Habitat Management Plan
for
French Creek Wildlife Management Area
2023 – 2032

A vernal pool at French Creek WMA.

Photo: Erik Latremore, NYSDEC

Division of Fish and Wildlife
Bureau of Wildlife

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SUMMARY

French Creek Wildlife Management Area (WMA) was acquired in in the late 1960s and early 1970s. During the 1980s, an investment was made to acquire the land under French Creek and its connected marshes. It was found that many neighboring landowners had built seawalls, boathouses, and docks on the WMA. Letters were sent to these landowners indicating that the structures could remain in place until major repairs were required to keep them functional. Once the structures required major repairs, the structures were required to be removed and replaced with temporary floating docks. In the early 2000s multiple flooding rights were acquired to proceed with a collaborative water control project with Ducks Unlimited and NYSDEC. The original objectives of this WMA in the 1970s were to (in priority, per a 1976 draft management plan):

1) Improve and perpetuate waterfowl populations;
2) Provide for the maximum public hunting opportunity;
3) Improve and perpetuate fish production;
4) Improve production of wetland furbearers;
5) Provide public fishing and trapping opportunities; and
6) Provide all other public use not in conflict with the previous five objectives.

French Creek WMA is currently a popular destination for deer hunting, trapping, fishing and wildlife viewing. Upland bird hunting is popular as the NYSDEC stocks this area with Ring-necked Pheasants raised at the Reynolds Game Farm. The WMA is comprised, predominantly, of a flooded/natural wetland complex consisting of emergent marsh, shrub swamp, and floodplain forest, followed by a natural and plantation forest. Early successional grasslands and shrublands round out the remaining habitat types on the WMA. Forested habitat on French Creek is rather extensive (38% of the 2,276-acre WMA), so the primary objectives for this WMA are to create a minimum of 10% young forest as part of the Young Forest Initiative while maintaining the forested wetland complex it is known for and to maintain/encourage grassland habitat to promote wildlife species and wildlife related recreation. Due to the makeup of this WMA, the key habitat management goals include:

- Managing 4% of the WMA (10% of the upland forested landscape) as young forest (0-20 years) to promote structural diversity;
- Retaining approximately 32% as natural and impounded wetlands to provide prime breeding and migratory stopover habitat for marsh birds and waterfowl and to promote wetland furbearers;
- Maintaining approximately 34% as intermediate and mature forest (20 to >100 years);
- Managing a minimum of 14% as grasslands;
- Managing approximately 15% as early successional shrublands; and
- Maintaining 1% 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 habitat adaptability and resilience under projected future conditions will be considered during the habitat management planning process and in any actions that are recommended in HMPs. Changing conditions that may affect habitat composition include warmer temperatures, milder winters, longer growing seasons, increased pressure from invasive species, more frequent intense storms, and moisture stress. It is also important to consider landscape-level effects to maintain the connectedness of habitats to allow range adjustments of both plant and wildlife species.

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

French Creek WMA is located in DEC Region 6, Town of Clayton, Jefferson County (Figure 1).

Total Area

2,277 acres

Habitat Inventory

A habitat inventory of the WMA was conducted in 2013 and is proposed to be updated every 15 to 20 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 French Creek WMA.

Habitat Type	Current Conditions (as of 2013)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest [a]	876	38%		782	Decrease to 34% [b]
Young forest	0	0%		94	Increase to 4%
Shrubland	332	15%		359	Increase to 16%
Grassland	329	14%		302	Decrease to 13%
Agricultural land	0	0%		0	No change
Wetland (natural) [c]	718	32%		718	No change
Wetland (impounded) [c]	0	0%		0	No change

Table 1 cont.

Habitat Type	Current Conditions (as of 2013)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Open water	0	0%		0	No change
Other	0	0%		0	No change
Roads	22	1%	6	22	No change
Rivers and streams			12		No change
Total Acres:	2,277	100%		2,277	

[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] The forest management proposed in this plan aims to replace poor quality forest, promote regeneration of native species, and establish a healthy mature forest for the future. See Landscape Context and Forest sections.
[c] Wetland acreage does not include forested wetlands, since they are included in the Forest category.

ECOLOGICAL RESOURCES

Wildlife Overview:

Wildlife present on French Creek WMA includes many species commonly found throughout northern New York and the eastern Lake Ontario plains area, such as:

- Beaver, muskrat, mink
- Red-winged Blackbird, Eastern Meadowlark, Bobolink, Brown Thrasher, Scarlet Tanager, Pileated Woodpecker, and seasonally limited Snowy Owl
- Eastern coyote, white-tailed deer, Wild Turkey, gray fox, red fox
- Painted turtle, snapping turtle, Blanding's turtle
- Bullfrog, northern leopard frog, green frog, American toad, spring peeper, wood frog, chorus frog
- Garter snake, northern water snake, red-bellied snake, ring-neck snake, eastern milk snake, smooth green snake
- Spotted salamander, red-backed salamander, blue spotted/Jefferson's complex salamander

Wildlife and Plant Species of Conservation Concern:

The following federal or state listed Endangered (E), Threatened (T), or Special Concern (SC) species and/or 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]

[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 https://www.dec.ny.gov/animals/7179.html.
[2] Available online at https://www.dec.ny.gov/animals/7312.html.
[3] Available online at https://www.dec.ny.gov/animals/7140.html.
[4] Available online at https://ebird.org/content/ebird/about/. © Audubon and Cornell Lab of Ornithology.

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

Species Group	Species	Federal Status	NY Status	NY SGCN
Birds	American Black Duck			HP
	American Woodcock			x
	Bald Eagle		T	x
	Blue-winged Teal			x
	Bobolink			HP
	Caspian Tern			x
	Eastern Meadowlark			HP
	Horned Lark			HP
	Northern Harrier		T	x
	Osprey		SC	
	Pied-billed Grebe		T	x
	Ruffed Grouse			x
Mammals	Indiana myotis	E	E	HP
	Little brown myotis (little brown bat)			HP
	Northern myotis (long-eared bat)	E	T	HP
Amphibians and reptiles	Blanding's turtle		T	HP
	Eastern ribbonsnake			x
	Smooth greensnake			x
	Spotted turtle			HP
	Snapping turtle			x
	Western chorus frog			x
Fish	Pugnose shiner		E	x
Invertebrates	None known			
Plants	Wheat sedge		Rare	x

Significant Ecological Communities:

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

- **Limestone woodland** (S2S3) - a conifer or hardwood dominated woodland that occurs

[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 https://www.nynhp.org/ecological-communities/.

on shallow soils over limestone bedrock, and usually includes numerous small rock outcrops. Typical examples have pure calcareous bedrock such as limestone, dolomite, calcite, or marble. Other examples may have hybrid bedrock types such as amphibolites or Potsdam sandstone. The tree canopy may be open or closed. There are usually several codominant trees, although one species may become dominant in any one stand.

- **Red maple-tamarack peat swamp** (S2S3) - a mixed swamp that occurs on organic soils (peat or muck) in poorly drained depressions. These swamps are often spring fed or enriched by seepage of minerotrophic groundwater resulting in a stable water table and continually saturated soil. Soils are often rich in calcium.

Additional information about significant ecological communities is available in *Ecological Communities of New York State, Second Edition* [6] and in the French Creek WMA Biodiversity Inventory Final Report (1993) prepared by the NY Natural Heritage Program.

Soils:

The topography commonly found within French Creek WMA consists of flat open lake plains and wetlands. Specific soil groups on the WMA include Benson channery, Collamer, Canandaigua, Hudson, Niagara, and Rhinebeck silt loams, Claverack, Deerfield, and Windsor loamy fine sand, Elmridge, Galen, Lamson, and Minoa fine sandy loam all found on gentle zero to eight percent slopes. Steeper slopes, eight to fifteen percent slopes, on the WMA include soils like Vergennes silty clay loam, Hudson and Vergennes soils with severe erosion characteristics, Hudson silt loam, and Benson-Galoo rock outcrop complex. There are some ponded Saprists and Aquents that are normally flooded soils.[7]

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 French Creek WMA include:

Cattail area encroaching into French Creek.

Photo: NYSDEC

- One large wetland complex regulated by Article 24 of the Environmental Conservation Law and several additional wetlands shown on the National Wetlands Inventory (NWI; 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.

[6] Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero. 2014. Ecological Communities of New York State, Second Edition. New York Natural Heritage Program, NYS Department of Environmental Conservation, Albany, NY. Available online at https://www.nynhp.org/ecological-communities/.

[7] Soil classification information available from: US Department of Agriculture, Natural Resources Conservation Service. Available online at https://www.nrcs.usda.gov/resources/guides-and-instructions/soil-classification.

- Multiple streams / ditch drainages (a watercourse entirely within the WMA) or segments of streams (a stream that meanders in and out of the WMA). The highest stream classification is Class C; therefore, only navigable streams are regulated by Article 15 of the ECL. The majority of the streams are of Class D. State agencies are exempt from the provisions of Article 15, but all water quality standards will be adhered to. [8]

Guidelines for habitat management projects within these areas are outlined in the Division of Lands and Forests *Rules for Establishment of Special Management Zones on State Forests and Wildlife Management Areas*.[9] Some habitat management activities may either be prohibited or restricted in order to protect these features. Any deviations from these guidelines will be addressed in the individual stand prescriptions.

LANDSCAPE CONTEXT

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

- Pasture/hay and grassland (33%)
- Open Water (23%)
- Deciduous forest (21%)
- Early successional shrubland (7%)
- Wetlands (5% combining emergent and woody wetlands)
- Development (5%)
- Cultivated crops (5%)
- Evergreen forest (1%)

Nearby conservation lands include:

- Grass Point State Park (https://parks.ny.gov/parks/139/details.aspx)
- Cedar Point State Park (https://parks.ny.gov/parks/21/details.aspx)
- Burnham Point State Park (https://parks.ny.gov/parks/57/details.aspx)
- Ashland Flats WMA (https://www.dec.ny.gov/outdoor/35474.html)
- Gordon D Cerow Recreation Park (https://townofclayton.com/living-here/government/parks-recreation/)

The WMA is located in an area lacking forested habitat at the landscape level (approximately 22% - NLCD 2011, Figure 4). The current forest age structure in the region provides only limited benefits to species requiring young and intermediate forest habitat. The majority of the surrounding landscape is either agricultural lands, open water, or developed areas (collectively totals 66% of the landscape). Of the forested areas on the landscape, many appear to be intermediate to mature in structure when using 2017 National Agriculture Imagery Program

[8] Information about stream classification is available online at https://www.dec.ny.gov/permits/6042.html.
[9] Available online at https://www.dec.ny.gov/outdoor/104218.html.

(NAIP) aerial imagery. Limited forest acreage, age, and size composition, surrounded by an overabundance of agricultural, developed, and open water habitat make it essential to add a young forest component to the landscape. Thus, a goal of this plan is to manage the WMA with young forest habitat creation to increase wildlife diversity and create habitat for Wild Turkey, Ruffed Grouse, American Woodcock, and Eastern Whip-poor-will while retaining existing mature/intermediate forested character that exists in the greater landscape. Currently, 38% of French Creek WMA is intermediate/mature forested wetland and upland deciduous/coniferous forest with no young forest, well under DFW's Young Forest Initiative (YFI) goal of managing at least 10% of the forested landscape on most WMAs as young forest.[10] Young forest habitat is desirable on this WMA, and will be beneficial for young forest species. Not reaching the YFI 10% goal might be an option, but the creation of young forest will benefit wildlife and provide recreational opportunities without adversely disturbing the current forest dependent wildlife.

II. Management Strategies by Habitat Type

DEC will continue active management of wildlife habitats on French Creek WMA to provide the following benefits:

- Maintain habitat characteristics that will benefit wildlife abundance and diversity within the New York landscape.
- Promote Best Management Practices for targeted wildlife and habitats.
- Provide opportunities for wildlife-dependent recreation such as trapping, hunting, and bird watching compatible with the ongoing habitat management practices and species management considerations.
- Improve habitat quality by reducing invasive species, if present and identified for treatment.

Forest

Forested acreage includes the following forest types:

Natural forest: naturally forested acres, including hardwoods and softwoods. Includes any upland forested acreage that is not young forest, i.e., pole stands, other intermediate forest age classes, mature forest, and old growth forest.
Plantation: planted forested acres, generally planted in rows dominated by one or two species.
Forested wetland: wetland acres where forest or shrub vegetation accounts for greater than 50% of hydrophytic vegetative cover and the soil or substrate is periodically saturated or covered with water.
Young forest: young or regenerating forested acres, typically 0-20 years since a disturbance or regeneration cut, depending upon the site conditions. May include both natural forest and plantations.

[10] Additional information about DEC's Young Forest Initiative and the YFI Strategic Plan is available online at https://www.dec.ny.gov/outdoor/104218.html.

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

Forest management on French Creek WMA should occur in areas with barren like characteristics to benefit Eastern Whip-poor-wills and areas to create improved nesting, forage, and rearing sites for Wild Turkey. Forests, forest openings caused by disturbances, and forested wetlands provide unique and diverse wildlife populations within this WMA. Limited additional disturbance may create temporary disruptions for wildlife, but long term benefits will be observed for the listed species. 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. [11]

Spruce plantation at French Creek WMA.

Photo: NYSDEC

MANAGEMENT OBJECTIVES

- Soften the transitions between grasslands and mature forest (i.e., create feathered edges), for species like Eastern Whip-poor-will and Wild Turkey.
- Create 6 acres of young forest through shelter wood harvests for Wild Turkey.
- Create 21 acres of young forest through seed tree harvests for American Woodcock, Ruffed Grouse, Wild Turkey and forest health.
- Create 15 acres of young forest through clearcuts for Ruffed Grouse and forest health improvements.
- Thin 52 acres of plantations on the WMA for Eastern Whip-poor-wills.
- Retain the 752 acres of forest, forested wetland, and plantation to provide habitat for intermediate/mature forest-dependent wildlife.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 876 forested acres on French Creek WMA, consisting of forested wetlands, natural northern hardwood forests, and plantations (Table 3). No young forest stands currently exist on the WMA, and this plan is to create 94 acres of young forests. Table 3 provides a summary of the forested areas, including the most common species found in each.

[11] Additional information about DEC's Young Forest Initiative and the Strategic Plan for Forest Management on WMAs is available online at https://www.dec.ny.gov/outdoor/104218.html.

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

Forest Type	Acres (as of 2013)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	609	515	Oak, maple, hickory, ash, white pine, aspen, hemlock
Plantation	130	130	Red pine, white pine, white spruce
Forested wetland	137	137	Black ash, elm, maple, white cedar, balsam fir
Young forest	0	94	-
Young forest (forested wetland)	0	0	-
Total Forested Acres:	876	876	

The forested areas on French Creek WMA have slow to moderate growth rates and moderate health. Understory regeneration is good in some of the hardwood stands, but is limited by deer browse, shallow soils, standing water, and competing honeysuckle and buckthorn in many of the stands. In the forested wetlands, regeneration is limited by flooding and competition from shrubs, grasses, ferns, and forbs.

The current management practices coupled with creation of feathered edges will benefit Eastern Whip-poor-will, Wild Turkey, and other SGCN. 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:

- Eastern Whip-poor-will:
    - General – Large home ranges with both forested and open areas in close proximity. Suitable sites provide this landscape configuration and are typically near known, occupied areas especially within Focus Areas.
    - Nesting – Forested habitat with well-drained soils and adjacent to open areas. Often pine or pine/hardwood forests, especially pitch pine barrens; rarely hardwood forests or stands with closed canopy or dense shrub layer. Soils critical since the clutch of 2 eggs is placed directly in leaf litter on forest floor.
    - Foraging – Open habitat (e.g., fields, gravel or sand pits, regenerating forest clearcuts, powerlines) adjacent to mature forest, due to increased prey (Lepidopterans) availability and/or increased lunar illumination. Within

Northern hardwood forest at French Creek WMA.
Photo: NYSDEC

regenerating stands, disproportionately use areas within 100m of mature forest edge and typically avoid interior of large clearcuts.
    - Roosting – Daytime roosts directly on ground or on low branch in forest/young forest. [12, 13]
- Ruffed Grouse:
    - Drumming areas – Downed trees surrounded by small diameter woody cover.
    - Foraging – 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. [14]
- Wild Turkey (in Northern Hardwood Forests):
    - 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 – Best brooding cover are 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 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. [15, 16]

MANAGEMENT HISTORY

Tree planting of plantations began in 1975. The primary tree species used at that time was white spruce withapproximately 25,000 seedlings planted. Shortly after this planting, many spruce were not surviving so larch were planted to fill in the gaps within the plantations. Another 5,000 spruce were planted in 1980 in areas that had total failure of the 1975 planting. In 1982, 2,700 white spruce were planted over other areas of failed initial plantation creation. The last recorded planting occurred in 1985, when approximately 3,000 white spruce were planted on the WMA.

[12] Hunt, P. 2014. Best Management Practices for the Eastern Whip-poor-will in New Hampshire. New Hampshire Audubon, Concord, NH. 13 pp.
[13] Wilson, M. D., and B. D. Watts. 2008. Landscape configuration effects on distribution and abundance on whip-poor-wills. The Wilson Journal of Ornithology. 120(4): 778-783.
[14] Jones, B. C. et al. Habitat Management for Pennsylvania Ruffed Grouse, Pennsylvania Game Commission. 10 pp.

[15] USDA – NRCS. 1999. Wild Turkey (*Meleagris gallopavo*) Fish and Wildlife Habitat Management Leaflet. 12 pp.
[16] Dickson, J. G. 1992. The Wild Turkey: Biology and Management. National Wild Turkey Federation and USDA Forest Service. Stackpole Books, PA. 480 pp.

Other than the plantings, no harvest records were found indicating historical sales of timber products. (Figure 6).

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed for the next 10 years with an acreage goal of approximately 94 acres:

- **Management planned for 2023-2032** (Table 4, Figure 6):
  - Shelterwood harvest a portion of Stand A-11 (6 acres) for Wild Turkey.
  - Seed tree harvest a portion of Stand A-12 (14 acres) for American Woodcock and Ruffed Grouse.
  - Timber stand improvement (TSI) thinnings in Stands A-14 and A-24 (52 acres) to improve the overall health of the forest.
  - Seed tree harvest in Stand A-27 (7 acres) for Ruffed Grouse and Wild Turkey.
  - Clearcut a portion of Stand A-35 (6 acres) for Eastern Whip-poor-will and multiple other hard mast loving and young forest species.
  - Clearcut a portion of Stand A-47 (9 Acres) for Ruffed Grouse and Eastern Whip-poor-will.

Table 4. Forest management schedule for the ten-year period of this HMP (2023-2032).

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A-11	6	Pole Timber 6”-11” DBH	Plantation	Wildlife	Wildlife	Shelterwood
A-12	14	Small Saw Timber 12”-17” DBH	NH- White Pine	Wildlife	Wildlife	Seed Tree
A-14	42	Pole Timber 6”-11” DBH	Plantation	Plantation	Wildlife/Forest health	TSI Thinning
A-24	10	Pole Timber 6”-11” DBH	Plantation	Plantation	Wildlife/Forest health	TSI Thinning
A-27	7	Pole Timber 6”-11” DBH	Forested Wetland	Wildlife	Wildlife	Seed Tree
A-35	6	Pole Timber 6”-11” DBH	NH- White Pine	Wildlife	Wildlife	Clearcut
A-47	9	Pole Timber 6”-11” DBH	WhitePine - Hemlock	Wildlife	Wildlife	Clearcut/Thinning

Stand locations and planned management actions are also summarized in Figure 6. Specific forest stand descriptions and detailed management prescriptions will be prepared for each proposed forest management area prior to implementation (see template, Appendix C). Briefly, habitat management for each of these stands will include the following:

- **Stand A-11 (6 acres)** is an overstocked white pine plantation. The trees are scraggly and overcrowded, and there is very little regeneration due to the closed canopy. A 6-acre shelterwood harvest/thinning is planned in order to encourage regeneration and benefit

Wild Turkey. An uncut buffer will be left along the wetland to the north. Either before or during the harvest, some of the shrubs in the adjacent stand (A-13), around the perimeter of Stand A-11, will be cut and treated to prevent them from immediately occupying the growing space that is created by the harvest in Stand A-11.

- **Stand A-12 (14 acres)** is currently a blend of small- to medium-sawtimber size oak, maple, hickory, aspen, and white pine. The understory has patches of thick honeysuckle. A multi-stage treatment is planned for approximately 6 acres, leaving an uncut buffer along the wetland to the north. The first stage will be to cut and/or treat the honeysuckle and any other undesirable species in the understory. The second stage will be a seed tree harvest with the goal of regenerating aspen, pine, and mast-producing hardwoods for Ruffed Grouse and American Woodcock. Mature, healthy oak, hickory, cherry, and pine will be favored as "leave trees", which will be left standing to serve as a seed source for the future stand. Larger openings will be cut where there are groups of aspen, in order to encourage vigorous root sprouting, primarily for white-tailed deer and Ruffed Grouse.
- **Stand A-14 (42 acres)** is a plantation of poletimber-size white spruce, with three separate sections. There is very little regeneration in the understory in most places. Where the canopy is more open, hardwoods and honeysuckle have become established. A thinning is planned in each of the three sections in order to open the canopy and provide growing space for regeneration. The goals are to improve the health and growth of the residual trees and to encourage spruce regeneration for timber stand improvement (TSI), some of which is already growing under the shrubs along the stand boundaries. The honeysuckle in the understory will be treated and monitored to ensure it does not outcompete the desirable regeneration.
- **Stand A-24 (10 acres)** consists of seven sections of dense white spruce plantation. The understory is open in most parts of the stand, apart from scattered patches of honeysuckle, and there is little regeneration present. Several of the sections will be thinned (approximately 10 acres) to encourage regeneration and improve growth, similar to the management planned for Stand A-14 (TSI). The honeysuckle will be treated before any trees are removed.
- **Stand A-27 (7 acres)** is a mix of northern hardwoods, aspen, and oak. There are patches of honeysuckle in the understory, as well as scattered buckthorn and dogwood. Several vernal pools and a small creek can be found within the stand too. Only part of the stand is manageable due to poorly-drained soils. A seed tree harvest is planned for approximately 7 acres. The invasives will be treated first, then the aspens and undesirable trees will be removed. Undesirable trees are those which are less beneficial to wildlife, that have poor health or form, or that are at greater risk from disease and insect attack (such as elm and ash). The goal is to encourage oak, maple, white pine, and hickory regeneration and to initiate dense aspen regeneration from root sprouting for Ruffed Grouse and Wild Turkey while incorporating some TSI for forest health.
- **Stand A-35 (6 acres)** is split into two sections by a tributary to French Creek. The smaller, northern section of the stand is white pine mixed with northern hardwoods and oaks. No management is planned in this section. The southern section has areas of aspen, birch, and maple with a few oak, hickory, and pine. The honeysuckle in the understory is thick in places. The soils are generally poorly-drained, particularly in the center of the stand and in the shrubbier northern portion. A roughly 6-acre clearcut with reserves is planned near the northeast corner of Stand 42. The invasives will be treated

and most of the trees will be removed, except for desirable species such as oak, hickory, and pine to create habitat for young forest wildlife species.

- **Stand A-47 (9 acres)** is a white pine plantation, which consists of three sections. The two, smaller western sections are inaccessible and no management is planned there. The largest section of the stand, which borders French Creek Road, is overstocked and due for a thinning. Most of the understory is open, with little to no regeneration. However, there are clumps of honeysuckle wherever there are gaps in the canopy. There is a drainage that cuts through the middle of the stand, from the road to the wetland. A 4-acre thinning is planned, with an uncut buffer left along the wetland in order to protect soil and water quality. The honeysuckle will be treated first, then the poorer quality trees will be removed. There are a few clumps of aspen within this stand – all the aspen will be removed and a clearing will be cut around them to encourage dense aspen regeneration. The goal is to improve the growth and health of the residual trees while providing growing space for regeneration.

BEST MANAGEMENT PRACTICES

Forest management on all WMAs follows Best Management Practices to protect soil and water resources, promote quality wildlife habitat, and establish healthy forests (Table 5).

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

Resource	Guidance Document [17]
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:

Since Blanding's turtles are known to occur on the French Creek WMA, date restrictions for equipment operating in wetlands will be incorporated into any management activity to further protect species such as Blanding's turtle (no work from October 15th – April 15th). The regional representative for DFW's Amphibian and Reptile Diversity team will be contacted prior to conducting management in known areas of Blanding's turtle occurrences if it is desirable to do work outside of the date restrictions specified above.

Due to the presence of Indiana and Northern long-eared bats being on the WMA, tree selection for cuts and the timing of cuts will be implemented. Trees larger than 3 inches in DBH will only be harvested between November 1st and March 31st.

Forest Health Considerations:

Thick grey-stemmed dogwood, buckthorn, and honeysuckle in many of the stands outcompete hardwood regeneration. Where possible, this interference will be mitigated through brush cutting and herbicide spraying.

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

Pre- and Post-treatment Considerations:

Forested wetlands, poor drainage, and shallow water tables limit access for management activities on French Creek WMA. All of these concerns do not allow the access of machinery into many of the forested stands.

Pre- and post-treatment actions to promote the desired forest regeneration will be addressed in detail in the silvicultural prescriptions.

MANAGEMENT EVALUATION

In order to determine whether the desired forest regeneration and wildlife response(s) have been achieved by the management outlined above, pre- and post-management assessments will be conducted following guidelines in the Young Forest Initiative Monitoring Plan. The Monitoring Plan established statewide standards for evaluating vegetation and target wildlife responses to forest management to determine if the outcome is as prescribed. Regeneration assessments will be conducted within one year of harvest completion, three, and five years after the harvest or until the forester determines adequate natural or artificial (i.e., planting) regeneration has been securely established. YFI wildlife target species selected for French Creek WMA, which may be assessed to determine response to management, include:

- American Woodcock
- Eastern Whip-poor-will

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. Typically characterized by >50% cover of shrubs and <25% canopy cover of trees.

MANAGEMENT OBJECTIVES

- Provide 359 acres of shrubland habitat for shrubland obligate species and other wildlife, including several YFI target species.

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

There are currently 332 acres of shrublands on French Creek WMA that consist of mixed shrubs, hardwood seedlings, grasses, and forbs. An increase of 27 acres is planned through allowing grasslands to gorw into shrublands. Conversion of shrublands to young forest may be beneficial to control invasive species, while creating habitat for Golden-winged Warblers, Eastern Whip-poor-wills and several other wildlife species:

- Ruffed Grouse
- Wild Turkey

MANAGEMENT HISTORY

None

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2023-2032** (Figure 6, Table 6):
    - Periodically mow meandering trails to maintain patches of herbaceous cover for Eastern Whip-poor-wills and to provide access for hunters, birdwatchers, and other wildlife related recreational activities.
    - 54 acres of shrubland management and apple tree releases to create habitat for young forest / shrubland wildlife species.

Habitat management will include the following:

- **Stand A-5 (21 acres)** is a shrubland with dogwood, honeysuckle, and buckthorn interspersed with open patches in the western section of the stand and apple trees in the eastern section of the stand. Patches of shrubs to be cleared through a non-commercial contract to create a mosaic of open, shrub, and forest suitable for Golden-winged Warbler, Wild Turkey, and Ruffed Grouse habitat. The apple trees will be released by removing undesirable species that are competing with the apples for growing space.
- **Stand A-8 (33 acres)** is a shrubland with patches of dogwood and honeysuckle interspersed with open, grassy areas. The current stand conditions are close to what is considered to be suitable Golden-winged Warbler habitat. The brush is too thick in places, so paths and patches will be cleared in these sections. In order to create a gradual transition from the field on private land to the north and the woods to the southeast, more mowing will occur along the northwestern boundary and less along the woods to the southeast, where oak, hickory, and maple regeneration will be encouraged. The natural regeneration may be supplemented by clearing and treating the invasive brush along the forest edge, followed by planting oak, hickory, maple, and/or aspen seedlings.

BEST MANAGEMENT PRACTICES

Brush hogging/mowing will be conducted from mid-August through early October when dry conditions normally persist and there is minimal interference with nesting activities of wildlife.

MANAGEMENT EVALUATION

None

GRASSLAND

Grasslands are open areas dominated by grasses and forbs, with less than 25% woody vegetation. Ideally, the forb component should not exceed 25% by area. Grasslands may contain shrubs and other woody vegetation, but not to the point beyond which maintenance would require significant brush cutting (i.e., not suitable for brush-hogging). Grasslands may include areas where hay is harvested by late season mowing once per year.

MANAGEMENT OBJECTIVES

- Provide 302 acres grassland habitat.
- Allow 27 acres of grasslands to grow into shrublands.
- Enhance the quality of grassland fields by removing shrubs or dense vegetation from the

fields (e.g., brush hogging, disking and seeding, and/or hydro-axing), where appropriate.
- Monitor for invasive species and attempt to eradicate where possible.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

The St. Lawrence Valley Grassland Focal Area covers the entire WMA. Grasslands in this area are important for reaching the goals set forth in the North American Bird Conservation Initiative and the Comprehensive Wildlife Conservation Strategy for the eastern Lake Ontario-St. Lawrence Basin in New York State. There are 329 acres of grassland habitat on French Creek WMA (Figure 6). This area helps distinguish the value associated with grassland species in New York. The fields of the WMA are extensive and offer a wide variety of individual habitat characteristics from large open fields to smaller old field types of habitat. Current management offers pollinators various stages of grassland habitat.

Tall grassland at French Creek WMA.

Photo: NYSDEC

Species that benefit from grassland Best Management Practices include:
- Northern Harrier
- Bobolink
- Eastern Meadowlark
- Horned Lark
- Common ribbon snake
- Smooth green snake

MANAGEMENT HISTORY

Prior to 2010, the majority of old field/grassland habitat, which represents 14% of the WMA, had been maintained through multiple cooperative agreements. Annual mowing was used to set back vegetative succession to maintain grassland habitat along with grazing. Since 2010, grassland management has been conducted through both cooperative agreements and DEC Division of Operations.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2023-2032** (Figure 6):
    - Continue to maintain 302 acres of grassland fields by mowing on a rotational basis.
    - Allow 27 acres of grassland to grow into shrubland habitat
    - Removal of invasive species.
    - Removal of shrubs and hedgerows dividing fields, creating a more large, open grassland area.

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.*[18] 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 which species are present.
- Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large open fields.
- Control invasive plant species (glossy buckthorn, pale and black swallowwort, Canada thistle, Phragmites, etc.) to improve habitat quality.
- When developing grassland planting or habitat restoration projects, consider a variety of factors including the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing site conditions, and vegetation removal techniques (including herbicide and intensive disking).
- 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 most situations in New York.

Timing of Management

- Fields over 25 acres (including all contiguous fields) and fields of any size with a history of listed (federally listed and/or state E/T or SC) grassland bird species within the last 10 years:
    - Avoid mowing or conducting other management between April 23 and August 15, unless the field(s)/area(s) targeted for management are first assessed or surveyed to confirm there is no active nesting by E/T/SC grassland birds and the proposed management will provide long-term benefits to the habitat/wildlife (such as invasive species management). In some cases, if nesting locations can be avoided, such as using spot treatment for invasive species, work can be done as long as any negative impacts to the species of concern are eliminated.
- Fields under 25 acres (including all contiguous fields) with no history of listed species:

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

    - Fields can be managed/mowed between 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).
- Wintering Restrictions: Avoid mowing and other management from November 1 to March 1 within fields over 25 acres (including all contiguous fields) and fields with a history of listed wintering raptors (regardless of field size). If management to improve habitat is planned during this time, conduct pre-treatment winter raptor surveys using established protocols to confirm there is no use by listed wintering raptors (Short-eared Owl and Northern Harrier). Other activities that cause excessive disturbance such as frequent high-speed snowmobile, ATV, motorized vehicle operation, or other loud noises should be avoided from November 1 to March 1, inclusive, for the protection of wintering raptors.

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). In some cases, spot/wander mowing can be done to leave cover while targeting problem areas.
- 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

DEC staff have conducted presence/absence point count surveys for breeding grassland birds on the WMA. Surveys will be considered in the future if the need arises.

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 French Creek WMA that is managed as agricultural land and no plan to develop such habitat.

WETLANDS (NATURAL AND IMPOUNDED)

Natural wetlands are areas where the soil or substrate is periodically saturated or covered with water, including emergent (perennial herbaceous vegetation accounts for >50% of hydrophytic vegetative cover) and scrub-shrub wetlands (woody vegetation under 20 feet tall accounts for >50% of hydrophytic vegetative cover). Impounded wetlands are areas similar to natural wetlands, but where water is held back by a berm, road, or other structure. Forested wetlands (137 acres) are addressed in the Forest section above.

MANAGEMENT OBJECTIVES

- Maintain 581 acres of non-forested wetlands as they currently exist.
- Maintain and inspect the water control and fish passage structure for wetland-dependent wildlife such as waterfowl, muskrat, and beaver and passage of pike, muskellunge, and other migratory fish species.
- Provide nesting, foraging, and cover habitat for Blanding's turtle.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

There are 581 acres of natural wetlands and impounded wetlands (non-forested; see Forest section for the forested wetlands) on French Creek WMA (Figure 3). The diverse wetlands, consisting of scrub-shrub, emergent, and open water type wetlands, provide habitat for species such as:

- American Woodcock, Belted Kingfisher, Caspian Tern, migratory waterfowl, Bald Eagle, Least Bittern, Virginia Rail
- Beaver, muskrat
- Blanding's turtle, snapping turtle, spotted turtle
- Chorus frog, bullfrog, northern leopard frog, green frog, spring peeper, wood frog
- Northern water snake, eastern milk snake
- Northern pike, muskellunge

MANAGEMENT HISTORY

The NYS Department of Transportation (DOT) proposed a marsh creation project as mitigation in 2000. A few years later, a French Creek habitat restoration project was proposed in the early part of 2003. In the latter half of 2003, flooding easements were proposed to be purchased to proceed with the water control and fish passage structure. A combination of funding through the Environmental Protection Funds (EPF) and a Great Lakes Restoration Initiative Grant was utilized for this project. The restoration/water control structure project was a collaborative effort by Ducks Unlimited, DEC, Central NY Waterfowlers, and neighboring landowners. It was unclear as to when the project was actually finished, but the structure is currently in operation. In 2012 and 2013, Ducks Unlimited restored another 42 acres of wetland habitat by potholing and channelizing cattail stands on the WMA. This created, approximately, five acres of spawning pools and 5,476 feet of meandering channels for northern pike and migratory waterfowl. Between 2019 and 2021 Ducks Unlimited performed multiple potholes and further channelling within montypic cattail areas. This created about 14 acres of potholes and channels and 14 acres of habitat mounds. Not only are these restoration projects valuable to fish spawning

and migratory waterfowl, but could also be potential areas used by Blanding's turtles and other reptiles and amphibians.

Implementation Plan and Anticipated Schedule

- **Management planned for 2023-2032:**
  - None planned at this time.

Management Evaluation

Annual inspections of the water control structure and fish passage device.

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

- There is no open water habitat on the WMA or any plan to develop such habitat.

Description of Existing Open Water Habitat and Target Species

Although there are no formally named waterbodies on the WMA, French Creek does traverse through the WMA which offers trappers, migratory waterfowl hunters, and wildlife observation opportunities.

Implementation Plan and Anticipated Schedule

- **Management planned for 2023-2032** (Figure 6):
  - See Wetlands Section

Best Management Practices

Manage water levels to the extent practicable for waterfowl propagation and fish spawning.

HABITAT MANAGEMENT SUMMARY

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

Table 6. Summary of habitat management actions recommended for French Creek WMA, 2023-2032 (See Figure 6).

Habitat	Management Action	Acres	Timeframe
Forest	Shelterwood harvest a portion of Stand A-11	6	2023-2032
Forest	Seedtree harvest a portion of Stand A-12	14	2023-2032
Forest	TSI thinning of Stand A-14	42	2023-2032
Forest	TSI thinning of Stand A-24	10	2023-2032
Forest	Seedtree harvest a portion of Stand A-27	7	2023-2032
Forest	Clearcut a portion of Stand A-35	6	2023-2032
Forest	Clearcut and thin Stand A-47	9	2023-2032
Grassland	Mow and manage grassland according to BMPs – Stands A-3, 4, & 7 rotationally mowed by DEC Operations	41	2023-2032
Grassland	Mow and manage grassland according to BMPs – Stand A-16 rotationally mowed by Cooperative Agreement	67	2023-2032
Grassland	Mow and manage grassland according to BMPs – Stands A-18, 22, 25, 29, 30, & 42 rotationally mowed by DEC Operations and to be included into a future agricultural agreement	194	2023-2032
Shrubland	Brush hog and clear Stand A-8 and A-5	54	2023-2032

III. FIGURES

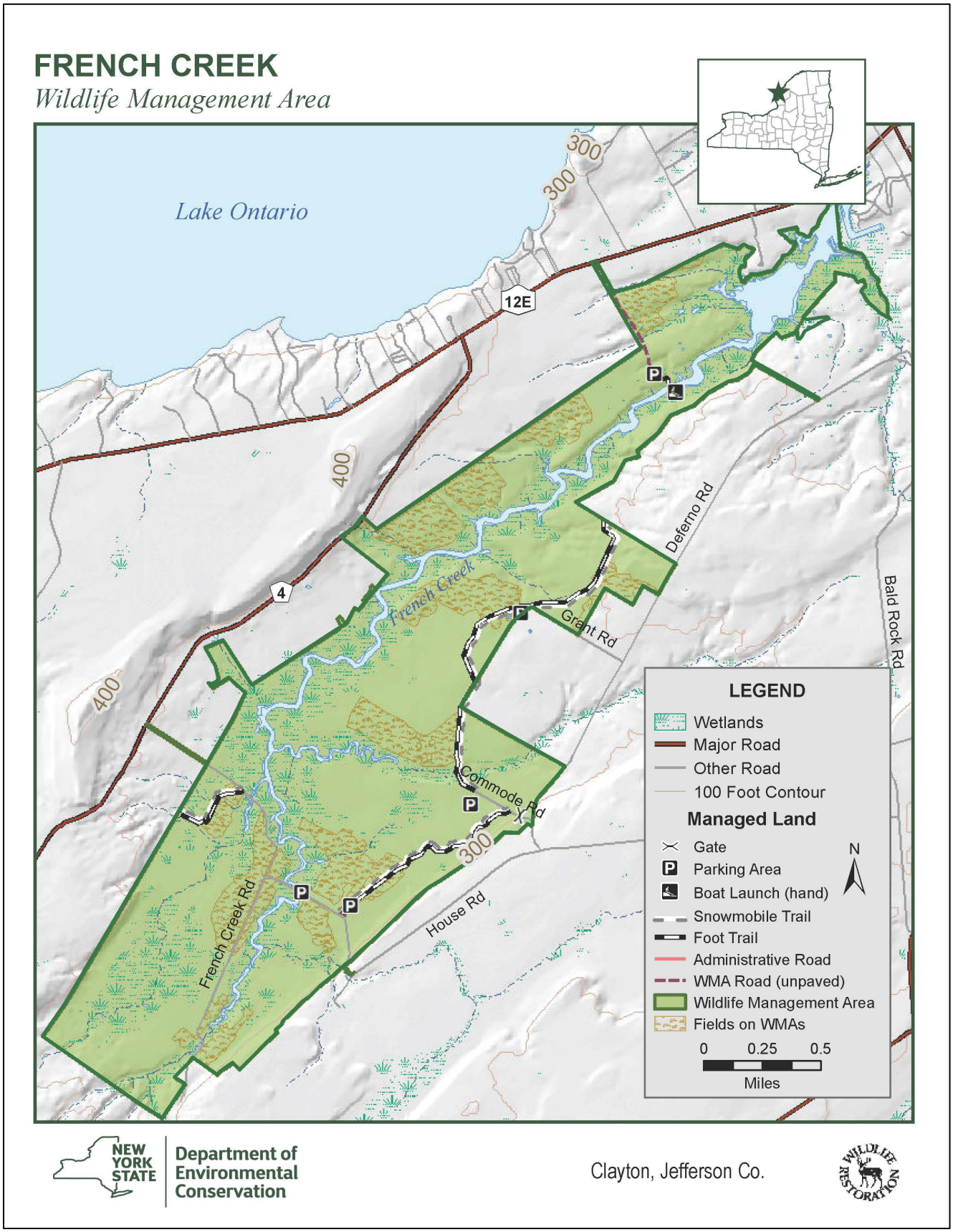

FIGURE 1. Location and access features at French Creek WMA.

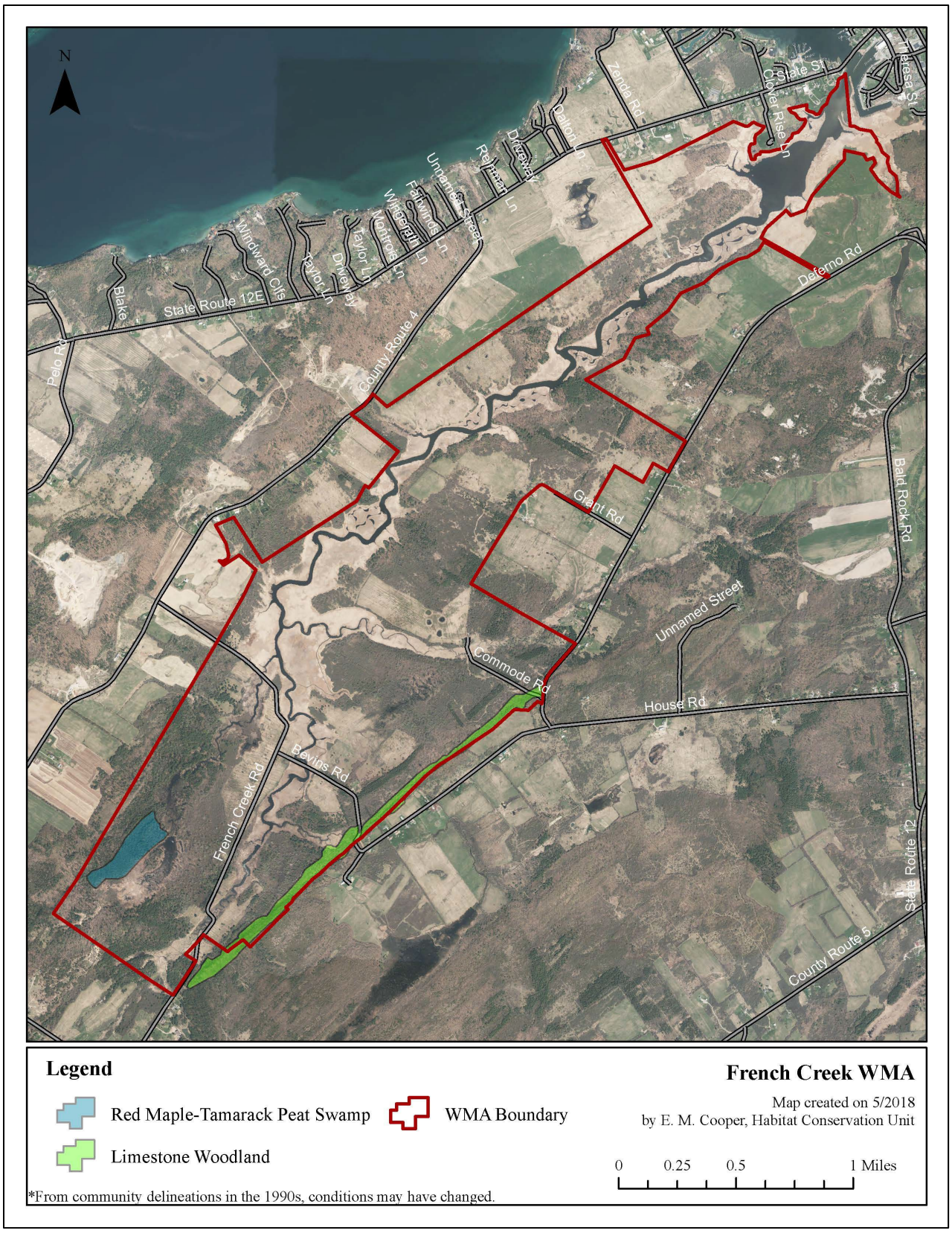

FIGURE 2. Significant ecological communities on French Creek WMA. Data from the NY Natural Heritage Program.

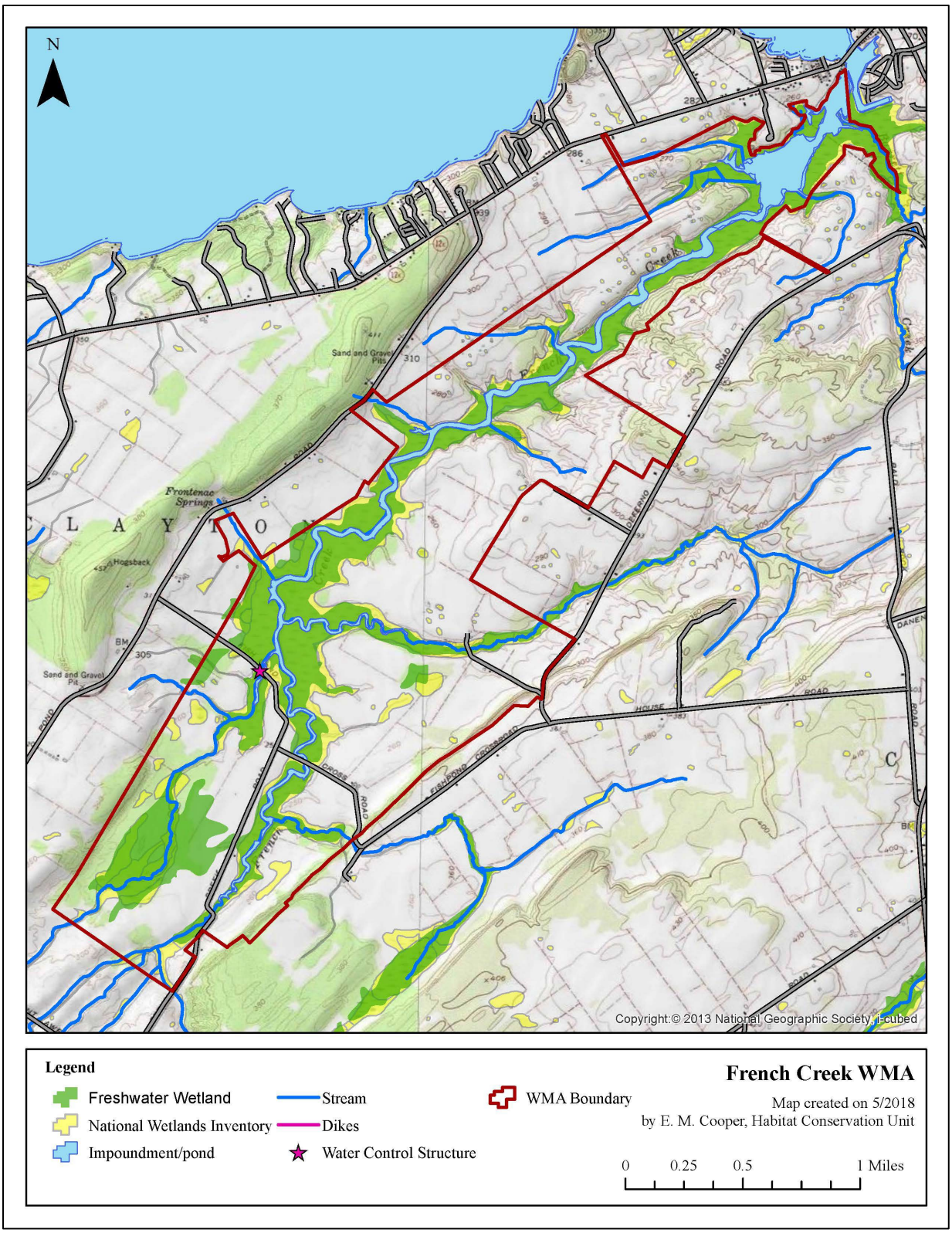

FIGURE 3. Wetlands, open water, and streams of French Creek WMA. Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

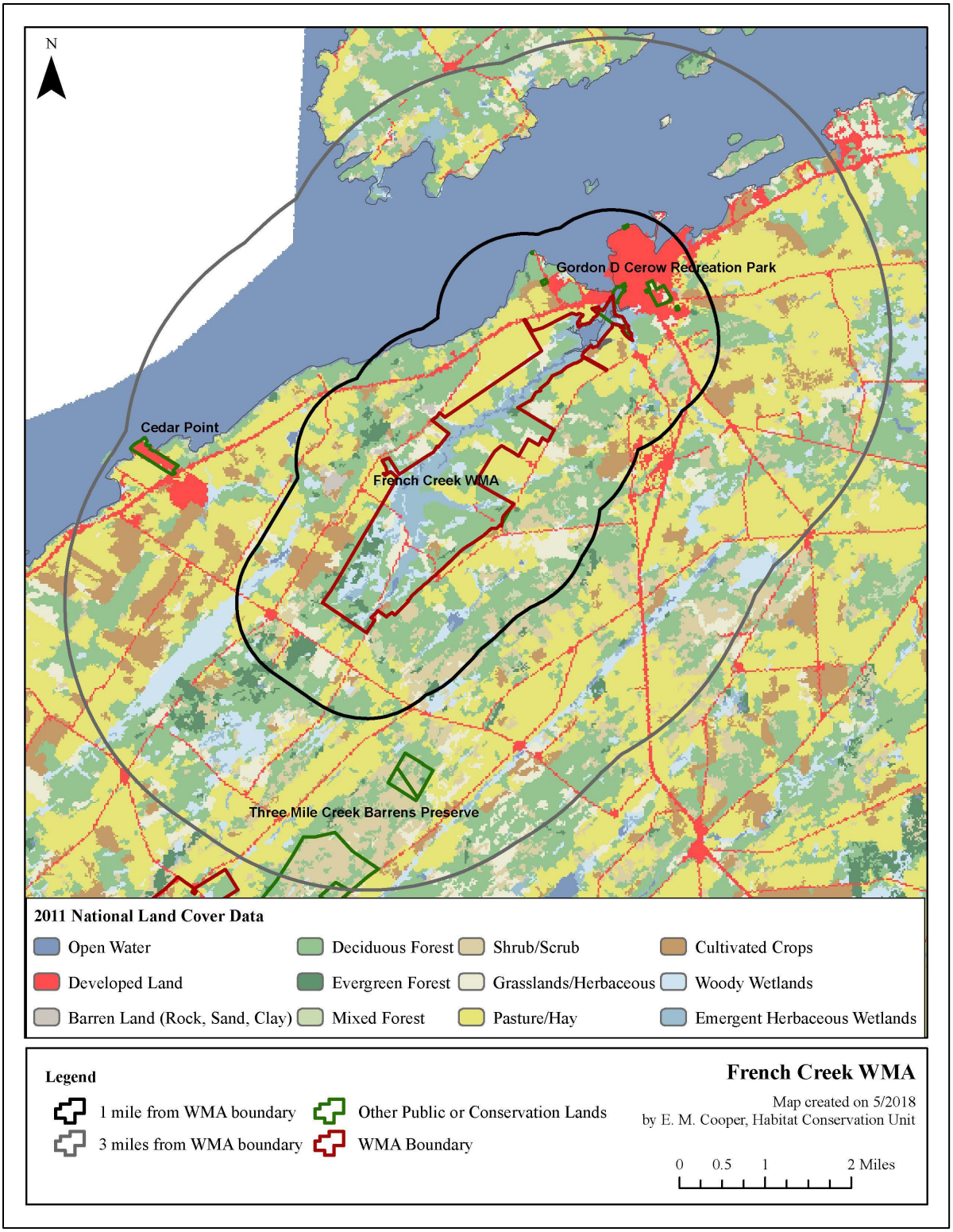

FIGURE 4. Land cover types and conservation lands in the landscape surrounding French Creek WMA. Conservation lands are from the NY Protected Areas Database available online at https://www.nypad.org/. Land cover types are from the 2016 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at https://www.mrlc.gov/data/legends/national-land-cover-database-2019-nlcd2019-legend.

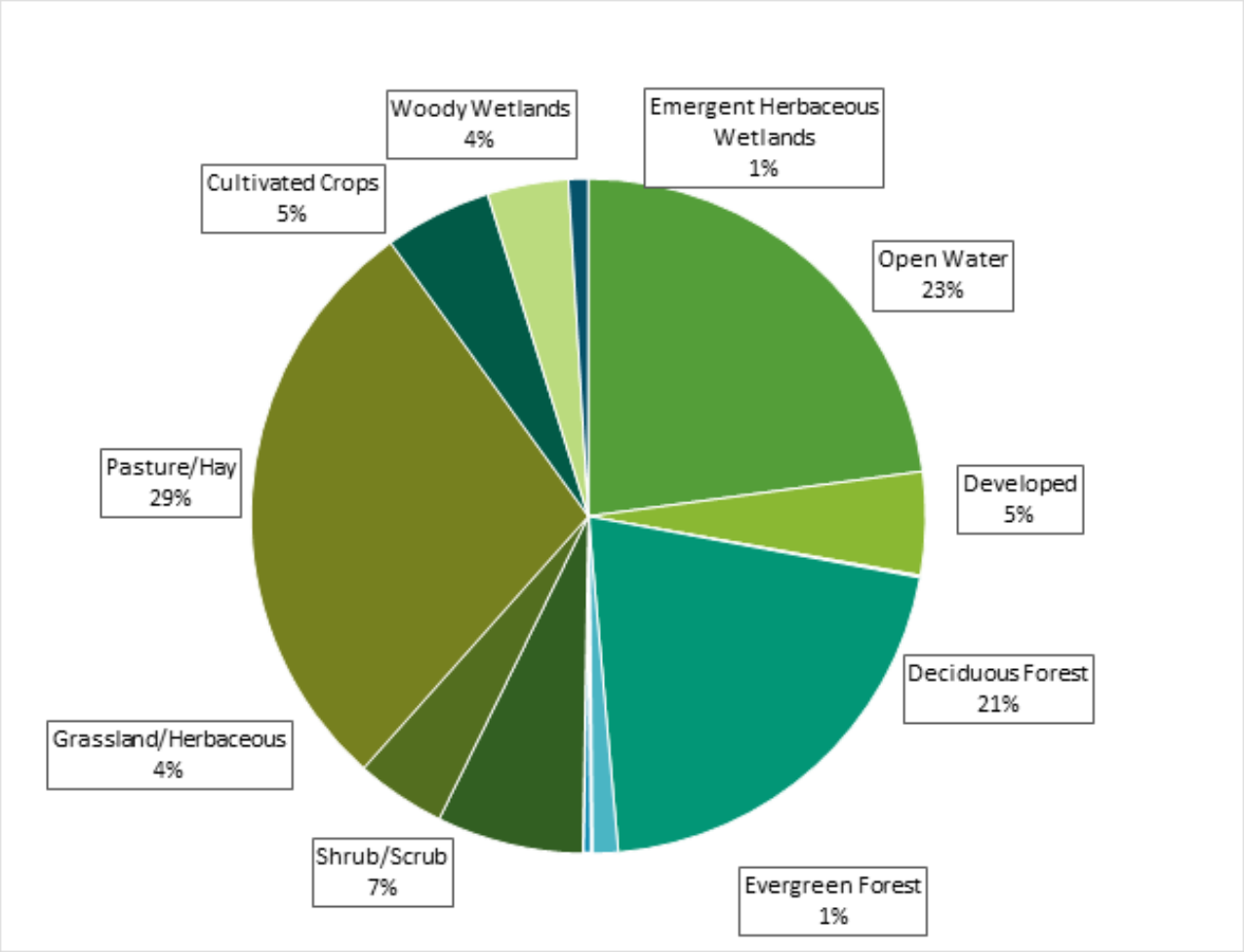

FIGURE 5. Percent cover of land cover types within three miles of French Creek WMA.

Land cover types are from the 2016 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at https://www.mrlc.gov/data/legends/national-land-cover-database-2019-nlcd2019-legend.

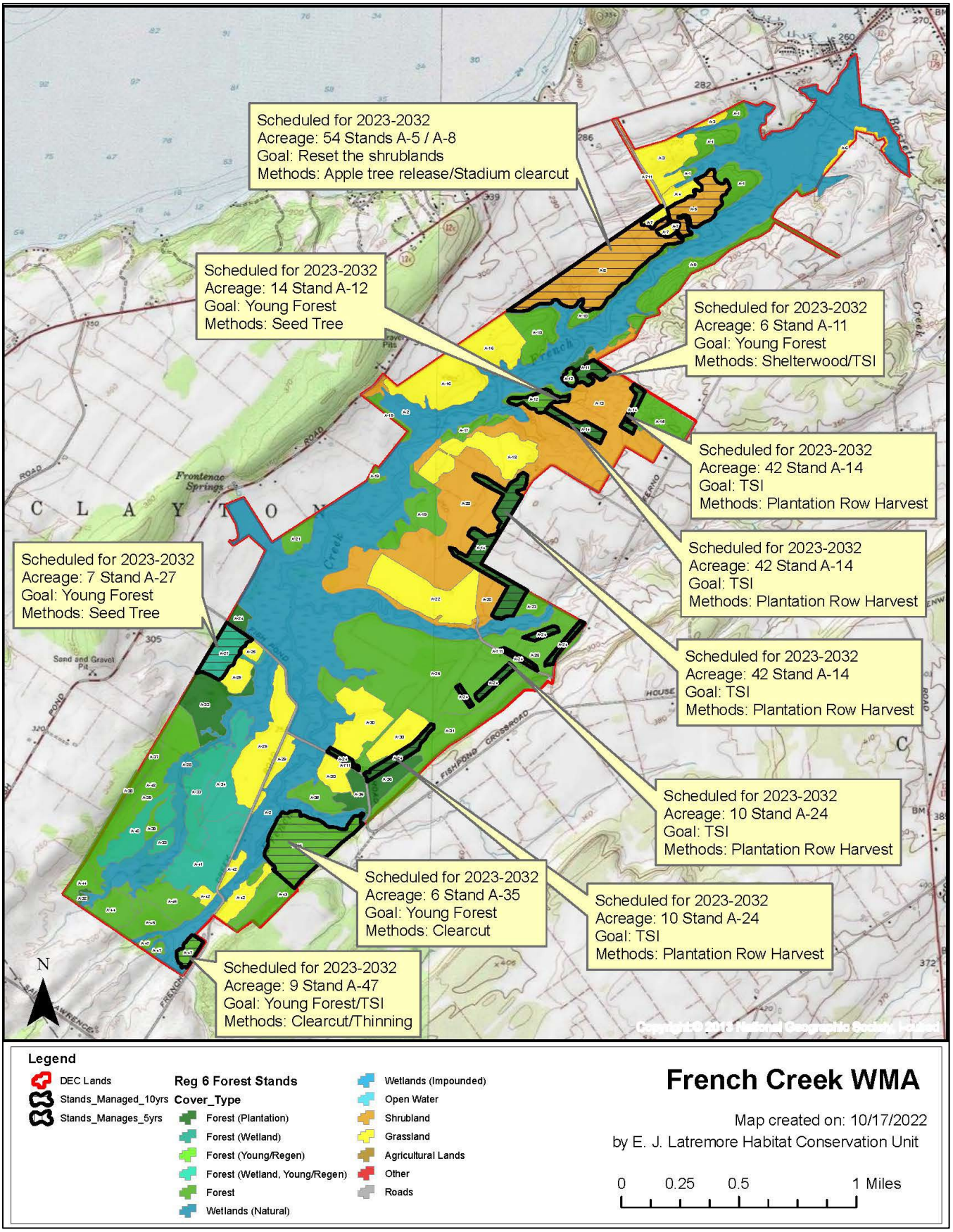

FIGURE 6. Habitat types and location(s) of proposed management on French Creek WMA. Numbers indicate the stand number from habitat inventory.

IV. APPENDICES

APPENDIX A: DEFINITIONS

The following key words were used in the development of this Habitat Management Plan. Definitions are from The Dictionary of Forestry, Society of American Foresters, J. A. Helms, Editor, unless otherwise noted.

Best Management Practices: (BMP) A practice or combination of practices that are determined to be the most effective and practicable means of avoiding negative impacts of habitat management.

Biodiversity: The variety and abundance of life forms, processes, functions, and structures of plants, animals, and other living organisms, including the relative complexity of species, communities, gene pools, and ecosystems at multiple spatial scales.

Clearcut: A forest regeneration or harvest method that entails the cutting of essentially all trees, producing a fully exposed microclimate for the development of a new age class. Depending on management objectives, a clearcut may or may not have reserve trees left to attain goals other than regeneration.

Community: An assemblage of plants and animals interacting with one another, occupying a habitat, and often modifying the habitat; a variable assemblage of plant and animal populations sharing a common environment and occurring repeatedly in the landscape. (NY Natural Heritage Program)

Endangered Species: Any species listed on the current state or federal endangered species list as being in danger of extinction throughout all or a significant portion of its range.

Forb: Any broad-leafed, herbaceous plant other than those in the Poaceae (Gramineae), Cyperaceae, and Juncaceae families (i.e., not grass-like).

Forest: An ecosystem characterized by a dense and extensive tree cover, often consisting of stands varying in characteristics such as species composition, structure, age class, and associated processes, and commonly including meadows, streams, fish, and wildlife.

Forest Health: The condition of a forest derived from concerns about such factors as its age, structure, composition, function, vigor, presence of unusual levels of insects or disease, and resilience to disturbance.

Grassland Bird Conservation Center: A landscape of at least 25,000 acres that meets at least two of the following three criteria: (1) >7,500 acres of grassland [i.e., >25% of the landscape is currently in some form of grassland habitat], (2) a grassland "anchor" field that meets specific criteria, and/or (3) at least 1,000 acres of grasslands already managed under BMPs for grassland birds (NYSDEC Strategy for Grassland Bird Habitat Management and Conservation 2021-2026).

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. 2014. 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. 2014. 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. 2014. 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. 2014. 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 are generally 0-20 years following a disturbance and composed of seedling-sapling sized trees (<5" DBH). Includes the stand initiation and beginning of stem exclusion phases of stand development. Old fields with woody encroachment and shrublands offer similar habitat structure as seedling-sapling stands for many of the target species.

APPENDIX B: COMPLIANCE WITH STATE ENVIRONMENTAL QUALITY REVIEW

This plan identifies habitat management activities to be conducted on the Wildlife Management Area. These activities were analyzed in the 1979 *Programmatic Environmental Impact Statement on Habitat Management Activities of the Department of Environmental Conservation; Division of Fish and Wildlife* (PEIS), as updated and amended in 2017 by the *Supplemental Final Environmental Impact Statement* (SFEIS).[19] Any activity that exceeds the thresholds of, or was not analyzed in the 1979 PEIS as amended in 2017, will require individual, site-specific environmental review. Environmental assessment forms prepared as a result of this review will be posted on the Environmental Notice Bulletin (ENB).[20]

The activities recommended in this plan:

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

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

APPENDIX C: FOREST MANAGEMENT PRESCRIPTIONS

PRESCRIPTION FOR WILDLIFE MANAGEMENT AREA TIMBER HARVEST

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

Species composition:

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

Stand inventory or analysis date:

Regeneration data:

Natural Heritage Element Occurrence layer review:

SMZ layer review:

Retention data:

Soil types and drainage:

Interfering vegetation:

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

Technical guidance/stocking guide:

Treatment purpose:

Management Objective: Even aged or Uneven Aged

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

Clearcut acreage and configuration: (if applicable)

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

Retention considerations and adjustments:

Treatment descriptions:

Name and Title of Preparer:

Central Office Lands and Forests Staff **Date**

Regional Wildlife Manager **Date**

PRESCRIPTION NOTES

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

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

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

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

Soil types and drainage: Specifically named soil types are useful, but not necessarily required. "Flat, sandy, well-drained hilltop" or "Steep, gravelly, moderately well-drained mid-slope" may be just as useful as "Hershiser-Koufax Sandy Silt Loam" in describing the soil conditions as they relate to management decisions. The important point is to note those characteristics that may limit equipment operation or establishment of regeneration. Soil type data is available for some counties on the Data Selector.

Interfering vegetation: Indicate the existing amount of interfering vegetation such as beech, striped maple, fern, etc. This may be quantified using mil-acre plots or by ocular estimate.

Technical guidance used: This may include stocking guides, articles found in technical journals, textbooks or other silviculture-related publications. Other sources of guidance may be acceptable as well.

Treatment purpose: As used here, "treatment purpose" and "management objective" (see below) are two different things. Also, "treatment purpose" is not what is to be done (i.e., "reduce basal area by 25%" or "remove every third row"), but rather is an explanation of why it is being done (i.e., "stimulate regeneration and increase growth of residual stand" or "regenerate current stand and convert to young forest").

Management objective: As used here, the term "management objective" is somewhat general. At a minimum, the prescription should indicate the desired future age structure and stand type. An entry as general as "Even aged hardwood" is acceptable, but regional staff may be more specific if they so choose. The management objective for a stand may be specified in the Habitat Management Plan (HMP) for the Wildlife Management Area in question. If the existing HMP does not specify the management objective regional staff should choose the management objective when the prescription is written.

Clearcut acreage and configuration: If the harvest involves one single clearcut, indicate the total contiguous area, in acres. If the harvest comprises more than one clearcut, indicate the total combined area of clearcuts, as well as the area of the largest clearcut.

Natural Heritage/MHDB considerations: Indicate what measures will be taken to protect those elements or features that were found in the review of the Natural Heritage Element Occurrence and Special Management Zone (not applicable yet) layers.

Retention considerations: Indicate whether or not existing levels meet the standards set forth in the Division's policy on Retention on State Forests, or whether they are expected to do so as a result of the proposed treatment. Also indicate if or how the treatment was adjusted in order to improve compliance with the policy standards.

Treatment description: The intended treatment should be clearly described. The amount of information necessary to accomplish this will vary greatly. For instance, in a row thinning of a pole timber sized plantation that had no SMZs or other special features, it may be sufficient to simply indicate "Remove two out of every six rows, taking two adjacent rows and leaving four rows between successive pairs being removed." An intermediate thinning in a sawtimber sized hardwood stand with a recreational trail, two streams and a known occurrence of an endangered plant community would require significantly more detail. One rule of thumb that could be used is to describe the treatment so that a qualified forestry professional could use it to assist in marking the harvest.

Additionally, since we are focused on creating young forests you should also address the presence/absence of advanced regeneration. If you are planning on clearcutting without advanced regeneration, address how you are going to mitigate that. For example, "This aspen stand will be clearcut and it is anticipated that future regeneration will be established through aspen root sprouting". Or, "This stand will be clearcut and replanted with Norway spruce to establish conifer cover."

Furthermore, if you are planning on conducting a shelterwood or seed tree cut, please indicate when you are planning on returning to the stand to conduct the final harvest (overstory removal).

APPENDIX D: AMENDMENTS

Any substantive changes to the habitat management described in this plan will be amended to the plan annually or as needed. Such changes may include: land acquisition, unforeseen natural disturbance, or any other change that alters the need for or the scope, method, or timing of management.