Habitat Management Plan
for
Partridge Run Wildlife Management Area
2017 – 2026


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SUMMARY

Partridge Run Wildlife Management Area (WMA) consists of 4,590.8 acres in central Albany County in the Helderberg Highlands. Most of the WMA was historically farm land that was abandoned during the 1930s. The federal government purchased the land and the Civilian Conservation Corps (CCC) planted over 1,000 acres of conifer and hardwood plantations, including spruce, pine and oak. Partridge Run WMA was gifted to the state by the federal government in 1962. Most of this WMA is forested with natural stands of northern hardwoods comprised of maple and ash, as well as hemlock. Grasslands are maintained throughout the WMA. In addition, there are numerous ponds, wetlands and beaver impoundments. Partridge Run WMA is part of the Helderberg Bird Conservation Area (BCA) and is managed to conserve the diverse assemblage of bird species utilizing the area. This WMA affords multiple recreational opportunities including hunting, trapping and bird watching. Ring-necked pheasants are released on the property in the fall to provide additional hunting opportunities. Wildlife species commonly found on the WMA include ruffed grouse, white-tailed deer, beaver and wild turkey.

Habitat management goals for Partridge Run WMA include:

- Managing approximately 11.1% of the WMA as young forest (12.6% of the total forested area) to promote ruffed grouse, wild turkey and American woodcock.
- Maintaining approximately 76.5% as upland forested habitat.
- Managing approximately 1.4% as grassland habitat.
- Managing approximately 0.8% as shrubland habitat.
- Maintaining approximately 3.9% as wetland habitat.
- Maintaining approximately 2.4% as open water.
- Maintaining approximately 0.4% of the WMA as parking lots, trails and shale banks.
- Maintaining approximately 3.5% of the WMA as roads.

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

Partridge Run WMA is located in DEC Region 4, Town of Berne, Albany County (Figures 1-3).

TOTAL AREA

4,590.8 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 Partridge Run WMA.

Habitat Type	Current Conditions (as of 2017)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest [a]	3,940.9	85.8%		3,511.9	Decrease to 76.5%
Young forest	97.1	2.1%		508.1	Increase to 11.1%
Shrubland	21.6	0.5%		39.6	Increase to 0.8%
Grassland	64.0	1.4%		64.0	No change
Agricultural land	0	0%		0	No change
Wetland (natural) [b]	146.0	3.2%		146.0	No change
Wetland (impounded) [b]	34.3	0.7%		34.3	No change
Open water	108.5	2.4%		108.5	No change
Other (shale banks, parking lots, utility ROW)	16.0	0.4%		16.0	No change
Roads	162.4	3.5%		162.4	No change
Rivers and streams			13.6		No change
Total Acres:	4,590.8	100%		4,590.8	

[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 Partridge Run WMA includes many species commonly found throughout eastern New York and the Helderberg Highlands, such as:

- White-tailed deer, bear, coyote, Eastern cottontail, fisher

- Ruffed grouse, wild turkey, American woodcock
- Wood frog, Eastern red-backed salamander, spotted salamander
- Garter snake, ring-necked snake

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 Partridge Run WMA, including state and federal Endangered (E) and Threatened (T) species, state Species of Special Concern (SC), High Priority SGCN (HP), and SGCN (x).

Species Group	Species	Federal Status	NY Status	NY SGCN Status
Birds	American kestrel			x
	American woodcock			x
	Black-billed cuckoo			x
	Blue-winged warbler			x
	Bobolink			HP
	Brown thrasher			HP
	Cooper's hawk		SC	
	Eastern meadowlark			HP
	Long-eared owl			x
	Louisiana waterthrush			x
	Prairie warbler			x
	Red-shouldered hawk		SC	x
	Ruffed grouse			x
	Scarlet tanager			x
	Wood thrush			x
Mammals	None known			
Amphibians and reptiles	Blue-spotted salamander			HP
	Snapping turtle			x
	Wood turtle			HP
	Jefferson salamander		SC	

[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
Fish	None known			
Invertebrates	None known			
Plants	None known			

Significant Ecological Communities:

There are no rare or significant ecological communities on Partridge Run WMA (Figure 4). Additional information about significant ecological communities is available in *Ecological Communities of New York State, Second Edition*.[5]

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 Partridge Run WMA include:

- Eight wetlands regulated by Article 24 of the Environmental Conservation Law and 78 additional wetlands shown on the National Wetlands Inventory (Figure 5). Each state regulated wetland is protected by a buffer zone, known as the adjacent area, of 100 feet from the delineated wetland boundary. There may be forestry prescriptions associated with forested wetlands and adjacent areas, and each management prescription will be reviewed individually for determination of impacts.
- Seventeen 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.

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:

Partridge Run WMA lies within the Helderberg Mountains area of Albany County. Lordstown-Kearsage-Arnot soils are the predominant soil type in this area. This soil type is formed when glacial till is deposited over sandstone, siltstone and/or shale bedrock ridges. This soil type is silt loam and described as well drained to somewhat excessively drained. Kearsage soils occur

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

where ridges are generally flatter and on hilltops, Arnot soils on the upper portions of slopes and Lordstown soils on the lower portions of slopes. Bedrock outcroppings occur on the Arnot soils. While this soil complex dominates the area, numerous other soil types occur where topography varies. Other soil types occurring on the area range from less well drained Burdett and Nunda soils to poorly drained Tuller-Greene complex soils to Medihemists and Hydraquents occurring at swamps and ponds. The main limitations to tree growth in all of these soils are depth to bedrock and depth to the water table. Examples of these limitations can be seen at Partridge Run WMA in the form of very short (height) red pine plantations.

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 Partridge Run WMA (Figures 6 and 7). The landscape within a three-mile radius of the WMA is primarily privately-owned land including:

- Forest (78% combining deciduous, evergreen and mixed forests)
- Pasture/hay (11%)
- Woody wetlands (4%)
- Developed, open space (4%)
- Open water (1%)
- Grassland/herbaceaous (1%)
- Cultivated crops (1%)

The landscape surrounding the WMA is primarily composed of forested habitats, both state and privately owned. Surrounding state forests are managed for forest product production and are harvested on a rotational basis. Management on the WMA focuses on the creation of habitat for the purpose of benefiting wildlife. Due to a lack of young forest on the WMA and in the surrounding landscape, it is the goal of DEC's Young Forest Initiative (YFI) to maintain young forest habitat on the WMA.[7] This habitat will provide cover and food resources benefiting both early successional and forest interior species.

Nearby conservation land includes:

- Cole Hill State Forest – 858 acres
- Partridge Run State Forest – 935 acres
- Rensselaerville State Forest – 2,546 acres
- Dutch Settlement State Forest – 1,009 acres
- Huyck Preserve – 2,000 acres
- Kenrose Sanctuary – 280 acres

[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.

II. MANAGEMENT STRATEGIES BY HABITAT TYPE

DEC will continue active management of wildlife habitats on Partridge Run 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 hunting, trapping 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: 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.

Norway spruce plantation on Partridge Run WMA.
Photo: Paul Farley, DEC

Forest management on Partridge Run WMA incorporates an approach to create and/or maintain the diversity of forest age

classes that are required to support a diversity of wildlife. In 2015, DEC launched the YFI to increase the amount of young forest on WMAs to benefit wildlife that require this transitional, disturbance-dependent habitat. Within the next ten years, young forest habitat (a minimum of 10% of the WMA's forested habitat) will be created and maintained in perpetuity on this WMA.

MANAGEMENT OBJECTIVES

- Retain the majority of mature forest (3,511.9 acres).
- Increase young forest from 97.1 to 508.1 acres (12.6% of the total forested area) to improve habitat for young forest-dependent wildlife, targeting ruffed grouse, wild turkey and American woodcock.
- Encourage dispersal of native hardwoods (i.e., oak) and softwoods (i.e., pine) to promote regeneration and increase availability of hard mast for wildlife.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 4,038 forested acres on Partridge Run WMA. The majority of the WMA is forested with a small percentage currently in young forest habitat (Figures 8 & 9). 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 Partridge Run WMA.

Forest Type	Acres (as of 2017)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	2,832.1	2,653.1	Sugar maple, red maple, white ash
Plantation	1,108.8	858.8	Norway spruce, red pine, jack pine, red oak, white oak
Forested wetland	0	0	
Young forest	97.1	508.1	Aspen, gray birch, red maple
Young forest (forested wetland)	0	0	
Total Forested Acres:	4,038.0	4,020.0 [a]	

[a] Eighteen acres of Stand C37 will be clearcut and allowed to revert to shrubland habitat, resulting in an overall decrease in forested acreage.

Target species for young forest include ruffed grouse, wild turkey, and American woodcock. 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:

- 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.[8, 9]

[8] 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.
[9] Jones, B.C., et al. Habitat Management for Pennsylvania Ruffed Grouse, Pennsylvania Game Commission. 10 pp.

- Wild turkey:
    - Strutting areas – Open fields with short vegetation, <12 inches preferred, and mature hardwoods.
    - Nesting cover – Blowdowns and the bases of trees and stumps in open hardwoods and brushy cover in early successional habitats and field edges.
    - Brood rearing – The best brooding cover is fields with herbaceous vegetation from 12-18 inches preferred.
    - Foraging – The habitat required ranges from open old-field areas to mature forests:
        - Spring diet – Tubers and invertebrates.
        - Summer diet – Poult diets consist primarily of invertebrates. Adult diets consist of invertebrates and tubers, switching over to herbaceous vegetation and soft mast as summer progresses.
        - Fall diet – Hard and soft mast, seeds, and invertebrates.
        - Winter diet – Hard and soft mast, seeds (birch if available) and hardwood buds.
    - Winter cover – Mature conifer stands.
    - Roosting – Mature hardwoods and softwoods. Adults with flightless poults tend to roost on the ground under large trees with a dense understory of young trees, shrubs, downed trees, rock outcrops, or brushy fields.[10, 11]
- American woodcock:
    - Singing/peenting ground – Open areas from 1 to >100 acres, usually in an abandoned field.
    - Foraging – Moist, rich soils with dense overhead cover of young alder, aspen or birch.
    - Nesting – Young, open, second growth woodlands.
    - Brood rearing – Similar to nesting except also including bare ground and dense ground cover.
    - Roosting – Open fields (minimum of 5 acres) or blueberry fields and reverting farm fields.[12]

MANAGEMENT HISTORY

Most of the WMA was formerly in small family farms that were abandoned prior to the 1930s. Extensive areas were planted by the CCC after abandonment. These plantings included many conifer species such as Norway spruce, white spruce, scots pine, red pine, jack pine, and larch, as well as several hardwood species like red and white oak. Other areas were planted in the 1960s with apple, crabapple, and a variety of shrubs intended for food and cover for wildlife. DEC has managed timber on Partridge Run WMA since its acquisition from the U.S. Department of the Interior in 1962. Many local sales for firewood products as well as a few pulp sales were conducted in the 1970s and 1980s, mainly for timber stand improvement purposes. Most

[10] USDA – NRCS. 1999. Wild Turkey (*Meleagris gallopavo*) Fish and Wildlife Habitat Management Leaflet. 12 pp.
[11] Dickson, J. G. 1992. The Wild Turkey: Biology and Management. National Wild Turkey Federation and USDA Forest Service. Stackpole Books, PA. 480 pp.
[12] US Department of Agriculture, Natural Resources Conservation Service. 2010. American Woodcock: Habitat Best Management Practices for the Northeast by Scot J. Williamson. Wildlife Insight. Washington, DC.

recently timber harvests have consisted of several clearcuts used to create young forest 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 508.1 acres within ten years:

Management planned for 2017-2021 (Table 4, Figures 8 & 9)

- Conduct clearcut treatments in Stands A-2, A-3, A-5.1, A-18, A-19, B-6, C-37, D-21, E-5, E-6, E-7, E-17, E-32, E-37, E-47, E-48, E-63.1, E-63.3 and F-50. These treatments will cover approximately 144 acres (126 acres will be converted to young forest; 18 acres will revert to shrubland).
- Patch clearcut Stands B-17, B-19 and C-24. These cuts will total approximately 10 acres.
- Conduct seed-tree treatments in Stands B-40, E-9, F-9 and F-45. These treatments will cover approximately 35 acres.
- Conduct shelterwood treatments in Stands A-35, B-32, D-2, D-22, E-36 and F-18. These treatments will cover approximately 70 acres.
- Release approximately 14 acres of apple trees in Stand D-20 and a portion of Stand A-3.

Management planned for 2022-2026 (Table 5, Figures 8 & 9)

- Conduct clearcut treatments in Stands A-32, A-36, B-10, C-52, E-8, F-43 and F-54. These treatments will cover approximately 77 acres.
- Install patch clearcuts in Stands B-18 and C-24. These cuts will total approximately 15 acres.
- Conduct seed-tree treatments in Stands A-22, A-26, D-56, E-1, E-2, E-3, F-47 and F-48. These treatments will cover approximately 64 acres.

The acreages identified in Tables 4 and 5 do not always represent entire stand acreages. Select stands will only have a portion of the whole stand treated to increase habitat diversity and provide a range of options for treatment in the future. Achieving the level of management proposed is subject to a variety of factors including; changing timber markets, presence/concern over rare, threatened or endangered species, cultural/historical features, natural disturbances, ground conditions or changes in staffing and funding support.

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

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A-2	6	Small sawtimber 12”-17” DBH	Plantation: Scots pine/ Norway spruce	Young forest	Wildlife	Clearcut
A-3	6	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ white pine	Young forest	Wildlife	Clearcut

Table 4. Continued

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A-3	9	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ white pine	Young forest	Wildlife	Apple tree release
A-5.1	9	Small sawtimber 12”-17” DBH	Plantation: Red pine	Young forest	Wildlife	Clearcut
A-18	4	Pole timber 6”-11” DBH	Plantation: Red pine/ scots pine	Young forest	Wildlife	Clearcut
A-19	11	Small sawtimber 12”-17” DBH	Plantation: Red pine	Young forest	Wildlife	Clearcut
A-35	3	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Shelterwood cut
B-6	5	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
B-17	3	Pole timber 6”-11” DBH	Natural Forest: Pioneer hardwoods	Young forest	Wildlife	Patch clearcuts
B-19	2	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Patch clearcuts
B-32	20	Pole timber 6”-11” DBH	Natural Forest: Northern hardwood/ hemlock	Young forest	Wildlife	Shelterwood cut
B-40	18	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Seed tree cut
C-24	5	Small sawtimber 12”-17” DBH	Natural Forest: Pioneer hardwoods	Young forest	Wildlife	Patch clearcuts
C-37	37	Pole timber 6”-11” DBH	Plantation: Norway spruce/Red Pine	Young forest/ shrubland	Wildlife	Clearcut
D-2	10	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Shelterwood cut
D-20	5	Small sawtimber 12”-17” DBH	Natural Forest: Pioneer hardwoods	Young forest	Wildlife	Apple tree release
D-21	5	Small sawtimber 12”-17” DBH	Plantation: Red pine	Young forest	Wildlife	Clearcut
D-22	4	Small sawtimber 12”-17” DBH	Natural Forest: Hemlock	Young forest	Wildlife	Shelterwood cut

Table 4. Continued

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
E-5	3	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ white pine	Young forest	Wildlife	Clearcut
E-6	3	Small sawtimber 12”-17” DBH	Natural Forest: White pine	Young forest	Wildlife	Clearcut
E-7	2	Pole timber 6”-11” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
E-9	4	Small sawtimber 12”-17” DBH	Natural Forest: Oak/white pine	Young forest	Wildlife	Seed tree cut
E-17	4	Pole timber 6”-11” DBH	Natural Forest: Pioneer hardwoods	Young forest	Wildlife	Clearcut
E-32	4	Small sawtimber 12”-17” DBH	Plantation: Red pine	Young Forest	Wildlife	Clearcut
E-36	8	Small sawtimber 12”-17” DBH	Plantation: Oak	Young forest	Wildlife	Shelterwood cut
E37	5	Pole timber 6”-11” DBH	Plantation: European larch/ Norway spruce	Young Forest	Wildlife	Clearcut
E-47	4	Small sawtimber 12”-17” DBH	Plantation: Red pine	Young forest	Wildlife	Clearcut
E-48	4	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
E-63.1	21	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
E-63.3	7	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
F-9	11	Pole timber 6”-11” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Seed tree cut
F-18	25	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Shelterwood cut
F-45	2	Small sawtimber 12”-17” DBH	Plantation: Oak	Young forest	Wildlife	Seed tree cut
F-50	4	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut

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

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A-22	9	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ hemlock	Young forest	Wildlife	Seed tree cut
A-26	16	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood/ white pine	Young forest	Wildlife	Seed tree cut
A-32	12	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
A-36	5	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
B-10	13	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
B-18	9	Small sawtimber 12”-17” DBH	Natural Forest: Pioneer hardwoods	Young forest	Wildlife	Patch clearcuts
C-24	6	Pole timber 6”-11” DBH	Natural Forest: Pioneer hardwoods	Young forest	Wildlife	Patch clearcuts
C-52	18	Small sawtimber 12”-17” DBH	Plantation: Scots pine	Young forest	Wildlife	Clearcut
D-56	15	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Seed tree cut
E-1	3	Small sawtimber 12”-17” DBH	Natural Forest: Pioneer hardwoods	Young forest	Wildlife	Seed tree cut
E-2	13	Small sawtimber 12”-17” DBH	Natural Forest: Northern hardwood	Young forest	Wildlife	Seed tree cut
E-3	2	Pole timber 6”-11” DBH	Plantation: Jack pine	Young forest	Wildlife	Seed tree cut
E-8	4	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
F-43	11	Pole timber 6”-11” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut
F-47	2	Small sawtimber 12”-17” DBH	Plantation: Oak	Young forest	Wildlife	Seed tree cut
F-48	4	Pole timber 6”-11” DBH	Natural Forest: Pioneer hardwoods	Young forest	Wildlife	Seed tree cut
F-54	14	Small sawtimber 12”-17” DBH	Plantation: Norway spruce	Young forest	Wildlife	Clearcut

Stand locations and planned management actions are also summarized in Figures 8 and 9. 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 2017-2021:

- **Stands A-2 and A-18:** These stands are mixed conifer plantations. Six acres of stand A-2 and four acres of stand A-18 will be clearcut and converted to 10 acres of young forest.
- **Stands A-3 and E-5:** These are mixed stands of northern hardwood and white pine. Six acres of stand A-3 and three acres of stand E-5 will be clearcut and converted to nine acres of young forest.
- **Stands A-35 and D-2:** These stands are Norway spruce plantations. Thirteen acres of these stands will be converted to young forest using a shelterwood harvest by thinning the existing overstory to establish seedling/sapling regeneration. Removal of residual trees will be evaluated approximately eight years after the initial thinning.
- **Stands B-6, E-7, E-48, E-63.3, E-63.3 and F-50:** These stands are Norway spruce plantations. A portion of these stands will be clearcut and converted to approximately 43 acres of young forest.
- **Stands A-5.1, A-19, D-21 and E-47:** These stands are red pine plantations. A portion of these stands will be clearcut and converted to 29 acres of young forest.
- **Stand E-6:** This is a white pine stand. Six acres of this stand will be clearcut to create young forest.
- **Stand B-40:** This stand is a Norway spruce plantation. Eighteen acres of this stand will be converted to young forest using a seed tree harvest by removing a majority of the trees and leaving a few of the best quality trees to provide a future seed source.
- **Stands A-3 and D-20:** These are old apple orchards where the apple trees are becoming overtopped by other trees. These stands will be subject to an apple tree release creating 14 acres of young forest.
- **Stand B-19:** This stand consists of northern hardwoods and aspen. Patch clearcuts will create three acres of young forest within these stands.
- **Stands B-17 and C-24:** These stands are pioneer hardwood stands with a large component of aspen. Patch clearcuts will create eight acres of young forest within these stands.
- **Stand B-32:** This is a northern hardwood-hemlock stand that will be converted into 20 acres of young forest using a shelterwood harvest by thinning the existing overstory to establish seedling/sapling regeneration. Removal of residual trees will be evaluated approximately eight years after the initial thinning.
- **Stand C-37:** This is a Norway spruce and red pine plantation that will be clearcut. Half of this stand will be allowed to revert to young forest. The other half (18 acres) will be converted to shrubland.
- **Stand D-22:** This is a hemlock stand that will be converted into four acres of young forest using a shelterwood harvest by thinning the existing overstory to establish seedling/sapling regeneration. Removal of residual trees will be evaluated approximately eight years after the initial thinning.
- **Stand E-17:** This stand is a pioneer hardwood stand. Four acres of this stand will be clearcut to create of young forest.

- **Stand F-45:** This stand is an oak plantation that will be converted into two acres of young forest using a seed tree harvest by removing a majority of the trees and leaving a few of the best quality trees to provide a future seed source.
- **Stand E-36:** This stand is an oak plantation that will be converted into eight acres of young forest using a shelterwood harvest to establish seedling/sapling regeneration. Removal of residual trees will be evaluated approximately eight years after the initial thinning.
- **Stand E-37:** This stand is a European larch and Norway spruce stand that will be clearcut to create five acres of young forest.
- **Stand E-9:** This is an oak and white pine stand that will be converted into four acres of young forest using a seed tree harvest by removing a majority of the trees and leaving a few of the best quality trees to provide a future seed source.
- **Stand F-9:** This is a northern hardwood stand that will be converted into nine acres of young forest using a seed tree harvest by removing a majority of the trees and leaving a few of the best quality trees to provide a future seed source.
- **Stand F-18:** This is a northern hardwood stand, with a mix of sugar maple, red oak, shagbark hickory and a small amount of bigtooth aspen. This stand will have a shelterwood harvest to establish seedling/sapling regeneration and create 25 acres of young forest. Removal of residual trees will be evaluated approximately eight years after the initial thinning.

Management planned for 2022-2026:

- **Stand A-26:** This is a northern hardwood and white pine stand. Sixteen acres of this stand will be converted to young forest using a seed tree harvest by removing a majority of the trees and leaving a few of the best quality trees to provide a future seed source.
- **Stands A-32, A-36, B-10, E-8, F-43, and F-54:** These stands are Norway spruce plantations that will be clearcut and converted to 59 acres of young forest.
- **Stands B-18 and C-24:** These stands consist of northern hardwoods and aspen. Patch clearcuts will create 15 acres of young forest within these stands.
- **Stands E-1 and F-48:** These stands are pioneer hardwood stands with a large component of aspen. Seven acres of these stands will be converted into young forest using patch clearcuts.
- **Stand E-3:** This stand is a failed jack pine plantation. Two acres of this stand will be converted into young forest using a seed tree harvest, with oak and hickory remaining as a seed source.
- **Stand C-52:** This is a scots pine stand that will be clearcut and converted to 18 acres of young forest.
- **Stand F-47:** This stand is a red and white oak plantation that will be converted into two acres of young forest using a seed tree harvest by removing a majority of the trees, leaving a few of the best quality trees scattered throughout the stand to provide a seed source for the next generation of trees.
- **Stand A-22:** This is a northern hardwood and hemlock stand. Nine acres of this stand will be converted into young forest using a seed tree harvest by removing a majority of the trees, leaving a few of the best quality trees scattered throughout the stand to provide a seed source for the next generation of trees.

- **Stands D-56 and E-2:** These are northern hardwood stands. Twenty-eight acres of these stands will be converted to young forest using a seed tree harvest by removing a majority of the trees, leaving a few of the best quality trees scattered throughout the stand to provide a seed source for the next generation of trees.

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** [13]
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:

There are no known state or federally listed threatened or endangered species confirmed on this property at this time. Bald eagles have been observed at White Birch Lake and Fawn Lake, but no evidence of nesting has been found. Considerations will be taken to avoid negative impacts to Indiana and Northern long-eared bats, as well as nesting woodland raptors. Surveys will be conducted for both bats and raptors to determine their presence/absence within or surrounding the treatment areas. If protected bat species are found on the property, timber harvests will be conducted outside the breeding time period if the species are known to be on the area or within close proximity. Raptor call back surveys will be conducted during the nesting season to identify nesting trees and 100 foot buffers will be designated around any identified nests.

Partridge Run WMA is part of the Helderberg BCA and is managed to conserve the diverse assemblage of bird species utilizing the area, in particular to ensure that early successional habitats continue to be an important component of the area. The BCA guidance recommends the use of even-aged forestry to create/maintain early successional habitats. Habitat management planned over the next ten years will create approximately 508 acres of needed young forest/early successional habitat. Conifer plantations are also identified within the BCA as an important habitat to maintain. The seed source provided by these plantations is utilized by winter finches during the winter months. Over the next ten years, approximately 22% of the conifer plantations on the WMA will be converted into young forest. Many conifer plantations at Partridge Run WMA have reached an age of maturity and have started to decline in health and wildlife value. Some of these stands will be harvested and allowed to regenerate naturally back to northern hardwood forest and select stands may be replanted to maintain a conifer component within the WMA.

Forest Health Considerations:

Soil quality may inhibit tree growth in certain areas of the WMA, causing slow regeneration of

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

desirable species.

This WMA contains plantations and natural forest that have reached maturity, or are at the point at which they will no longer continue to increase timber production, and may begin to be subject to increased mortality. It is at this point or before that 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) and hemlock wooly adelgid (HWA) have not yet been identified within the WMA. 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 multitude of invasive or undesirable vegetation present. Observed vegetation includes multiflora rose, buckthorn, honeysuckle, Japanese barberry, autumn olive, 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 soil conditions limit regeneration following treatment, planting of desirable species may supplement natural regeneration.

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 stands may be re-treated to attempt to improve the quality or quantity of desired regeneration. This may include re-cutting of the overstory, using herbicides or a forestry mower 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 Monitoring Plan establishes statewide standards for evaluating vegetation and target wildlife responses to forest management to determine if the outcome is as prescribed.

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

Regeneration assessments will be conducted within one year of harvest completion, and three and five years after the harvest or until the forester determines adequate natural or artificial (i.e., planting) regeneration has been securely established. Deer exclosures may be erected around select harvest areas if herbivory is found to have a negative impact on regeneration. YFI wildlife target species selected for Partridge Run WMA, which may be assessed to determine response to management, include:

- Ruffed grouse
- Wild turkey
- American woodcock

SHRUBLAND

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

MANAGEMENT OBJECTIVES

- Maintain the existing 21.6 acres of shrublands to provide early successional habitat for cottontail rabbit, ruffed grouse, pheasant and other early successional species.
- Clearcut Stand C-37 and allow 18 acres of the stand to revert into shrubland.

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

Shrublands occur at scattered locations throughout Partridge Run WMA, often at the periphery of lakes, ponds, and wetlands, or at margins of maintained fields. Some are associated with apple orchards. These areas are interspersed with a shrub component of dogwoods and honeysuckle.

The shrublands provide habitat for species such as:

- American woodcock
- Wild turkey
- Ruffed grouse
- Eastern cottontail
- Pheasant
- White-tailed deer

MANAGEMENT HISTORY

Partridge Run WMA was historically farmland. Over the years, much of the land has reverted to forest; some fields that had originally been maintained have grown up to shrubland due to limitations on DEC's ability to mow areas regularly, or due to wet soils. As equipment has been available, some of the shrubland has been periodically brush-hogged and allowed to regrow.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Table 7, Figures 8 & 9):

- Mow the grassland component of these shrubby areas every 2-3 years to maintain hunting access and to maintain these open areas.
- Mow the shrub component of these areas every 7-10 years with a forestry mower or similar equipment in order to maintain shrub density.
- As time is available, reduce the tree component of these shrublands (i.e., remove trees) so that trees do not dominate and shade out the shrubs.
- Monitor and control invasive vegetation if needed.

BEST MANAGEMENT PRACTICES

Mowing of the grassy component of shrublands will occur after August 15 in order to avoid impacts to nesting birds. Mowing will typically be completed prior to the opening of most small game hunting (October 1). However, in some cases, work in these areas may occur in late December or throughout the winter when the ground is frozen.

MANAGEMENT EVALUATION

Visual evaluations of the shrublands will be conducted annually to assess needed management actions, such as brush-hogging of grassy areas, cutting or mowing of shrubs, or removal of trees.

GRASSLAND

Grasslands are open, grassy areas with a minimal amount of shrub and tree cover (<35%) that are maintained, or could be maintained, without significant brush cutting.

MANAGEMENT OBJECTIVES

- Mow all 64.0 acres of fields every 2-3 years to maintain grassland habitat for wildlife.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

The 64 acres of grassland habitat at this WMA are primarily found in about 15 different fields. Because these fields are all relatively small, and are interspersed with some shrubs and trees, they provide limited habitat for grassland nesting birds. These areas provide important habitat for pheasants released at this property immediately prior to and during the small game hunting season. They also provide foraging habitat for white-tailed deer and wild turkey. Boblink have been documented in the recent past utilizing one field near the intersection of Cook Hill and Bradt Hollow Rd.

The grasslands provide habitat for species such as:

- Wild turkey
- Pheasant
- White-tailed deer

MANAGEMENT HISTORY

This property was historically farmland and presumably existing fields were once used for grazing by livestock. Some row crop agriculture likely also occurred on the land. After DEC acquired this property, extensive planting of trees occurred with the intention of providing

wildlife habitat. Most remaining fields have a perimeter of planted trees, and/or small stands of trees planted within the fields. Most recent management has involved maintaining and reclaiming fields that had become overgrown, and in trimming back perimeter tree growth that was continually encroaching on the fields and physically impeding mowing.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Table 7, Figures 8 & 9):
  - Mow 64 acres of fields every 2-3 years to maintain grassland conditions. Some limited mowing may be done annually to provide hunter access, or under TRP for dog trials/training. Mowing will generally occur after August 15 and will be completed prior to release of pheasants in late September.
  - Improve fields by limbing perimeter trees, and limbing and/or removing individual trees or small stands of trees in fields that shade, obstruct, break up, or have invaded the field. Remove trees that fall into fields. Generally, one field may be treated per year. Much of this work will be done during the late fall or winter after the conclusion of deer season.

BEST MANAGEMENT PRACTICES

The following sub-sections provide guidelines for grassland habitat management on all WMAs in NY. For more detailed information and recommendations see *A Plan for Conserving Grassland Birds in New York*.[15] In particular, refer to the plan for species-specific habitat requirements and detailed recommendations regarding grassland management and restoration techniques.

General Management Recommendations

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

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

most situations in New York.

Timing of Management

- Fields over 25 acres (including all contiguous fields) or fields with a history of listed (federally listed and/or state E/T or SC) grassland bird species within the last 10 years, including fields of any size AND contiguous fields. Can also include nearby fields if deemed necessary:
    - Mowing or other management should be avoided between April 23 and August 15 unless at least one of the following criteria are met and the fields are assessed or surveyed to confirm there is no active nesting by E/T/SC grassland birds:
        - Management is to be done for long term benefits to the habitat/wildlife (such as invasive species management).
        - The fields are assessed or surveyed and there is no active nesting by E/T/SC grassland birds.
        - Nesting locations can be avoided, such as using spot treatment for invasive species, reducing any negative impact to the species of concern.
- Fields under 25 acres (including all contiguous fields) with no history of listed species:
    - Field can be managed/mowed within the period April 23 and August 15 if necessary to accomplish other goals and priorities that benefit other species that use the habitat. If early management is proposed, then the habitat requirements and nesting periods of other species should be considered (e.g., nesting waterfowl, American bittern, reptiles and amphibians).

Additional Mowing Guidelines

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

MANAGEMENT EVALUATION

Fields will be assessed annually to determine the need for mowing. Most of the fields have a substantial component of suppressed shrubs and saplings – particularly black locust – that quickly regrows if not kept in check. Determining when and where to mow will largely depend on the height and vigor of woody regrowth. Fields will also be assessed for issues regarding invasive plants.

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 Partridge Run WMA managed as agricultural land. As time and opportunity presents, small wildlife food plots may be developed at locations throughout the WMA. These food plots will generally not exceed one acre in size and will not number more than ten.

WETLANDS (NATURAL AND IMPOUNDED)

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

MANAGEMENT OBJECTIVES

- Maintain existing wetlands to provide habitat for wildlife.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

There are eight different DEC mapped wetlands occurring on Partridge Run WMA. RE-7 is associated with Becker Pond, RE-8 with Waxwing Pond, and RE-12 with Newt Ponds. These are permanent impoundments, though each wetland itself often is more extensive than the ponds themselves. The remainder (RE-47, RE-50, RE-18, RE-19) encompass various beaver impoundments which are not named. These impoundments may or may not hold water at any given time, depending on current beaver occupancy and seasonal water conditions. Wetland boundaries depicted on the habitat map in Figures 8 and 9 may not be the same as the state regulated freshwater wetland boundaries depicted in Figure 5. This is due to the fact that some wetlands include ponds/lakes, which are designated as open water on the habitat inventory maps.

The wetlands provide habitat for species such as:

- American woodcock
- Wild turkey
- Ruffed grouse
- White-tailed deer
- Amphibians and reptiles, especially turtles
- Waterfowl and other water-associated birds
- Furbearers such as beaver, muskrat, mink and raccoon

MANAGEMENT HISTORY

No wetland management has occurred at this site during DEC ownership. It is likely that when the area was farmed, the wetlands were in pasture.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2017-2026** (Table 7, Figures 8 & 9):

- Survey impoundments annually for the presence of water chestnut. Hand-pull any plants found.
- Survey wetlands periodically for invasives such as purple loosestrife and Phragmites. Small numbers of loosestrife plants can be hand-pulled. Larger groups may need to be addressed through release of *Gallericella* beetles. Phragmites may need to be controlled through the use of herbicide applied by a licensed pesticide applicator.
- Monitor beaver activity in impoundments with dikes and beaver dams. Control beaver populations through licensed trapping and, when necessary, nuisance removal to avoid impacts to culverts and roads, and damage to dikes and forest stands, as needed.

BEST MANAGEMENT PRACTICES

Habitat management activities will be conducted in accordance with the DEC General Permit (GP-0-16-003), the New York State Freshwater Wetlands Act (ECL Article 24), and Water Resources Law (ECL Article 15, Title 5). Any use of herbicides to control invasive wetland plants, such as Phragmites, should be performed by a licensed pesticide applicator following all label directions.

MANAGEMENT EVALUATION

Periodic surveys for amphibians and reptiles in 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., White Birch Pond, Fawn Lake).

MANAGEMENT OBJECTIVES

- Maintain the existing 108.5 acres of open water to provide habitat for breeding, nesting and wintering bird species.
- Monitor for invasive species and eradicate where feasible.

DESCRIPTION OF EXISTING OPEN WATER AND TARGET SPECIES

There are 108.5 acres of open water on Partridge Run WMA consisting of natural and impounded ponds and streams. These include Becker Pond, Hidden Pond, Wood Pond, Tubbs Pond, Fawn Lake, White Birch Lake, and Wood Duck Pond, among others. These areas provide aquatic habitat for many species of amphibians, reptiles, fish and waterfowl.

There are 14 streams or segments of streams (approximately 12.2 miles) that occur on the WMA and the adjoining state forest. Only one small section of stream supports a sparse population of trout. The other streams located on the WMA are unnamed and are classified as Class C indicating it can support a fishery.

Species that benefit from open water habitat include:

- Waterfowl
- Bald eagle, osprey and wading birds such as herons
- Amphibians
- Snapping turtle and painted turtle

MANAGEMENT HISTORY

Certain areas of open water habitat have been historically managed on Partridge Run WMA. Many of the small impoundments were originally constructed to provide habitat for waterfowl. Some of these have been temporarily partially drained as work or repairs have occurred on the dikes or water control structures. Tubbs Pond was last drained in 1997 to promote emergent aquatic plant growth to benefit waterfowl habitat. Becker Pond was last intentionally drained in 1997 for the same reasons. However, in 2016 the control boards at the outlet structure deteriorated, which allowed the pond to drain. This remained mostly dry for several months until repairs could be made.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

Repairs to the dams at Tubbs Pond, Fawn Lake, and White Birch Pond may occur within the next 10 years. These repairs would be intended to fix identified deficiencies in the dams themselves, or repair unusable drainage structures. In order to carry out these repairs, these bodies of water may need to be partially or completely drained.

Earthen dikes require periodic inspection and maintenance that involves mowing and reshaping the dike surfaces, which can be eroded by wave action or burrowing by muskrats. This work normally requires the site be at least partially drained so that work can be done when the soil is dry. While mowing of dikes should be performed at least every 2-3 years to prevent encroachment by woody vegetation, reshaping of the dike surface may not have to be done more than every 10-15 years, depending on specific conditions and observed damage.

BEST MANAGEMENT PRACTICES

All work carried out at water bodies will be done under all applicable permits, with timing set to minimize impacts to wildlife that utilize these habitats.

MANAGEMENT EVALUATION

Water bodies will be regularly inspected to assess integrity of dams and dikes to ensure that these habitat features provide the maximum benefit to wildlife without jeopardizing public safety, infrastructure, or other habitat features.

HABITAT MANAGEMENT SUMMARY

In summary, Table 7 lists the habitat management actions planned for Partridge Run 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 Partridge Run WMA, 2017-2026. (Also see Figures 8 & 9.)

Habitat	Management Action	Acres	Timeframe
Forest	Clearcut stands A-2, A-3, A5.1, A-18, A-19, B-6, C-37, D-21, E-5, E-6, E-7, E-17, E-32, E-37, E-47, E-48, E-63.1, E-63.3 and F-50	144	2017-2021
Forest	Patch clearcut stands B-17, B-19 and C-24	10	2017-2021
Forest	Seed tree cut stands B-40, E-9, F-9 and F-45	35	2017-2021
Forest	Shelterwood cut stands A-35, B-32, D-2, D-22, E-36 and F-18	70	2017-2021
Forest	Perform apple tree release in stands A-3 and D-20	14	2017-2021
Forest	Clearcut stands A-32, A-36, B-10, C-52, E-8, F-43 and F-54	77	2022-2026
Forest	Patch clearcut stands B-18 and C-24	15	2022-2026
Forest	Seed tree cut stands A-22, A-26, D-56, E-1, E-2, E-3, F-47 and F-48	64	2022-2026
Shrubland	Continue mowing shrubland (A950, B950, D950, E950 and F950) every 2-3 years for the grassland component and every 7-10 for the shrubland component to maintain shrub density.	39.6	2017-2026
Shrubland	Selective removal of tree component within shrublands, if needed.	≤39.6	2017-2026
Shrubland	Monitor and control invasive species.	≤39.6	2017-2026
Grassland	Continue mowing grassland every 2-3 years to maintain grassland conditions.	64	2017-2026
Grassland	Improve grassland perimeters by limbing/removing individual or small stands of trees.	≤64	2017-2026
Wetland	Monitor and control invasive species.	180.3	2017-2026
Wetland	Monitor beaver activity and implement control if needed.	≤180.3	2017-2026
Wetland/ Open water	Periodic inspection and maintenance of impoundments and dikes	288.8	2017-2026
Open water	Monitor and control invasive species.	108.5	2017-2026

III. FIGURES

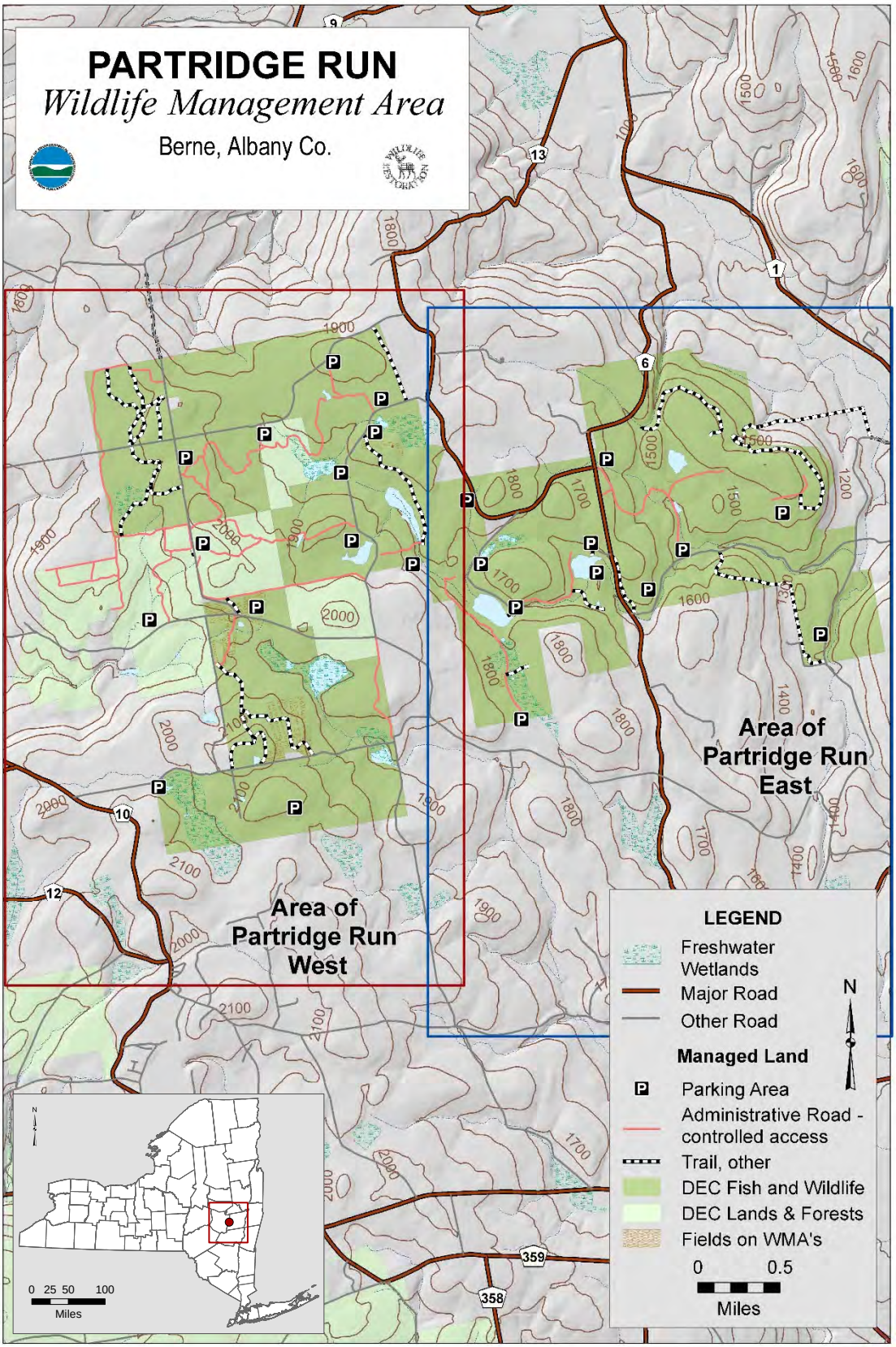

FIGURE 1. Map index for Partridge Run WMA.

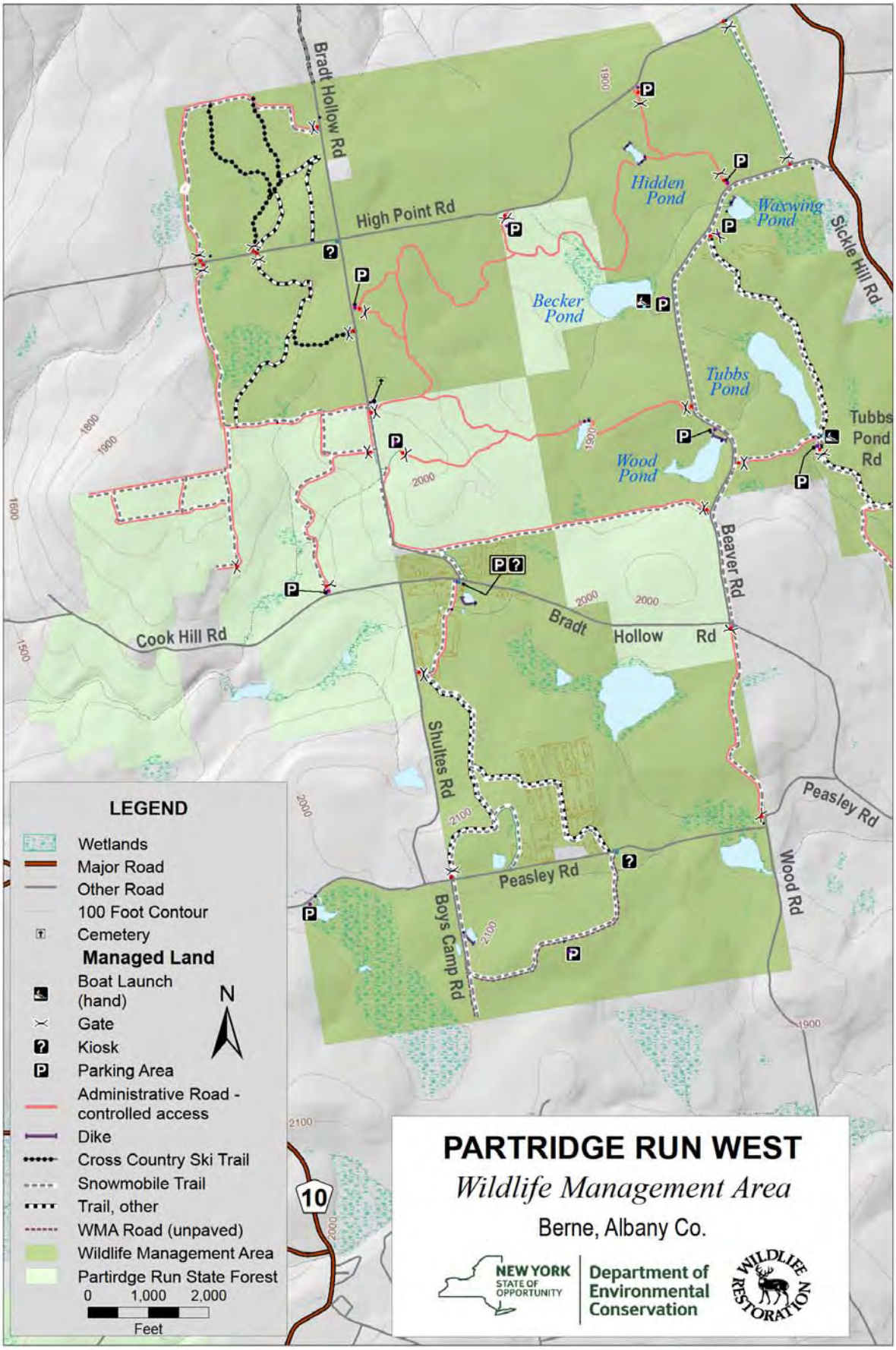

FIGURE 2. Location and access features at Partridge Run (west).

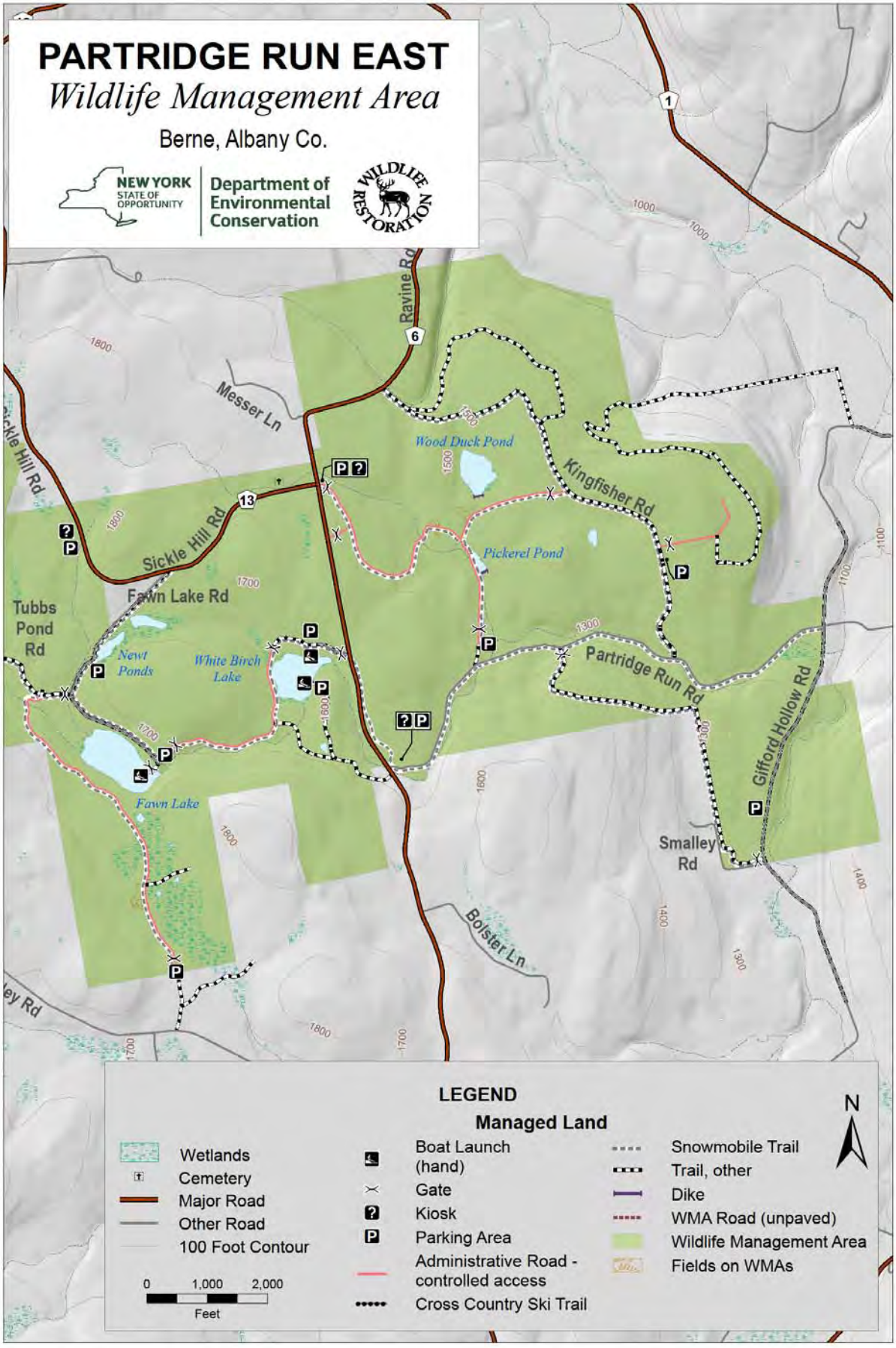

FIGURE 3. Location and access features for Partridge Run (east).

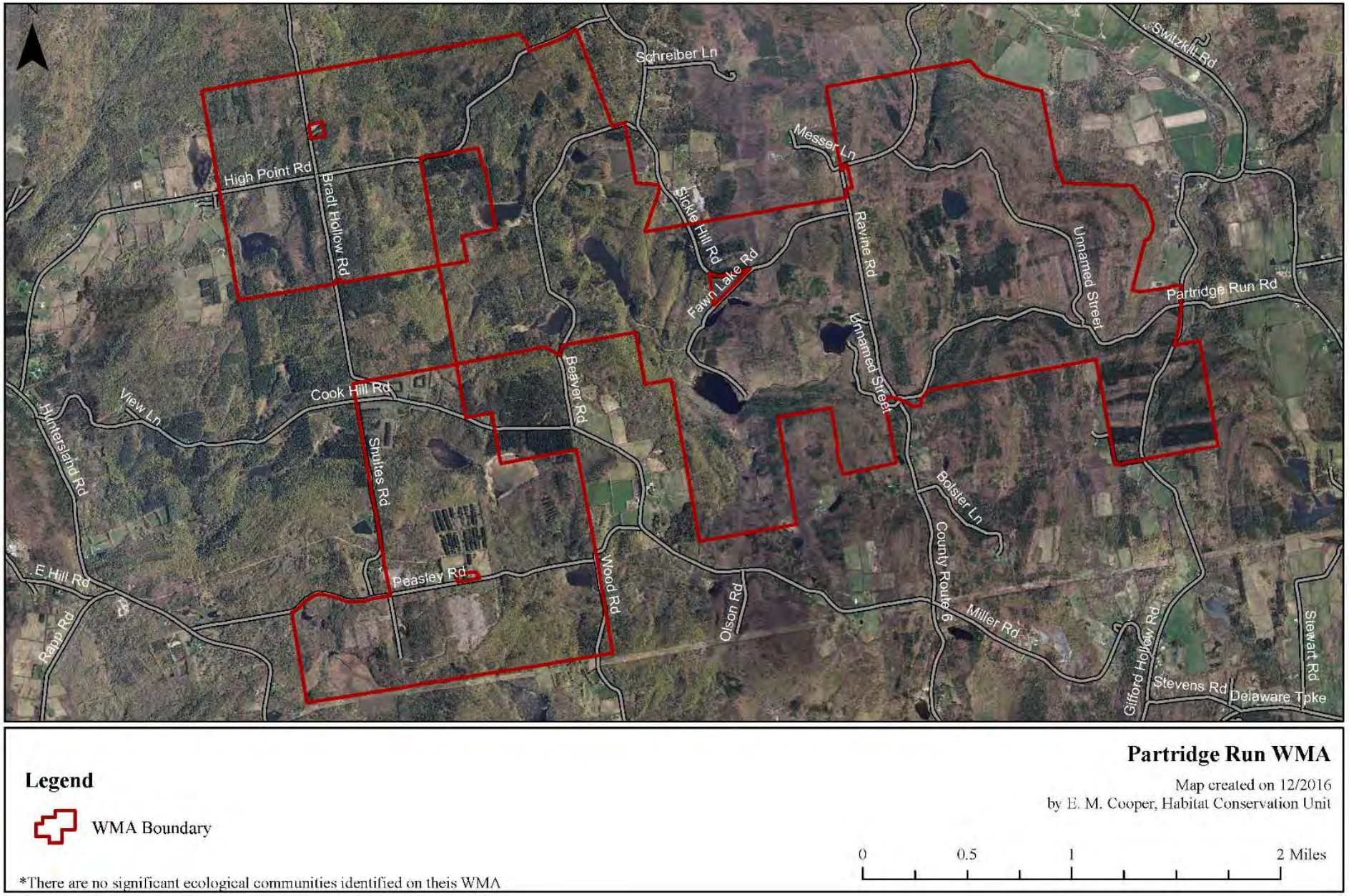

FIGURE 4. Significant ecological communities on Partridge Run WMA. Data from the NY Natural Heritage Program.

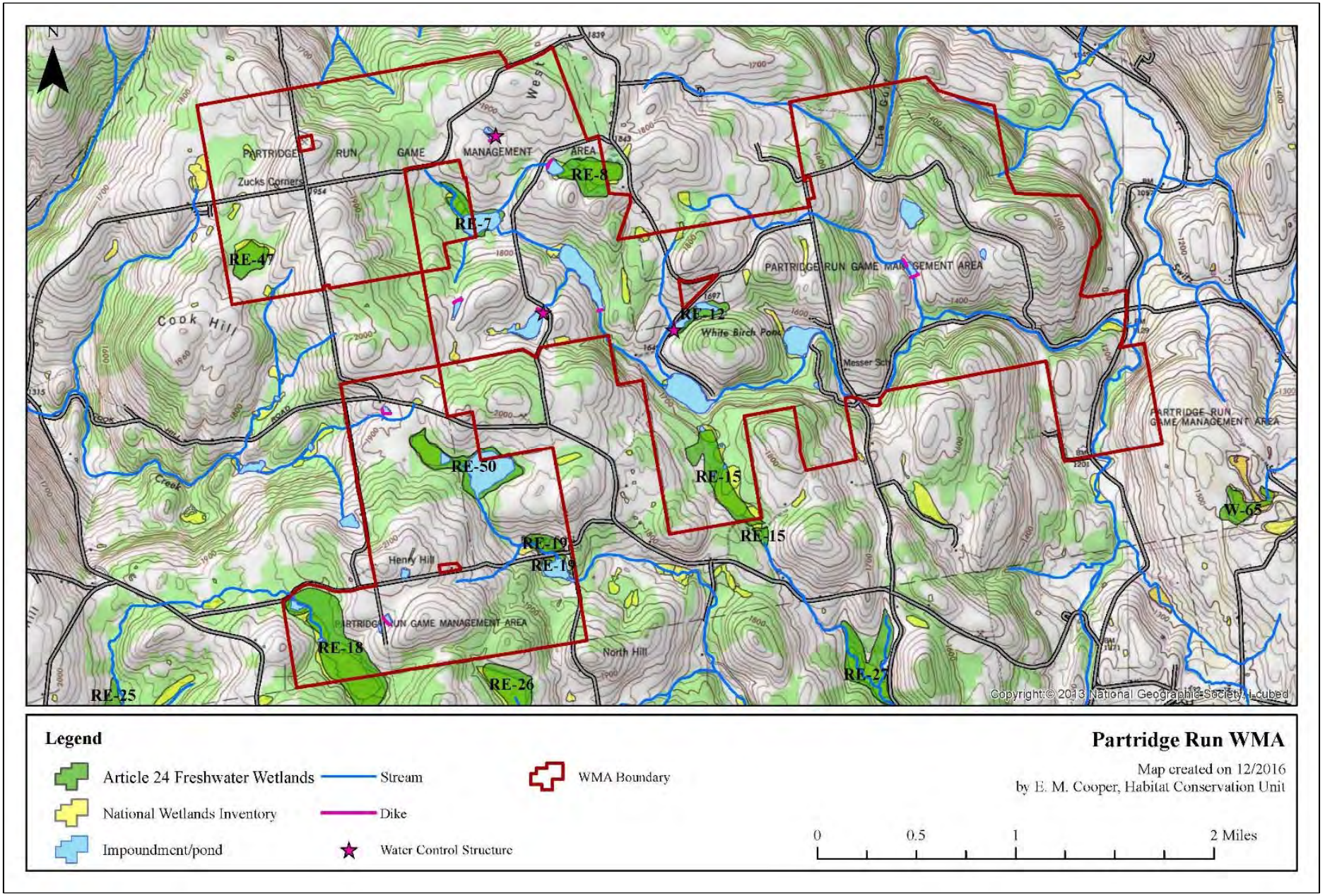

FIGURE 5. Wetlands, open water, and streams of Partridge Run WMA. Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

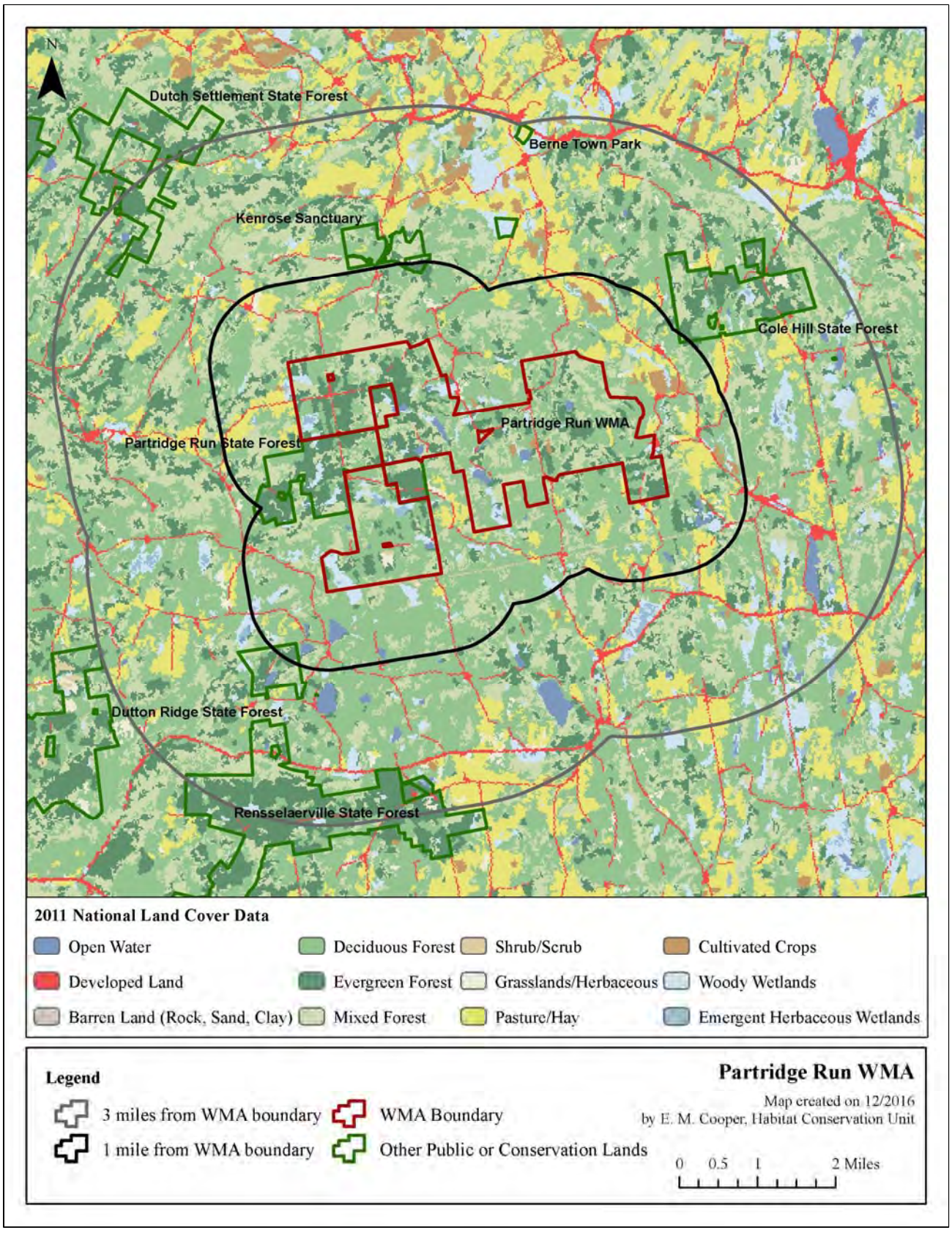

FIGURE 6. Land cover types and conservation lands in the landscape surrounding Partridge Run WMA. Conservation lands are from the NY Protected Areas Database available online at http://www.nypad.org/. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at http://www.mrlc.gov/nlcd2011.php.

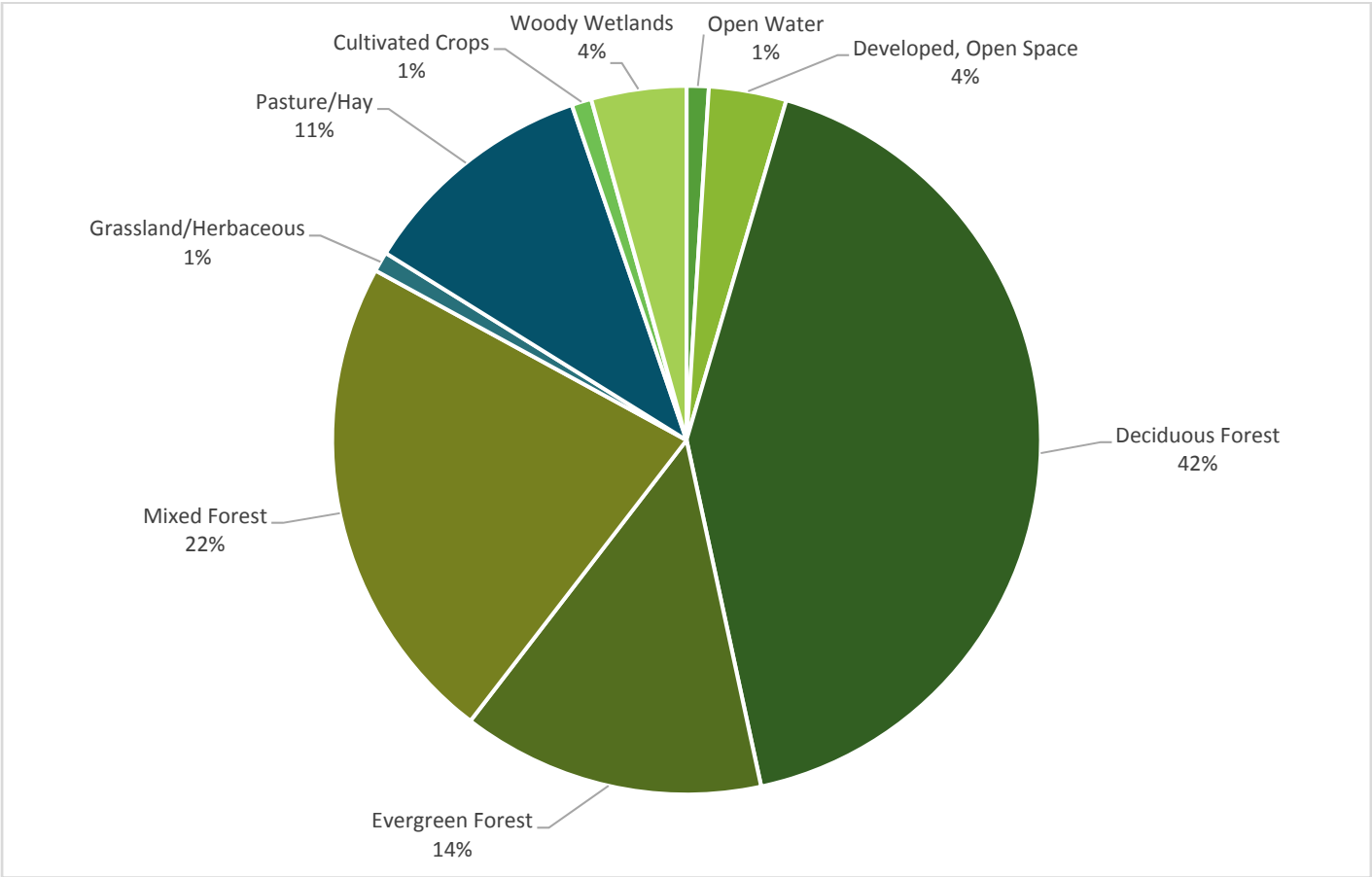

FIGURE 7. Percent cover of land cover types within three miles of Partridge Run WMA. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at http://www.mrlc.gov/nlcd2011.php.

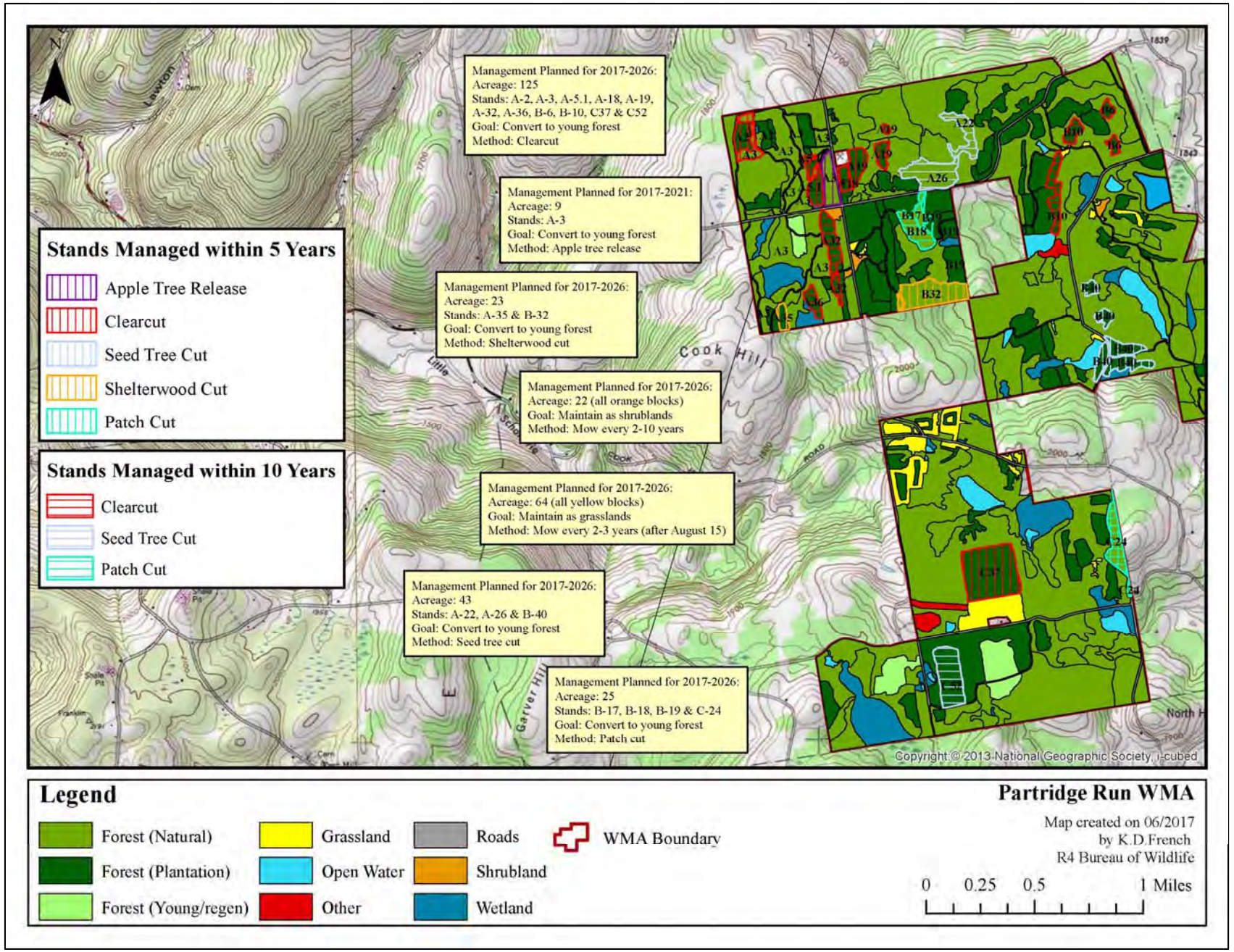

FIGURE 8. Habitat types and locations of proposed management on Partridge Run WMA. Numbers indicate the stand number from habitat inventory.

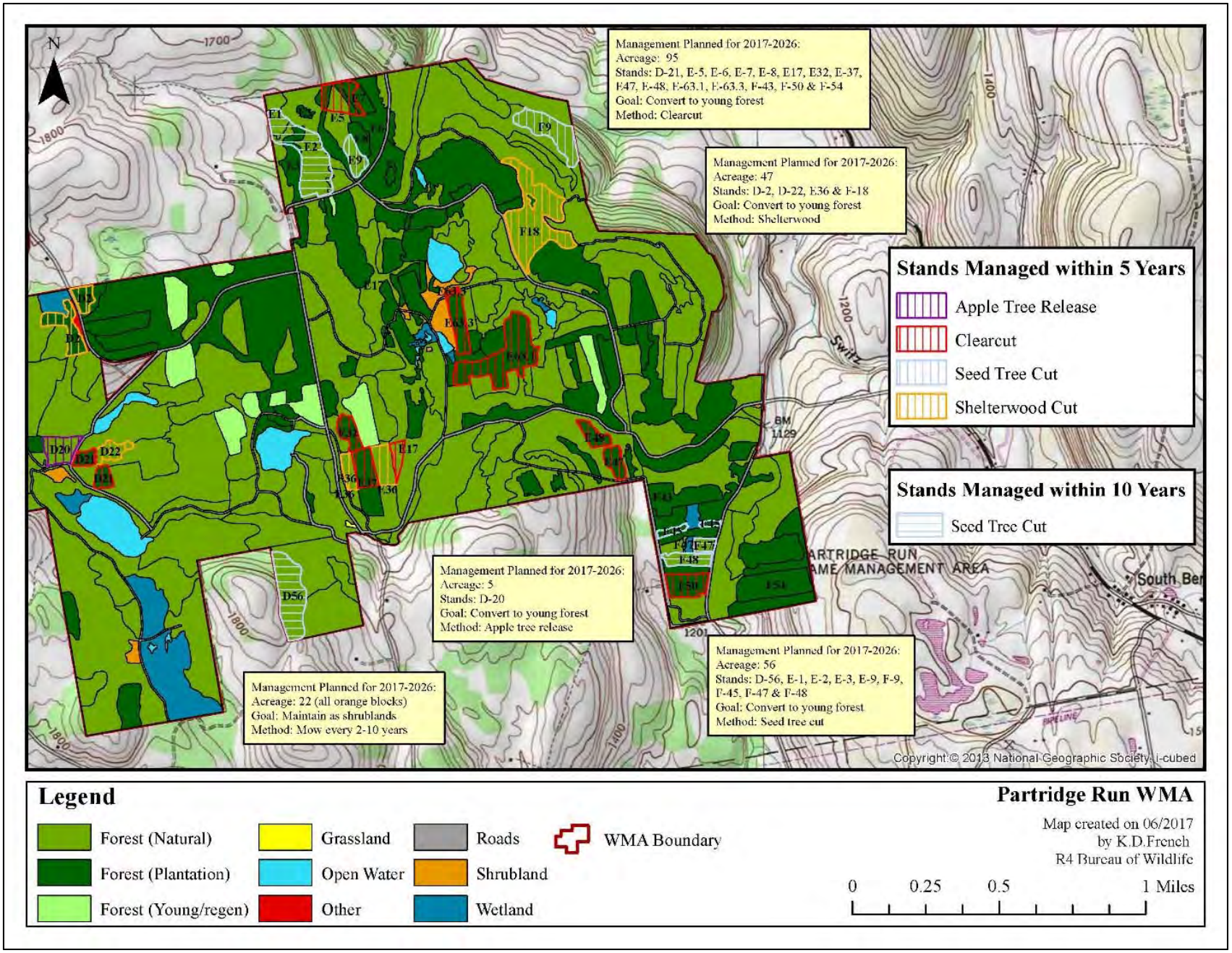

FIGURE 9. Habitat types and locations of proposed management on Partridge Run WMA. Numbers indicate the stand number from habitat inventory.

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 method: 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 Cut 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 Cut 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.

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:

Regional Wildlife Manager **Date**

Central Office Lands and Forests Staff **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.