Habitat Management Plan
for
Capital District Wildlife Management Area
2017 – 2026

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

Capital District Wildlife Management Area (WMA) consists of 3,981.7 acres, most of which is covered with semi-mature to mature stands of black cherry, sugar maple, yellow birch, hemlock, red maple and red spruce. Black spruce and balsam fir occur in the bog-like wetlands within the WMA. The WMA was acquired from 1928 to 1979 for use as a game management area and game refuge. The main human activities on the area had been subsistence farming and charcoal burning. During the 1930s and 1940s, a Civilian Conservation Corps (CCC) camp was operated at the WMA which constructed many projects including roads and the dam for Black River Pond. Capital District WMA was utilized as a beaver stocking site during the beaver reintroduction program in the 1930s and in 1944 the refuge designation was dropped and the entire area became a wildlife management area. Wildlife on the area are typical of forests and forest edge habitats, including white-tailed deer, snowshoe hare, beaver, otter, fisher, bobcat, raccoon, ruffed grouse, wild turkey, woodcock, a variety of songbirds, woodland raptors, reptiles and amphibians. Moose now reside in the WMA, having entered the area from neighboring counties and states. This WMA is included in the Rensselaer Forest Tract Important Bird Area. This designation is attributed to the large, relatively unfragmented forest, high elevation and poorly drained soils, favoring an Adirondack-like forest. This area supports a diverse assemblage of forest breeding birds, including wood thrush, sharp-shinned hawk and common raven. This WMA affords multiple recreational opportunities including hunting, fishing, trapping and bird watching.

Habitat management goals for Capital District WMA include:

- Managing approximately 15.2% of the WMA as young forest (15.9% of the total forested area) to promote snowshoe hare, ruffed grouse and moose habitat;
- Maintaining approximately 80.6% as mature forest to provide habitat for forest interior species;
- Maintaining approximately 2.4% as wetlands;
- Maintaining approximately 0.3% as open water; and
- Maintaining approximately 1.5% of the WMA as roads, parking lots and utility right-of-ways.

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 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

Capital District WMA is located in DEC Region 4, Towns of Berlin and Stephentown, Rensselaer County (Figure 1).

TOTAL AREA

3,981.7 acres

HABITAT INVENTORY

A habitat inventory of the WMA was updated 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 Capital District WMA.

Habitat Type	Current Conditions (as of 2017)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest [a]	3,774.4	94.8%		3,209.4	Decrease to 80.6%
Young forest	40.7	1.0%		605.7	Increase to 15.2%
Shrubland	0	0%		0	No change
Grassland	0	0%		0	No change
Agricultural land	0	0%		0	No change
Wetland (natural) [b]	96.2	2.4%		96.2	No change
Wetland (impounded) [b]	0	0%		0	No change
Open water	10.8	0.3%		10.8	No change
Other (utility rights-of-way, parking areas)	5.9	0.2%		5.9	No change
Roads	53.7	1.3%		53.7	No change
Rivers and streams			8.26		No change
Total Acres:	3,981.7	100%		3,981.7	

[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 Capital District WMA includes many species commonly found throughout Eastern New York and the Rensselaer Plateau, such as:

- Wild turkey, ruffed grouse, American bittern, sharp-shinned hawk, black-throated blue warbler
- Snowshoe hare, Eastern coyote, white-tailed deer, fisher, otter, beaver, moose
- Eastern red-backed salamander, American bullfrog, Northern dusky salamander
- Common garter snake, Northern ring-necked snake, snapping turtle

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

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

Species Group	Species	Federal Status	NY Status	NY SGCN Status
Birds	American bittern			x
	American black duck			HP
	American kestrel			x
	Bald eagle		T	x
	Black-billed cuckoo			
	Black-throated blue warbler			x
	Blue-winged warbler			x
	Canada warbler			HP
	Cerulean warbler		SC	x
	Northern goshawk		SC	x
	Long-eared owl			x
	Olive-sided flycatcher			HP
	Red-shouldered hawk		SC	x
	Ruffed grouse			x
	Scarlet tanager			x
	Sharp-shinned hawk		SC	
	Wood thrush			x
Mammals	Northern long-eared bat	T	T	HP
	New England cottontail [a]			HP

[1] The 2015 New York State Wildlife Action Plan identifies 366 Species of Greatest Conservation Need (SGCN) including 167 High Priority SGCN. Available online at http://www.dec.ny.gov/animals/7179.html.
[2] Available online at http://www.dec.ny.gov/animals/7312.html.
[3] Available online at http://www.dec.ny.gov/animals/7140.html.
[4] Available online at http://ebird.org/content/ebird/about/. © Audubon and Cornell Lab of Ornithology.

Table 2. Continued

Species Group	Species	Federal Status	NY Status	NY SGCN Status
Amphibians and reptiles	Fowler's toad			x
	Smooth green snake			x
	Snapping turtle			x
Fish	Brook trout			x
Invertebrates	None known			
Plants	Farwells water milfoil		T	
	Rhodora		T	

[a] According to NY Natural Heritage, this is a historical record and the species has not been identified on the WMA since 1954.

Significant Ecological Communities:

There are five rare and/or significant natural communities located on Capital District WMA as identified by the NY Natural Heritage Program (Figure 2). The state rank reflects the rarity within NY, ranging from S1, considered the rarest, to S5, considered stable; definitions are provided in Appendix A. The following significant ecological communities occur on the WMA; the community description is from *Ecological Communities of New York State, Second Edition:*[5]

- **Spruce-Fir Swamp (S3):** a conifer or sometimes mixed swamp that occurs on acidic muck to shallow peat. This community typically occurs in a drainage basin, in some cases filling the basin, but also can occur at the edge of a lake or pond, or along gentle slopes of islands where there is some nutrient input from groundwater discharge or subsurface flow. In the Adirondacks and the Tug Hill these swamps are often found in drainage basins occasionally flooded by beaver (*Castor canadensis*).
- **Inland Poor Fen (S3):** a weakly minerotrophic, flat peatland that occurs inland from the coastal plain in which the substrate is peat composed primarily of peat mosses (*Sphagnum* spp.) with admixtures of graminoid or woody peat. The dominant plants are peat mosses (*Sphagnum* spp.), with scattered sedges, shrubs, and stunted trees. Poor fens are fed by waters that are weakly mineralized, and have low pH values, generally between 3.5 and 5.0. This community typically develops where water moves through the peat mat, thus it often forms linear patches closely associated with open water.
- **Spruce Flats (S4):** a mixed forest that occurs on moist sites along the borders of swamps and in low flats along lakes and streams in the Adirondacks. Soils are strongly podzolized, loamy to sandy, and seasonally moist, but not saturated and not peaty.
- **Beech Maple Mesic Forest (S4):** a northern hardwood forest with sugar maple (*Acer saccharum*) and American beech (*Fagus grandifolia*) codominant. This is a broadly defined community type with several regional and edaphic variants. These forests occur on moist, well-drained, usually acid soils. Common associates are yellow birch (*Betula*

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

alleghaniensis), white ash (*Fraxinus americana*), hop hornbeam (*Ostrya virginiana*), and red maple (*Acer rubrum*).

- **Hemlock-Northern Hardwood Forest (S4):** a mixed forest that typically occurs on middle to lower slopes of ravines, on cool, mid-elevation slopes, and on moist, well-drained sites at the margins of swamps.

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 Capital District WMA include:

- Eleven wetlands regulated by Article 24 of the Environmental Conservation Law and 88 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 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.
- Six 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(TS), indicating that streams may support trout spawning. Water quality standards will be adhered to on all streams.
- Several known vernal pools. Management activities will follow SMZ guidelines.

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.*[6] 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.

Soils:

Soils across Capital District WMA are quite consistently very stony loams. Well drained *Buckland very stony loam* is the predominant soil type on moderate slopes. Steeper sloping areas are generally *Glover very stony loam* and somewhat excessively drained. Flatter, low lying areas with poorer drainage are usually *Brayton very stony silt loam*. These soils are listed as not prime farmland, but would not be a limitation for forest.

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

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

- Forest (79% combining deciduous, evergreen and mixed forests)
- Pasture/hay (8%)
- Wetlands (6% combining woody and emergent herbaceous wetlands)
- Development (4%)
- Shrub/scrub (3%)

A majority of the surrounding landscape consists of privately owned forested habitats. A large portion of this forested land is owned and leased by timber companies. These managed forests contain areas of young forest, but they are managed specifically for the production of forest products and will not be maintained in this age class. Timber management on WMAs occurs to create and maintain a young forest component within the landscape to provide quality wildlife habitat. Due to the limited amount of young forest habitat on this WMA, it is the goal of this plan to create young forest habitat in perpetuity on Capital District WMA. This increase in habitat diversity benefits many different species of wildlife and ensures a healthy forest in the future.

Nearby conservation lands include:

- Cherry Plain State Park (175 acres)
- Taconic Ridge State Forest (3,834 acres)
- Berlin State Forest (678 acres)

II. Management Strategies by Habitat Type

DEC will continue active management of wildlife habitat on Capital District 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.

Forest management on Capital District 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.[7] 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. The goal at Capital District WMA is to create approximately 605.7 acres of young forest habitat, 15.9% of the forested acreage.

MANAGEMENT OBJECTIVES

- Retain the majority of the existing forest (3,209.4 acres) for forest interior species.
- Increase young forest from 40.7 to 605.7 acres (15.9% of the total forested area) to improve habitat for young forest-dependent wildlife, targeting snowshoe hare, ruffed grouse, and moose.
- Encourage dispersal of native hardwoods and softwoods to promote regeneration and increase availability of mast and cover for wildlife.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 3,815.1 forested acres on Capital District WMA. The majority of the WMA is forested with several wetlands scattered throughout the property (Table 3; Figure 6). The forests consist mainly of northern hardwood species, hemlock, and red spruce. Several forested wetlands occur on the property, which provide a valuable food source for many species of wildlife including varying hare and moose. Table 3 provides a summary of the forested areas, including the most common species found in the WMA's forests.

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

Forest Type	Acres (as of 2015)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	3,634.3	3,089.3	black cherry, sugar maple, hemlock, red spruce
Plantation	100.0	80.0	Norway spruce, larch
Forested wetland	40.1	40.1	hemlock, red spruce, red maple
Young forest	40.7	605.7	black cherry, white ash, aspen
Young forest (forested wetland)	0	0	
Total Forested Acres:	3,815.1	3,815.1	

[7] 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.

Target species for young forest include snowshoe hare, ruffed grouse, and moose. 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:

- Varying (snowshoe) hare:
  - Protective cover – Well-developed woody understory and densely covered fields of herbaceous vegetation and dense thickets. Ideally, dense stands of conifer (8-16 feet) for daytime sanctuary from visual predators.
  - Foraging – Summer needs are met through herbaceous vegetation in areas with dense cover while winter needs include taller shrubs and young trees that are not covered by snow. Woody browse is critical during the winter months. Young conifer stands (16-50 feet) offer dense thermal cover, food, and travel corridors between resting and feeding areas.[8]
- Ruffed grouse:
  - 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 midstory stem density.[9, 10]
- Moose (in Northeastern hardwood forests):
  - Calving areas – hardwood/conifer forests with dense brushy cover, usually near water.
  - Spring/summer diet – Primarily feed on aquatic vegetation (sodium rich) and hardwood and softwood trees and shrubs.
  - Fall diet – Leaves, twigs and buds of hardwood and softwood trees and shrubs. Disturbed areas provide dense young growth of herbaceous and woody vegetation.
  - Winter diet – Browse on woody vegetation (maple, aspen, willow, birch, dogwood), moss and lichens.
  - Bedding cover – Varies from open hardwoods with laydowns to dense thickets of early succession habitat.[11]

Moose is a target species at Capital District WMA.
Photo: S.L. Brandon

[8] Gilbart, M. 2012. Under Cover: Wildlife of Shrublands and Young Forest. Wildlife Management Institute. Cabot VT. 87 pp.
[9] 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.
[10] Jones, B. C. et al. Habitat Management for Pennsylvania Ruffed Grouse, Pennsylvania Game Commission. 10 pp.
[11] Additional information about moose is available at http://www.dec.ny.gov/animals/6964.html.

MANAGEMENT HISTORY

Most of the WMA was formerly in small subsistence farms that were abandoned prior to the 1930s. The area was planted by the CCC in the 1930s and 1940s. These plantings included conifer species such as Norway spruce and larch. Other areas were planted with apple, crabapple, and a variety of shrubs intended for wildlife food and cover in the 1960s and 1970s. DEC has managed timber on Capital District WMA mainly for the benefit of the many wildlife species present on the area. Recent timber harvests have consisted of strip cuts, patch clearcuts, and apple tree release projects used to improve wildlife habitat.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed in order to reach the young forest acreage goal of 605.7 acres within ten years:

- **Management planned for 2017-2021** (Table 4, Figure 6):
  - Conduct clearcut treatments in stands: A-13, A-14, B-6, C-9, C-14, C-15, C-16, C-17, C-20, C-21 and C-28. These treatments will cover approximately 146 acres.
  - Conduct seed-tree treatments in stands: A-15, D-8 and D-10. These treatments will cover approximately 76 acres.
  - Conduct shelterwood treatment in Stand A-2. This treatment will cover approximately 80 acres.
- **Management planned for 2022-2026** (Table 5, Figure 6):
  - Conduct clearcut treatments in stands: A-14, C-8, C-9, C-14, C-15, C-17, C-21, C-22, C-29, C-30, C-31, C-33 and C-34. These treatments will cover approximately 163 acres.
  - Conduct seed-tree treatments in stands: A-15, C-4, C-10, C-14, D-10, D-11, D-12 and D-14. These treatments will cover approximately 100 acres.

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

Compartment Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A2	80	Pole Timber 6”-11” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Shelterwood
A13	14	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Clearcut
A14	29	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
A15	3	Medium Sawtimber 18”- 24”	Plantation: European larch	Young forest	Wildlife	Seed Tree
B6	31	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Clearcut
C9	26	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Spruce/Fir	Young forest	Wildlife	Clearcut

Table 4. Continued

Compartment Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
C14	13	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Spruce/Fir	Young forest	Wildlife	Clearcut
C15	2	Small Sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
C16	3	Pole Timber 6”-11” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
C17	13	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
C20	2	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Spruce/Fir	Young forest	Wildlife	Clearcut
C21	8	Pole Timber 6”-11” DBH	Natural Forest: Northern hardwood/ Spruce/Fir	Young forest	Wildlife	Clearcut
C28	5	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
D8	34	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Seed Tree
D10	39	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Seed Tree

Table 5. Forest management schedule for the second five-year period of this HMP (2022-2026).

Compartment Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A-14	28	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
A15	3	Medium Sawtimber 18”- 24”	Plantation: European larch	Young forest	Wildlife	Seed Tree
C4	4	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Seed Tree
C8	6	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
C9	14	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Spruce/Fir	Young forest	Wildlife	Clearcut
C10	7	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Seed Tree

Table 5. Continued

Compartment Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
C14	7	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Spruce/Fir	Young forest	Wildlife	Seed Tree
C14	8	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Spruce/Fir	Young forest	Wildlife	Clearcut
C15	7	Small Sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
C17	13	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
C21	10	Pole Timber 6”-11” DBH	Natural Forest: Northern hardwood/ Spruce/Fir	Young forest	Wildlife	Clearcut
C22	9	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
C29	5	Small Sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
C30	3	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Clearcut
C31	35	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Clearcut
C33	9	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ White pine	Young forest	Wildlife	Clearcut
C34	16	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Clearcut
D10	43	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ Hemlock	Young forest	Wildlife	Seed Tree
D11	17	Small Sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Seed Tree
D12	3	Small Sawtimber 12”-17” DBH	Natural Forest: Hemlock	Young forest	Wildlife	Seed Tree
D14	16	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 silviculture 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 2017-2021:

- **Stand A2:** This is a northern hardwood stand composed of mostly red maple, hemlock, yellow birch and beech. This stand was treated in 2001, with 50-foot wide strips removed from throughout the stand to create dense undergrowth to provide habitat for varying hare. A third of the remaining rows will be removed in a shelterwood cut to increase the amount of early successional habitat within the stand.
- **Stand A13:** This stand is primarily composed of northern hardwood species with hemlock also present. A portion of this stand will be clearcut and allowed to regenerate naturally to provide habitat for ruffed grouse and moose.
- **Stands A14, C16, C17 & C28:** These stands are composed of northern hardwood species. A portion of these stands will be clearcut and allowed to regenerate naturally.
- **Stand A15:** This stand is composed of a European larch plantation. A seed tree harvest will be conducted on this stand leaving groups of larch to provide a future seed source for regeneration. The retained trees will be left in groups to decrease the chances of blowdown.
- **Stand B6:** This stand is primarily composed of northern hardwood species and hemlock. A portion of this stand will be clearcut and planting will be incorporated to encourage the regeneration of softwoods.
- **Stands C9, C14, C20 & C21:** These stands are primarily composed of northern hardwood species and spruce. A portion of these stands will be clearcut and allowed to regenerate naturally, providing young forest habitat for ruffed grouse, varying hare and moose.
- **Stand C15:** This stand is a Norway spruce plantation. A portion of this stand will be clearcut and allowed to regenerate naturally.
- **Stands D8 & D10:** These stands are primarily composed of northern hardwood species and hemlock and have very little understory growth. A seed tree harvest will remove most of the overstory with spruce, cherry and maple retained as a seed source. The removal of the overstory will allow sunlight to reach the forest floor and facilitate the establishment of young forest habitat. Planting will be incorporate to encourage the regeneration of softwoods.

Management planned for 2022-2026:

- **Stands A14, C8, C17, C22 & C30**: These stands are composed of northern hardwood species. A portion of these stands will be clearcut and allowed to regenerate naturally.
- **Stand A15**: This stand is composed of a European larch plantation. A seed tree harvest will be conducted on this stand leaving groups of larch to provide a future seed source for regeneration. The retained trees will be left in groups to decrease the chances of blowdown.
- **Stands C4, C10 & D10**: These stands are primarily composed of northern hardwood species and hemlock. A seed tree harvest will remove most of the overstory with hemlock, cherry, maple and oak retained as a seed source. The removal of the overstory will allow sunlight to reach the forest floor and facilitate the establishment of young forest habitat. Planting will be incorporate to encourage the regeneration of softwoods.
- **Stands C9, C14 & C21**: These stands are primarily composed of northern hardwood species and spruce. A portion of these stands will be clearcut and allowed to regenerate naturally, providing young forest habitat for ruffed grouse, varying hare and moose.

- **Stand C14**: This stand is primarily composed of northern hardwood species and spruce. A seed tree harvest will remove most of the overstory with spruce, cherry, maple and oak retained as a seed source. The removal of the overstory will allow sunlight to reach the forest floor and facilitate the establishment of young forest habitat. This stand will be allowed to regenerate naturally to provide habitat for ruffed grouse and moose.
- **Stands C15 & C29**: These stands are Norway spruce plantations. A portion of these stands will be clearcut and allowed to regenerate naturally.
- **Stands C31 & C34**: These stands are primarily composed of northern hardwood species with hemlock also present. A portion of these stands will be clearcut and planting will be incorporated to encourage the regeneration of softwoods.
- **Stand C33**: This stand is composed of northern hardwood species and white pine. A portion of these stands will be clearcut and planting will be incorporated to encourage the regeneration of softwoods.
- **Stands D11 & D14**: These stands are primarily composed of northern hardwood species and have very little understory growth. A seed tree harvest will remove most of the overstory with spruce, cherry and maple retained as a seed source. The removal of the overstory will allow sunlight to reach the forest floor and facilitate the establishment of young forest habitat. Planting will be incorporate to encourage the regeneration of softwoods.
- **Stand D12**: This stand is composed of mainly hemlock, with some northern hardwood species present. A seed tree harvest will remove most of the overstory with spruce, cherry and maple retained as a seed source. The removal of the overstory will allow sunlight to reach the forest floor and facilitate the establishment of young forest habitat. Planting will be incorporate to encourage the regeneration of softwoods.

Natural and artificial regeneration of the stands will occur to create quality habitat for snowshoe hare, ruffed grouse and moose. 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** [12]
Soils	*Rutting Guidelines for Timber Harvesting on Wildlife Management Areas*
Water quality	*NYS Forestry Best Management Practices for Water Quality*
Wildlife	*Retention Guidance on Wildlife Management Areas*
Plantations	*Plantation Management Guidance on Wildlife Management Areas*

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

Wildlife Considerations:

Management actions will be planned to avoid negative impacts to Northern long-eared bats and nesting woodland raptors. Past DEC surveys documented several breeding territories and nest locations for raptors including Northern goshawk and red-shouldered hawk (both SGCN). Additional raptor surveys will be conducted during the nesting season to locate nest trees and 100 foot buffers will be designated around any identified nests. Due to the possibility of Northern long-eared bats being in the area, tree selection for cuts and the timing of cuts will be evaluated to protect the bats.

Capital District WMA is included in the Rensselaer Forest Tract Important Bird Area.[13] This designation is attributed to the large, relatively unfragmented forest along with high elevation and poorly drained soils which favor an Adirondack-like forest. This area supports a diverse assemblage of at-risk breeding birds, including wood thrush, sharp-shinned hawk, American bittern, and Canada warbler. Timber harvest locations will be selected to cause as little disturbance to these areas as possible.

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.

This WMA contains mainly natural forest stands and a few plantations. The plantations are at the point at which they will no longer continue to increase timber production and may begin to be subject to increased mortality. At this point, or before, they should be harvested to improve stand quality. This will be taken into account when making determinations of which stands to harvest.

Emerald ash borer (EAB) has not been confirmed to be within the WMA, but has been found in Rensselaer County and the town of Stephentown is included in the restricted zone. Hemlock wooly adelgid (HWA) has not been found to be within the WMA, but has been confirmed nearby in the town of Chatham, Columbia County. These invasive pests, if found to be present in the future, can have a detrimental effect on the health of forest stands.

This WMA has a relatively low volume of invasive or undesirable vegetation present. Observed vegetation includes honeysuckle, Japanese barberry, and Japanese knotweed, along with other plant species. These species can inhibit or outcompete desirable or native species. Stands where American beech is a significant component will be evaluated to see if control is necessary. While beech is not invasive, it is a prolific stump and root sprouter that can severely limit more desirable forest regeneration. Beech in New York State is heavily infested with beech bark disease and the vast majority of trees will not survive to become viable trees or mast producers. However, as trees die and re-sprout they continue to shade out all other species.

Pre- and Post-treatment Considerations:

If site conditions limit regeneration following treatment, planting of desirable species may supplement natural regeneration.

[13] Rensselaer Forest Tract Important Bird Area: http://www.audubon.org/important-bird-areas/rensselaer-forest-tract

Invasive and undesirable species may outcompete desirable regeneration. In stands where such understory plants occur, herbicide or mechanical control may be utilized pre- and/or post-harvest. White-tailed deer herbivory 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, deer exclosures may be erected around harvested areas.

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 re-cutting of the overstory or using mechanical methods to restart the regeneration process. Pre- and post-harvest actions will be specifically addressed in detail in silvicultural prescriptions.

MANAGEMENT EVALUATION

In order to determine whether the desired forest regeneration and wildlife responses have been achieved by the management outlined above, pre- and post-management assessments will be conducted in accord with guidelines in the *Young Forest Initiative Monitoring Plan: 2016-2025*.[14] 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, three, and five years after the harvest completion or until the forester determines adequate natural or artificial (i.e., planting) regeneration has been securely established. Deer exclosures may be installed and regeneration within the exclosures may be monitored annually. YFI wildlife target species selected for Capital District WMA, which may be assessed to determine response to management, include:

- Snowshoe hare
- Ruffed grouse
- Moose

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

There is no acreage on Capital District WMA managed as shrubland and no plan to develop such habitat.

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

GRASSLAND

Grasslands are open, grassy areas with a minimal amount of shrub and tree cover (<35%) that are maintained, or could be maintained, without significant brush cutting. Grassland management will restore and maintain habitat that will be used by migratory birds as well as contribute to the goal of building self-sustaining grassland bird populations.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

There is no acreage on Capital District 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

There is no acreage on Capital District 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 96.2 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

Currently 96.2 acres are managed as natural wetlands on Capital District WMA. The wetlands are a mixture of emergent vegetation, shrubs, and scattered trees (Figure 3). Unique to this WMA are several inland poor fens that consist of peat mosses, shrubs and stunted black spruce. Wetlands classified as open water or forested wetlands are not addressed in this section. Descriptions of these wetland habitats can be found in the Forest management and Open Water sections of this HMP.

The wetlands provide habitat for species such as:

- American woodcock, American bittern, swamp sparrow

- Muskrat, beaver, otter
- Migratory waterfowl
- Snapping turtle, painted turtle
- Spring peeper, Northern leopard frog, spotted salamander

MANAGEMENT HISTORY

Capital District WMA was utilized as a stocking site during the 1930s beaver reintroduction program. Since that time, beaver have played an integral role in maintaining and creating wetlands within the WMA. Wood duck boxes have been installed within several wetlands to provide artificial nesting habitat for waterfowl. In 2016, a stand of phragmites was identified within one of the wetlands.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Table 7, Figure 6):
    - Maintain the current acreage and quality of wetlands (96.2 acres).
    - Control phragmites both mechanically and chemically, when weather conditions allow.
    - Continue to monitor for other invasive species.
    - Monitor and control invasive aquatic 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. Projects will take into account seasonal weather conditions, along with the breeding and nesting period of wildlife species found on the WMA. Herbicide applications will comply with all applicable state laws, rules and regulations.

MANAGEMENT EVALUATION

Phragmites stands will continue to be monitored and controlled. Other invasive vegetation will continue to be monitored and if identified, controlled.

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 10.8 acres of open water to provide habitat for breeding, nesting and wintering bird species.
- Maintain water control structures and dikes on small ponds occurring on the WMA.
- Monitor and control invasive aquatic vegetation as needed.

DESCRIPTION OF EXISTING OPEN WATER AND TARGET SPECIES

There are 10.8 acres of open water on Capital District consisting of natural and impounded ponds. These areas provide aquatic habitat for many species of amphibians, reptiles and waterfowl.

There are six streams or segments of streams (approximately 8.26 miles) that occur on the WMA. The Black River runs through the WMA and is classified as a Class C(TS) protected trout spawning stream. The other streams located on the WMA are unnamed and are classified as Class C, C(T), and C(TS) indicating they can support a fishery.

Species that benefit from open water habitat include:

- Brook trout
- Pied-billed grebe, American black duck
- Northern leopard frog
- Snapping turtle

MANAGEMENT HISTORY

The CCC constructed water control structures to create three ponds within Capital District WMA in the 1930s. DEC has maintained these structures to enhance open water habitat within the WMA, providing habitat for many different species of wildlife.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Table 7, Figure 6):
    - Maintain existing natural and impounded open water habitat.
    - Monitor and control invasive aquatic vegetation as needed.
    - Inspect and maintain water control structures and dikes.

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

Water bodies on Capital District WMA are not regularly surveyed. Fisheries surveys were conducted in 2003, 2008 and 2010. Brook trout were found at four sites within the WMA.

HABITAT MANAGEMENT SUMMARY

In summary, Table 7 lists the habitat management actions planned for Capital District 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 Capital District WMA, 2017-2026. (Also see Figure 6.)

Habitat	Management Action	Acres	Timeframe
Forest	Perform seed tree cuts in Stands A15, D8 & D10.	76	2017-2021
Forest	Perform clearcuts in Stands A13, A14, B6, C9, C14, C15, C16, C17, C20, C21 & C28	146	2017-2021
Forest	Perform a shelterwood cut in Stand A2.	80	2017-2021
Forest	Perform seed tree cuts in Stands A15, C4, C10, C14, D10, D11, D12 & D14.	100	2022-2026
Forest	Perform clearcuts in Stands A14, C8, C9, C14, C15, C17, C21, C22, C29, C30, C31, C33 & C34.	163	2022-2026
Wetland	Inventory and control invasives as needed.	≤96.2	2017-2026
Open water	Inventory and control invasives as needed.	≤10.8	2017-2026
Open water	Maintain water control structures and dikes.	≤10.8	2017-2026

III. FIGURES

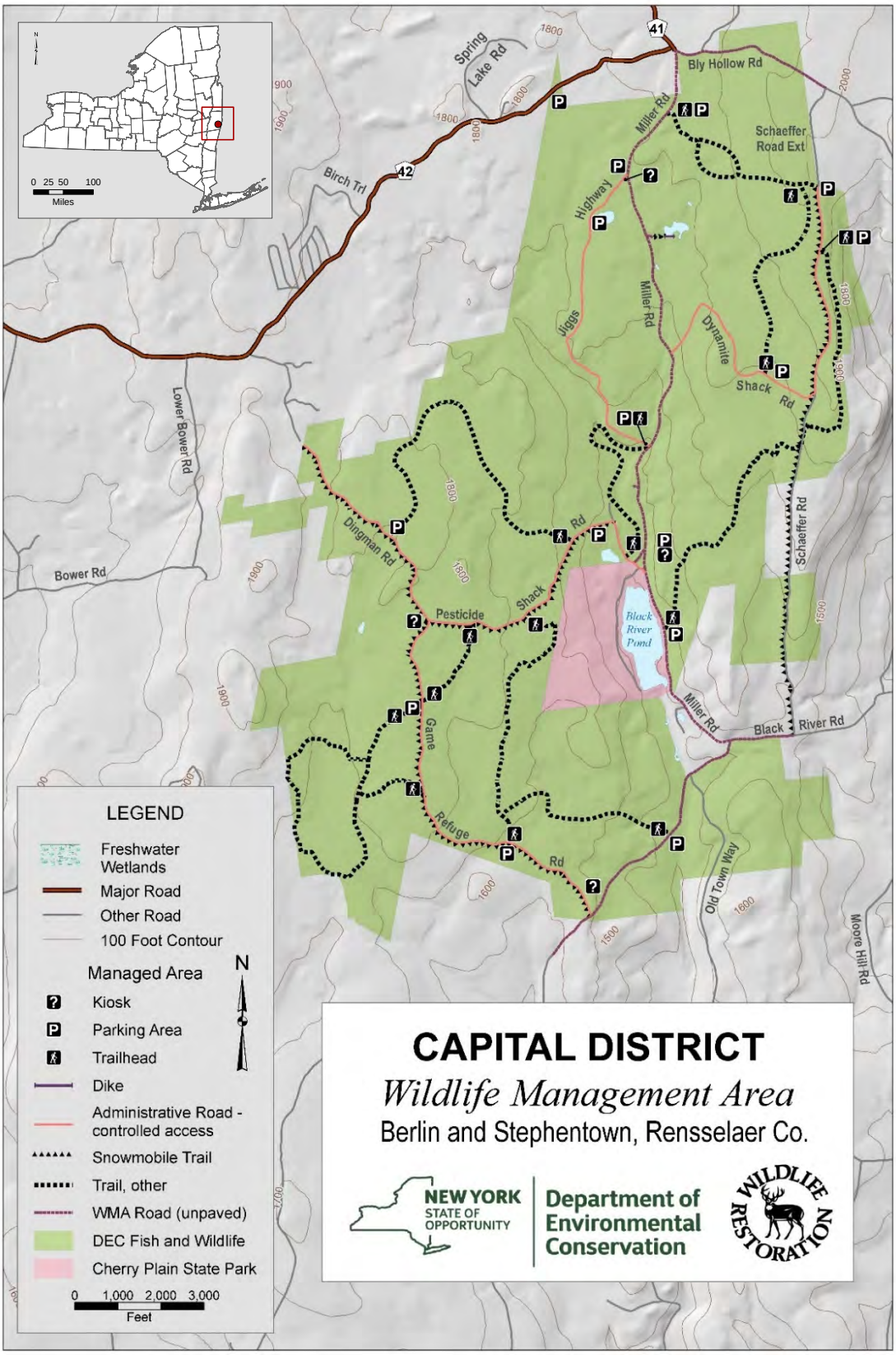

FIGURE 1. Location and access features at Capital District WMA.

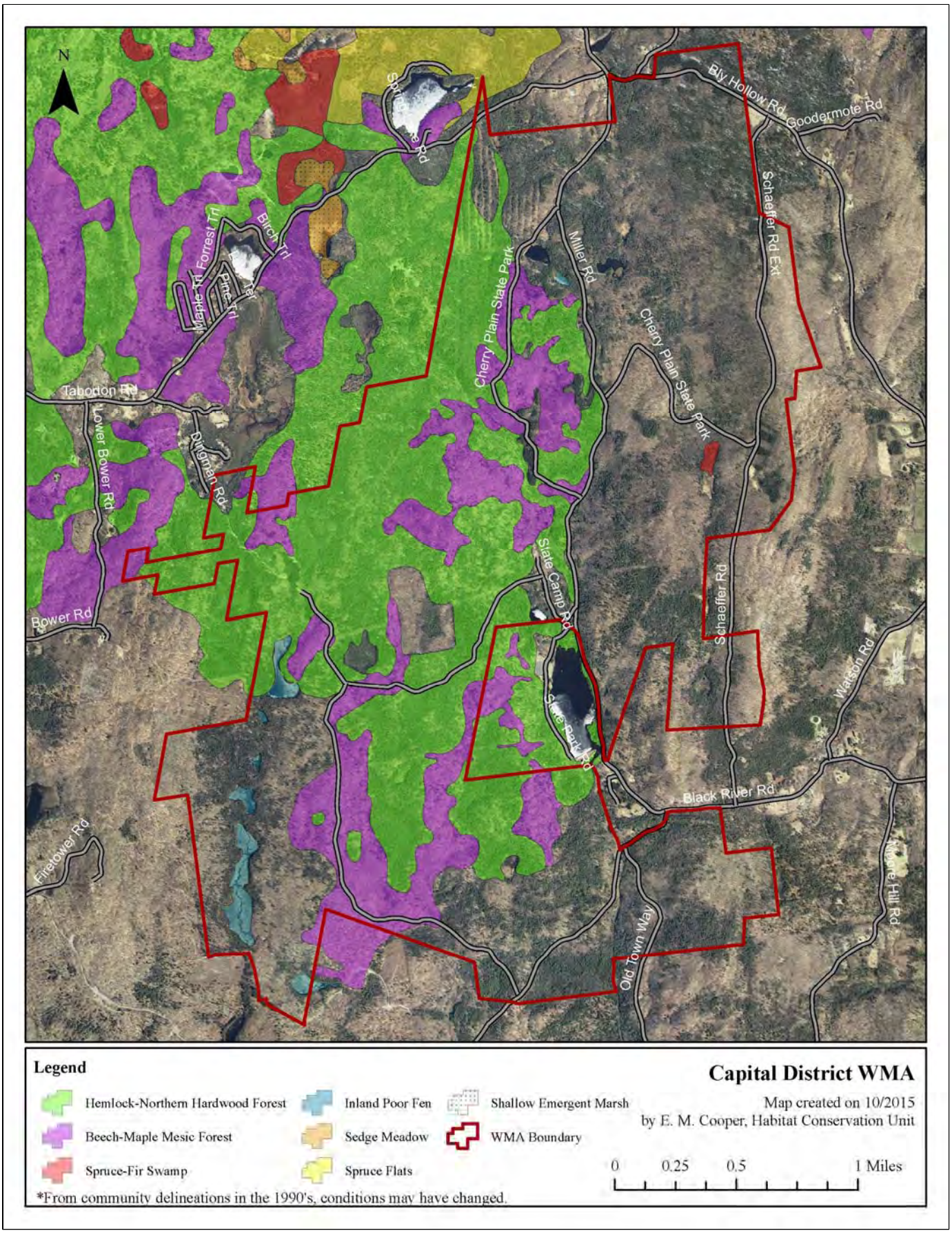

FIGURE 2. Significant ecological communities on Capital District WMA. Data from the NY Natural Heritage Program.

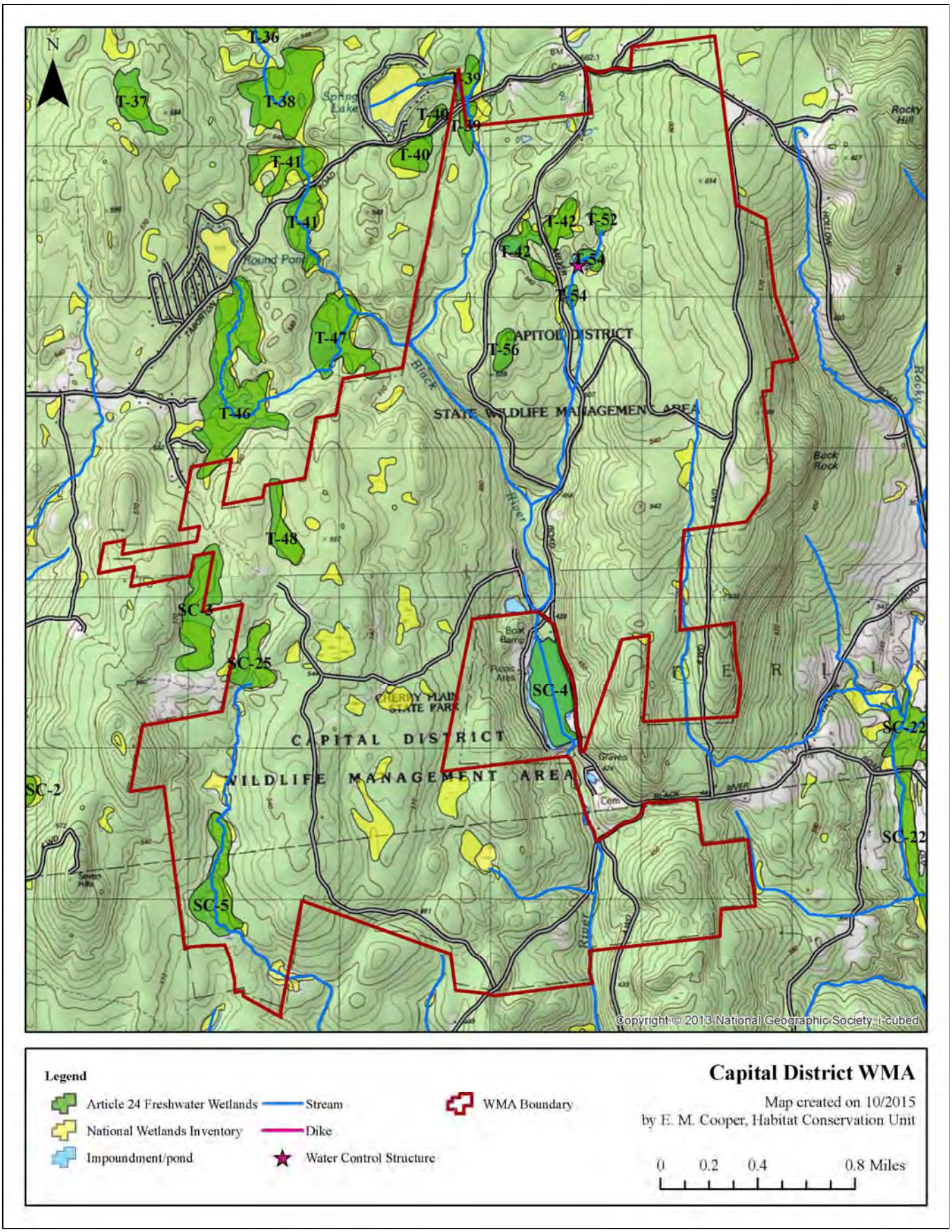

FIGURE 3. Wetlands, open water, and streams of Capital District WMA. Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

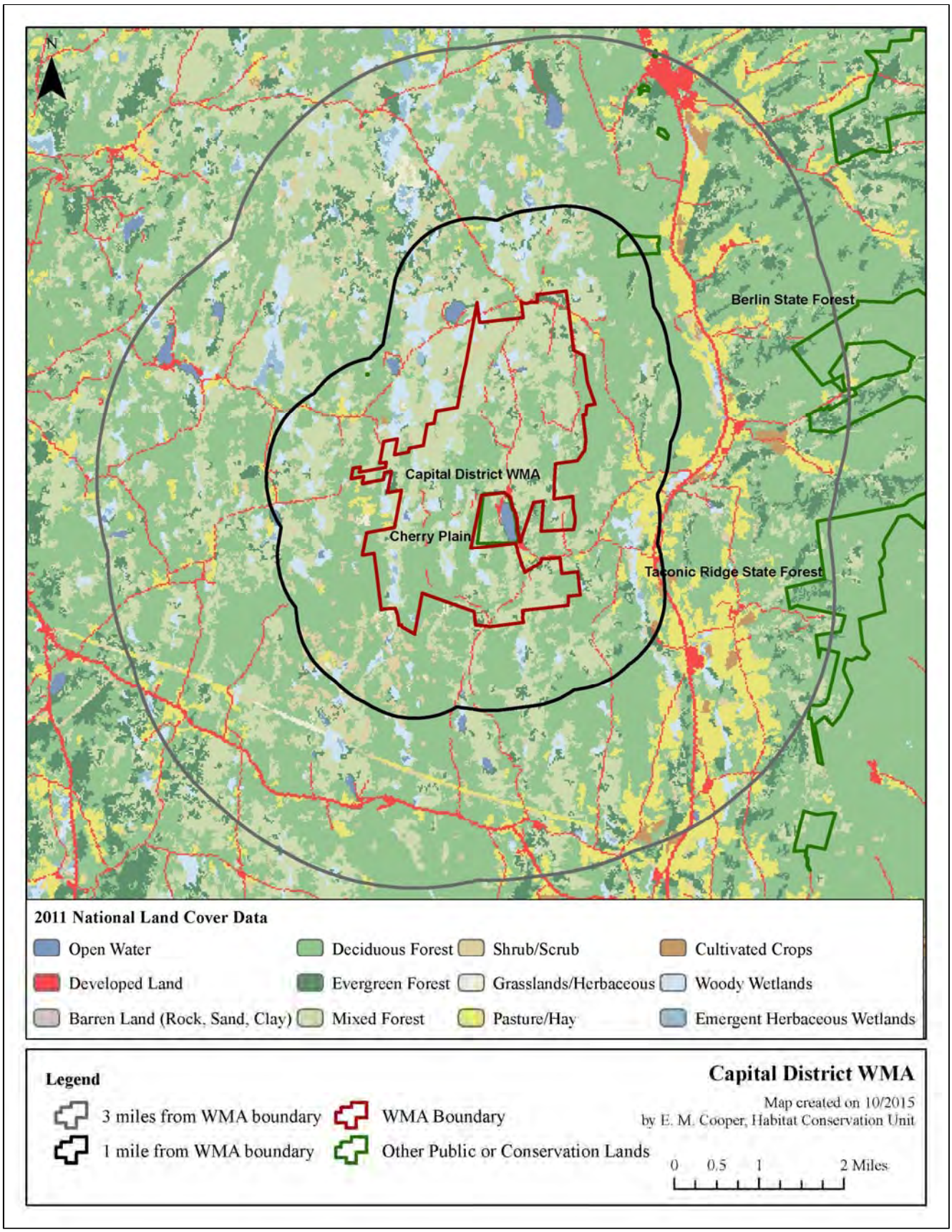

FIGURE 4. Land cover types and conservation lands in the landscape surrounding Capital District WMA. Conservation lands are from the NY Protected Areas Database available online at http://www.nypad.org/. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types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

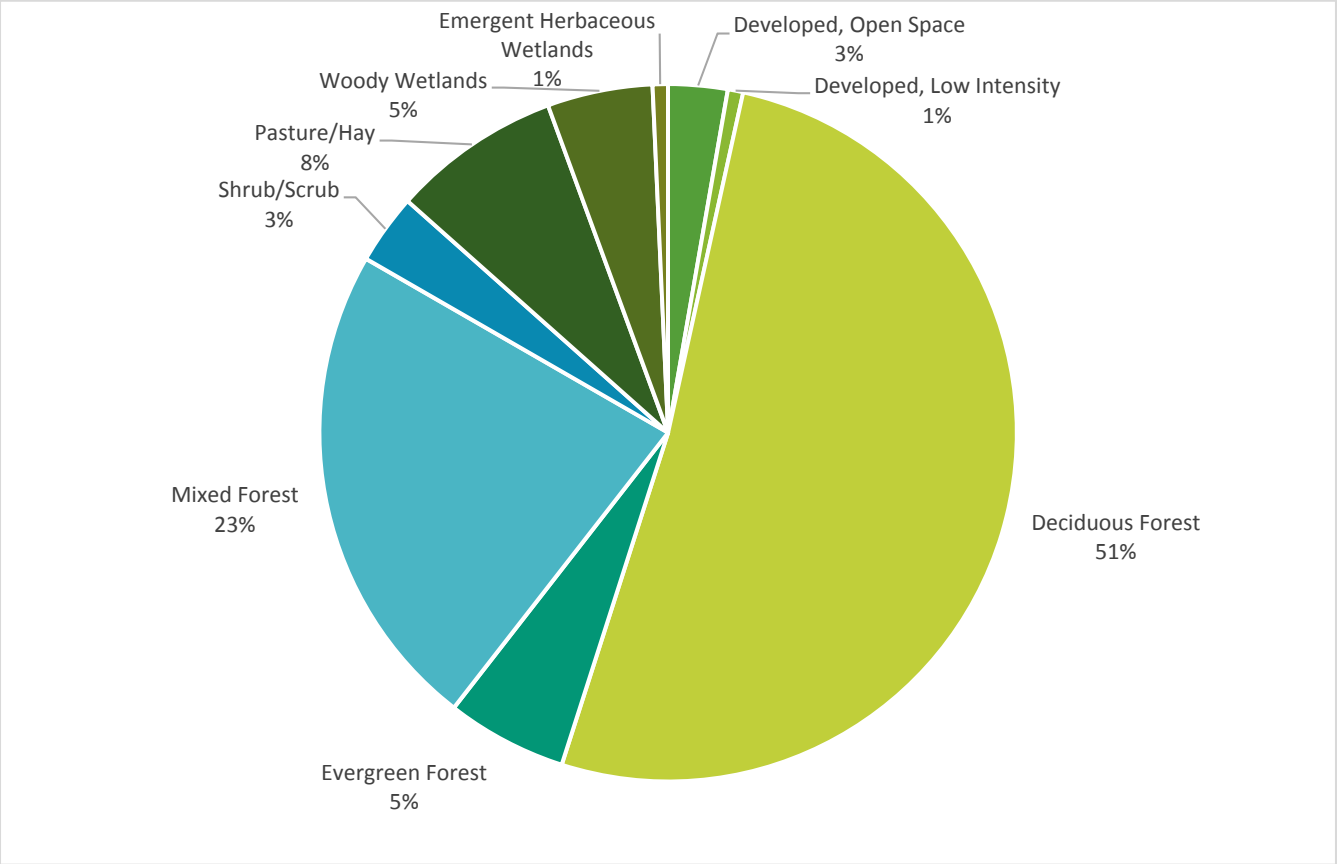

FIGURE 5. Percent cover of land cover types within three miles of Capital District WMA. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at http://www.mrlc.gov/nlcd2011.php.

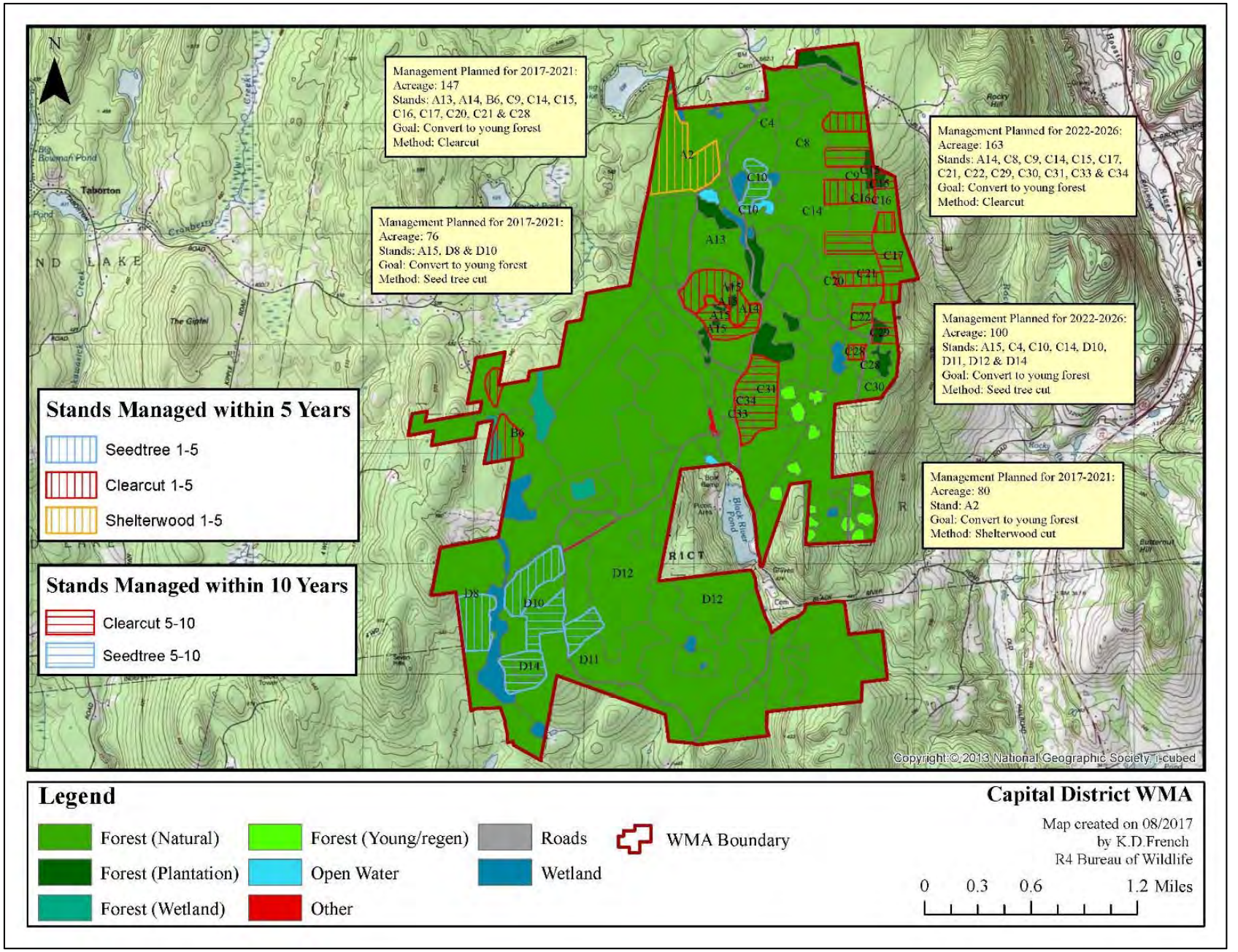

FIGURE 6. Habitat types and locations of proposed management on Capital District WMA. Numbers indicate the stand number from habitat inventory.

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, young forest target species at Capital District WMA include snowshoe hare, ruffed grouse, and moose.

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.