Habitat Management Plan
for
Doodletown Wildlife Management Area
2018 – 2027

Division of Fish and Wildlife
Bureau of Wildlife

65561 State Route 10, Stamford, NY 12167

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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SUMMARY

Doodletown Wildlife Management Area (WMA) was purchased in 2017 to permanently safeguard habitat and ensure that the primary purpose of the land will be for the conservation and management of wildlife. Historically, a majority of the property was farmed. Since the farms were abandoned in the early 1900s, the property has been privately owned with little to no habitat management occurring. Doodletown WMA consists of 689 acres, the majority of which is covered with semi-mature to mature forest stands of red oak, sugar maple, black birch and bigtooth aspen. Wildlife species utilizing this upland forested habitat include spotted salamander, ruffed grouse, raccoon, bobcat, worm-eating warbler and wood thrush. Several wetlands and vernal pools are scattered throughout the property, providing breeding and nursery habitat for many species of amphibians. An important species to be managed for at Doodletown WMA is the New England cottontail, a species of special concern (SC) in New York State. The WMA falls within a New England cottontail focus area[1] and planned management actions will provide protection of critical habitat to support populations of New England cottontail. Doodletown WMA will be managed to provide a range of forest age-classes benefiting many species of wildlife including cerulean warbler, scarlet tanager, fisher, bear and wild turkey. This WMA also affords multiple recreational opportunities including hunting, trapping and bird watching.

Habitat management goals for Doodletown WMA include:

- Managing approximately 12.3% of the WMA as young forest (12.8% of the total forested area) to promote New England cottontail and ruffed grouse habitat;
    - Monitoring the impact of white-tailed deer within the WMA and managed forest stands;
- Maintaining approximately 84.2% as mature forest to provide habitat for forest interior species including scarlet tanager, bobcat and red-backed salamander;
- Maintaining approximately 3.4% as wetlands; and
- Maintaining approximately 0.1% as open water.

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

[1] Focus areas available online at http://newenglandcottontail.org/content/focus-areas-guide-cottontail-comeback.

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 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.

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

Definitions are provided in Appendix A.

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

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

WMA OVERVIEW

LOCATION

Doodletown WMA is located in DEC Region 4, Towns of Ancram, Gallatin and Taghkanic, Columbia County (Figure 1).

TOTAL AREA

689.2 acres

HABITAT INVENTORY

A habitat inventory of the WMA was completed in 2017 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 Doodletown WMA.

Habitat Type	Current Conditions (as of 2017)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest [a]	665.0	96.5%		580	Decrease to 84.2%
Young forest	0	0%		85	Increase to 12.3%
Shrubland	0	0%			No change
Grassland	0	0%			No change
Agricultural land	0	0%		0	No change
Wetland (natural) [b]	23.7	3.4%		23.7	No change
Wetland (impounded) [b]	0	0%		0	No change
Open water	0.5	0.1%		0.5	No change
Other (utility r.o.w, parking areas)	0	0%		0	No change
Roads	0	0%		0	No change
Rivers and streams			1.4		No change
Total Acres:	689.2	100%		689.2	

[a] Forest acreage includes all mature and intermediate age classes of natural forest, plantations, and forested wetlands. Young forest is reported separately. Definitions are provided in the Forest section of this plan.
[b] Wetland acreage does not include forested wetlands, since they are included in the Forest category.

ECOLOGICAL RESOURCES

Wildlife Overview:

Wildlife present on Doodletown WMA includes many species commonly found throughout Eastern New York, such as:

- Wild turkey, American redstart, wood thrush
- Eastern coyote, white-tailed deer, fisher, bobcat
- Eastern American toad, red-backed salamander, spotted salamander, wood frog
- Common garter snake, painted turtle

This WMA falls within a New England cottontail focus area and therefore management occurring on the property will include creating and maintaining habitat for this species. This cottontail does not currently inhabit the property, likely due to the current habitat structure of mature forest. However, they have been identified on neighboring properties. Management on this WMA will focus on creating openings within the forest canopy, creating young forest. The goal of this management is to create habitat within the property and to provide connectivity to neighboring properties to facilitate the dispersal and establishment of New England cottontail populations within the WMA.

Wildlife and Plant Species of Conservation Concern:

The following federal or state listed Endangered (E), Threatened (T), state species of Special Concern (SC), and/or Species of Greatest Conservation Need (SGCN) may occur on the WMA (Table 2).[2] SGCN listed below include species that have been documented on or within the vicinity of the WMA that are likely to occur in suitable habitat on the WMA. Other SGCN may also be present on the WMA. Data sources include: the NY Natural Heritage Program, NY Breeding Bird Atlases,[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 Doodletown 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 woodcock			x
	Black-billed cuckoo			x
	Blue-winged warbler			x
	Canada warbler			x
	Cerulean warbler			x
	Prairie warbler			x
	Scarlet tanager			x
	Wood thrush			x
	Worm-eating warbler			x
Mammals	New England cottontail		SC	HP
	Northern long-eared bat	T	T	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 Status
Amphibians and reptiles	Four-toed salamander			HP
	Snapping turtle			x
	Eastern box turtle		SC	
Fish	None known			
Invertebrates	None known			

Significant Ecological Communities:

There are no State rare or significant ecological communities on Doodletown WMA (Figure 2). Additional information about significant ecological communities is available in *Ecological Communities of New York State, Second Edition*.[6]

This WMA falls within a 7,643 acre regionally significant forest patch.[7] These forests provide a range of benefits including wildlife habitat, clean water, climate moderation and forest products. Maintaining a mix of forest age classes within these forest patches ensures a heathier forest for the future.

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 Doodletown WMA include:

- One wetland regulated by Article 24 of the Environmental Conservation Law and several additional wetlands shown on the National Wetlands Inventory (Figure 3). Each state-regulated wetland is protected by a buffer zone of 100 feet from the delineated wetland boundary, known as the wetland adjacent area. There may be forestry prescriptions associated with forested wetlands and adjacent areas, and each management prescription will be reviewed individually for determination of impacts.
- Four streams (a watercourse entirely within the WMA) or segments of streams (a stream that meanders in and out of the WMA). Streams designated as class C(T) or higher are regulated by Article 15 of the Environmental Conservation Law. The highest stream classification on this property is Class C(T), indicating that streams may support trout. Water quality standards will be adhered to on all streams.
- A number of vernal pools exist on the WMA.

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*

[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, Second Edition. New York Natural Heritage Program, NYS Department of Environmental Conservation, Albany, NY. Available online at http://www.dec.ny.gov/animals/97703.html.

[7] Hudson Valley Natural Resource mapper is available online at: http://hudson.dnr.cals.cornell.edu/mapper/

Wildlife Management Areas.[8] Some habitat management activities may either be prohibited or restricted in order to protect these features. Deviations from these guidelines may be permitted when creating wildlife habitat and if they occur, will be addressed in the individual stand prescriptions.

Soils:

Soils across Doodletown WMA are almost exclusively Nassau channery silt loams. These soils are classified as somewhat excessively drained very stony loams which are not prime farmland, likely due to stones and slope. Three other soil types are present on the area and are classified as prime farmland. Two of these soils, Manlius channery silt loam and Stockbridge channery silt loam, are also somewhat excessively well drained. The last soil type, sun silt loam, is in the vicinity of the WMA's southernmost wetland and is very poorly drained but also listed as prime farmland. Because the entire area is comprised of silt loams, there will be no limitations to supporting forest crops.

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

- Forest (58% combining deciduous, evergreen and mixed forests)
- Pasture/hay (20%)
- Wetlands (10% combining woody and emergent herbaceous wetlands)
- Development (5%)
- Shrub/scrub (4%)
- Cultivated crops (2%)
- Open water (1%)

The majority of the landscape surrounding the WMA to the north, south and west is comprised of locally and regionally significant forests (approximately 19,500 acres within three miles of the WMA[9]), almost entirely in private ownership. Lands to the east of the WMA largely consist of farmed and cultivated land. Very little active habitat or forest management occurs on these properties. When harvests do occur on private lands, they are generally geared towards harvesting timber with the highest economic value and rarely focus on its effect on wildlife and wildlife habitat. The U.S. Fish and Wildlife Service (USFWS) is currently working with a local landowner located approximately 3.5 miles to the southeast of Doodletown to actively manage their property for wildlife, with an emphasis on New England cottontail. The proposed project will increase the acreage of young forest within the property through the use of timber harvests to reduce crown cover to levels between 50% to 10% in defined areas. Brush piles and wildlife food plots will also be incorporated into the planned management. New England cottontails have been positively identified on properties directly south of the WMA. Management on the WMA

[8] Available online at http://www.dec.ny.gov/outdoor/104218.html.
[9] Hudson Valley Natural Resource mapper is available online at: http://hudson.dnr.cals.cornell.edu/mapper/

will provide direct connectivity between existing New England cottontail habitats on these properties and the planned young forest habitat at Doodletown.

Nearby conservation lands include:

- New Forge State Forest (612 acres) - DEC Division of Lands and Forests
- Lake Taghkanic State Park (1,585 acres) - NYS Office of Parks, Recreation and Historic Preservation
- Drowned Lands Swamp Conservation Area (114 acres) - Columbia Land Conservancy

II. Management Strategies by Habitat Type

DEC will continue active management of wildlife habitat on Doodletown 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 (New England cottontail, ruffed grouse and white-tailed deer) and habitats.
- Provide opportunities for wildlife-dependent recreation such as hunting, trapping 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 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 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 Doodletown 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] The Initiative's goal is to increase forest management so that a minimum of 10% of the WMA's forested acreage is classified as young forest habitat. Timber management on WMAs is utilized to create and maintain a young forest component within the landscape and to provide quality wildlife habitat. Currently, Doodletown WMA contains no young forest. The goal of this management plan is to create young forest habitat in perpetuity on Doodletown WMA. This increase in habitat diversity benefits many different species of birds, mammals, amphibians, reptiles and pollinators and will help to maintain a healthy forest in the future. The goal at Doodletown WMA is to create approximately 85 acres of young forest habitat, 12.8% of the forested acreage.

MANAGEMENT OBJECTIVES

- Retain the majority of the existing forest (580 acres) for forest interior species, such as scarlet tanager, wood thrush and bobcat.
- Increase young forest from 0 to 85 acres (12.8 % of the total forested area) to improve habitat for young forest-dependent wildlife, targeting New England cottontail and ruffed grouse.
    - Monitor the impact of white-tailed deer within the WMA and managed forest stands.
- Encourage dispersal of native hardwoods and softwoods to promote regeneration and increase availability of mast and cover for wildlife.
- Supplement natural regeneration with planting of native trees and shrubs to achieve the desired dense understory, if necessary.
- Continue to identify and protect viable vernal pools identified within the forested stands.
- Monitor and control invasive and/or undesirable vegetation as needed.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 665 acres of forest covering approximately 96% of Doodletown WMA (Table 3; Figure 6). Existing forest at Doodletown WMA is predominantly a mature northern hardwood composition. The most common species are maple, oak, ash and birch. Oaks and ash tend to dominate on the steeper slopes and high ridges, while the lower lying areas have a higher maple and aspen population. A minor conifer component is present within the WMA. The lack of conifers within the WMA is presumably due to a timber harvest focused on white pine in the recent past. While there may be some old trees on this WMA, all evidence points to the forest on the WMA being quite young, in historic terms. An "old growth," "ancient" or "climax" forest is characterized by mostly shade tolerant (or climax) tree species capable of perpetuating themselves for very long periods of time (sugar maple, basswood, hemlock). The forest on this WMA contains large numbers of shade intolerant or moderately shade intolerant tree species (oak, birch, aspen). The numerous stone walls, cellar holes and roads visible throughout this property also reflect a history which includes land clearing for farming. A lack of old growth forest does not mean a lack of mature forest, which this property contains.

[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.

The absence of young forest habitat provides very little diversity of forest structure within the WMA. The current forest structure provides habitat for forest interior species, including several SGCN, that require mature forest habitat. There is very little habitat for those species that require young forest. Forest breeding birds currently present on the property, including scarlet tanager, wood thrush and worm-eating warbler, require mature forested stands to breed. Once their young have fledged, these species will often move their fledglings to young forest stands that provide thick vegetation for protection from predators and a plentiful food source. The majority of the forest within Doodletown WMA will be maintained to provide habitat for forest interior wildlife species. A small percentage of the forest (12.8%) will be converted into young forest to provide needed habitat for young forest dependent species as well as many other forest dwelling species.

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

Forest Type	**Acres (as of 2015)**	**Desired Acres**	**Overstory species**
Natural forest (mature/intermediate)	665	580	Red oak, sugar maple, red maple
Plantation	0	0	
Forested wetland	0	0	
Young forest	0	85	
Young forest (forested wetland)	0	0	
Total Forested Acres:	665	665	

Target species for young forest include New England cottontail and ruffed grouse. These species rely on forest and young forest areas for nesting, foraging, and cover and will benefit from management that creates the following habitat requirements:

- New England cottontail: [11, 12]
    - General - Large (≥25 acres) patches of thickets, young forests, shrub swamps, or other dense shrubby areas, within 0.5 to 2 miles of other suitable habitat patches. Woody cover 3-15 ft. high and stem density of >20,000 stems per acre.
    - Protective cover – Thick, regenerating deciduous trees and shrubs preferred for escape and thermal cover, also will use low-hanging conifer branches. Conifers provide winter cover.
    - Foraging – As above, but also use small patches of grass and other herbaceous plants within thickets. Typically, will not move very far (>16 ft.) from dense woody vegetation.
    - Nesting – Nest placed directly on ground in well-drained areas, typically in shrubs or in forbs on the forest floor.
- Ruffed grouse: [13, 14]

[11] New England Cottontail Regional Technical Committee. 2013. Best Management Practices: How to Make and Manage Habitat for the New England Cottontail, A Regional Land Manager's Guide. 28 pp.

[12] Arbuthnot, M. 2008. A Landowner's Guide to New England Cottontail Habitat Management. Environmental Defense Fund. 37 pp.

[13] 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.

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

- Drumming areas – Downed trees surrounded by small diameter woody cover.
- Foraging areas – Open areas with dense overhead cover of young forest with good mast production.
- Nesting – Young, open forest stands or second growth woodlands.
- Brood rearing – Herbaceous ground cover with a high mid-story stem density.

- White-tailed deer: [15]
  - White-tailed deer are an important generalist herbivore within New York's forest ecosystems. When deer are abundant within a landscape, deer herbivory can greatly impact forests by affecting the kinds and numbers of plants present, impair the ability to grow new trees and control the overall structure of the forest. These changes can inhibit natural regeneration from occurring within forest stands and reduce the amount of food and cover habitat available for other species of wildlife. Areas within Columbia County exhibit signs of high deer populations causing negative impacts to homeowners, farmers and forest stands. White-tailed deer were chosen as a target species at Doodletown WMA to allow DEC to better understand the impact they are having within the WMA habitats, as well as monitor the impact they may have within managed forest stands.

MANAGEMENT HISTORY

Little information is available about the history of forest management on Doodletown WMA because it was privately owned until 2017. Based on observations made by DEC staff during habitat inventory and subsequent visits to the area, a general summary of the past can be presumed. There are many old roads present throughout the property, some in better condition than others. It can be assumed that these roads were once used for timber harvest operations and access to the land by previous occupants. The species present on this WMA would have provided many valuable resources; pine and oak lumber for buildings, hickory and ash for tool handles, and firewood for heating homes. This type of utilitarian forest management likely began when trees were first cleared to make way for agriculture. Many tree stumps in varying stages of decomposition are clearly results of timber harvests. There are multiple old foundations near these roads within the property, rock walls, drainage structures and earthen piles from road maintenance. From the size and type of tree stumps remaining intact, it can be hypothesized that a selective timber harvest has occurred in approximately the last 25-35 years, removing multiple species of hardwoods including many oak and maple trees, along with what looks like a removal of a majority of the white pine on the southern portion of the WMA. No timber management has occurred on the property since DEC acquired it in 2017.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed to attain the young forest acreage goal of 85 acres within ten years:

- **Management planned for 2018-2022** (Table 4, Figure 6):
  - Conduct seed-tree treatments in stands A6, A8 and A9. These treatments will cover approximately 56 acres.
  - Monitor and control invasive/undesirable vegetation as needed.

[15] Rawinski, T.J. 2015. White-tailed Deer in Northeastern Forests: Understanding and Assessing Impacts. USDA Forest Service. 27 pp.

- **Management planned for 2023-2027** (Table 5, Figure 6):
    - Conduct seed-tree treatments in stands A1 and A2. These treatments will cover approximately 29 acres.
    - Monitor and control invasive/undesirable vegetation as needed.

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

Compartment Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A6	8	Small Sawtimber 12”-17” DBH	Natural Forest: Transitional hardwood	Young forest	Wildlife	Seed-tree
A8	35	Pole Timber 6”-11” DBH	Natural Forest: Transitional hardwood	Young forest	Wildlife	Seed-tree
A9	13	Pole Timber 6”-11” DBH	Natural Forest: Transitional hardwood	Young forest	Wildlife	Seed-tree

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

Compartment Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A1	8	Pole Timber 6”-11” DBH	Natural Forest: Transitional hardwood	Young forest	Wildlife	Seed-tree
A2	21	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Seed-tree

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 for each of these stands will include the following:

Management planned for 2018-2022

- **Stands A6 and A8:** These are transitional hardwood stands composed of mostly sugar maple, red oak and birch. A seed-tree harvest will be conducted on a portion of each of these stands to create early successional young forest habitat required by New England cottontail and ruffed grouse.
- **Stand A9:** This is a transitional hardwood stand composed of mostly sugar maple, red oak and ash. A seed-tree harvest will be conducted on a portion of this stand to create early successional young forest habitat required by the New England cottontail and ruffed grouse.

Management planned for 2023-2027

- **Stand A1**: This is a transitional hardwood stand composed of mostly red maple, red oak and aspen. A seed-tree harvest will be conducted on a portion of this stand to create early successional young forest habitat required by ruffed grouse.
- **Stand A2**: This is a northern hardwood stand composed of mostly red oak, chestnut oak and birch. A seed-tree harvest will be conducted on a portion of this stand to create early successional young forest habitat required by ruffed grouse.

Natural and artificial regeneration of the stands will occur to create quality habitat for New England cottontail and ruffed grouse. If invasive species within the treated stands are found to have a significant negative impact on forest regeneration, chemical or mechanical control may be implemented.

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:

Considerations will be taken to avoid negative impacts to bats and nesting woodland raptors. Raptor surveys will be conducted during the nesting season to identify nesting trees and 100 feet buffers will be designated around any identified active nests. Due to the possibility of protected bats being in the area, the timing of cuts will be restricted to October through March to protect the bats during their active season.

Doodletown WMA contains several vernal pools that act as breeding and nursery habitat for many frogs and salamanders inhabiting the WMA (i.e. four-toed salamander, spring peeper, spotted salamander, wood frog). These pools typically have no inlet or outlet and contain standing water during the winter and spring months, drying up in the early summer months. Surveys were conducted in 2017 to determine the location of vernal pools within the WMA, utilizing data from the national wetland inventory and the Town of Ancram Conservation Advisory Counsel. Vernal pools were identified within the WMA and monitored throughout the early spring and summer months. Amphibian species were identified within and around the vernal pools and evidence of breeding was noted when observed. Surveys will continue to be conducted periodically to monitor the viability of the vernal pools and the species that inhabit them. Management on the WMA will take into consideration the location of these vernal pools

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

and will be guided by the Division of Land and Forest's Rules *for Establishment of Special Management Zones on State Forests and Wildlife Management Areas.*

Forest Health Considerations:

Soil quality is not expected to inhibit the ability of trees to regenerate in most areas within the WMA. Where soils are poorly drained in low lying areas, regeneration may be slower than well drained sites, but overall forest regeneration is not expected to be adversely impacted by soil quality.

This WMA contains natural forest stands with little invasive ingrowth that will be addressed with each forest treatment. Observed vegetation includes honeysuckle, Japanese barberry, autumn olive and multiflora rose along with other undesirable plant species. These species can inhibit or outcompete desirable native species. Management options include mechanical control both pre- and post-treatment, and if necessary chemical treatment or a combination of both.

Emerald Ash Borer (EAB) is potentially present on the property due to its confirmed presence in Columbia County. This invasive pest can have a detrimental effect on the health of forest stands containing ash species. However, Doodletown WMA forest stands have a low percentage of ash species, so the effect of EAB is expected to be minimal.

Pre- and Post-treatment Considerations:

Following forest management activities, invasive and/or undesirable species may outcompete desirable regeneration. In stands where these understory plants occur and are having a negative impact on desirable regeneration, mechanical or chemical control may be utilized pre- and/or post-harvest.

White-tailed deer herbivory (overgrazing) may pose a threat to forest regeneration in certain areas of the WMA. If this is determined to be a major threat to desirable forest regeneration, silvicultural or wildlife management techniques may be implemented.

The possibility exists that desirable forest regeneration may not occur after treatment. If this is determined to be the case, the stand(s) may be re-treated to attempt to improve the quality or quantity of desired regeneration. This may include removal of undesirable regeneration using mechanical or chemical methods to restart the regeneration process, and may include planting of desirable tree or shrub species. Pre- and post-harvest actions will be specifically addressed in detail in silvicultural prescriptions.

MANAGEMENT EVALUATION

To determine whether the desired forest regeneration and wildlife responses have been achieved by the management outlined in this plan, pre- and post-management assessments will be conducted in accordance with guidelines in the *Young Forest Initiative Monitoring Plan: 2016-2025*.[17] The plan establishes statewide standards for evaluating vegetation and target wildlife responses to forest management to determine if the outcome is as prescribed. Regeneration assessments will be conducted within one year of harvest completion and again at three and five

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

years after the harvest or until the forester determines adequate natural or artificial (i.e., planting) regeneration has been securely established. The installation of deer exclosures may be necessary to ensure adequate regeneration within the WMA. Any exclosures constructed for this purpose may be monitored on an annual or as needed basis. Surveys for non-target wildlife species will be conducted as time allows on both the managed areas as well as the neighboring forest. YFI wildlife target species selected for Doodletown WMA which may be assessed to determine response to management include:

- New England cottontail
- Ruffed grouse
- White-tailed deer

SHRUBLAND

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

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

Currently, there is no acreage on Doodletown WMA managed as shrubland. In the future, DEC may decide to maintain some areas as shrubland within the WMA to enhance habitat for New England cottontail.

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.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

Currently, there is no acreage on Doodletown WMA managed as grassland and no plan to develop such habitat.

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.

DESCRIPTION OF EXISTING AGRICULTURAL LANDS AND TARGET SPECIES

Currently, there is no acreage on Doodletown WMA 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 23.7 acres of existing wetlands to provide quality habitat for wildlife.
- Monitor and control invasive aquatic vegetation as needed.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

Doodletown WMA has 23.7 acres of natural wetlands, including one state regulated wetland and 31 federally regulated wetlands (Figure 3). The wetlands are a mixture of emergent vegetation, shrubs, and scattered trees. Vernal pools can be found throughout the forested stands on the WMA. Most of the vernal pools can be found on the southern half of the WMA, though several vernal pools are scattered throughout the northern parcel as well. These seasonal wetlands provide important breeding and nursery habitat for a number of different frogs and salamanders inhabiting the WMA.

The wetlands provide habitat for species such as:

- American woodcock, common yellowthroat
- Muskrat, beaver, mink
- Spring peeper, Northern leopard frog, spotted salamander, four-toed salamander

MANAGEMENT HISTORY

No wetland management has occurred on this WMA during DEC ownership.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Table 7, Figure 6):
    - Maintain the current acreage and quality of wetlands (23.7 acres).
    - Monitor and control invasive vegetation as needed.

BEST MANAGEMENT PRACTICES

Timing of the management activities will be limited to ensure impacts to the habitat and wildlife are kept to a minimum. Prior to implementation of proposed projects, seasonal weather conditions and the breeding and nesting periods of wildlife species found on the WMA will be taken into consideration. Herbicide applications necessary for habitat management will comply with all applicable State and Federal laws, rules and regulations.

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

MANAGEMENT EVALUATION

Periodic surveys for amphibians in the wetlands may occur as opportunity arises.

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).

MANAGEMENT OBJECTIVES

- Maintain the existing 0.5 acres of open water habitat.

DESCRIPTION OF EXISTING OPEN WATER AND TARGET SPECIES

There are 0.5 acres of open water on Doodletown WMA consisting of a natural pond and streams. There are four streams or segments of streams (approximately 1.4 miles) that occur on the WMA. These streams are unnamed and are classified as Class C and C(T), indicating they can support a fishery. These areas provide aquatic habitat for many species of amphibians and reptiles.

Species that benefit from open water habitat include:

- Wood duck, great blue heron
- Northern leopard frog, green frog, Eastern newt
- Snapping turtle, painted turtle

MANAGEMENT HISTORY

No open water management has occurred on this WMA during DEC ownership.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Table 7, Figure 6):
    - Maintain existing natural open water habitat.
    - Monitor and control invasive vegetation as needed.

BEST MANAGEMENT PRACTICES

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

MANAGEMENT EVALUATION

Periodic surveys for reptiles and amphibians may occur as opportunity arises.

HABITAT MANAGEMENT SUMMARY

In summary, Table 7 lists the habitat management actions planned for Doodletown 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 Doodletown WMA, 2018-2027. (Also see Figure 6.)

Habitat	Management Action	Acres	Timeframe
Forest	Perform seed tree cuts in Stands A6, A8 & A9.	56	2018-2022
Forest	Perform seed tree cuts in Stands A1 & A2.	29	2023-2027
Forest	Monitor and control invasive/undesirable vegetation as needed.	665	2018-2027
Wetland	Monitor and control invasive vegetation as needed.	23.7	2018-2027
Open water	Monitor and control invasive vegetation as needed.	0.5	2018-2027

III. FIGURES

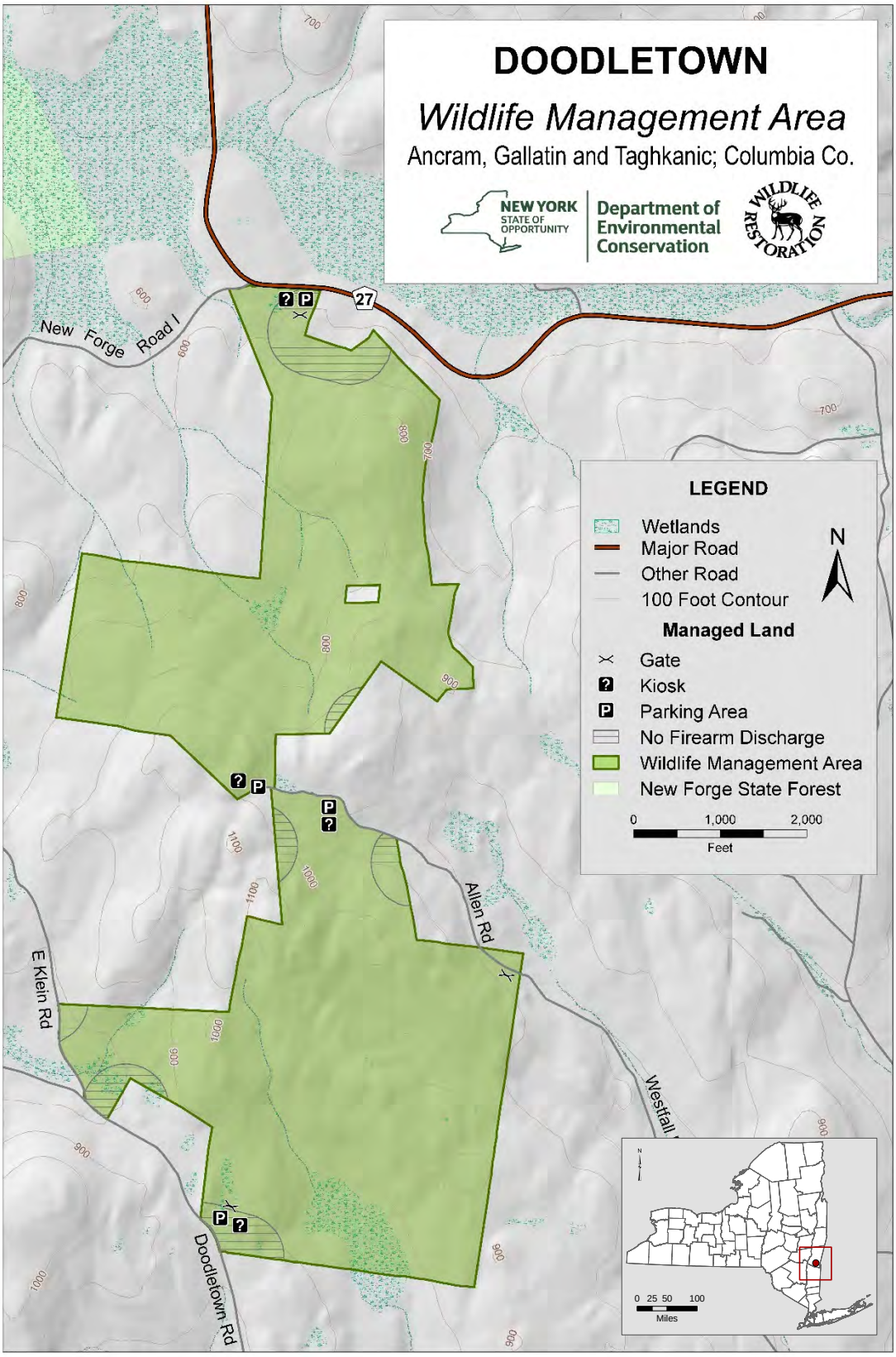

FIGURE 1. Location and access features at Doodletown WMA.

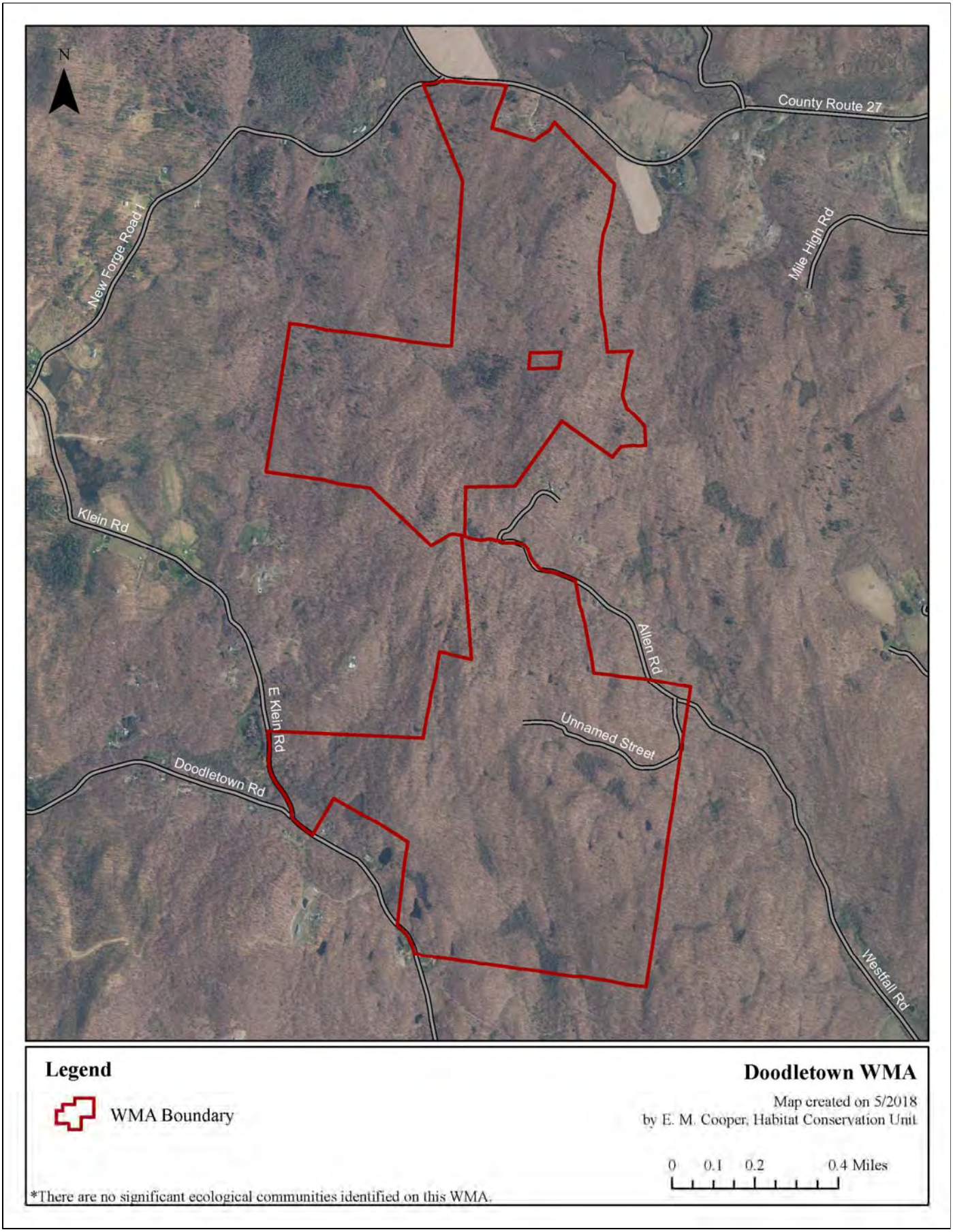

FIGURE 2. Significant ecological communities on Doodletown WMA. Data from the NY Natural Heritage Program.

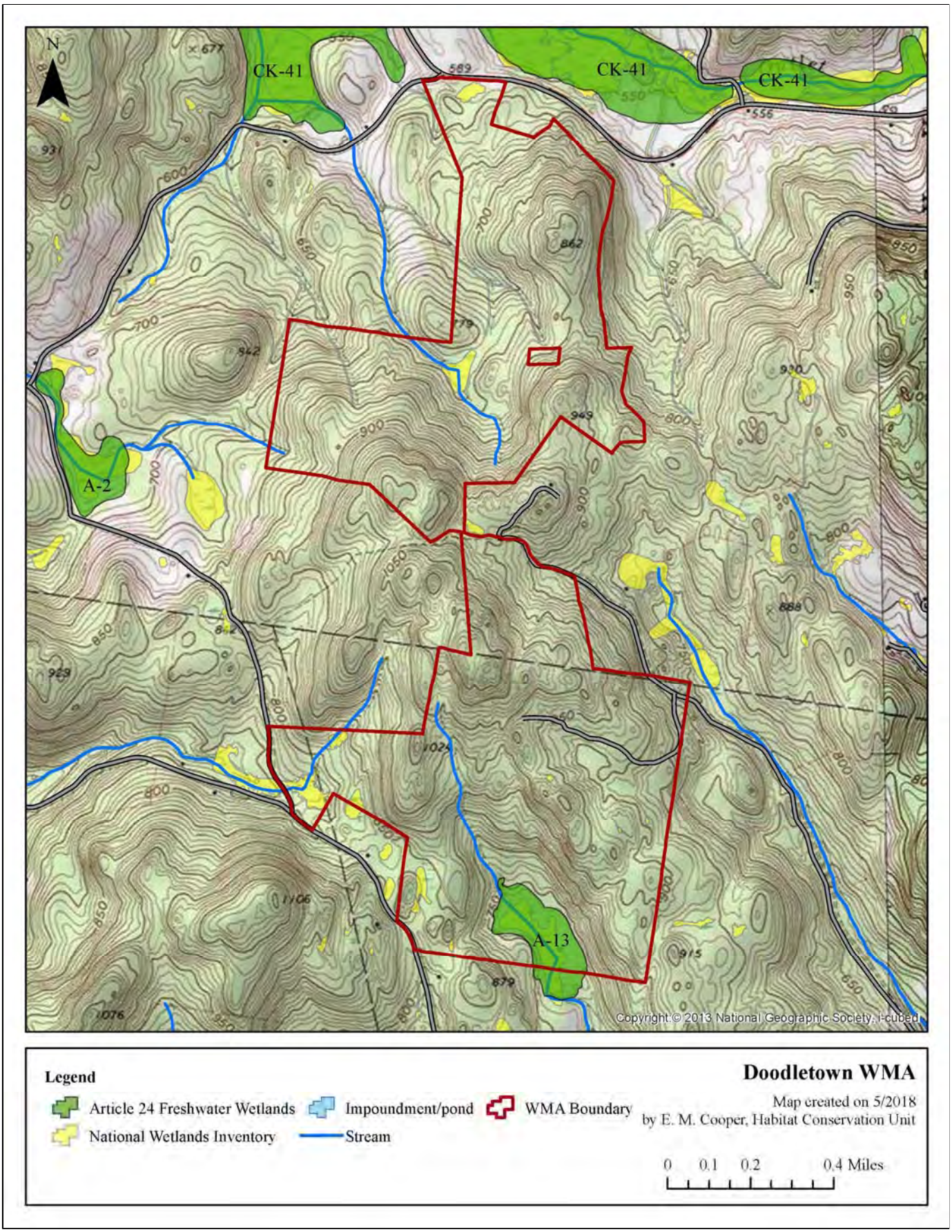

FIGURE 3. Wetlands, open water, and streams of Doodletown WMA. Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

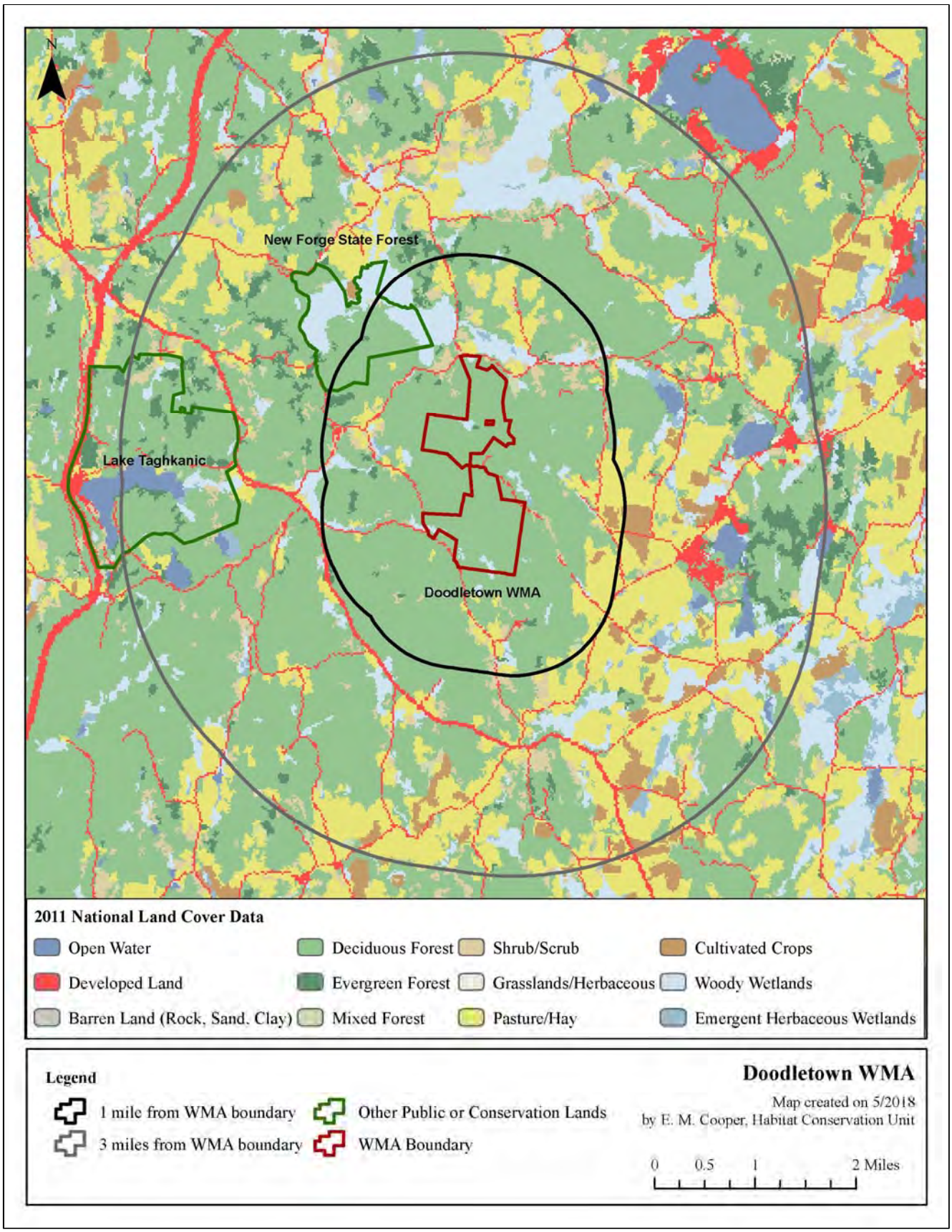

FIGURE 4. Land cover types and conservation lands in the landscape surrounding Doodletown WMA. Conservation lands are from the NY Protected Areas Database available online at http://www.nypad.org/. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used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

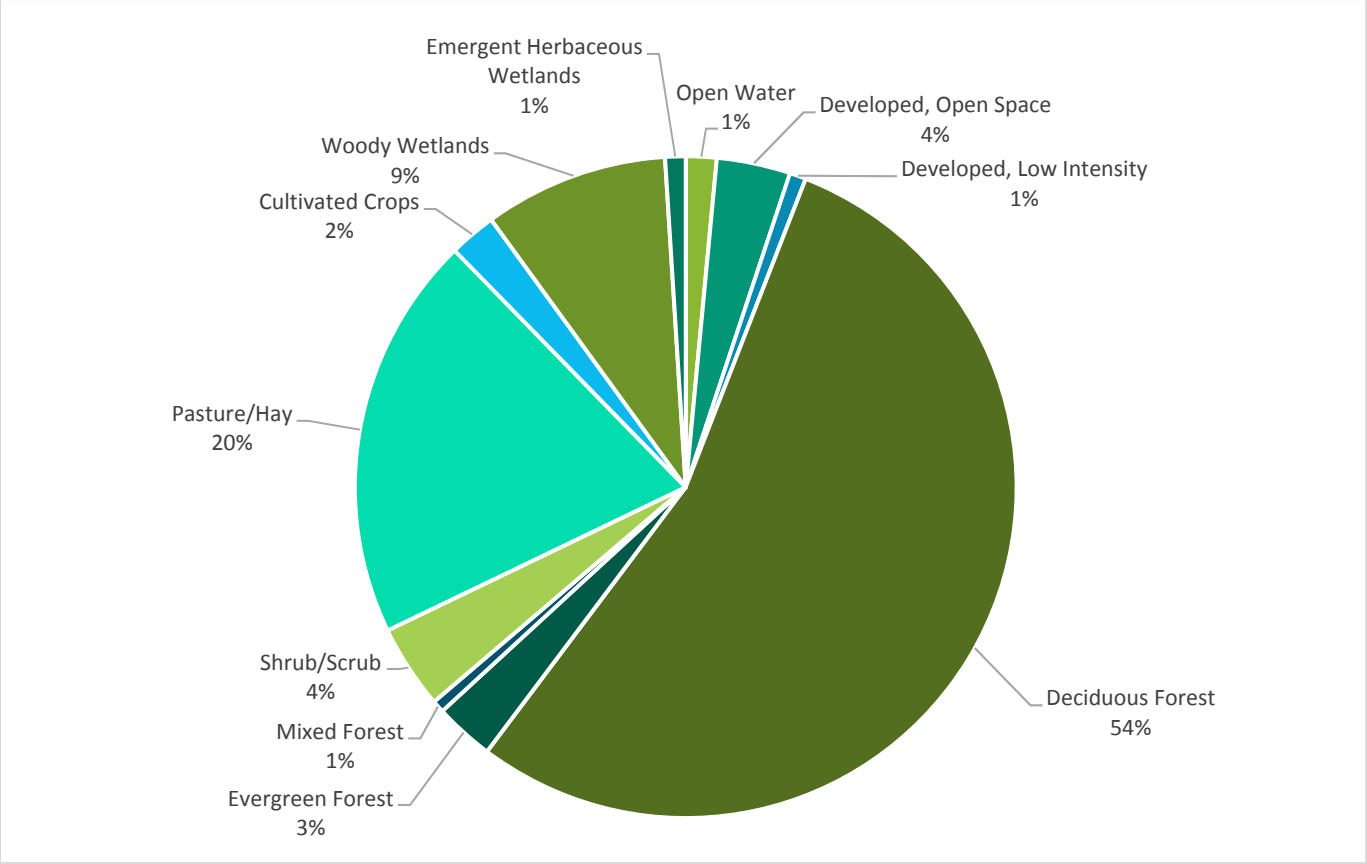

FIGURE 5. Percent cover of land cover types within three miles of Doodletown WMA. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at http://www.mrlc.gov/nlcd2011.php.

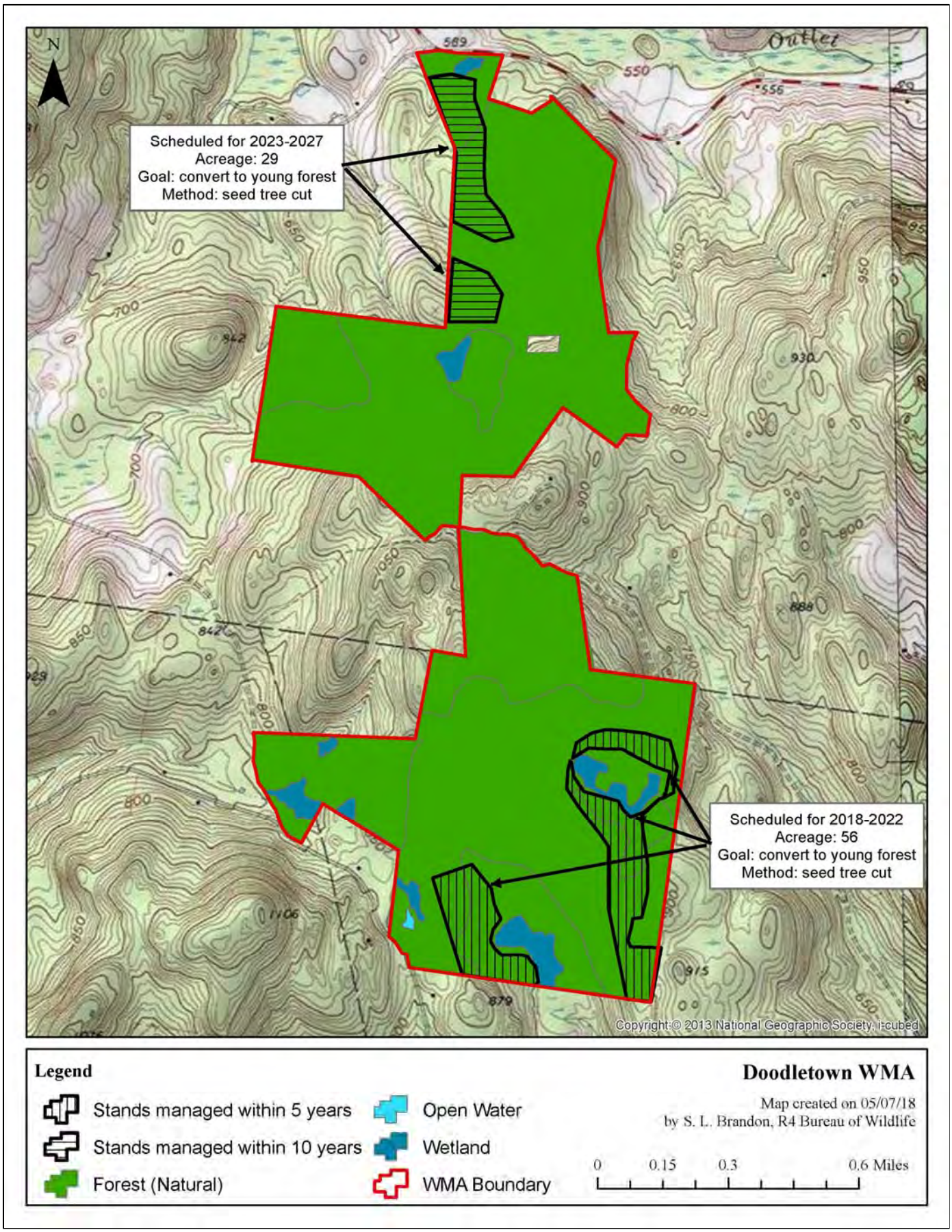

FIGURE 6. Habitat types and locations of proposed management on Doodletown WMA.

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, young forest target species at Doodletown WMA include New England cottontail, ruffed grouse, and white-tailed deer.

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

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

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

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

(Refer to NYS Environmental Conservation Law, Article 24 § 24-0107 for full definition.)

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

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

APPENDIX B. COMPLIANCE WITH STATE ENVIRONMENTAL QUALITY REVIEW

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

The activities recommended in this plan:

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

[18] Available online at http://www.dec.ny.gov/regulations/28693.html.
[19] Available online at http://www.dec.ny.gov/enb/enb.html.

APPENDIX C: FOREST MANAGEMENT PRESCRIPTIONS

PRESCRIPTION FOR WILDLIFE MANAGEMENT AREA TIMBER HARVEST

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

Species composition:

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

Stand inventory or analysis date:

Regeneration data:

Natural Heritage Element Occurrence layer review:

SMZ layer review:

Retention data:

Soil types and drainage:

Interfering vegetation:

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

Technical guidance/stocking guide:

Treatment purpose:

Management Objective: Even aged or Uneven Aged

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

Clearcut acreage and configuration: (if applicable)

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

Retention considerations and adjustments:

Treatment descriptions:

Name and Title of Preparer:

Central Office Lands and Forests Staff **Date**

Regional Wildlife Manager **Date**

PRESCRIPTION NOTES

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

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

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

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

Soil types and drainage: Specifically named soil types are useful, but not necessarily required. "Flat, sandy, well-drained hilltop" or "Steep, gravelly, moderately well-drained mid-slope" may be just as useful as "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.