Habitat Management Plan
for
Helmer Creek Wildlife Management Area
2016 - 2025

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

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Prepared by:

Michael Palermo, Biologist 1 (Wildlife)
Emily Bonk, Forester 1
Young Forest Initiative

Scott Smith, Biologist 1 (Wildlife)
Kelly Raab, Fish & Wildlife Technician 2
Helmer 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	11/10/16 Date
James F Farquhar III, Chief Bureau of Wildlife	11/15/2016 Date
Doug Stang, Acting Director Division of Fish and Wildlife	11/15/16 Date

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SUMMARY

Helmer Creek Wildlife Management Area (WMA) encompasses the southeast-facing terminus of a ridge located immediately north of the Canisteo River. Helmer Creek, of which the WMA is named after, is found less than a quarter of a mile to the east and one of its tributaries runs along the northeastern boundary of the property. Habitat types here include hardwood forest, natural conifer forest, a small conifer plantation, old fields maintained as grassland and shrubland, and a small pond. An important priority for management is protection and improvement of timber rattlesnake habitat. This plan elaborates upon habitat objectives described in the Canisteo River Basin Unit Management Plan[1] (UMP) and provides guidance for the revision of that document.

Habitat management goals for Helmer Creek WMA include:

- Managing approximately 6% as young forest (at least 10% of forested area) to promote American woodcock, ruffed grouse, and timber rattlesnakes;
- Maintaining approximately 51% as intermediate and mature forest to provide diversity in forest habitats;
- Managing approximately 26% as grassland;
- Managing approximately 16% as a fire-adapted oak opening community; and
- Maintaining approximately 1% as impoundments and sedge meadow wetlands.

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 Unit Management Plans (UMPs), existing WMA habitat management guidelines, NY Natural Heritage Program's WMA Biodiversity

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

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.

The Canisteo River Basin UMP is scheduled for revision in 2017. Habitat objectives from this HMP will be integrated into the UMP, and management provisions for facilitating compatible wildlife-dependent recreation, access, and facility development and maintenance will be addressed.

Definitions are provided in Appendix A.

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

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

WMA Overview

Location

Helmer Creek Wildlife Management Area is located in DEC Region 8, Town of Rathbone in Steuben County (Figure 1).

Total Area

126 acres

Habitat Inventory

A habitat inventory of the WMA was conducted in 2016 and is proposed to be updated every ten to fifteen years to document the existing acreage of each habitat type and to help determine the location and extent of future management actions. Table 1 summarizes the current acreage by habitat type and the desired acreage after management. Desired conditions were determined with consideration of habitat requirements of targeted wildlife, current conditions on the WMA, and conditions in the surrounding landscape (see Landscape Context section below).

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

Habitat Type	Current Conditions (as of 2016)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest [a]	72	57%		64	Decrease to 51%
Young forest	0	0%		8	Increase to 6%
Shrubland	20	16%		20	No change
Grassland	33	26%		33	No change
Agricultural land	0	0%		0	No change
Wetland (natural)	0.6	<1%		0.6	No change
Wetland (impounded)	0.1	<1%		0.2	<1%
Open water	0	0		0	No change
Roads and parking	0.3	<1%	0.2	0.3	No change
Rivers and streams			0.2		No change
Total Acres:	126	100%		126	

[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:

Helmer Creek WMA is located within the northern limit of the Appalachian Plateau and resident wildlife are associated with a landscape characterized by active and abandoned farmland interspersed with woodland. Very little wetland habitat is present and consequently the area is home to primarily upland wildlife species.

Several species that were absent entirely in the early 20th century have begun to repopulate the area. The black bear population has been expanding for the past 30 years and sightings are now quite common. Bobcat have been present for a number of years at low levels, however, populations have begun to grow and harvest areas have expanded into the southern tier. The range of the fisher has recently begun expanding and this iconic furbearer can once again be found in western New York.

Although a small WMA, excellent hunting opportunities exist for both small and big game. White-tailed deer are the primary big game species, although black bear are also hunted. Small game include: cottontail rabbit, ruffed grouse, squirrels, wild turkey, and woodcock. Furbearer species are present, with raccoon, red and gray foxes, skunk, coyote, and weasel popular for hunting and trapping.

Numerous non-game species are important residents of Helmer Creek WMA. Several songbirds can be found in the diverse habitats of forest, grassland, and the edge between them. Common frog and turtle species can be found in the small wetland here. Timber rattlesnakes, a threatened species in New York, are present on the WMA during the warmer months of the year.

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 on the WMA. 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 Helmer 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 kestrel			x
	American woodcock			x
	Blue-winged warbler			x
	Bobolink			HP
	Brown thrasher			HP
	Canada warbler			HP
	Eastern meadowlark			HP

[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.

Table 2. Continued				
Species Group	**Species**	**Federal Status**	**NY Status**	**NY SGCN**
	Grasshopper sparrow		SC	HP
	Henslow's sparrow		T	HP
	Louisiana waterthrush			x
	Northern harrier		T	x
	Ruffed grouse			x
	Scarlet tanager			x
	Vesper sparrow		SC	HP
	Wood thrush			x
Mammals	None known to occur			
Amphibians and reptiles	Northern black racer			x
	Smooth greensnake			x
	Timber rattlesnake		T	HP
Fish	None known to occur			
Invertebrates	None known to occur			
Plants	None known to occur			

Significant Ecological Communities:

There are no known rare and significant natural communities located on Helmer Creek WMA as identified by the NY Natural Heritage Program (Figure 2). Additional information about ecological communities is available in the Helmer Creek WMA Biodiversity Inventory Final Report (1998) prepared by the NY Natural Heritage Program.

Soils:

Most of the soils on Helmer Creek WMA are of the Volusia-Mardin-Lordstown associations.[6] Soil types here are generally well-drained and provide moderate growing conditions. The major limitation affecting management is the soils located on the steeper slopes of the WMA, which are of poor growing quality and would be susceptible to significant erosion.

Special Management Zones:

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

- A small wetland tracked by the National Wetlands Inventory (NWI, Figure 3).

[6] 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.

- Approximately 800 feet of stream along the northeast boundary of the WMA (Figure 3). This stream is classified as C and therefore is not regulated by Article 15 of the Environmental Conservation Law, however water quality standards will be adhered to.[7]

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.*[8] Some habitat management activities may either be prohibited or restricted in order to protect these features. Any deviations from these guidelines will be addressed in the individual stand prescriptions.

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 Helmer Creek WMA (Figures 4 and 5). The landscape within a three mile radius of the WMA is primarily privately-owned land including:

- Forest (64% combining deciduous, evergreen, and mixed)
- Pasture/hay and grassland (19%)
- Cultivated crops (11%)
- Developed (3%)
- Early-successional shrubland (2%)
- Wetland (1% combining emergent and woody wetlands)
- Open water (<1%)

Although the surrounding landscape is heavily forested, management of these forests generally does not produce large patches of young forest habitat. The lack of young forests in the surrounding landscape makes their creation on Helmer Creek WMA even more important.

Helmer Creek WMA is within a linkage zone spanning across Steuben County that connects several forest matrix blocks. Forest matrix blocks are large, unfragmented examples of the dominant forest communities throughout the state. Linkage zones describe corridors between blocks that maintain connectivity for populations of plants and animals. More information regarding forest matrix blocks can be found in the *Strategic Plan for State Forest Management*[9].

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

- Cameron State Forest (1,965 acres) - multiple-use forest, mixed age classes. Most of this property is more than 3 miles from the WMA.
- Cameron Mills State Forest (544 acres) - multiple-use forest, mixed age classes.
- Tracy Creek State Forest (568 acres) - multiple-use forest, mixed age classes.

[7] Information about stream classification is available online at http://www.dec.ny.gov/permits/6042.html.
[8] Available online at http://www.dec.ny.gov/outdoor/104218.html.
[9] The Strategic Plan for State Forest Management is available online at http://www.dec.ny.gov/lands/64567.html.

II. MANAGEMENT STRATEGIES BY HABITAT TYPE

DEC will continue active management of wildlife habitats on Helmer 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, if present and identified for treatment.

FOREST

Forested acreage includes the following forest types:

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

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

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

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

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

Photo 1: Understory regeneration at Helmer Creek WMA following the unintentional fire in 2015. Oak seedlings readily resprout from their roots after a fire.

Photo: Emily Bonk, DEC

Forest management on Helmer 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

1. *Convert and maintain at least 10% of forested acreage as young forest.* Currently, there is no young forest on the WMA. Planned management actions intend to establish approximately 6% (8 acres) as young forest (11% of forested acreage). In order to benefit timber rattlesnakes, this percentage may increase up to 25% of forested acreage dependent upon forest regeneration following the currently planned timber harvest.
2. *Maintain at least 75% of forest acreage in an intermediate or mature age class.* A diversity of forest age classes and structure provides habitat for a diversity of wildlife.
3. *Promote a continued oak component in hardwood stands.* Acorns are a valuable food for many wildlife species. Without proper silvicultural techniques, oak stands can transition into other forest types.
4. *Maintain coniferous forest for associated wildlife species.* Conifer stands cover 19% (24 acres) of the WMA. These provide unique food and cover for wildlife and future management of these stands should promote conifer regeneration.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 72 acres of forest on Helmer Creek WMA (Figure 6). Table 3 provides a summary of the forested areas, including the most common tree species present in each.

Over half of Helmer Creek WMA is forested, with the remainder being dominated by grassland and shrubland. The largest expanse of forest occurs in the northern half of the WMA, with smaller stands along the southern boundary. Nearly two-thirds of this forest area is a hardwood type dominated by oak, which provides a valuable wildlife food resource. A natural conifer forest of hemlock and white pine occurs along the steep north and northeastern slopes and a small conifer plantation exists along the southern boundary of the WMA. These conifer stands provide important insulating cover resulting in cooler summer and warmer winter temperatures.

The majority of forest on the WMA is small sawtimber, with only a few acres of pole timber. This domination of relatively mature forest provides very little diversity of forest structure.

The current forest provides habitat for many species common to western New York but minimal habitat for those dependent upon young forest. Manipulation of forests is desirable to remove shading of snake basking areas and encourage undergrowth that provides security and foraging areas for snakes.

[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.

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

Forest Type	Acres (as of 2016)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	69	61	Red and white oak, red maple, red and white pine, and hemlock
Plantation	3	3	Scotch pine, pitch pine, and Norway spruce
Young forest	0	8	Currently not present on the WMA
Total Forested Acres:	72	72	

Target Species:

Due to the predominance of mature forest, and lack of young forest, there has been a decline of wildlife species dependent upon young forests. Target species for forest habitat management at Helmer Creek WMA are American woodcock, ruffed grouse, and timber rattlesnake. All of these are SGCN, with the rattlesnake also being state-listed as Threatened.

Photo 2: Gravid female timber rattlesnakes require open canopy areas to access direct sunlight for basking.

Photo: Madeline Alfieri, 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:
  - Singing/Peenting ground – Open areas from 1 to >100 acres, usually in an abandoned field.
  - Foraging areas – Moist, rich soils with dense overhead cover of young trees.
  - Nesting – Young, open, second growth woodlands.
  - Brood rearing – Similar to nesting except also including bare ground and dense ground cover.
  - Roosting – Open fields (minimum of 5 acres) or reverting farm fields.[11]
- Ruffed grouse:
  - Drumming areas – Downed trees surrounded by small diameter woody cover with high stem density.
  - Foraging areas – Open areas with dense overhead cover of young forest with good mast production and catkins.
  - Nesting – Young, open forest stands or second growth woodlands.

[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.

    - Brood rearing – Herbaceous ground cover with a high midstory stem density.[12, 13]
- Timber rattlesnake:
    - Overwintering – typically forested, rocky hillsides having a southeastern to westward exposure. Hibernacula are subterranean and often surrounded by dense, deciduous overstory.
    - Gestation/basking – rocky, open areas of less than 20% overstory cover and exposed rock ledges (Photo 2).
    - Foraging areas – forest, shrubland, and fields with rocks, downed logs, or dense vegetation that serve as ambush sites for prey.[14, 15]

Management actions to create young forest will also benefit several other SGCN known to occur on or near the WMA, including blue-winged warbler, brown thrasher, Canada warbler, northern black racer, and smooth greensnake. Bobcat, white-tailed deer, wild turkey, and a variety of pollinator species are expected to benefit as well. 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.

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

MANAGEMENT HISTORY

Helmer Creek WMA was acquired in 1993 by the United States government, Farmers Home Administration, as a foreclosure and the land was then transferred to New York State because it provides significant habitat for the timber rattlesnake.

Since acquisition of the property, no forest management has occurred. A prescribed burn of WMA grassland and shrubland in 2015 accidentally escaped and burned approximately 30 acres of understory in Stand A03 (Photo 1). Although unintentional, this burn has had a positive effect, providing a flush of understory regeneration, including an abundance of oak. Oak forests benefit from frequent fire by clearing off the leaf litter and stimulating new growth from the seed bank and from resprouting.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

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

- **Management planned for 2016-2020** (Table 4, Figure 6):
    - Clearcut 8 acres in Stand A03.
- **Management planned for 2021-2025**:
    - There is no management currently planned during this time period.

[12] Dessecker, D. R., G. W. Norman, and S. J. Williamson. 2006. Ruffed Grouse Conservation Plan. Association of Fish & Wildlife Agencies: Resident Game Bird Working Group. 94 pp.
[13] Jones, B. C. et al. Habitat Management for Pennsylvania Ruffed Grouse, Pennsylvania Game Commission. 10 pp.
[14] Pennsylvania Fish & Boat Commission. 2011. Species Action Plan: Timber Rattlesnake (*Crotalus horridus*). 2 pp.
[15] New York Natural Heritage Program. 2015. Online Conservation Guide for *Crotalus horridus*.

Table 4. Forest management schedule for the first five-year period of this HMP (2016-2020).

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A03	8	Small Saw Timber 12”-17” DBH	Oak	Young Forest	Wildlife	Clearcut

Stand locations and planned management actions are also summarized in Figure 6. 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:** Clearcut several small patches (¼ acre to 3 acres) totaling 8 acres. The variability in patch sizes will be evaluated post-harvest to see if a certain size yields better results. Tree tops and other coarse and fine woody debris will be left to serve as basking and foraging sites. This management intends to regenerate the oak forest type, create young forest, and enhance timber rattlesnake habitat.

Objective One - Create and maintain at least 10% of forested acreage as young forest:

The forest management objective should be met within the ten year span of this plan by creation of approximately 8 acres (11% of forested area) of young forest through the use of clearcut harvests. Continued application of even-aged management throughout WMA forested stands will maintain at least 10% young forest in perpetuity.

Creating and maintaining a higher percentage of young forest (up to 25%) on Helmer Creek WMA may be beneficial in the future to enhance habitat value for timber rattlesnakes. The open canopy of a young forest provides increased basking areas for snakes, and the high density of stems provides improved prey habitat and ambush cover. Forest regeneration following this harvest will be evaluated to guide future planning.

Objective Two - Manage at least 75% forest acreage in an intermediate or mature age class:

Mature forest is abundant on Helmer Creek WMA and provides valuable habitat for associated species, however it is important to provide increased diversity of forest structure.

The aging of young forests to intermediate then mature will ensure a diversity of forest age classes in perpetuity. Young forest is a temporary habitat type and typically ages into an intermediate age class within 10-15 years.

An increase in the percentage of young forest up to 25% of forest acreage may be determined beneficial in the future. Due to Helmer Creek WMA being adjacent to large areas of unbroken mature forest, it is expected that an increase of young forest and decrease of other forest age classes on the WMA will not significantly affect populations of species requiring mature forest.

The steep slope on the north side of the WMA within Stand A04 provides an area of mature conifer forest composed of large hemlocks and white pines. The steepness of this slope makes timber harvest impractical and this area will contribute valuable late-stage mature forest to the WMA.

Objective Three - Promote a continued oak component in hardwood stands:

The oak forest type is dominant in hardwood stands at Helmer Creek WMA. Acorns produced by these trees are a valuable food resource for wildlife and planned management to establish young forest will promote the persistence of these species.

Silvicultural techniques will be used to promote the continuation of oak as a significant component of forest stands. The clearcut method is proposed in Stand A03 to regenerate oak because it provides the access to sunlight required for successful oak establishment. Rotation lengths of even-aged management to maintain at least 10% young forest (up to 25%) in perpetuity will be sufficient to produce abundant mast. Future prescribed burning of forest understory may be utilized as resources become available.

Objective Four - Maintain coniferous forest for associated wildlife species:

The conifer forests at Helmer Creek WMA provide important food and cover diversity for wildlife. No management is planned for conifer stands during the timeframe of this plan. Anticipated future management would aim to regenerate stands, improve habitat, and retain the benefits of conifer species. This may include harvesting in plantation Stand A02 to stimulate regeneration of a more natural forest type, and in the less steep eastern side of Stand A04 to provide diversity of forest age and structure.

BEST MANAGEMENT PRACTICES

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

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

Resource	**Guidance Document** [16]
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 Helmer Creek WMA that warrant special consideration include:

- *Indiana, northern long-eared, and tri-colored bats*. There are no known occurrences of these species on the WMA. However, harvests will take place in winter, avoiding potential impacts.
- *Timber rattlesnake*. Timber harvest actions on the WMA will occur in winter to avoid potential negative impacts. The creation of young forest is beneficial to rattlesnakes by providing basking sites and improved foraging habitat.

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

Due to the sensitivity of endangered, threatened, and special concern species, and SGCN, special management guidelines may be implemented if additional species are determined to occur in or within close proximity to the 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 Helmer 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 introduced insects such as emerald ash borer (EAB), gypsy moth, hemlock wooly adelgid (HWA), pear thrips, and pine shoot beetle are of present concern and bear persistent monitoring. Gypsy moth and pear thrips densities fluctuate and occasionally can reach outbreak levels where complete defoliation of host trees can occur. Gypsy moth most commonly attacks oak and aspen species while pear thrips favors sugar maple. EAB and HWA have not yet been detected on the WMA, however they are present in Steuben County. EAB infests ash trees and HWA infests hemlock trees, and both cause mortality of host trees within a few years. Stands dominated by hemlock exist here and although management actions to prevent or control HWA infestation are currently limited, they may be implemented should effective methods be developed.

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

Invasive plants that are known to be on or near the forested areas of the WMA include: autumn olive, buckthorn, garlic mustard, honeysuckle, multiflora rose, and swallow-wort.

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 (ironwood, shadbush, and striped maple) are present in the understory of many stands here but are not expected to be abundant enough to interfere with forest regeneration. Although these native species have many beneficial qualities, they are considered undesirable when overabundant because they can interfere with forest regeneration.

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

If it is concluded post-treatment that desired tree species are not regenerating sufficiently, 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 response(s) 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[17]. 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 Helmer Creek WMA, which may be assessed to determine response to management, include:

- American woodcock
- Ruffed grouse
- Timber rattlesnake

Monitoring of these species may include woodcock singing-ground surveys and ruffed grouse drumming surveys to determine habitat use and abundance in response to forest management. Monitoring of rattlesnake habitat use at the WMA has occurred annually since 2011 and continuation of rattlesnake monitoring is recommended. 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

- *Encourage transition of dense shrubland to an oak opening vegetative community*.
- *Control invasive shrub species to enhance habitat quality*.

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

There are 20 acres of shrubland on Helmer Creek WMA (Figure 6). Shrubland here originated from old agricultural pastures being abandoned and naturally succeeding to a shrub-dominated community.

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

This shrubland contains dense shrubs and trees with an interspersion of herbaceous cover and includes an abundance of non-native invasive species, such as autumn olive, buckthorn, honeysuckle, and multiflora rose. Although these invasive species are dominant in most of the shrubland, native shrub species are present. Species of dogwood, hawthorn, shadbush, and wild apples can be found and provide a valuable soft-mast resource for wildlife.

Oak trees are present throughout the shrubland and proposed management is intended to promote a fire-adapted vegetative community that resembles an oak opening. Once established, this oak opening habitat will be composed of herbaceous groundcover interspersed with native shrubs and mature trees.

This shrubland currently provides habitat for a variety of wildlife, including several that also utilize young forest. The proposed transition of this shrubland to an oak opening will provide enhanced habitat for timber rattlesnakes through increased ground level sun exposure and improved habitat for prey species (e.g., meadow vole and white-footed mouse). This oak opening habitat will also provide important habitat for other snakes, deer fawning, turkey nesting, and pollinators. Reduction of dense shrubland habitat will be compensated through the creation of young forest habitat, as discussed in the previous Forest section, which is expected to be of higher quality, being dominated by native plant species.

Target species for shrubland management at Helmer Creek WMA include:

- Timber rattlesnake
- White-tailed deer

MANAGEMENT HISTORY

Historically, the fields at Helmer Creek WMA were used for livestock pasture. Under State management, an objective was to maintain these fields as open habitat by mowing, however, some areas were too steep to mow and have succeeded into shrubland.

Prescribed fire has become the primary method of managing fields on the WMA and has occurred in this shrubland annually since 2013.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2016-2025** (Figure 6):
    - Encourage transition to a fire-adapted oak opening habitat type.
        - Selective cutting to remove undesirable trees and invasive shrub species.
        - Annual prescribed fire should be continued to control undesirable woody growth and select for fire-adapted species. Once the oak opening is established, prescribed burning may occur on a biennial or triennial schedule.
    - Control invasive shrub species to enhance habitat quality.
        - Mechanical removal and/or herbicide application will be utilized to remove invasives from this stand and continued prescribed fire should prevent re-establishment.

BEST MANAGEMENT PRACTICES

In order to minimize disturbance to shrubland wildlife species, especially rattlesnakes, management activities, when possible, should occur during the dormant season (October 15 – April 15). However, management may occur outside this timeframe if it is to be done for long-term benefits (e.g., invasive species management) to the habitat and/or target species.

MANAGEMENT EVALUATION

Monitoring of rattlesnake habitat use has occurred across the WMA since 2011 and is recommended to continue. Current monitoring of other species using shrubland habitat is informal and data are often derived opportunistically, and will be continued. The establishment of periodic bird point counts would be beneficial to better understand species diversity and use.

Monitoring of invasive vegetation control efforts will be necessary to ensure success and prevent future spread.

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.

MANAGEMENT OBJECTIVES

- *Maintain existing grassland habitat (33 acres).* Continuous management is required to encourage favorable herbaceous species and prevent reversion to shrubland or forest.
- *Identify and control invasive species.* Non-native invasive shrubs are present on the WMA and require persistent control to prevent their dominance in fields.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

There are 33 acres of grassland habitat on Helmer Creek WMA (Figure 6). The majority of grassland here is located in the center of the WMA and is primarily cool season grasses remaining from historic use as pasture (Photo 3).

Field sizes range from 4 to 20 acres, with old fence lines overgrown into hedgerows. Non-native invasive shrubs are abundant on parts of the WMA and continually invade these fields.

The entire WMA is within the Southern Tier Grassland Focus Area.[18] Grassland dependent bird species typically require large patches of grassland with low edge-to-area ratios in an open landscape for breeding. Surveys conducted in 2013 did not detect breeding grassland birds on the WMA and is likely because of the small habitat patch sizes and heavily forested surroundings.

[18] 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. Audubon New York, Ithaca, NY. Available online at http://ny.audubon.org/conservation/grassland-bird-conservation-program.

Grassland management on the WMA primarily targets the maintenance of high-quality habitat for timber rattlesnakes. These open fields provide rattlesnakes with numerous basking locations, dense cover, and produce an abundance of prey. The presence of hedgerows dividing these fields adds important habitat diversity and travel corridors.

Photo 3: Grassland patch at Helmer Creek WMA showing invasion of non-native honeysuckle shrub.

Photo: Mike Palermo, DEC

Maintenance of these grasslands is expected to also benefit several other wildlife species. For example, deer find high-quality forage in these openings and turkeys strut to attract mates. Pollinators and various other insects also thrive in these herbaceous areas and this provides an important high-protein food for grouse chicks, turkey poults, and songbirds. Grassland dependent birds, although not known to nest here, may benefit from these fields during migration.

Target species for grassland management at Helmer Creek WMA include:

- Timber rattlesnake
- Wild turkey

MANAGEMENT HISTORY

Historically, the fields at Helmer Creek WMA were used for livestock pasture. Under State management, some of these fields have been maintained as open habitat, originally through mowing, and with annual prescribed burning since 2015.

Fire was introduced as a management tool because of its effectiveness at controlling undesirable woody vegetation and the burning season being in the spring, before rattlesnake emergence from overwintering dens. Mowing has continued to occur since the implementation of burning and mostly targets the perimeters of fields in late fall or early spring to facilitate burning.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2016-2025** (Figure 6):
    - Throughout Stand A940, routinely perform maintenance actions.
        - Annually use prescribed fire as the primary method for controlling woody growth in fields. Mowing should be used if burning is not feasible.
        - Annually mow perimeter of fields.
        - As needed, lime, fertilize, disk, and reseed grasslands. Promote native herbaceous species where practical.
        - As needed, control invasive vegetation mechanically and/or with herbicide.

BEST MANAGEMENT PRACTICES

Prescribed fire and mowing activity should only occur between October 15 and April 15 to avoid impacts to timber rattlesnakes. General guidelines for grassland habitat management are below. For more detailed information and recommendations see *A Plan for Conserving Grassland Birds in New York*.[19]

General Management Recommendations

- Conduct invasive species control (buckthorn, honeysuckle, Canada thistle, etc.) to improve habitat quality.
- Consider a variety of factors, such as the targeted wildlife 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, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives.

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.
- 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

Monitoring of rattlesnake habitat use has occurred across the WMA since 2011 and is recommended to continue. Current data of grassland bird presence at Helmer Creek WMA was derived from surveys conducted in 2013. Additional surveys would be beneficial to detect any changes in grassland bird habitat use. Use of grassland habitat by other wildlife species is informal and data are often derived opportunistically, and will be continued.

Monitoring of invasive vegetation control efforts will be necessary to ensure success and prevent future spread.

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.

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

DESCRIPTION OF EXISTING AGRICULTURAL LANDS AND TARGET SPECIES

There is no acreage on Helmer Creek WMA that is managed as agricultural land and no plan to develop such habitat.

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 existing impounded wetland*. Maintenance of impounding feature and prevention of invasive vegetation is a priority here.
- *Create additional wetland areas.* Opportunities exist to impound water in additional areas to enhance wetland habitat and facilitate fire management on the WMA.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

There is less than one acre of wetland habitat on Helmer Creek WMA (Figure 3 and 6). This consists of a small marsh impoundment (0.1 acres, Photo 4) and a sedge meadow (0.6 acres). There are no New York State regulated wetlands on the WMA, however, the impoundment is mapped by the National Wetlands Inventory (Figure 3).

Photo 4: Small wetland impoundment on Helmer Creek WMA.

Photo: Mike Palermo, DEC

These wetlands provide valuable diversity to the mostly upland WMA and important habitat for species such as:

- Eastern American toad, red-spotted newt, spotted salamander, and spring peeper.
- Painted and snapping turtles.
- Dragonflies, damselflies, and mayflies.

Small impoundments also provide an important source of water during dry months for upland wildlife, such as deer and turkey, and provide resting areas for migrating waterfowl. Sedge meadow habitat is often moist and consists of tussock forming herbaceous vegetation which

offers unique habitat favored by many species, such as the American woodcock, which uses its long beak to probe for worms in the soft soil.

MANAGEMENT HISTORY

The impounded wetland at Helmer Creek WMA was created at an unknown date prior to New York State acquisition of the property. Maintenance of this impoundment has included inspection of the earthen dam and excavation to remove sediment and increase water depth. The dam and the sedge meadow have both been included in prescribed burning activity on the WMA since 2013 to prevent the establishment of woody vegetation.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2016-2025** (Figures 6):
  - Maintain integrity of existing marsh impoundment.
    - Inspect dam and spillway annually and repair as needed, including the filling and compacting of animal burrows.
    - Burn or mow dam annually to prevent establishment of woody vegetation.
  - Create additional impoundments on the WMA.
    - A small pond (approximately .10 acres) is planned to be created in 2016 within Grassland Stand A940 to provide water for prescribed burning activities (Figure 6).
    - If opportunities arise, additional impoundments could be created.
  - Monitor for non-native invasive vegetation and as needed control mechanically and/or with herbicide application.

BEST MANAGEMENT PRACTICES

Management activities within wetlands will take into consideration the timing of wildlife breeding 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 Helmer Creek WMA is informal and data are often derived opportunistically, and will be continued. However, the establishment of periodic surveys for amphibian, reptile, and waterfowl 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., Perch Lake, South Colwell Pond).

DESCRIPTION OF EXISTING OPEN WATER HABITAT AND TARGET SPECIES

Approximately 800 feet of the west branch of Helmer Creek flows along the northeast boundary of the WMA and state ownership extends to its centerline (Figure 3, Photo 5). This stream provides an important year-round water source for upland wildlife, and habitat for aquatic invertebrates, salamanders, and several fish species. Fish diversity has not been surveyed on the WMA, but the main stem of Helmer Creek contains sculpins, dace, stonerollers, and creek chubs, and similar species are expected to occur here.

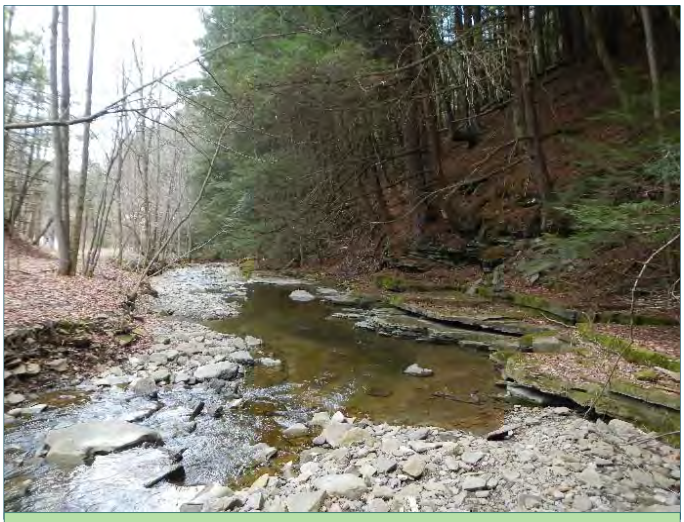

Photo 5: West branch of Helmer Creek at WMA boundary.

Photo: Mike Palermo, DEC

Beyond this stream, there is no other open water habitat (no named lakes or ponds) or any plan to develop such habitat on the WMA.

HABITAT MANAGEMENT SUMMARY

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

Table 7. Summary of habitat management actions recommended for Helmer Creek WMA, 2016-2025. (Also see Figures 3 and 6.)

Habitat	Management Action	Acres	Timeframe
Forest	Clearcut small patches (¼ to 3 acre patches) in Stand A03 to regenerate oak and create young forest.	8	2016-2020
Shrubland	Encourage transition from shrubland to oak opening habitat type with prescribed fire and mechanical removal.	20	2016-2025, ongoing
Shrubland	Promote dominance of native shrubs by controlling invasive shrub species mechanically and/or with herbicide	20	2016-2025, ongoing
Grassland	Maintain grassland acreage with prescribed fire and mowing.	33	Annually
Grassland	Improve grassland quality (control invasives, lime, fertilizer, disk, reseed)	33	2016-2025, as needed
Wetlands	Create additional small pond to create wetland habitat and facilitate prescribe fire management.	~ 0.1	2016-2020
Wetlands	Maintain existing and future impounded wetlands (inspect, mow, repair dam)	< 1	2016-2025, as needed

III. FIGURES

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

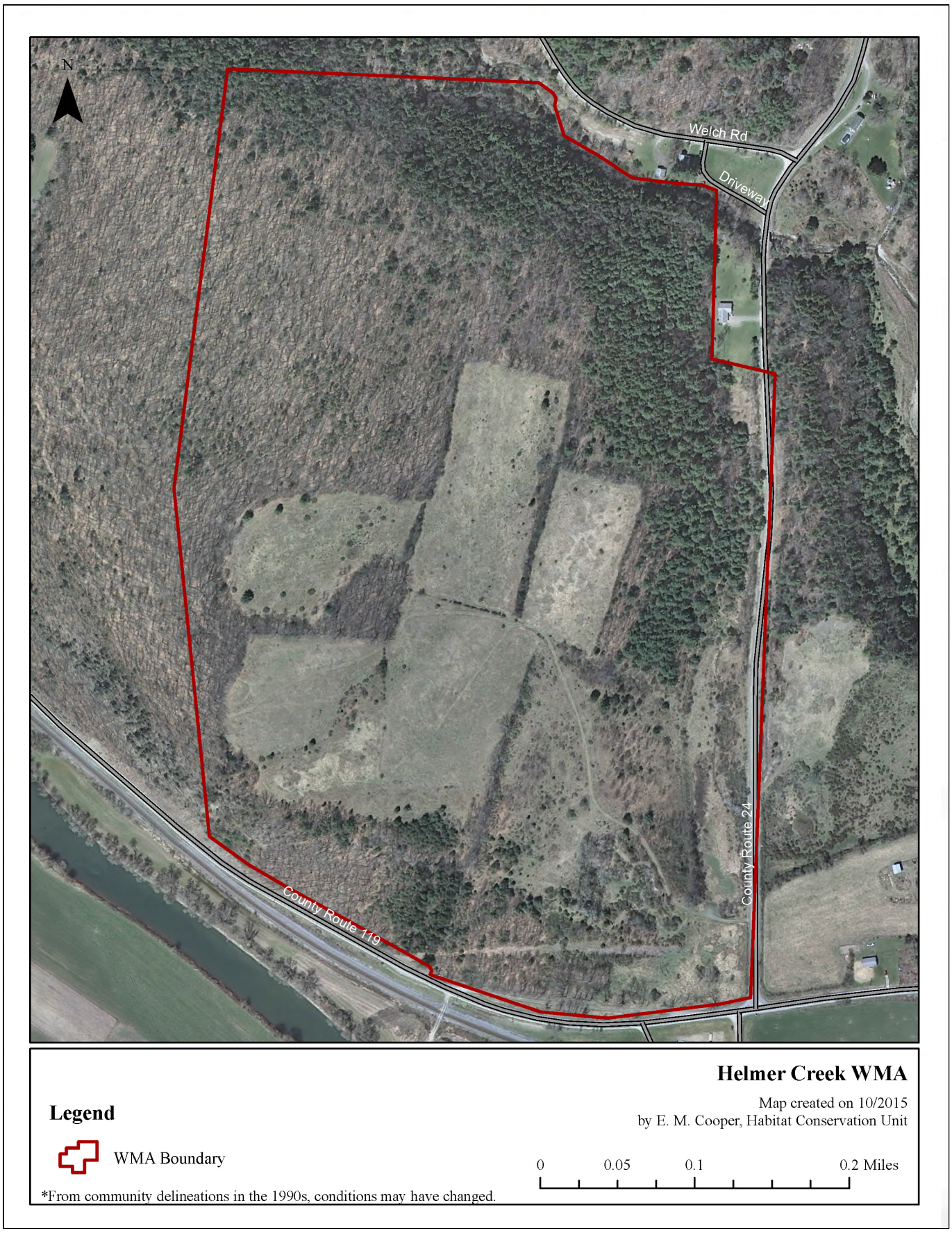

FIGURE 2. No significant ecological communities exist on Helmer Creek WMA. Data from the NY Natural Heritage Program.

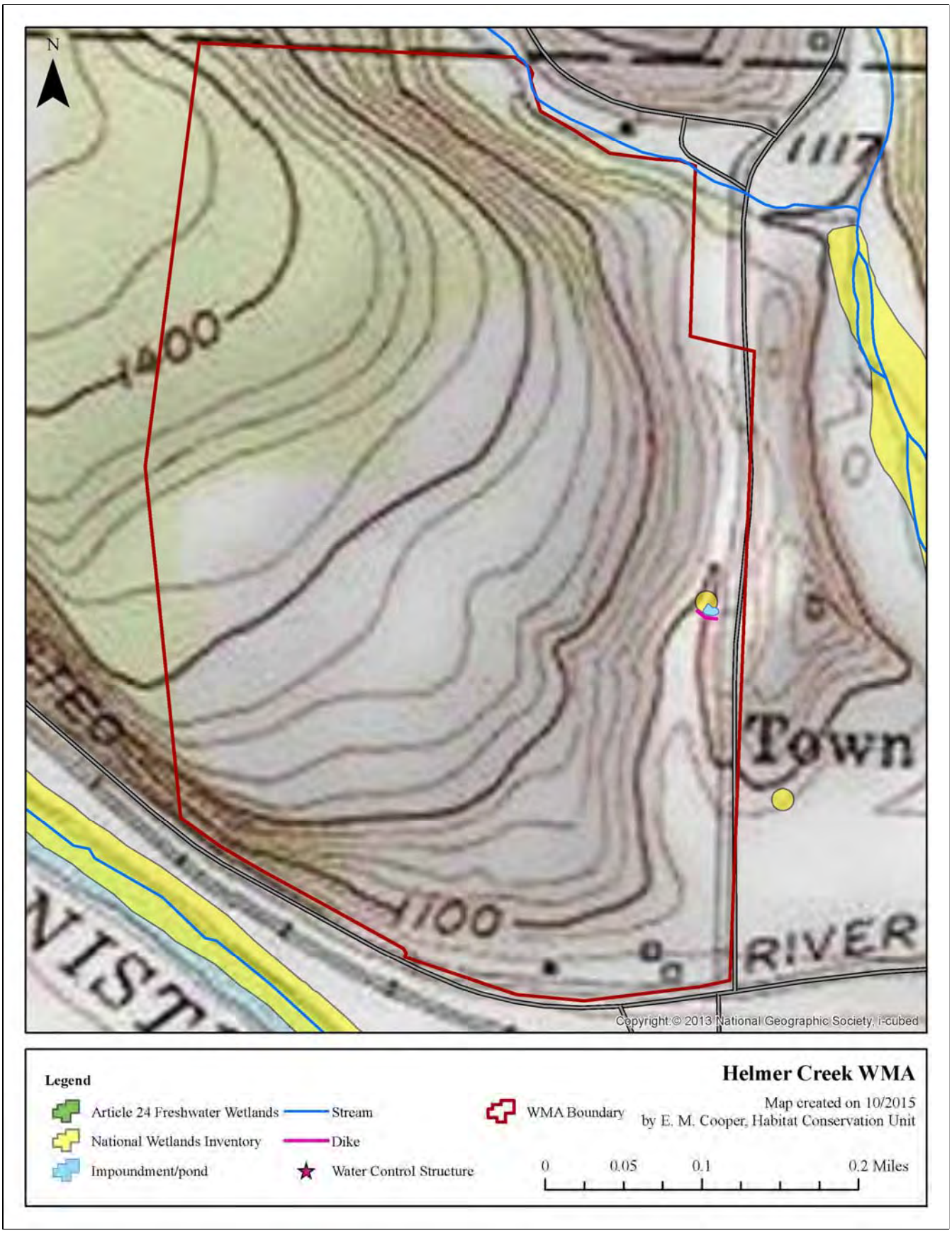

FIGURE 3. Wetlands, open water, and streams of Helmer Creek WMA. Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

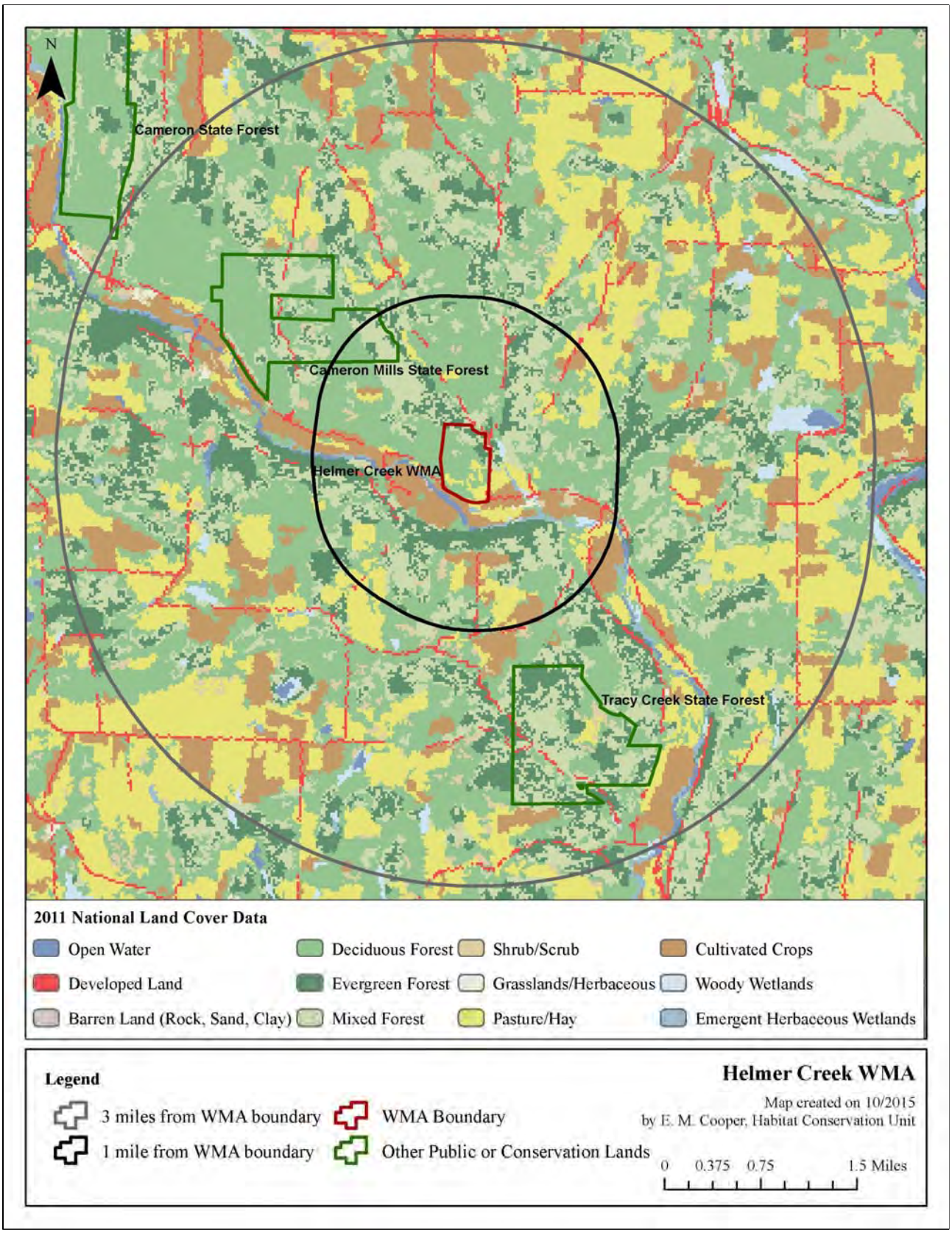

FIGURE 4. Land cover types and conservation lands in the landscape surrounding Helmer Creek WMA. Conservation lands are from the NY Protected Areas Database available online at http://www.nypad.org/. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types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

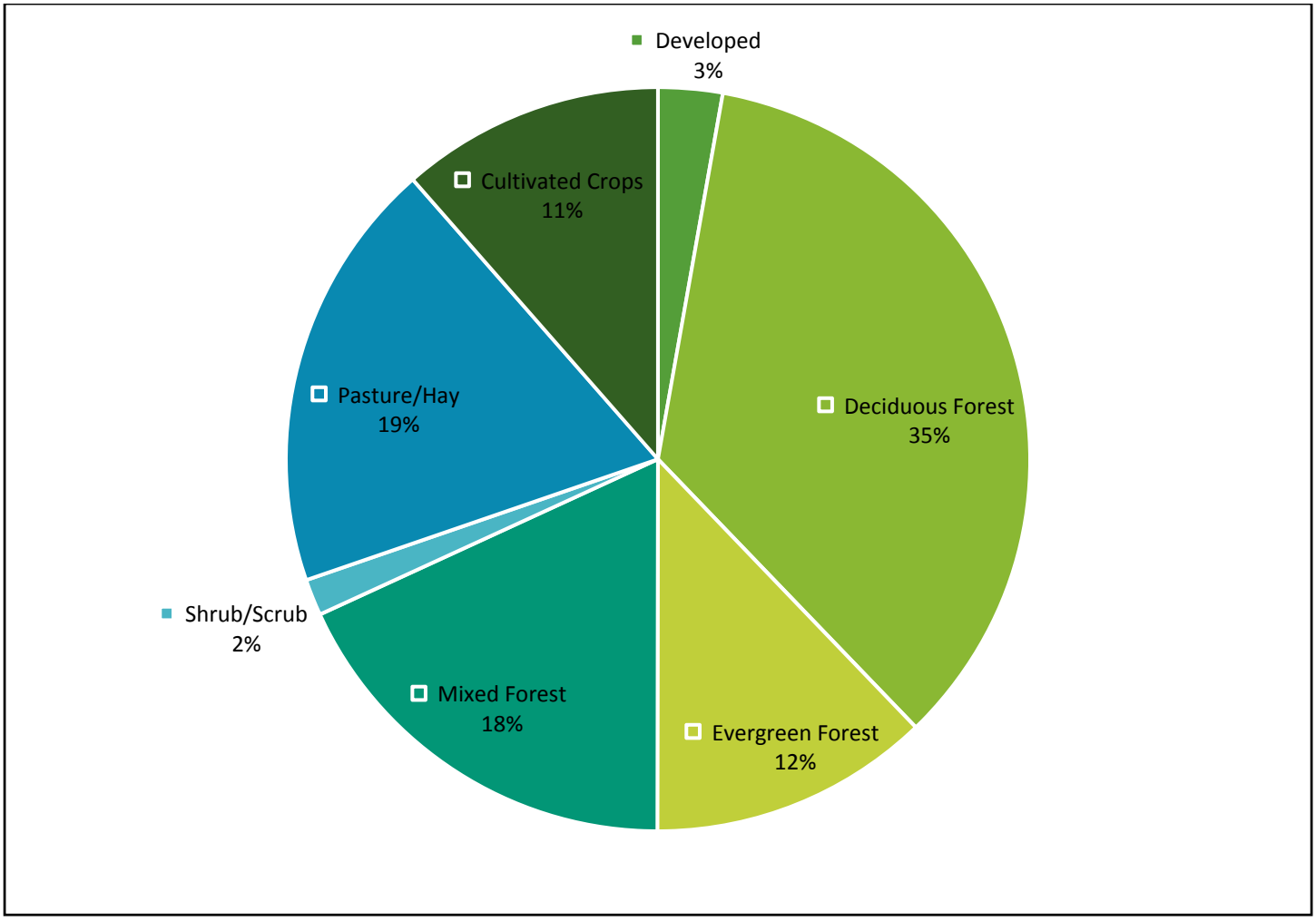

FIGURE 5. Percent cover of land cover types within three miles of Helmer Creek WMA.

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.

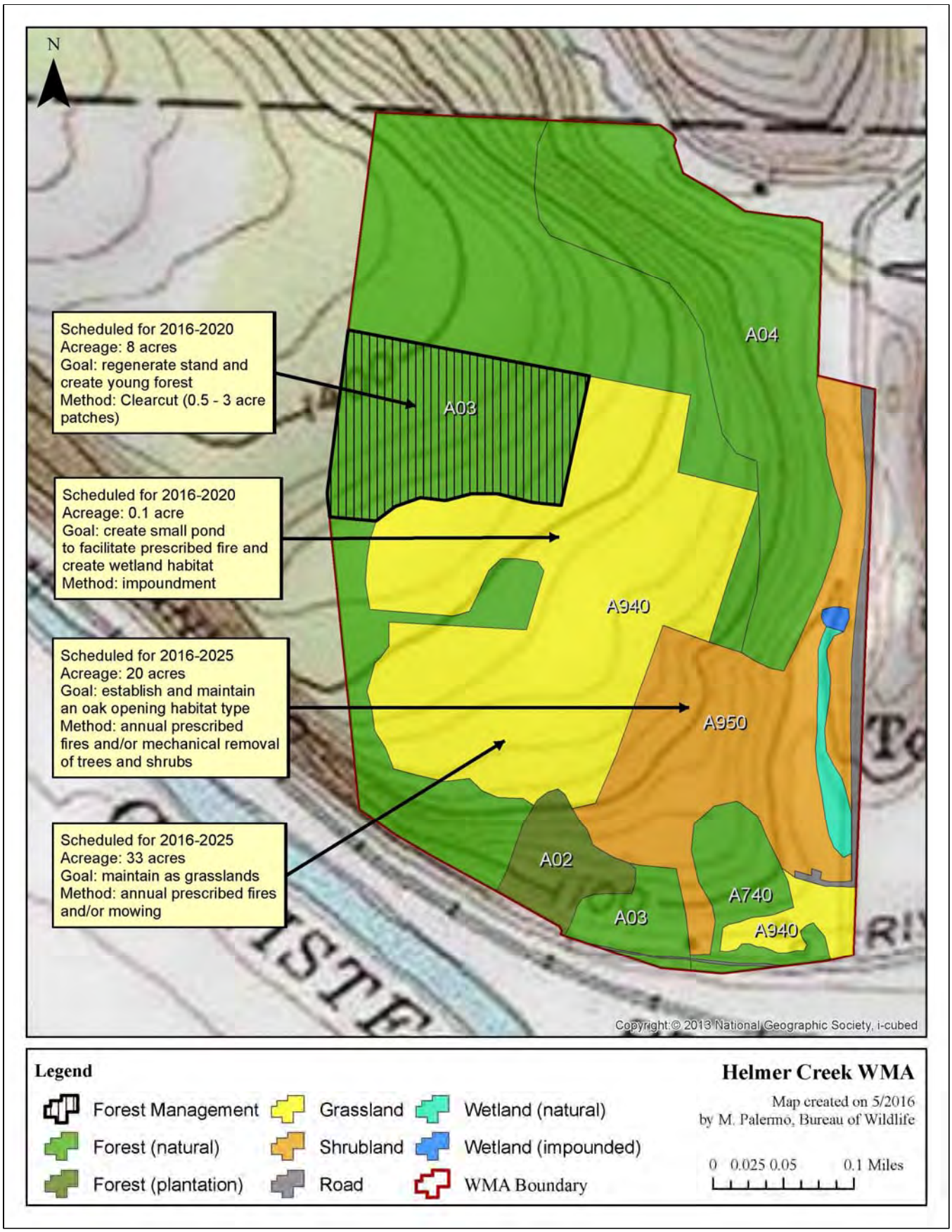

FIGURE 6. Habitat types and location(s) of proposed management on Helmer Creek WMA. Numbers indicate the stand number from habitat inventory.

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.)

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, forest management target species at Helmer Creek WMA include: American woodcock, ruffed grouse, and timber rattlesnake.

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.

PRESCRIPTIONS

Silvicultural prescriptions provide a detailed approach for each forest management area (See Appendix C). For additional information about the prescriptions listed below, please contact Emily Bonk, senior forestor, at (607) 622-8281. The following prescriptions have been prepared for Helmer Creek WMA.

Prescription approved October 2017:

- Stand A-3 (45 acres) will receive multiple small block clearcuts totaling 8 acres to create quality foraging and basking habitat for timber rattlesnakes. The proposed activity will also provide good nesting and foraging habitat for wild turkey and ruffed grouse. Clearcut block size will range from 1/4 acre to 3 acres (possible checkerboard layout). Everything over 2 inches in diameter will be cut; some desirable saplings / a seed tree may be reserved in some of the larger blocks. Tree tops and other coarse and fine woody debris will be left to serve as basking and foraging sites, and the creation of some slash piles is desired. The blocks will be allowed to regenerate naturally; oak, hickory, red maple, and pine are the anticipated desirable tree regeneration.