat on the WMA is approximately 40 acres (Photo 7). The

[14] Morgan, M. and M. Burger. 2008. A Plan for Conserving Grassland Birds in New York. Available online at http://ny.audubon.org/conservation/grassland-bird-conservation-program.

planned conversion of agricultural land to grassland will significantly increase habitat patch sizes, establishing two patches of approximately 80 acres each.

The diversity of grasslands on the WMA provides a range of habitats beneficial to several wildlife species. Large grassland patches provide important habitat to grassland dependent birds that are area-sensitive, meaning they require extensive habitat to be successful, such as grasshopper sparrow, northern harrier, and short-eared owl (Photo 8). Smaller grasslands adjacent to forest and shrubland provide habitat to several associated wildlife, such as for deer (fawning) and turkey (brood rearing). Pollinators, such as bees and butterflies, and various other insects, also thrive in all types of grassland and provide an important high-protein food for grouse chicks, turkey poults, and songbirds.

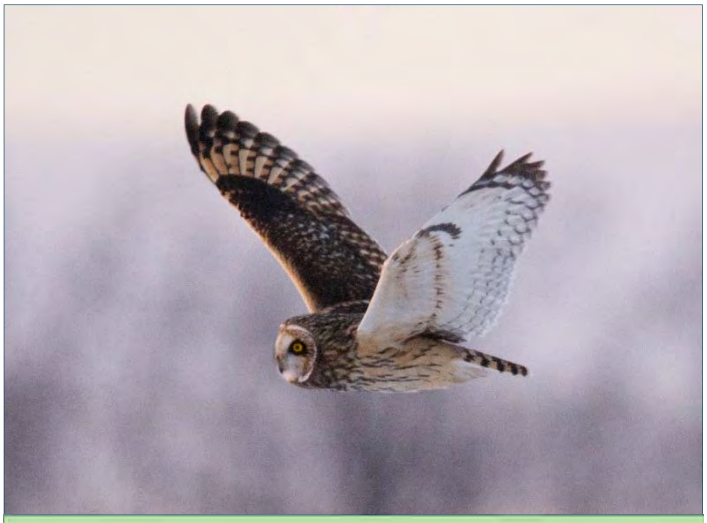

Photo 8: Short-eared owl, a state endangered species, has been observed foraging on the WMA in winter.

Photo: Jeff Thompson, DEC

A diversity of warm and cool season grasses, legumes, and wildflowers (Photo 9) have been planted in these fields as well to provide added diversity of food and cover. For example, warm season grasses, such as switchgrass, often grow in bunches, which provide bare ground between plants that allows for wildlife movement and foraging. Many bunch grass species also retain their upright form through winter, providing valuable cover when most vegetation is matted down by heavy snow. Cool-season grasses, such as timothy, develop rapidly in spring, providing a flush of valuable cover with high forage value.

Some of the fields on the WMA contain an abundance of woody growth (e.g., ash, dogwood, buckthorn, and honeysuckle). These shrubs and tree saplings are typically suppressed by routine mowing, but not completely controlled. Continued restoration and replanting of fields is necessary to prevent reversion to shrubland and to maintain long-term habitat values for wildlife, especially grassland birds.

In an effort to promote hunting opportunities, ring-necked pheasant have been released in grasslands on the WMA under the DEC Day-old Pheasant Chick Program.[15] Pheasant, and several other wildlife species, benefit from the abundant seeds and herbaceous cover that often persists in grasslands throughout the winter.

[15] Additional information is available online at http://www.dec.ny.gov/animals/7271.html.

Target species for grassland management on Honeoye Creek WMA are:

- Grassland birds (e.g., bobolink, eastern meadowlark, horned lark, and grasshopper, savannah, and vesper sparrows)
- Wintering raptors (e.g., northern harrier, rough-legged hawk, and short-eared owl)
- Pheasant, white-tailed deer, and wild turkey
- Bees, butterflies, and other pollinators

MANAGEMENT HISTORY

Historically, the fields at Honeoye Creek WMA were used for agriculture. Under DEC management, these fields have been maintained as open habitat through routine mowing, agricultural practices, and reseeding to provide herbaceous plants favored by target wildlife. Over the years a variety of warm-season (e.g., switchgrass and big blue stem) and cool season grasses (e.g., timothy and orchard grass) have been planted. In 2014, two small fields (5 acres total) were planted with Norway spruce and apple seedlings and converted to forest stands to provide conifer cover and soft mast for wildlife.

Photo 9: Several fields here contain abundant wildflowers beneficial to a variety of pollinator species.

Photo: Michael Palermo, DEC

Cooperative agreements with local farmers have been utilized on the WMA since acquisition, which have allowed them to either harvest hay or temporarily plant crops in exchange for payments or habitat management services. This technique has been an important tool for maintaining and replanting grasslands. An existing cooperative agreement is set to expire in 2018; several fields cultivated under this agreement are currently fallow and will be replanted to grass before contract expiration (for more information see the Agricultural Land section).

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Figure 7):
  - Throughout all grassland stands, routinely perform maintenance actions.
    - Mow fields every 1-3 years to prevent establishment of woody vegetation.
      - Mowing of fields heavily invaded by woody plants may be most effective if conducted in early spring and again before senescence.
    - When resources are available, utilize prescribed fire where appropriate.
    - Control invasive vegetation mechanically and/or with herbicide.
    - As needed: lime, fertilize, disk, and reseed grasslands. Promote native herbaceous species where practical.
  - Convert approximately 3 acres of forest to grassland (Stand A10).
    - Remove trees, grade ditches, and plant with cool-season grasses.

- Replant approximately 110 acres of existing agricultural lands (Fields 9, 11, 14, 23, 29, 33, and 34) to grass and forb mixes favored by target wildlife.
- Convert 20 acres of grassland to crops (Field 15) to provide agricultural habitats.
- As needed, temporarily (3 to 5 years) convert grassland fields to crops as a means to restore grassland quality.
    - Over a few years, the repeated tilling associated with cultivated crops disrupts root systems and depletes the seed bank of woody vegetation and other undesirable plants. This provides a clean slate for seeding desired herbaceous plants to establish a grassland of improved habitat value.
    - This temporary crop habitat will be in addition to the 50 acres to be consistently managed as agricultural lands (see Agricultural Land section below for more information).

BEST MANAGEMENT PRACTICES

The following sub-sections provide guidelines for grassland habitat management on all WMAs in NY. For more detailed information and recommendations see *A Plan for Conserving Grassland Birds in New York*.[16] In particular, refer to the plan for species-specific habitat requirements and detailed recommendations regarding grassland management and restoration techniques.

General Management Recommendations

- Target management for grassland bird species known to be in the vicinity, and consider the needs of both breeding and wintering grassland bird species.
- Consider the surrounding landscape when making management decisions.
- Conduct baseline grassland bird surveys on newly acquired fields or fields targeted for management changes to determine species present.
- Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large fields.
- Conduct invasive species control (e.g., buckthorn, swallowwort, Canada thistle, Phragmites, purple loosestrife, etc.) to improve habitat quality.
- Consider a variety of factors, such as the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing conditions, and vegetation removal techniques (including herbicide and intensive disking) in developing grassland planting or restoration projects.
- Utilize mowing, haying, disking, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

Timing of Management

- Fields over 25 acres (including all contiguous fields) or fields with a history of listed (federally listed and/or state E/T or SC) grassland bird species within the last 10 years,

[16] 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.

including fields of any size AND contiguous fields. Can also include nearby fields if deemed necessary:
    - Mowing or other management should be avoided between April 23 and August 15 unless at least one of the following criteria are met and the fields are assessed or surveyed to confirm there is no active nesting by E/T/SC grassland birds:
        - Management is to be done for long term benefits to the habitat/wildlife (such as invasive species management).
        - Nesting locations can be avoided, such as using spot treatment for invasive species, reducing any negative impact to the species of concern.
- Fields under 25 acres (including all contiguous fields) with no history of listed species:
    - Field can be managed/mowed within the period April 23 and August 15 if necessary to:
        - Control the growth of invasive vegetation in fields where grassland habitat value is degraded.
        - Ensure that suitable grass cover will be present to provide important winter habitat for grassland birds and ring-necked pheasants.
    - If early management is proposed, then the habitat requirements and nesting periods of other species should be considered (e.g., nesting waterfowl, American bittern, reptiles and amphibians).

Additional Mowing Guidelines

- Frequency of mowing, size of area mowed, and mowing techniques should be based on species present and current and desired habitat conditions.
- Block or spot mowing is preferred and strip mowing should be limited (especially in fields over 25 acres).
- Unmowed blocks should be in the shape of a square as opposed to long rectangles.
- When mowing, consider mowing from one side of the field to the other side or start in the center and mow outwards to avoid concentrating animals in the area yet to be mowed.
- In general, mow grass to a residual height of 6-12 inches.

MANAGEMENT EVALUATION

Current monitoring of grassland habitat use at Honeoye Creek WMA is informal and data are often derived opportunistically, and will be continued. However, the establishment of periodic surveys, especially for breeding and wintering grassland birds, would be beneficial to better understand species diversity and habitat use.

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

- Convert 110 acres of existing agricultural land to grassland.
- Maintain 32 acres of food plot habitat to provide supplemental food for wildlife species and provide varied hunting opportunities.
- Manage approximately 50 acres as crops to provide agricultural habitat for related species, such as white-tailed deer, wild turkey, and migrating geese.

DESCRIPTION OF EXISTING AGRICULTURAL LANDS AND TARGET SPECIES

There are currently 172 acres of agricultural lands on Honeoye Creek WMA (Figures 6 and 7, Photo 10). This consists of four fields (32 acres) that are planted to wildlife food plots and nine fields (140 acres) that are under a "Cooperative Agreement for the Use of State Land."

Food plots on the WMA are typically planted annually to a mix of herbaceous vegetation favored by wildlife, including buckwheat, corn, millet, sorghum, and sunflowers. These fields should continue to be maintained as needed with similar mixes.

Photo 10: This food plot is planted primarily with sorghum, also known as milo, which provides valuable food and cover for deer, pheasant, wild turkey, and migrating geese.

Photo: Michael Palermo, DEC

The cooperative agreement in place allows for a local farmer to grow crops on the WMA in exchange for services. Crops are generally rotated each year, and then at the expiration of the agreement the fields are planted to a grass mix favorable to wildlife. Currently, there are no crops present on the WMA, as fields under the agreement have been fallow since 2015. Several of these fields have been reworked and are scheduled to be planted to a grass and forb (e.g., legumes and wildflowers) mix in the near future.

The presence of food plots and crops have important habitat value for wildlife, including high-quality forage for deer, pheasant, turkey, and migrating geese. Agricultural lands also benefit grassland bird species that prefer a higher amount of bare soil, such as horned lark and vesper sparrow. When crops are grown on the WMA, conditions of the cooperative agreement require some grain and cover be left for wildlife after harvest.

Target species for agricultural land management on Honeoye Creek WMA are:

- White-tailed deer
- Wild turkey
- Migrating geese

Hunters also value being able to hunt agricultural land habitat types on public land. This is particularly true regarding field hunting for geese, as nearly all public land waterfowl hunting is limited to marshes or open water.

MANAGEMENT HISTORY

Cooperative agreements with local farmers have been utilized on the WMA since the property was acquired, and have allowed farmers to harvest hay or temporarily plant crops in exchange for payments or habitat management services. This technique has been an important tool for maintaining the open character of the WMA and replanting grassland fields.

Past agricultural agreements have included a large percentage of the WMA, for example, an agreement started in 2009 included nearly 200 acres (27% of the WMA). At the expiration of past contracts, the fields cultivated were planted to grass. The existing agreement is set to expire in 2018 and currently 140 acres are fallow and will be replanted to a desirable grass and forb mix before contract expiration.

Existing food plots on the WMA are planted annually in cooperation with the Genesee Valley chapter of Pheasants Forever under a volunteer stewardship agreement started in 2015. This agreement will expire in 2019; however, renewal is anticipated if volunteer interest continues.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Figure 7):
    - Maintain approximately 32 acres as wildlife food plots (Fields 1, 3, 7, and 8).
        - Annually replant with herbaceous mixes favored by target wildlife species.
    - Replant approximately 110 acres of existing agricultural lands (Fields 9, 11, 14, 23, 29, 33, and 34) to grass and forb mixes favored by target wildlife.
    - Manage approximately 50 acres as crops to provide agricultural habitat.
        - Convert 20 acres of grassland to crops (Field 15).
        - Continue managing 30 acres of existing agricultural fields as crops (Fields 26 and 28).
    - As needed, temporarily (3 to 5 years) convert grassland to crops as a means to restore grassland quality.
        - This temporary crop habitat will be in addition to the 50 acres to be consistently managed as agricultural lands.

BEST MANAGEMENT PRACTICES

Agricultural activities involve mowing, tilling, and the use of pesticides, which have potential to impact wildlife and the environment, therefore guidelines are provided within the cooperative agreements to minimize impacts. For Honeoye Creek WMA this includes: soil conservation practices, buffers between cropland and wetlands, review of planned pesticide use, no fall

plowing without a winter cover crop, and no harvest of hay, alfalfa, or other grasses prior to August 1 (sometimes earlier if it is to be done for long term benefits to the habitat/wildlife).

MANAGEMENT EVALUATION

Annual agricultural activities, such as timing of mowing and crops planted, will be tracked. Fields should be monitored for control of invasives to prevent spread to adjacent areas, or in preparation for rotating agricultural fields to grassland. Establishing periodic surveys would be beneficial to better understand wildlife diversity and habitat use.

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 approximately 24 acres of natural emergent and scrub-shrub wetlands to promote associated wildlife, such as marshbirds, waterfowl, amphibians, and reptiles.
- Identify and control invasive plant species.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

There are no impounded wetlands and 24 acres of natural wetlands on Honeoye Creek WMA, not including forested wetlands (Figures 3 and 7). This consists of two small, isolated marshes on the northern parcel (Photo 11), and minor portions of the large wetland system along Honeoye Creek on both of the southern parcels.

These wetlands are typically saturated, with several areas that are often inundated, and contain a mix of emergent and shrub vegetation. They provide valuable habitat for numerous wildlife species that inhabit the WMA and the larger wetland system, including common frog and turtle species, beaver and muskrat, marshbirds, waterfowl, several songbirds, and numerous invertebrates, such as dragonflies.

Photo 11: This small, isolated marsh (7 acres) provides emergent and scrub-shrub wetland habitat valuable to several species, such as western chorus frog and eastern ribbonsnake.

Photo: Michael Palermo, DEC

Upland wildlife also benefit from these wetlands as reliable sources of water, especially during dry periods.

Several SGCN are known to use the larger Honeoye Creek wetland system and will benefit from wetland habitat maintenance on the WMA, including American bittern, pied-billed grebe, eastern ribbonsnake, snapping turtle, and western chorus frog. Sandhill crane, although not a listed species nor an SGCN in New York, is a rare breeder in this state and is believed to reproduce in the larger wetland system and has been observed using both wetland and grassland habitats on and near the WMA.

Management of these wetlands is expected to be minimal and will likely only include invasive vegetation control when necessary. The protection and maintenance of these wetlands is intended to target and benefit all species that occur there.

MANAGEMENT HISTORY

Honeoye Creek WMA was originally purchased to protect the large wetland system along Honeoye Creek. Only a small portion of this wetland occurs on the WMA; however, DEC management of upland habitats here helps protect the larger wetland from excessive nutrient and sediment runoff. No DEC management has occurred within the wetlands on the WMA.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Figure 7):
    - As needed, invasive vegetation (e.g., Phragmites, knotweed, and purple loosestrife) will be controlled biologically, mechanically, and/or with herbicide.
    - Consider special wetland projects that will benefit wetland-dependent species as opportunities and funding arise.

BEST MANAGEMENT PRACTICES

Management activities within wetlands will take into consideration the timing of wildlife breeding and hibernation seasons and when practicable these periods of time will be avoided. Wetland management will follow guidelines established in the General Permit GP-0-16-003: Habitat Management by NYSDEC, and will obtain any necessary additional permits.

MANAGEMENT EVALUATION

Current monitoring of wetland habitat use at Honeoye Creek WMA is informal and data are often derived opportunistically, and will be continued. However, the establishment of periodic surveys for amphibian, reptile, and bird presence would be beneficial to better understand species diversity and use.

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., Honeoye Lake, Genesee River).

MANAGEMENT OBJECTIVES

- Maintain the high-quality of waters found on the WMA.

DESCRIPTION OF EXISTING OPEN WATER HABITAT AND TARGET SPECIES

There are 4 acres of open water habitat on Honeoye Creek WMA (Figure 7). This is composed of Honeoye Creek (Photo 12) which flows north through all three parcels of the WMA.

Approximately 1.3 miles of Honeoye Creek and 3.2 miles of its tributaries flow through the WMA (Figure 3). The section of Honeoye Creek that is located on the WMA contains relatively small numbers of bluegill, pumpkinseed, largemouth bass, and smallmouth bass that provide a limited fishery. Surveys for freshwater mussels were conducted in 2009 and 2010 within Honeoye Creek on and near the WMA and found five species, including eastern pondmussel, which is an SGCN.

Photo 12: Honeoye Creek provides open water habitat that flows through various wetlands on the WMA.

Photo: Emily Bonk, DEC

Beyond these streams, there is no other open water habitat or any plan to develop such habitat on the WMA. Habitat management activities will adhere to best management practices to protect the water quality of these streams.

Target species for open water management on Honeoye Creek WMA are:

- Warm water fish species
- Freshwater mussels

MANAGEMENT HISTORY

There has been no DEC management of Honeoye Creek on the WMA. DEC management of upland habitats here helps protect the creek from excessive nutrient and sediment runoff.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Figure 7):
    - Maintain and improve the high-quality of waters found on the WMA.
        - All habitat management activities on the WMA will adhere to the Environmental Conservation Law and follow best management practices.

BEST MANAGEMENT PRACTICES

All management activities on the WMA will comply with the New York State Freshwater Wetlands Act (ECL Article 24) and Water Resources Law (ECL Article 15, Title 5).

MANAGEMENT EVALUATION

Surveys for fish and wildlife in Honeoye Creek on the WMA is not routine. The establishment of consistent periodic surveys would be beneficial to better understand species diversity and use.

HABITAT MANAGEMENT SUMMARY

In summary, Table 6 lists the habitat management actions planned for Honeoye Creek WMA over the next ten years. Any substantive changes will be appended to this HMP annually or as needed (Appendix D).

Table 6. Summary of habitat management actions recommended for Honeoye Creek WMA, 2017-2026 (Also see Figure 7).

Habitat	Management Action	Acres	Timeframe
Forest	Seed tree harvest of Stand A03	10	2017-2021
Forest	Timber stand improvement of Stand A11	13	2017-2021
Forest	Convert 3 acres of Stand A10 to grassland	3	2017-2021
Forest	Plant additional conifer seedlings in Stands A12 and A13	5	2017-2021
Forest	Monitor and control invasive species	≤ 215	2017-2026, ongoing
Shrubland	Maintain shrubland acreage by cutting trees, brush cutting and potentially prescribed fire	≤ 42	2017-2026, as needed
Shrubland	Promote dominance of native shrubs by controlling invasive shrub species	≤ 42	2017-2026, ongoing
Shrubland	Allow Stands 951, 955, and 956 to revert to forest	16	2017-2026
Grassland	Maintain grassland acreage by mowing and potentially prescribed fire (as needed: lime, fertilize, disk, or reseed)	≤ 365	Annual, biennial, or triennial
Grassland	Monitor and control invasive species	≤ 365	2017-2026, ongoing
Grassland	Convert Field 15 to agricultural land	20	2017-2026
Agricultural Lands	Replant wildlife food plots in Fields 1, 3, 7, and 8	32	2017-2026, annually
Agricultural Lands	Convert Fields 9, 11, 14, 23, 29, 33, and 34 to grassland	110	2017-2018

Table 7. Continued

Habitat	Management Action	Acres	Timeframe
Agricultural Lands	Manage Fields 15, 26, and 28 as crops	50	2017-2026, ongoing
Wetlands / Open Water	Monitor and control invasive species	≤ 28	2017-2026, ongoing

III. FIGURES

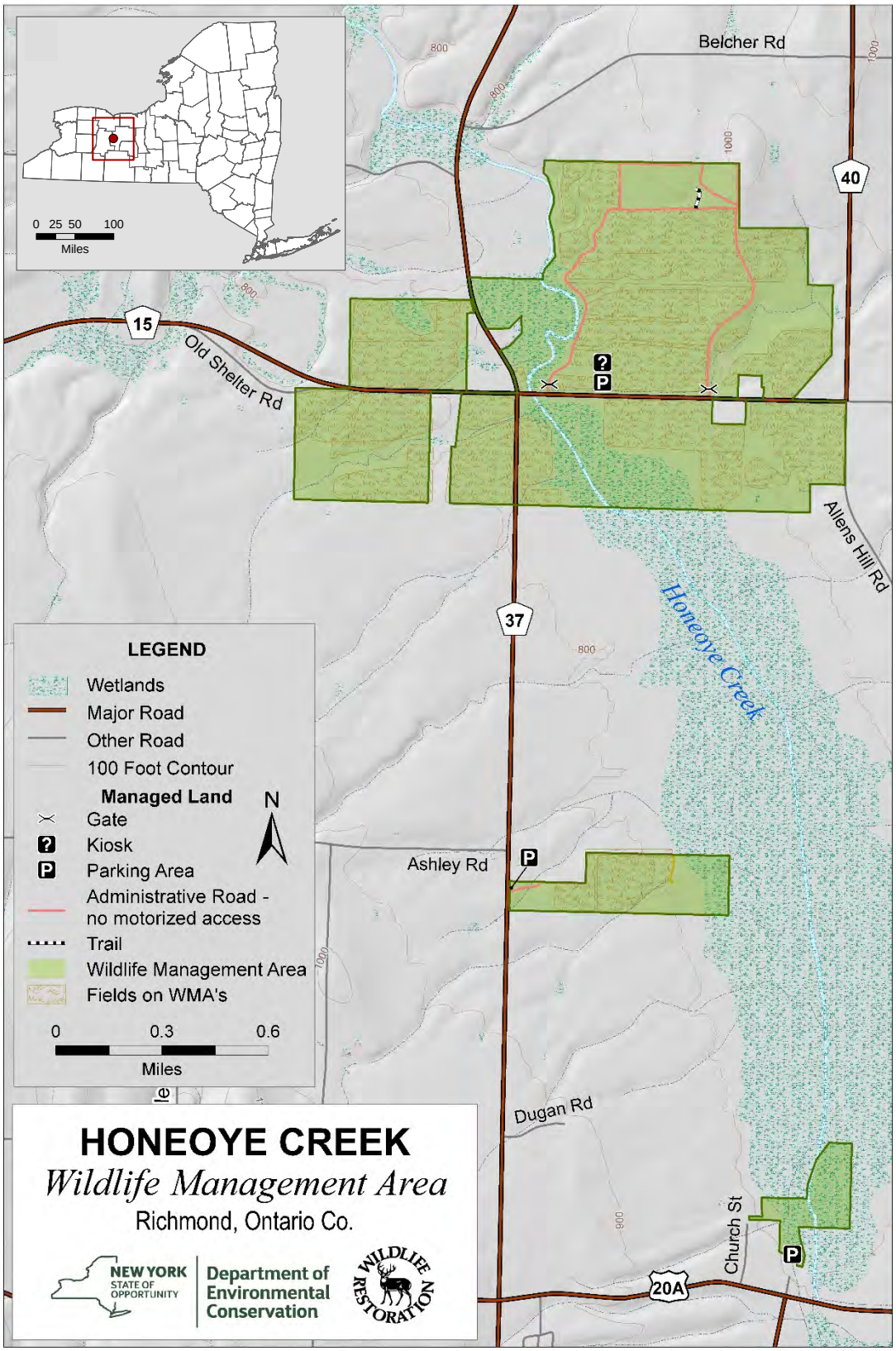

FIGURE 1. Location and access features at Honeoye Creek WMA.

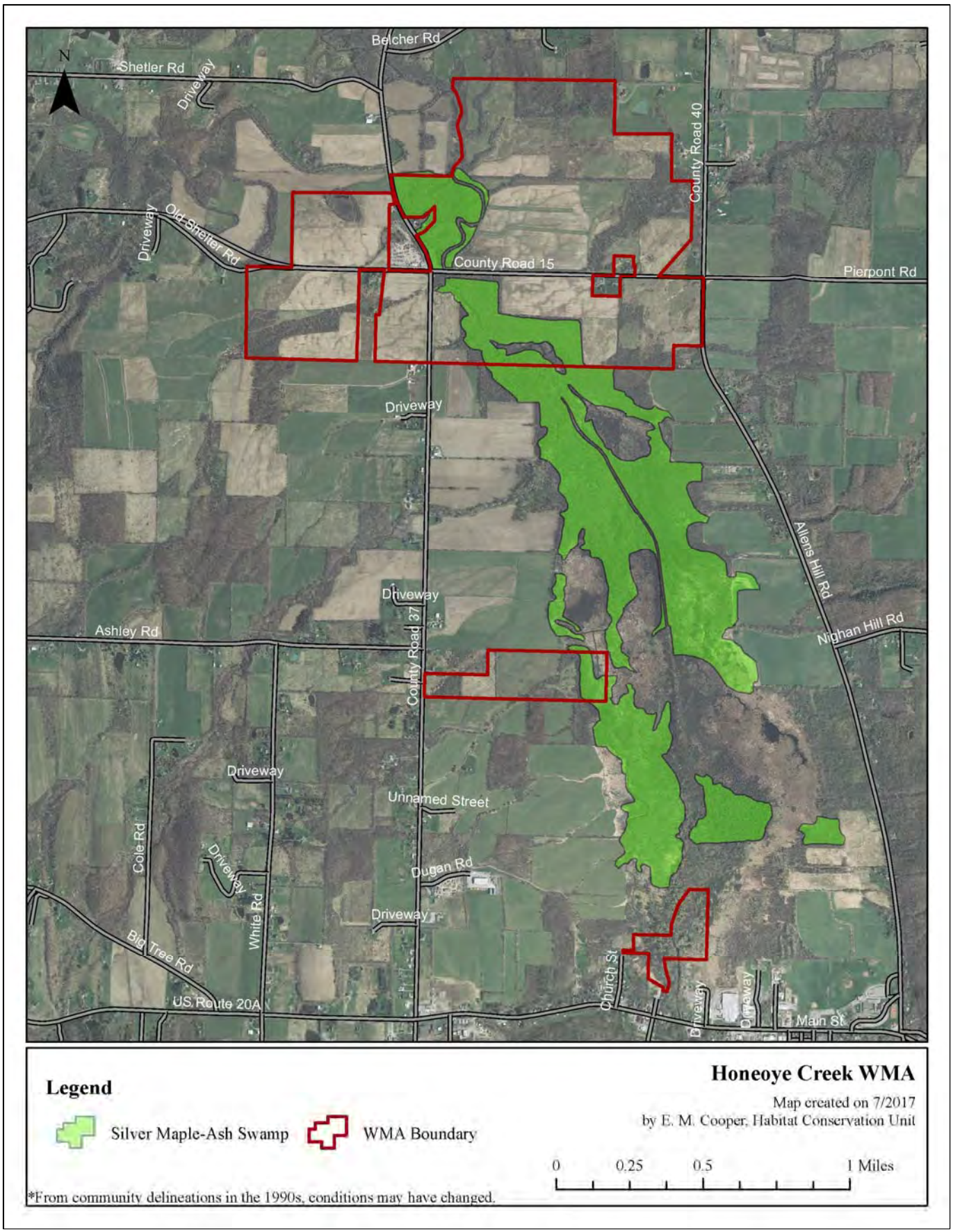

FIGURE 2. Significant ecological communities on Honeoye Creek WMA. Data from the NY Natural Heritage Program.

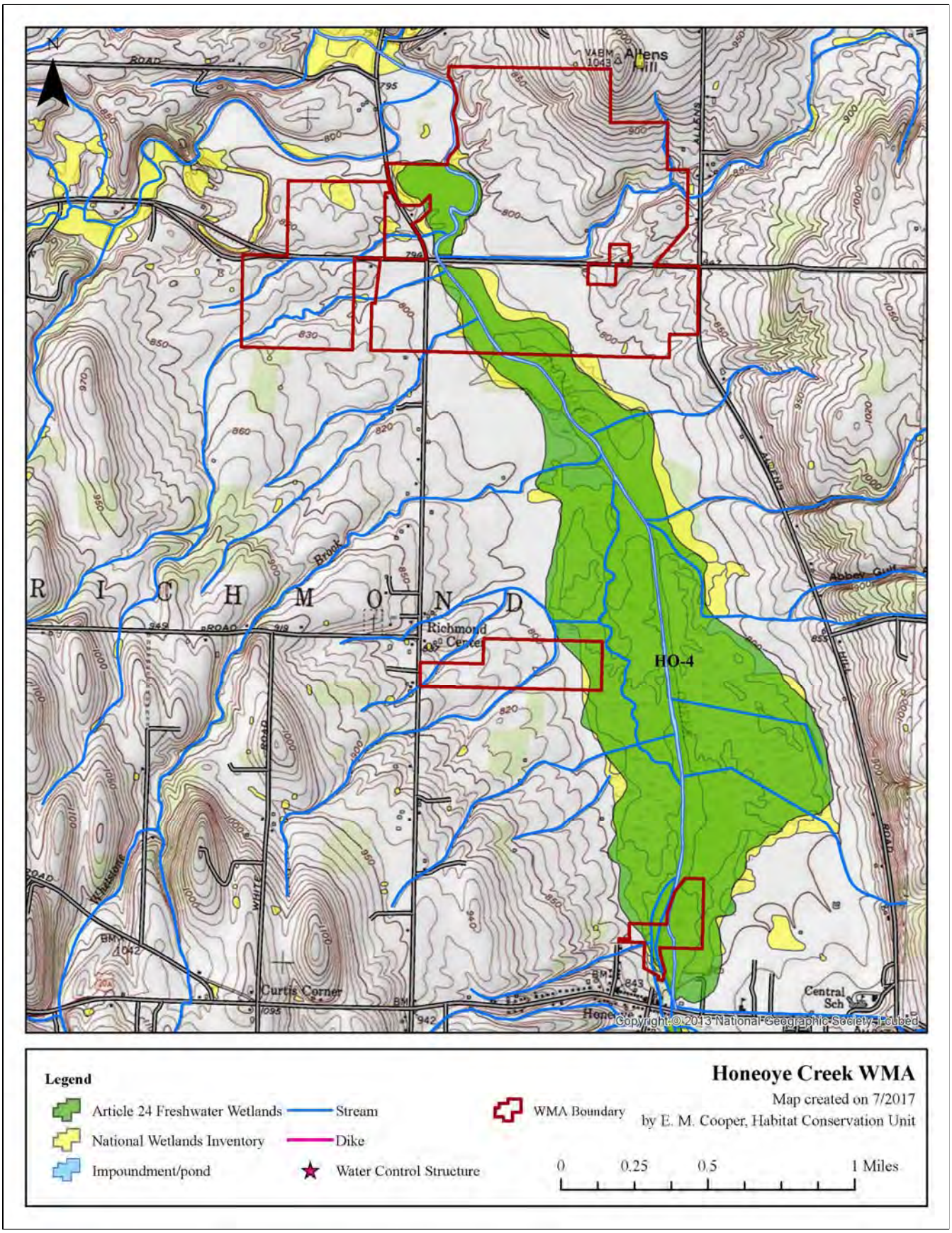

FIGURE 3. Wetlands, open water, and streams of Honeoye Creek WMA. Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

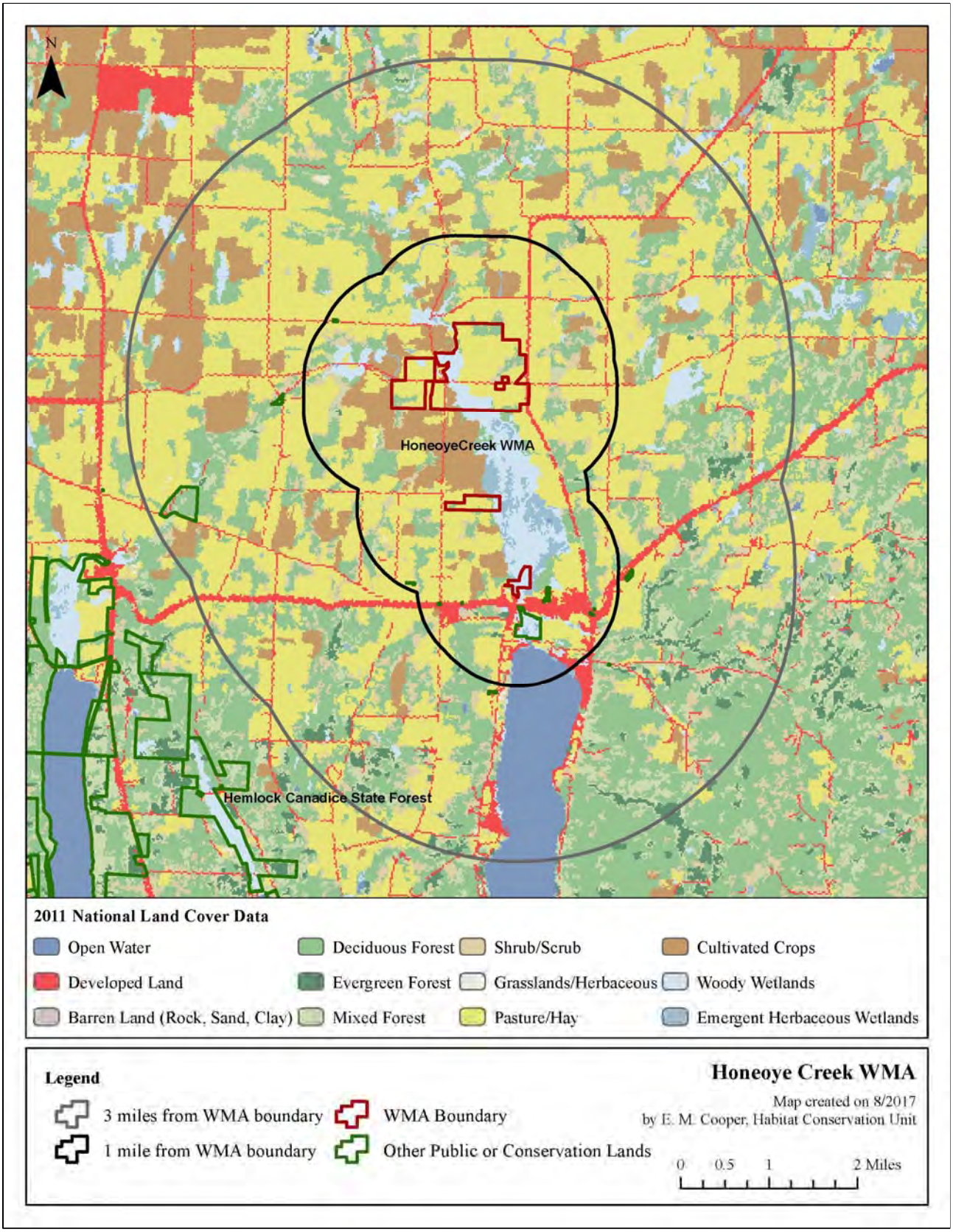

FIGURE 4. Land cover types and conservation lands in the landscape surrounding Honeoye Creek WMA. Conservation lands are from the NY Protected Areas Database available online at http://www.nypad.org/. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at http://www.mrlc.gov/nlcd2011.php.

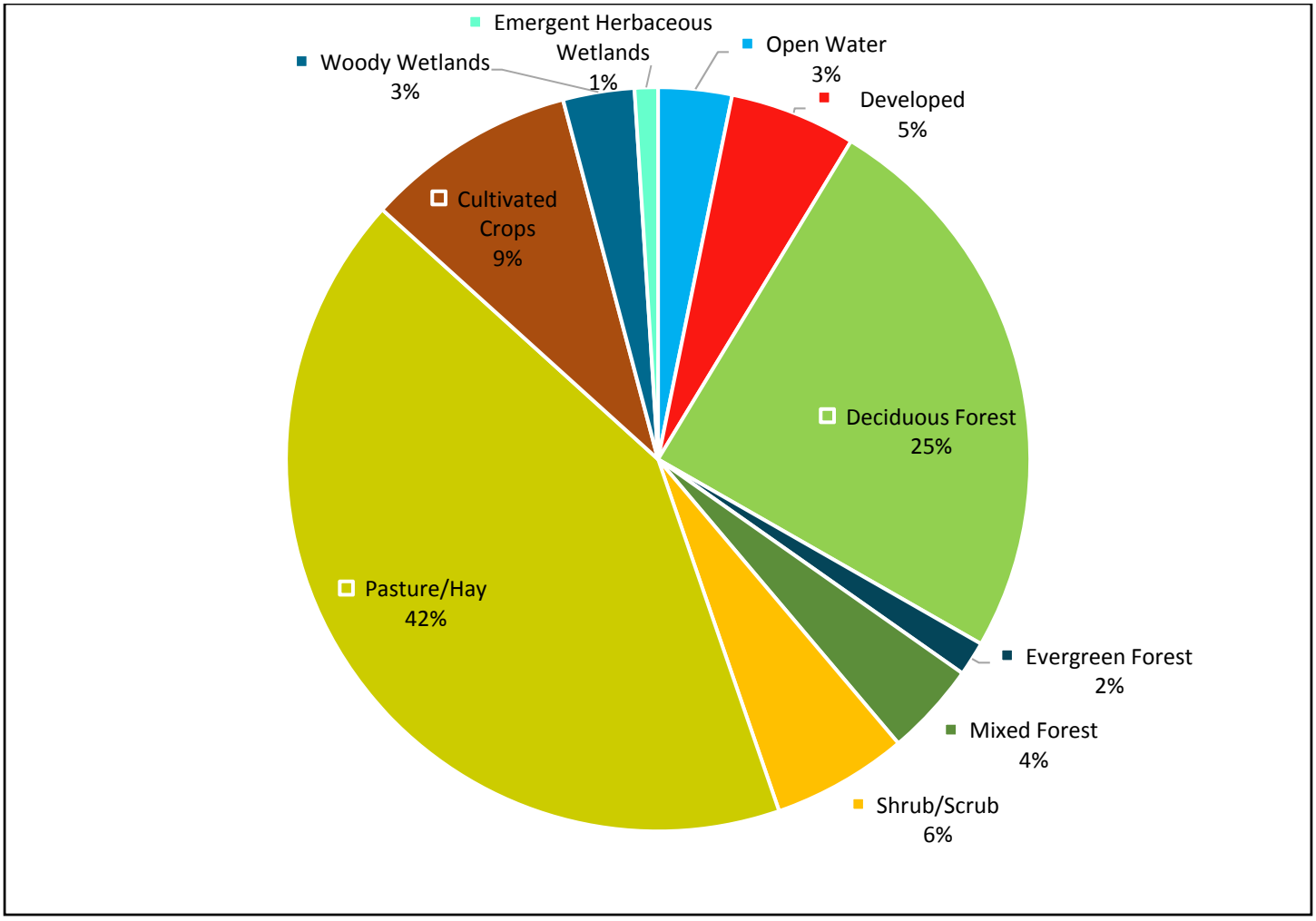

FIGURE 5. Percent cover of land cover types within three miles of Honeoye Creek WMA.

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.

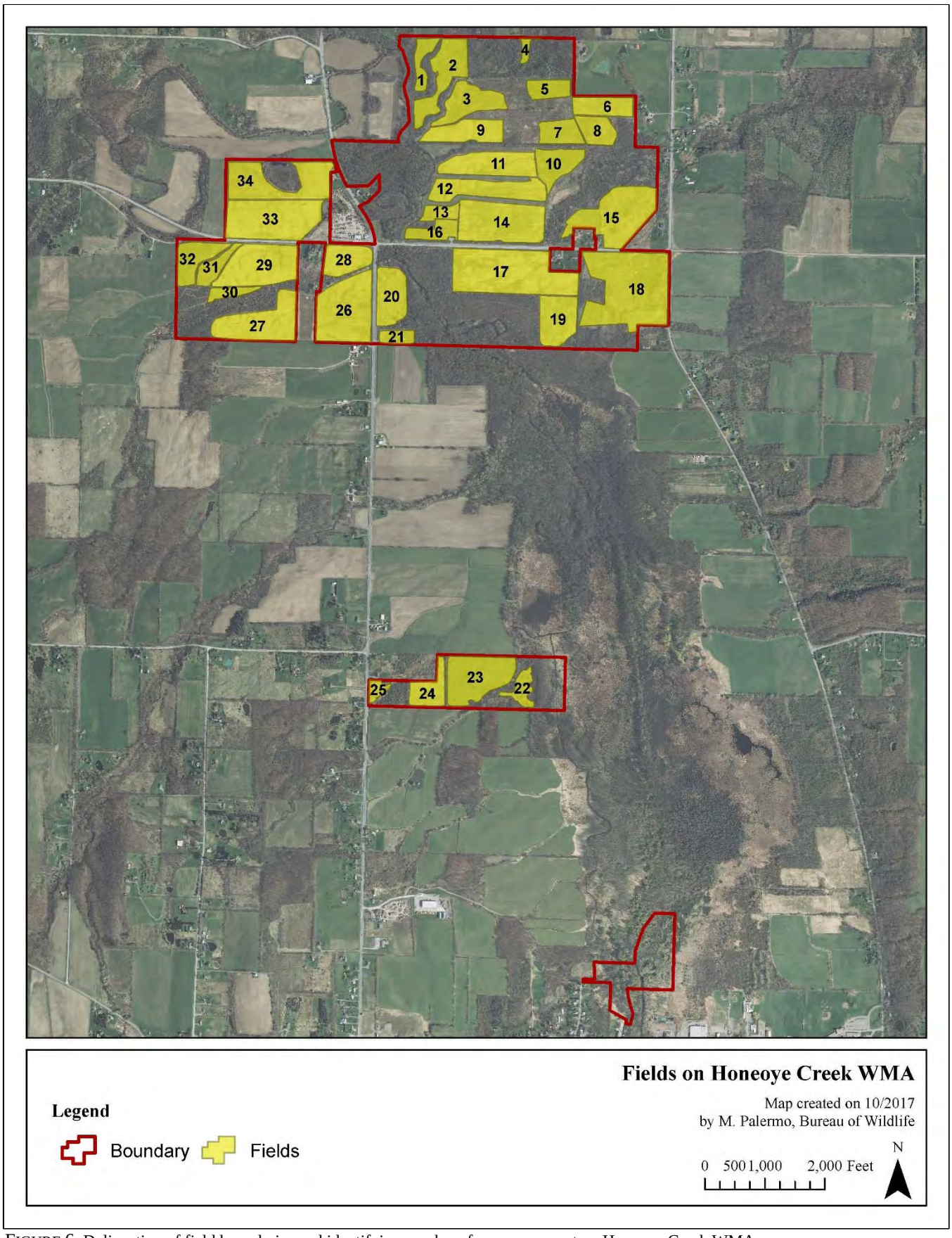

FIGURE 6. Delineation of field boundaries and identifying numbers for management on Honeoye Creek WMA.

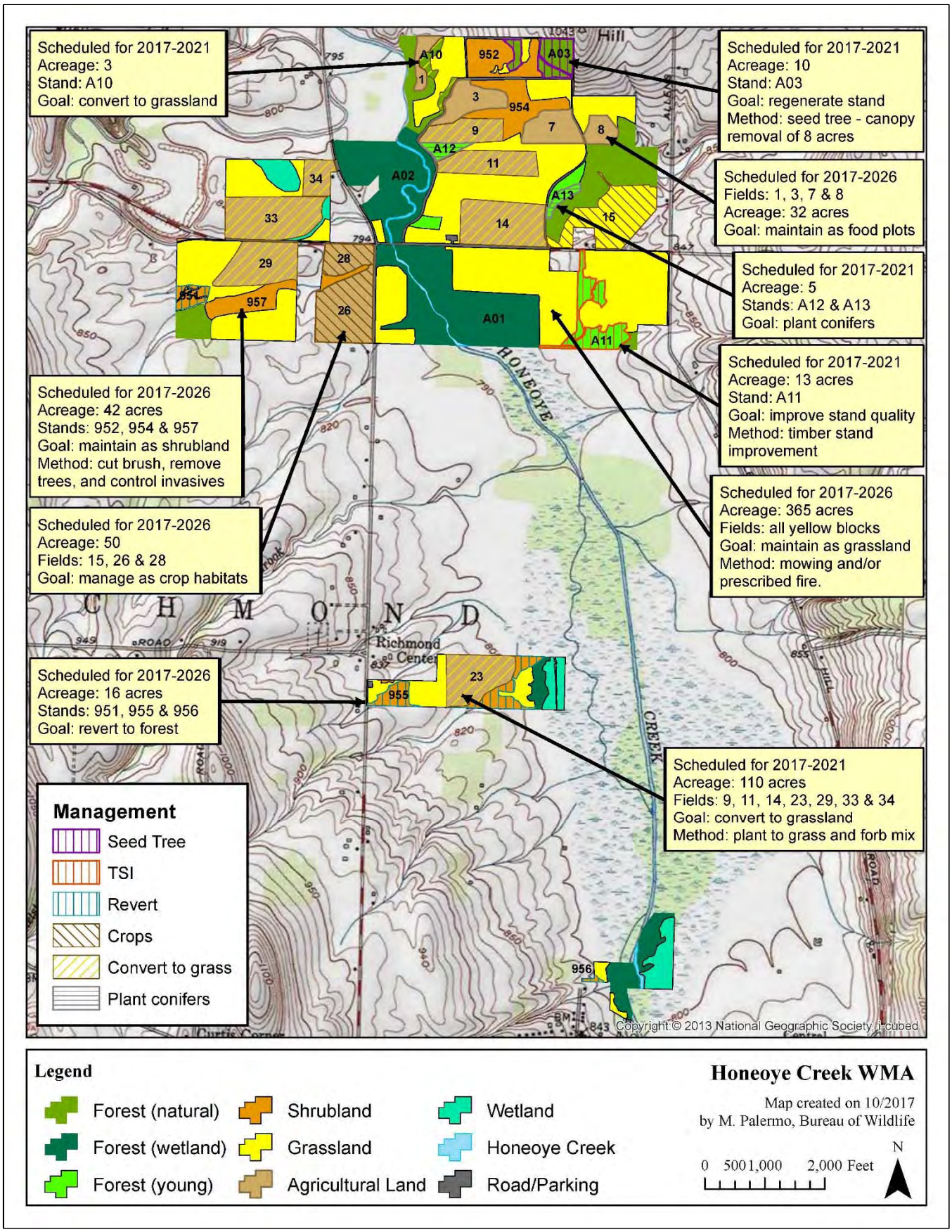

FIGURE 7. Habitat types and locations of proposed management on Honeoye Creek WMA. Numbers indicate the stand number from habitat inventory.

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-leafed, 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.)

Grassland Habitat Patch: A continuous area of grassland that is not divided by significant barriers (e.g., tall hedgerows, major highways, buildings). Several grassland bird species are sensitive to the size and shape of available habitat and prefer larger fields with low perimeter-to-area ratios. Increasing grassland habitat patch size is a management action that can benefit grassland bird species. (Adapted from 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 Honeoye Creek WMA include: American woodcock and wild turkey.

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. STATEMENT OF CONFORMITY WITH SEQRA

Habitat Management Plans will be in compliance with the 1979 *Programmatic Environmental Impact Statement on Habitat Management Activities of the Department of Environmental Conservation; Division of Fish and Wildlife* by following the criteria for site specific assessments included in this Programmatic Environmental Impact Statement (EIS) and by discussing further in Appendix B, Statement of Conformity with the State Environmental Quality Review Act (SEQRA). Appendix B will be included in each plan, thereby satisfying overall compliance with 6 NYCRR Part 617, the State Environmental Quality Review. If any of these criteria are exceeded an additional site specific environmental review will be required.

Most activities recommended in this HMP are a continuation of habitat management that DEC routinely conducts under the Programmatic EIS. Beginning in 2015, DEC's Young Forest Initiative (YFI) will considerably increase forest management on Wildlife Management Areas (WMA); YFI's conformity with SEQRA is specifically addressed below. The overarching goal of the YFI is to restore and maintain young forest habitat on WMAs in order to address the declining amount of young forest habitat in the state and provide habitat for key species of conservation interest, including both at-risk and game species. The habitat management activities to be carried out under the YFI are in compliance with the above referenced document and these management activities:

- Will not adversely affect threatened or endangered plants or animals or their habitat.
    - Careful review of the NY Natural Heritage Program's "Natural Heritage Element Occurrence" database in conjunction with a field survey when necessary prior to management activities taking place allows field staff to assess the presence or absence of threatened and endangered species. Appropriate actions will be taken if a threatened or endangered plant or animal is encountered in the project area including, but not limited to: establishing adequate buffer zones around known occurrences, moving the project area, or aborting the project altogether.
- Will not induce or accelerate significant change in land use.
    - The forestland affected by the YFI will be regenerated and remain forested land, therefore no land use change will take place.
- Will not induce significant change in ambient air, soil, or water quality.
    - All projects carried out under the YFI will protect air, soil and water quality through careful project planning, use of appropriate NYS Best Management Practices for Water Quality, 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.
    - YFI projects will follow established plans or policies of other state and federal agencies. Additionally, all YFI projects will be in compliance with all relevant US Fish and Wildlife Service rules and regulations.
- Will not induce significant change in public attraction or use.
    - The WMA program 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. Projects carried out under the YFI 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 area.
    - Habitat management projects under the YFI will be carried out primarily through even-aged forest management. Even-aged silvicultural systems are designed to mimic natural disturbances, such as flooding, wildfire, insect and disease outbreaks and storm damage often found in nature.
- Will not result in areas of significantly different character or ecological processes.
    - The even-aged silvicultural techniques that will be employed for habitat management projects under the YFI intentionally result in areas of different character and ecological processes. However, they are not considered significant as they are ephemeral or transitional and will not permanently alter the landscape.
- Will not affect important known historical or archeological sites.
    - Each YFI project will be reviewed by DEC's State Historic Preservation Officer (SHPO) as well as the Office of Parks, Recreation and Historic Preservation (OPRHP) to determine whether

project sites may potentially affect any historical or archeological sites. In addition, thorough field review prior to management activities taking place allows field staff to assess the presence or absence of any apparent historical or archeological sites that may not be found during the review process. Should known important historical or archeological sites present themselves necessary actions will be taken to protect these resources under the direction of DEC's SHPO and the OPRHP Archaeology Unit staff.

- Will not involve the application of herbicides, pesticides or other such chemicals.
    - YFI projects may involve the judicious use of pesticides which may be necessary to control invasive species, to protect rare and endangered plants from competition, or to control vegetation interfering with forest regeneration. If projects do require the use of herbicides or pesticides an additional site-specific environmental review will be required.
- Will not stimulate significant public controversy.
    - It is not anticipated that YFI projects will stimulate significant public controversy. A significant amount of public outreach and notification will be conducted on an on-going basis as well as prior to projects being implemented on the ground including, but not limited to: public information sessions regarding the Habitat Management Plans for each WMA, signage installation at project sites informing the public of the scope and purpose of the project, establishment of one demonstration area in each region to showcase YFI management techniques to the public, periodic informational articles published in local media outlets and the development of a public YFI website. The YFI has one full time position dedicated to facilitating the program's public outreach and communication efforts.

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 "Hershiser-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.