Habitat Management Plan for
Allegheny Reservoir Wildlife Management Area
2020 – 2029

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Bureau of Wildlife

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1/11/2021

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Financial support for development of this Habitat Management Plan was provided by the Federal Aid in Wildlife and Sport Fish Restoration Program and non-federal funds administered by the New York State Department of Environmental Conservation including Habitat & Access Stamp funds.

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SUMMARY

Allegheny Reservoir Wildlife Management Area (WMA) is 1,066 acres and exhibits a variety of habitat types. The WMA is in the southwestern portion of Cattaraugus County in the Town of South Valley and is adjacent to the Allegheny Reservoir and the Seneca Nation of Indians tribal lands. Allegany State Park is located to the east of the WMA, one and a half miles across the Kinzua Reservoir. The Kinzua Reservoir, created by the installation of the Kinzua Dam on the Allegheny River just east of Warren, Pennsylvania is approximately, 4-miles south of the New York border. The Kinzua Reservoir serves as flood control for downstream communities.

The WMA is owned by the United States Government, administered by the Department of the Army under direction of the Army Corps of Engineers, and a license is issued to the DEC Bureau of Wildlife to conduct fish, wildlife, and forest management activities on the area. The Bureau of Wildlife entered a twenty-five-year license agreement in 1992 and subsequently renewed the license in 2017 for another twenty-five years, expiring in 2042. The license allows the Bureau of Wildlife to manage the WMA using scientifically based management practices providing habitat for a variety of wildlife species and creating recreational opportunities for hunters, trappers, hikers, and fishing. Any income generated from the property will be utilized for wildlife habitat management projects and internal infrastructure repairs and improvements. DEC has also entered into a cooperative agreement with the National Wild Turkey Federation (NWTF) to assist with the administration of habitat projects.

Habitat management goals for Allegheny Reservoir WMA include:

- Increase young forest acreage to 38.1 acres (4.9% of the total forested acreage) to provide high stem density habitat for ruffed grouse and American woodcock;
- Manage 10.8% as shrubland habitat;
- Manage 68.9% as intermediate and mature forest, including forested wetland, to provide habitat and hard mast for a variety of wildlife species including cavity nesters;
- Manage approximately 5.8% of the WMA as grassland to provide habitat for grassland-dependent species and waterfowl nesting;
- Manage 2.3% as natural wetlands; and
- Manage 4.9% as open water to maintain water control structures, dikes, and berms on small marshes, ponds, and potholes; provide aquatic habitat for waterfowl, reptiles, and amphibians; and resting habitat for birds during spring and fall migration.

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/MUAs 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/MUAs. These plans incorporate management recommendations from Unit Management Plans (UMPs), existing WMA/MUA habitat management guidelines, NY Natural Heritage Program's WMA/MUA Biodiversity Inventory Reports, Bird Conservation Area guidelines, and other documents available for individual WMAs/MUAs.

SCOPE AND INTENT

Primary purposes of this document:

- Provide the overall context of the habitat on the WMA/MUA and identify the target species for management;
- Identify habitat goals for WMA/MUA-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/MUA 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 5 years, this HMP will be integrated into a comprehensive WMA/MUA 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

Allegheny Reservoir Wildlife Management Area is located in DEC Region 9, Town of South Valley, Cattaraugus County (Figure 1).

Total Area

1066 acres

Habitat Inventory

A habitat inventory of the WMA was conducted in 2018 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 Allegheny Reservoir WMA.

Habitat Type	Current Conditions (as of 2019)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest [a]	779.4	73.1%		735.3	Decrease to 68.9%
Young forest	0.0	0.0%		38.1	Increase to 3.6%
Shrubland	109.0	10.2%		115.0	Increase to 10.8%
Grassland	62.3	5.8%		62.3	No change
Agricultural land	0.0	0.0%		0.0	No change
Wetland (natural)[b]	24.1	2.3%		24.1	No change
Open water	51.8	4.9%		51.8	No change
Other (Parking lot)	0.1	0.009%		0.1	No change
Other (Utilities)	4.4	0.4%		4.4	No change
Roads	12	1.1%		12	No change
Rivers and streams			6.0		No change
Total Acres:	1,066*	100%		1,066*	

[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.
*A 22.9-acre (2.2%) difference exists between Army Corps Real Property acreage and the habitat layer due to digitizing and mean high water level of the reservoir.

ECOLOGICAL RESOURCES

Wildlife Overview:

Wildlife present on Allegheny Reservoir WMA include species commonly found on the High Allegheny Plateau (AO2-Allegheny Hills) region of southwestern New York such as:

- White-tailed deer, red fox, eastern coyote, black bear
- Beaver, raccoon, otter, fisher, muskrat
- Ruffed grouse, American woodcock, wild turkey, American crow, osprey, blue jay, Northern harrier
- Wood duck, mallard, Canada goose
- Eastern American toad, spring peeper, wood frog
- Snapping turtle, painted turtle, Eastern garter snake

The New York River Otter Project occurred from 1995-2000 with a primary goal of restoring river otters to watersheds of western New York. The Allegheny watershed contained historic populations of river otters. Bone Run on the Allegheny Reservoir WMA was one of the release sites chosen during the restoration effort.

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]

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

Species Group	Species	Federal Status	NY Status	NY SGCN Status
Birds				
	American woodcock			x
	Bald Eagle		T	x
	Black-billed cuckoo			x
	Black-throated blue warbler			x
	Blue-winged warbler			x
	Bobolink			HP
	Brown thrasher			HP

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

Table 2 continued				
Species Group	**Species**	**Federal Status**	**NY Status**	**NY SGCN Status**
	Cerulean warbler		SC	x
	Eastern meadowlark			HP
	Louisiana waterthrush			x
	Northern harrier		T	x
	Osprey		SC	
	Red-shouldered hawk		SC	x
	Ruffed grouse			x
	Scarlet tanager			x
	Wood thrush			x
Amphibians and reptiles				
	Snapping turtle			x
	Eastern spiny softshell		SC	HP
	Short-headed gartersnake			x
	Smooth greensnake			x
Mammals				
	None known			
Fish				
	None known			
Invertebrates				
	None known			
Plants				
	None known			

Significant Ecological Communities:

There are roughly 19 ecological communities present on Allegheny Reservoir WMA, including two significant natural communities. 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):

- **Chestnut oak forest (G5 S4):** a hardwood forest that occurs on well-drained sites in glaciated portions of the Appalachians. This forest is similar to the Allegheny oak forest; it is distinguished by fewer canopy dominants and a less diverse shrub layer and groundlayer flora.

  Dominant trees are typically chestnut oak (*Quercus montana*) and red oak (*Q. rubra*). Common associated are white oak (*Q. alba*), black oak (*Q. velutina*), and red maple

[5] Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero (editors). 2014. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's *Ecological Communities of New York State*. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY. Available online at https://www.nynhp.org/ecological-communities/.

(*Acer rubrum*). American chestnut (*Castanea dentata*) was a common associate in these forests prior to the chestnut blight; chestnut sprouts are still found in some stands.

- **Allegheny oak forest (G3G4 S2):** a hardwood forest that occurs on well-drained sites in the unglaciated portion of southwestern New York. This is a narrowly defined community distinguished by a more diverse flora, especially in the tree canopy and groundlayer, compared to other mid to high elevation oak communities in the state (*e.g.*, chestnut oak forest). These mixed oak forests are characteristic of the rounded ridgetops and upper south-facing slopes of the unglaciated Allegheny Plateau. In New York, they occur from 1,300 to 2,300 feet above sea level and grade into rich mesophytic forests that occur directly below them on west-facing, and east-facing slopes and sometimes on north-facing aspects.

  Codominant trees are typically white oak (*Q. alba*), red oak (*Q. rubra*), chestnut oak (*Q. montana*), black oak (*Q. velutina*), and red maple (*Acer rubrum*). American chestnut (*Castanea dentata*) was a common associate in these forests prior to the chestnut blight; chestnut sprouts are still very common in the understory. Other common canopy trees are pignut hickory (*Carya glabra*), black birch (*Betula lenta*), black cherry (*Prunus serotine*), and big-tooth aspen (*Populus grandidentata*).

Additional information about significant ecological communities is available in the Ecological Communities of New York State, Second Edition prepared by the NY Natural Heritage Program.

Soils:

Allegheny Reservoir WMA spans across two different soil series. Compartments A and B are located on a Rayne-Kinzua-Ernest variant-Carrollton soil series. This is a fine loamy soil occurring on hills and plateaus comprised of sandstone, siltstone, and shale materials. They are typically very deep and well drained. Compartment C is on a Leck kill-Hartleton-Buchanan-Albrights soil series. These are channery silt loam soils found on upland slopes of mountains, hills, and plateaus. They are typically very deep and well drained as well. Both series are well suited for supporting forest vegetation, including hardwood species such as oaks, maple, birch, beech, and cherry.[6]

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 Allegheny Reservoir WMA include:

- There are no known state-regulated wetlands on the WMA. The National Wetlands Inventory (NWI) maps show wetland acreage separate from state regulated wetlands due to a difference in mapping criteria. Several forested/shrub and emergent wetlands are noted along with open water and riverine habitats. There may be forestry prescriptions associated with forested wetlands and each management prescription will be reviewed individually for determination of impacts.
- Three streams (a watercourse entirely within the WMA) or segments of streams (a stream that meanders in and out of the WMA). Bone Run, Pierce Run, and Stateline Run have a

[6] https://soilseries.sc.egov.usda.gov/osdname.aspx

C Classification with a (T) standard[7]. Classification C is for waters supporting fisheries and suitable for non - contact activities. A Standard of (T) indicates the creek may support a trout population.
- Vernal pools and spring seeps exist on the WMA. Management activities will follow SMZ rules established for WMAs.

Guidelines for habitat management projects within these areas are outlined in the Division of Lands and Forests *Rules for Establishment of Special Management Zones on State Forests and Wildlife Management Areas.*[8] Some habitat management activities may either be prohibited or restricted in order to protect these features. Any deviations from these guidelines will be addressed in the individual stand prescriptions.

LANDSCAPE CONTEXT

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

- Deciduous forest (51.1%)
- Mixed forest (27.9%)
- Open water (8.2%)
- Developed (3.4%)
- Evergreen forest (2.9%)
- Barren land (2.5%)
- Pasture/Hay (1.5%)
- Shrub/Scrub (1.0%)
- Wetlands (includes emergent herbaceous and woody wetlands) (0.8%)
- Grasslands (0.3%)
- Cultivated crops (0.3%)

Several properties managed by the DEC's Division of Lands and Forest are located within several miles of Allegheny Reservoir WMA and include:

- Pine Hill State Forest – 1,142 acres
- South Valley State Forest – 4,477 acres

The hardwood and softwood stands of these state forests are managed through a suite of silvicultural practices specifically applied with regard to existing conditions and desired outcomes. The conifer stands of pine and spruce were planted in old farm fields by the Civilian Conservation Corps to prevent soil erosion on abandoned farmland. They are usually managed by a series of partial harvest thinnings, which provide openings for sunlight to encourage natural

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

regeneration of native hardwoods. The removal of the conifer overstory in the final harvest allows the hardwood seedlings to grow to maturity.
Hardwood stands are also thinned via selective cuts providing more growing space for residual trees, improving forest health, and creating openings for seed germination and seedling growth. When regeneration is determined to be adequate, the remaining overstory trees are then harvested. Removal of the overstory allows ample sunlight to reach the forest floor stimulating seedling growth.

Two additional Wildlife Management Areas are located nine and a half and ten and a half miles, respectively, to the west of the Allegheny Reservoir include:

- Hartson Swamp WMA – 99.5 acres
- Clay Pond WMA – 180 acres

HMP's for these two WMA's have not been completed. Due to wet soil conditions, habitat management of Hartson Swamp and Clay Pond WMAs will be different than management at Allegheny Reservoir. Allegheny Reservoir WMA consists primarily of upland forest with smaller acreages of grasslands, shrubland, and wetlands. A much larger percentage of young forest acreage will be created with regards to the overall forested acreage.

Allegany State Park, located one and a half miles East of Allegheny Reservoir WMA, encompasses 65,000 acres of mature forest, open fields, several lakes, and is adjacent to the Kinzua Reservoir. Minimal habitat management occurs at the park. Forest management in general, and specifically young forest management, are not included in the current master plan for Allegany State Park.

The Seneca Nation of Indians tribal lands are adjacent to the Allegany Reservoir WMA and include much of the Allegheny Reservoir and portions of the surrounding upland habitat. Habitat management strategies for Nation lands are controlled by the Seneca Nation Tribal Council and the Seneca Nation Wildlife Unit.

The remaining property surrounding Allegheny Reservoir WMA is in private ownership. Private landowners generally follow a diameter-limit management or uneven aged management strategy that is primarily income driven. This achieves an immediate economic gain with the harvest but does not create young forest as described in DEC's *Young Forest Initiative Strategic Plan*.[9] The goal at Allegheny Reservoir is to create young forest habitat on the WMA using even-aged management (e.g., clearcuts) as the primary management technique to benefit the target species of the WMA. A minimum of 4.9% of the forested acreage on the WMA will be maintained in a young forest stage. This low percentage of the total forested acreage is due to the topography of the WMA which severely limits access to the preferred forest stands for management.

[9] 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 Allegheny Reservoir WMA to provide the following benefits:

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

FOREST

Forested acreage includes the following forest types:

Natural forest: naturally forested acres, including hardwoods and softwoods. Includes any upland forested acreage that is not young forest, i.e., pole stands, other intermediate forest age classes, mature forest, and old growth forest.
Plantation: planted forested acres, generally planted in rows dominated by one or two species.
Forested wetland: wetland acres where forest or shrub vegetation accounts for greater than 50% of hydrophytic vegetative cover and the soil or substrate is periodically saturated or covered with water.
Young forest: young or regenerating forested acres, which are typically aged 0-10 years since a disturbance or regeneration cut, depending upon the site conditions. May include both natural forest and plantations.
Young forest (forested wetland): young, regenerating forested wetland acres.

Forest management on Allegheny Reservoir WMA incorporates an approach to create and/or maintain the diversity of forest age classes that are required to support a diversity of wildlife. In 2015, DEC launched the Young Forest Initiative (YFI) to increase the amount of young forest on WMAs to benefit wildlife that require this transitional, disturbance-dependent habitat. [10]

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

MANAGEMENT OBJECTIVES

- Increase young forest acreage from an existing 0 acres to approximately 38.1 acres intended to improve habitat for young forest target species, specifically ruffed grouse and American woodcock.

Natural forest of northern hardwoods on Allegheny Reservoir WMA.

Photo: Justin Kindt, NYSDEC

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

Allegheny Reservoir WMA contains 779.4 acres of forested habitat (Figures 6-9). The predominant forest type is natural forest, consisting mostly of northern hardwood species such as maples and ash. The property also contains red and white oak in concentrated areas. Most forested stands throughout the property are in a poletimber or small sawtimber size class. Allegheny Reservoir WMA is comprised of multiple noncontiguous parcels therefore, three compartments have been assigned for management purposes (Figure 6). Major challenges to forestry management is access to certain areas due to topography, hydrology, or private property constraints. Field inventory assessments were used to create a summary of the current and desired forest types for Allegheny Reservoir WMA (Table 3).

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

Forest Type	Acres (as of 2020)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	606.9	570.6	Red maple, sugar maple, red oak
Plantation	7.8	0	Red pine
Forested wetland	164.7	164.7	
Young forest	0	38.1	
Young forest (forested wetland)	0	0	
Total Forested Acres:	779.4	773.4[a]	

[a] Change in total forested acres is due to the conversion of forest to shrubland habitat (6 acres).

Target species for young forest habitat management include ruffed grouse and American woodcock. These species rely on areas of young forest adjacent to mature forest for nesting, foraging, and cover and will benefit from management that creates the following:

- **Ruffed Grouse Habitat Requirements:**
  - 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.[11]

- **American Woodcock Habitat Requirements:**
  - Singing/Peenting Ground – Open areas from 1 acre to over 100 acres usually in an abandoned field.
  - Daytime areas – Moist, rich soils w/ dense overhead cover of young alders, aspen, or birch.
  - Nesting – Young open, second growth woodlands.
  - Brood rearing – Similar to nesting except there needs to be bare ground and dense ground cover.
  - Roosting – Open fields (min. of 5 acres) or blueberry fields and reverting farm fields.[12]

MANAGEMENT HISTORY

Previous forest management has been limited on Allegheny Reservoir WMA and no specific young forest habitat has been created.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed in order to reach the goal of 38.1 acres of young forest habitat or approximately 4.9% young forest habitat of the total forest acreage within ten years:

- **Management planned for 2020-2024** (Table 4, Figures 6-9):
  - Clearcut half of a northern hardwood – hemlock stand in Compartment C Stand 9 (13.0 acres).
  - Clearcut pioneer hardwoods in Compartment B Stand 10 (8.8 acres).
  - Remove hardwood overstory trees from Compartment B Stand 11 to covert stand into shrubland habitat (6.0 acres).
- **Management planned for 2025-2029** (Table 5, Figures 6-9):
  - Clearcut a red pine plantation in Compartment C Stand 4 (7.8 acres).
  - Clearcut portion of a northern hardwoods stand in Compartment B Stand 19 (8.5 acres).

[11] Jones, B. C. et al. Habitat Management for Pennsylvania Ruffed Grouse, Pennsylvania Game Commission. 10 pp.
[12] Sepik, G. F. et al. 1981. A Landowner's Guide to Woodcock Management in the Northeast, Moosehorn National Wildlife Refuge, USFWS. 25 pp.

Table 4. Forest management schedule for the first five-year period of this HMP (2020-2024).

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
C-9	13.0	Small Sawtimber	NH - Hemlock	Young Forest	Wildlife	Patch Clearcut
B-10	8.8	Poletimber	Pioneer	Young Forest	Wildlife	Clearcut
B-11	6.0	Poletimber	Northern Hardwoods	Shrubland	Wildlife	Selective cut

Table 5. Forest management schedule for the second five-year period of this HMP (2025-2029).

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
C-4	7.8	Poletimber	Plantation	Young Forest	Wildlife	Clearcut
B-19	8.5	Small Sawtimber	Northern Hardwoods	Young Forest	Wildlife	Patch Clearcut

Stand locations and planned management actions are also summarized in Figures 6-9. 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 for 2020-2024 (27.8 acres):

Natural forest (27.8 acres)

Compartment C Stand 9

This is a 26.8-acre northern hardwood – hemlock stand. The forested area covers a small hill, with hemlock growing on the slopes and northern hardwoods growing on the flat top. The 13.0-acre hardwood component of the stand will be clearcut to create young forest with an ideal juxtaposition to conifer cover.

Compartment B Stand 10

This is an 8.8-acre hardwood stand composed of mostly pioneer species. It is located at the base of a large hill and borders two grassland fields. The stand also projects into the fields with spurs of aspen thickets at various locations along its length. The entire stand will be clearcut, with exception of the scattered white

oak within it, to regenerate the aspen and create young forest cover in proximity to other foraging habitats.

Compartment B Stand 11

This 6.0-acre stand was an old field that has been allowed to regrow with woody vegetation. It contains mostly shrubs and pole size trees. The trees will be removed to convert the stand to shrubland habitat. Further details are described in the **Shrubland Management** section.

Management for 2025-2029 (16.3 acres):

Plantation (7.8 acres)

Compartment C Stand 4

This is a 7.8-acre red pine plantation that will be cleared for young forest regeneration. The seed bank should contribute to the natural regeneration of red pine which is ideal for young forest target species and other wildlife.

Natural forest (8.5 acres)

Compartment B Stand 19

This is a 28-acre northern hardwood stand located on the side of a hill. An 8.5-acre patch will be cleared on the northern end of the stand to regenerate young forest habitat. This new cover in combination with nearby grasslands and other forested stands of different ages should create ideal habitat for a suite of wildlife, especially the young forest target species.

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:

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

General wildlife surveys of project locations will be conducted prior to any forest management. Management activities will be limited to ensure impacts to sensitive species will be avoided or kept to a minimum. Projects will take into account seasonal weather conditions, along with the breeding and nesting period of wildlife species found on the WMA.

A Northern long-eared bat survey has not yet been conducted following the U. S. Fish and Wildlife Service (USFWS) approved survey protocol. Forest management will not occur outside of Northern long-eared bat hibernation season, until a survey has been conducted and concludes probable absence.

Forest Health Considerations:

Forest management using sound silviculture helps encourage tree, stand, and forest resilience. This can improve wildlife habitat for target species and create a healthier ecosystem. A more resilient forest is less likely to succumb to the adverse effects of injurious agents or limit the spread of damaging pests that may already be present on the WMA. A loss of function and diversity can occur when forest health declines from pests or other destructive agents. This could lead to fewer wildlife species inhabiting an area successfully, further compounding the decline of health and diversity.

Undesirable vegetation is any vegetation deemed to inhibit the successful establishment and growth of more desirable vegetation, which can be based on wildlife or timber values. It can possess traits that allow it to readily outcompete desirable regeneration, such as growth rate and environmental tolerances. Pre- and/or post-treatments are likely needed to ensure the successful regeneration of desirable species. Observed interfering or invasive vegetation includes blue beech, black birch, American beech, hawthorn, ironwood, honeysuckle, multiflora rose, poison ivy, various weeds, ferns, and grasses.

White-tailed deer herbivory varies across Allegheny Reservoir WMA and has been observed at high intensities in some of the forested stands. In areas where deer browse could pose a threat to desirable regeneration, deer enclosures (natural or artificial) may be constructed to protect regeneration.

Common forest pests, such as emerald ash borer (EAB), hemlock woolly adelgid (HWA), Asian longhorned beetle (ALB), and spotted lantern fly have not been observed on the WMA. Allegheny Reservoir WMA is, however, located within an emerald ash borer quarantine zone, therefore, additional regulations are currently applicable to all ash wood products. Also, gypsy moth egg masses were sporadically observed on the WMA.

Pre- and Post-treatment Considerations:

Pre- and post-treatments occur at the stand level and aim to promote the regeneration of desired species. The establishment of desired regeneration is primarily achieved by reducing competing vegetation, exposing mineral soil, and improving the seedbed.[14] Additionally, deer browse also greatly impacts the success of desired regeneration. Treatment actions are typically carried out

[14] Nyland, R.D. 2007. Silviculture: Concepts and Applications 2nd ed. Waveland Press.

through mechanical and/or chemical means. It should also be noted that certain ecological situations are best treated through a prescribed burning regimen.

Mechanical treatments will most commonly include the use of brush saws or chainsaws to cut out invasive or undesired species from the understory. Chemical treatments will involve the use of herbicides to reduce vegetative competition. Pre- and post-treatment actions will be addressed further in the silvicultural prescriptions.

MANAGEMENT EVALUATION

In order to determine whether the desired forest regeneration and wildlife response(s) have been achieved by the management outlined above, pre- and post-management assessments will be conducted in accordance with guidelines that will be established in a Young Forest Initiative Monitoring Plan (in prep). The Monitoring Plan will establish 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 Allegheny Reservoir WMA, which may be assessed to determine response to management, include:

- American woodcock
- Ruffed grouse

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

- Manage approximately 115.0 acres as shrubland habitat (10.8% of the WMA), providing habitat for a variety of shrubland dependent species. This is a combined acreage of 93.8 acres of wetland shrubland and 21.2 acres of upland shrubland.
- Convert 6.0 acres of natural forest to shrubland.
- Brush piles will be constructed from undesirable perimeter trees and trees removed from within the stand for cottontail rabbit habitat.
- Maintain selected shrubland stands/partial stands via a forestry mower every 3-5 years or as necessary.
- Conduct apple tree releases as necessary.
- Invasive species monitoring will be conducted annually. Treatment of invasive species will occur as deemed necessary and as funding becomes available.
- Plantings of soft-mast shrubs will be considered.

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

Currently 109.0 acres of shrubland exist on Allegheny Reservoir WMA composed of wetland shrubland species such as alder, red osier dogwood, silky dogwood, elderberry, and winterberry.
Species present in drier soil conditions include: crab apple, wild apple, honeysuckle, grey-stemmed dogwood, multi-flora rose, autumn olive, and sumac. These densely-stemmed habitats provide foraging and escape cover for both young of year and adults of numerous wildlife species, including the YFI target species:

- American woodcock
- Ruffed grouse

Other species benefitting from this habitat type:

- brown thrasher
- black-billed cuckoo
- cottontail rabbits.

MANAGEMENT HISTORY

Shrubland management on Allegheny Reservoir WMA has been limited due to high maintenance costs. As a result of flat topography on certain areas of the WMA, water recedes at a very slow rate inundating a portion of the habitat for long periods of time creating challenging growing conditions for plant species and habitat management techniques. In most winters, early snow cover limits ground freezing preventing stable soil conditions necessary to support equipment. An apple tree release was conducted by Wildlife Staff in Compartment B Stand 950 to improve growth and fruit production. Fortunately, efforts to maintain this valuable cover type are included in this HMP and will be attempted when the environmental conditions are most favorable.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2020-2029** (Figures 6-9):
    - **Compartment B Stand 11:** Convert entire stand to shrubland (6.0 acres) by removing all overstory red maple and ash in the stand. Removed trees will be cut and stacked to form brush piles scattered throughout the stand. Maintenance of the stand will be conducted as necessary by Wildlife Staff.
    - **Compartment B Stand 950:** Daylighting of apple trees in the untreated portion of the stand and maintenance of the treated portion of the stand will be conducted. Removed trees will be cut and stacked forming brush piles throughout the stand. Meandering mowed strips will be incorporated. Conifer clump plantings will be considered.

Habitat management will include the following:

- **Compartment B Stand 11:** Currently this 6.0-acre stand is natural forest with an overstory composed of small diameter red maple and white ash and an understory composed of shrub species. Shrub species include: crab apple, hawthorne, wild apple, and honeysuckle. All red maple and white ash trees will be removed as well as honeysuckle. The removed vegetation will be stacked into brush piles forming habitat for

rabbits and small rodents. Future planting of soft mast shrubs will be considered depending on the stand's response to the overstory removal. Plantings of conifer thermal cover will occur to provide wildlife additional winter season protection.

- **Compartment B Stand 950:** This stand will be managed as shrubland with an emphasis on soft mast production from apple trees. Remnants of an old apple orchard exist with small openings interspersed throughout. Many of the apple trees are in desperate need of pruning and day lighting. Pruning and removal of competing vegetation will encourage soft mast production providing a food source for wild turkey and white-tailed deer. Meandering mowed strips will be incorporated to provide critical edge habitat for foraging wildlife. Scattered conifer clump plantings will be strategically located to enhance escape cover and provide vital winter thermal cover.

BEST MANAGEMENT PRACTICES

Timing of the management activities will be limited to ensure impacts to the habitat and wildlife are kept to a minimum. Projects will consider seasonal weather conditions, along with the breeding and nesting period of wildlife species found on the WMA.

MANAGEMENT EVALUATION

These stands will be included in the American woodcock singing ground survey and the ruffed grouse drumming survey routes established on the WMA. Point counts of bird species pre- and post- management may occur to document presence or probable absence of young forest species and species response to the proposed management. Details of the methodology and data collection can be found in the Young Forest Initiative Monitoring Plan. Periodic inspections will be conducted to ensure tree species do not recolonize the project areas. Winter track surveys will monitor wildlife activity in and surrounding these shrublands.

GRASSLAND AND OTHER OPEN SPACE

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. Grasslands may include areas where hay is harvested by late season mowing once per year.

MANAGEMENT OBJECTIVES

- Maintain 62.3 acres of grassland and open areas (5.8 % of the WMA) to provide nesting and brooding habitat for a variety of wildlife species including bobolinks, mallards, wild turkeys, and Eastern meadowlarks. These areas will also provide hunting opportunities during the fall pheasant hunting season from stocked pheasants.
- Maintain grasslands and smaller fields annually to suppress encroachment of woody vegetation.
- Periodically lime and fertilize the grasslands to enhance annual growth.
- Re-seed grasslands/fields to re-establish desirable species.
- Construct brush piles periodically along the perimeter of the grassy openings.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

All grassland habitat is located in Compartment B along the north and south sides of the administrative road off of Bone Run road. These fields are seasonally wet making management difficult in high precipitation years. Currently, the growing conditions favor reed canary grass growth. The reed canary stem density and vigorous growth along with moist soil conditions are preventing other grasses from germinating.

The perimeter of the stands and alternating strips are mowed annually to suppress the encroachment of woody vegetation. Strip mowing is conducted in late summer to enhance hunting opportunities from released ring-necked pheasants.

Species that benefit from grassland best management practices include:

- Eastern meadowlark
- Bobolink

MANAGEMENT HISTORY

DEC Division of Operations maintain the grasslands following an annual mowing schedule provided by the Bureau of Wildlife. Wet soil conditions are a challenge to managing this cover type, not only for new plantings but also for annual maintenance to suppress undesirable species. The perimeter of the fields are mowed annually to prevent encroachment of woody vegetation from surrounding stands. Strip mowing on a two- or three-year rotation prevents the establishment of woody vegetation within the stand. Hunting opportunities on the WMA are enhanced by the annual fall stocking of adult ring-necked pheasants in and around the grasslands.

Stand 946: Reed canary grassland. Location of proposed vernal pool construction at the base of Stand 9 visible in the background.

Photo: Greg Ecker, NYSDEC.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2020-2029** (Figures 6-9):
    - **Compartment B border of Stands 9 and 10 with Stands 946 and 947:** Vernal pool construction along the southern borders of 946 and 947 and northern borders of Stands 9 and 10.
    - **Compartment B Stands 940 through 947:** Continue field maintenance following an annual mowing schedule.

- **Compartment B Stand 947:** Re-seed 9.0 acres to warm season grasses.
- All grasslands will be periodically limed and fertilized.
- Construct brush piles periodically along the perimeter of the grasslands.

Habitat management will include the following:

- **Compartment B border of Stands 9 and 10 with Stands 946 and 947:** The establishment of vernal pools at the base of Stands 9 and 10 between Stands 946 and 947 in Compartment B will attempt to collect the runoff from hillside springs that produce high flow each spring. Retaining some of the runoff should create drier growing conditions in the reed canary grass fields. The fields will be treated, plowed, disked, fertilized, and planted with corn to break up the existing root systems for two (or more) growing seasons. Following development of suitable soil conditions, the fields will be planted with a warm season grass mix of big blue stem, little blue stem, Indian grass, and switchgrass. This management will benefit a wide range of species that rely on this cover type including the species mentioned above.

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 most situations in New York.

[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.

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 working 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

These stands will be included in the American woodcock singing ground survey and the ruffed grouse drumming survey routes established on the WMA. Point counts of bird species pre- and post-management may occur to document presence or absence of young forest and grassland species and species response to the proposed management. Periodic winter track surveys will monitor wildlife activity in and surrounding these grassy openings.

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

Allegheny Reservoir WMA does not contain any stands that are currently managed as agricultural land. Future management plans do not include adding agricultural fields to the existing habitat.

WETLANDS (NATURAL AND IMPOUNDED)

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

MANAGEMENT OBJECTIVES

- Maintain 24.1 acres of natural wetland as it currently exists.
- Maintain 93.8 acres of scrub-shrub wetlands; management objectives covered in the shrubland section of this HMP.
- Construct vernal pools between Stands 9 and 10 and grassland Stands 946 and 947 in Compartment B.
- Maintain natural hydrology and water quality on the WMA.
- Maintain water control structures and dikes on small ponds and impounded wetlands occurring on the WMA.
- Manage beaver and muskrat occupancy at levels that will not jeopardize the integrity of dikes and water control structures.
- Repair dikes, emergency spillways, and water control structures as needed.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

There are 24.1 acres of natural wetlands and 93.8 acres of scrub-shrub wetlands on Allegheny Reservoir WMA in addition to 99.5 acres of forested wetland identified in the **Forest** section. (Figures 6-9). The wetland acreage is a combination of small, shallow water areas, emergent aquatic vegetation, and scrub-shrub species.

The wetlands provide habitat for species such as:

- American woodcock
- Beaver, muskrat, mink, otter
- Migratory waterfowl, shorebirds
- Wood frog, spring peeper, bull frog
- Snapping turtle, painted turtle, northern water snake

MANAGEMENT HISTORY

Mowing of berms and dikes is completed annually by the Division of Operations following the WMA work plan. Removal of beaver dams along the administrative road occurs periodically when the road becomes inundated with water from beaver activity.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2020-2029** (Figures 6-9):
  - **Compartment B border of Stands 9 and 10 with Stands 946 and 947:** Construct several vernal pools in strategic locations along the borders of Stands 9 and 10 and grassland Stands 946 and 947 in Compartment B.
  - Continue annual routine maintenance of dikes, berms, water control structures, and emergency spillways.
  - Continue routine inspection of dikes/berms for muskrat and beaver damage.
  - Reconstruct dikes/berms and replace water control devices as necessary and when funding is available.

Habitat management will include the following:

- **Compartment B Stands 946, 947, 9 and 10:** Considerable runoff from hillside spring seeps flow into Stand 946 and 947 creating wet growing conditions that have favored reed canary grass establishment. The goal is to capture and store a portion of the runoff in vernal pools established on the border of these stands. A bulldozer or tracked excavator will be utilized to create the shallow water pools with the spoils being spread around the perimeter. These vernal pools will create habitat for a variety of reptile, amphibian, and water dependent wildlife species. It is anticipated capturing some of the runoff will result in drier conditions in Stand 946 and 947 enabling restoration projects to occur for warm season grass species establishment.

Best Management Practices

Timing of the management activities will be limited to ensure impacts to habitat and wildlife are kept to a minimum. Projects will consider seasonal weather conditions, along with the breeding and nesting period of wildlife species found on the WMA. Date restrictions for water level management or equipment in wetlands will be followed to protect hibernating amphibians and reptiles (October 1st– March 31st).

MANAGEMENT EVALUATION

None.

OPEN WATER (WATERBODIES AND WATERCOURSES)

Open water is defined as any area of open water, generally with less than 25% cover of vegetation or soil and typically named (e.g., Perch Lake, South Colwell Pond).

MANAGEMENT OBJECTIVES

- Maintain dikes, berms, water control structures, and emergency spillways on small ponds/potholes occurring on the WMA.
- Manage beaver and muskrat occupancy at levels that will not jeopardize the integrity of dikes, berms, and water control structures.
- Protect water quality on all streams and segments of stream as management activities are conducted.
- Construct additional ponds as funding becomes available.

DESCRIPTION OF EXISTING OPEN WATER HABITAT AND TARGET SPECIES

A small pond was constructed on the management area in 2018. A water control structure and emergency spillway were installed in 2019 on the pond to aid in water level management.

A large open water pool/pond exists at the end of Bone Run. Water depths fluctuate in this pool as water levels in the Allegheny Reservoir rise and fall due to weather events. This pool dries up in low precipitation years and during the early fall reservoir draw down. The annual draw down protects the downstream communities from flooding events associated with spring runoff from melting snowpack and spring rain events. A project to install water control structures at the culverts that run beneath West Perimeter Road was proposed but never received final approval. The water control structures would be necessary to regulate water levels within in this pool

This area provides aquatic habitat utilized by a variety wildlife including migratory waterfowl, reptile, and amphibian species.

There are three streams and associated tributaries (approximately 6.0 miles) located on the WMA. Bone Run, Pierce Run, and Stateline Run flow through different parts of the WMA and are classified as C streams indicating they can support a fishery and are suitable for non-contact activities. They also carry a (T) standard indicating the streams may support a trout population.

MANAGEMENT HISTORY

A small pond with a control structure was constructed in 2018 and is the only pond on the WMA. Several small beaver ponds exist and are dependent on population levels (Figures 3,6, and 8).

Bone Run on Allegheny Reservoir WMA.

Photo: Greg Ecker, NYSDEC

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2020-2029** (Figures 6-9):
    - Routine maintenance on

all dikes, berms, and water control structures including yearly inspections, annual mowing of the dikes, berms, and monitoring of beaver and muskrat activity.
- Expand the existing pond incorporating shallow areas for emergent aquatic plants.
- Initiate construction of additional ponds and vernal pools as funding becomes available (vernal pool construction discussed in the wetland section).

Habitat management will include the following:

- Expansion of the existing pond to include shallow water areas promoting the establishment of aquatic emergent vegetation including cattail, bulrush, pickerel weed, and sedges. This plant community will provide areas for turtle basking, waterfowl nesting, and foraging for muskrats and mink. Avian species such as red-winged blackbirds, swallows, and flycatchers will benefit from nesting and insect foraging habitat.

BEST MANAGEMENT PRACTICES

Timing of management activities will be limited to ensure impacts to the habitat and wildlife are kept to a minimum. Projects will consider seasonal weather conditions, along with the breeding and nesting period of wildlife species found on the WMA.

MANAGEMENT EVALUATION

None.

Proposed pond expansion to include shallow emergent marsh.

Photo: Greg Ecker, NYSDEC

HABITAT MANAGEMENT SUMMARY

In summary, Table 7 lists the habitat management actions planned for Allegheny Reservoir 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 Allegheny Reservoir WMA, 2020-2029. (Also see Figures 6-9.)

Habitat	Management Action	Acres	Timeframe
Forest	Patch clearcut northern hardwoods in Compartment C Stand 9.	13.0	2020-2024
Forest	Clearcut pioneer hardwoods in Compartment B Stand 10.	8.8	2020-2024
Shrubland	Remove tree overstory and convert stand to shrubland in Compartment B Stand 11.	6.0	2020-2024
Shrubland	Apple tree release Compartment B Stand 950.	15.0	2020-2024
Grassland	Grassland preparation in Compartment B Stand 947.	9.0	2020-2024
Open Water	Vernal pool/pothole/level ditch construction border of Compartment B Stands 9&10 and 946 & 947.	N/A	2020-2024
Forest	Clearcut red pine plantation in Compartment C Stand 4.	7.8	2025-2029
Forest	Patch clearcut northern hardwoods in Compartment B Stand 19.	8.5	2025-2029
Grassland	Grassland restoration- plant warm season grass mix in Compartment B Stand 947.	9.0	2025-2029
Open Water	Expansion of pond/shallow water marsh Compartment B Stand 910.		2025-2029
Shrubland	Stand maintenance every 3-5 years or as deemed necessary.	-	2020-2029
Grassland	Annual field maintenance.	-	2020-2029

III. FIGURES

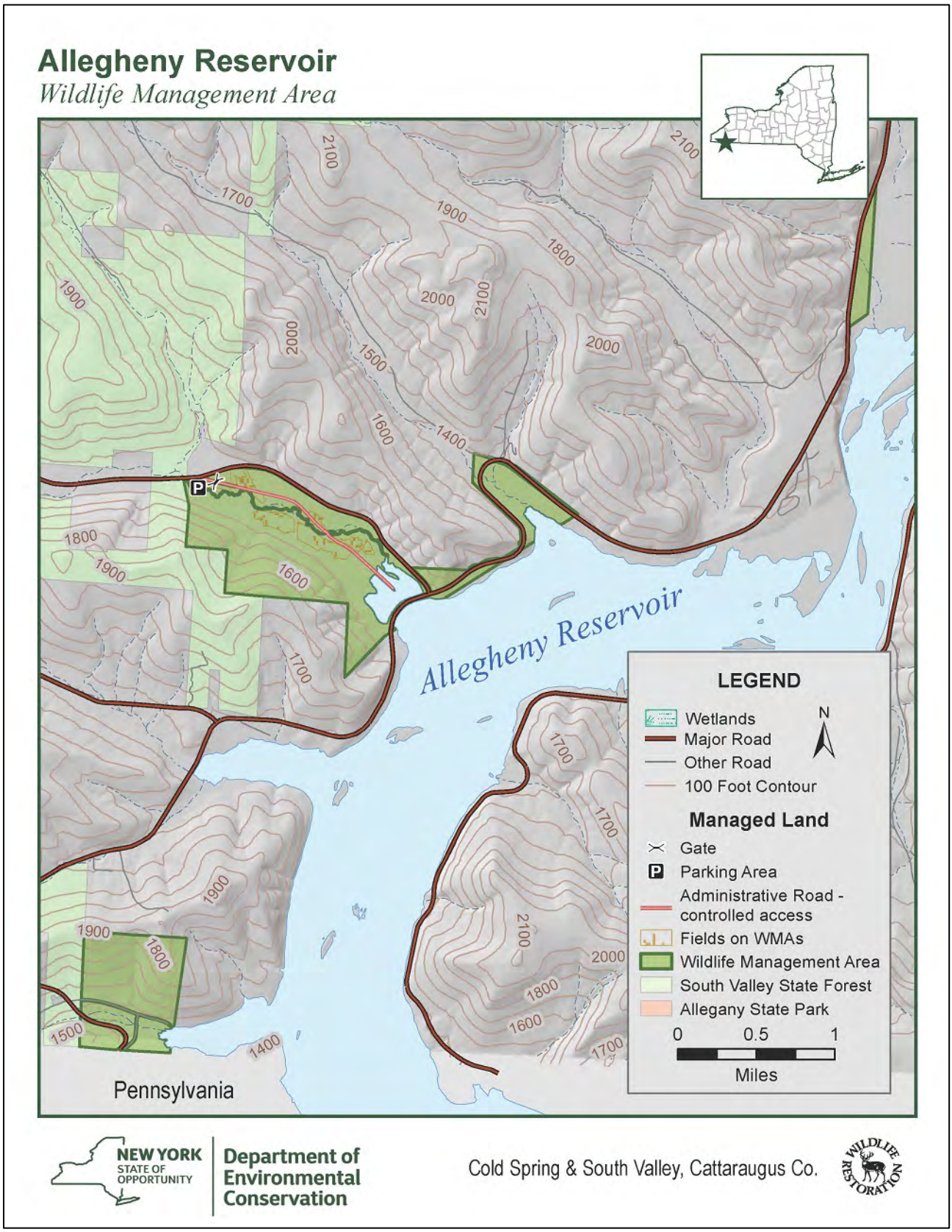

Figure 1. Location and access features at Allegheny Reservoir WMA.

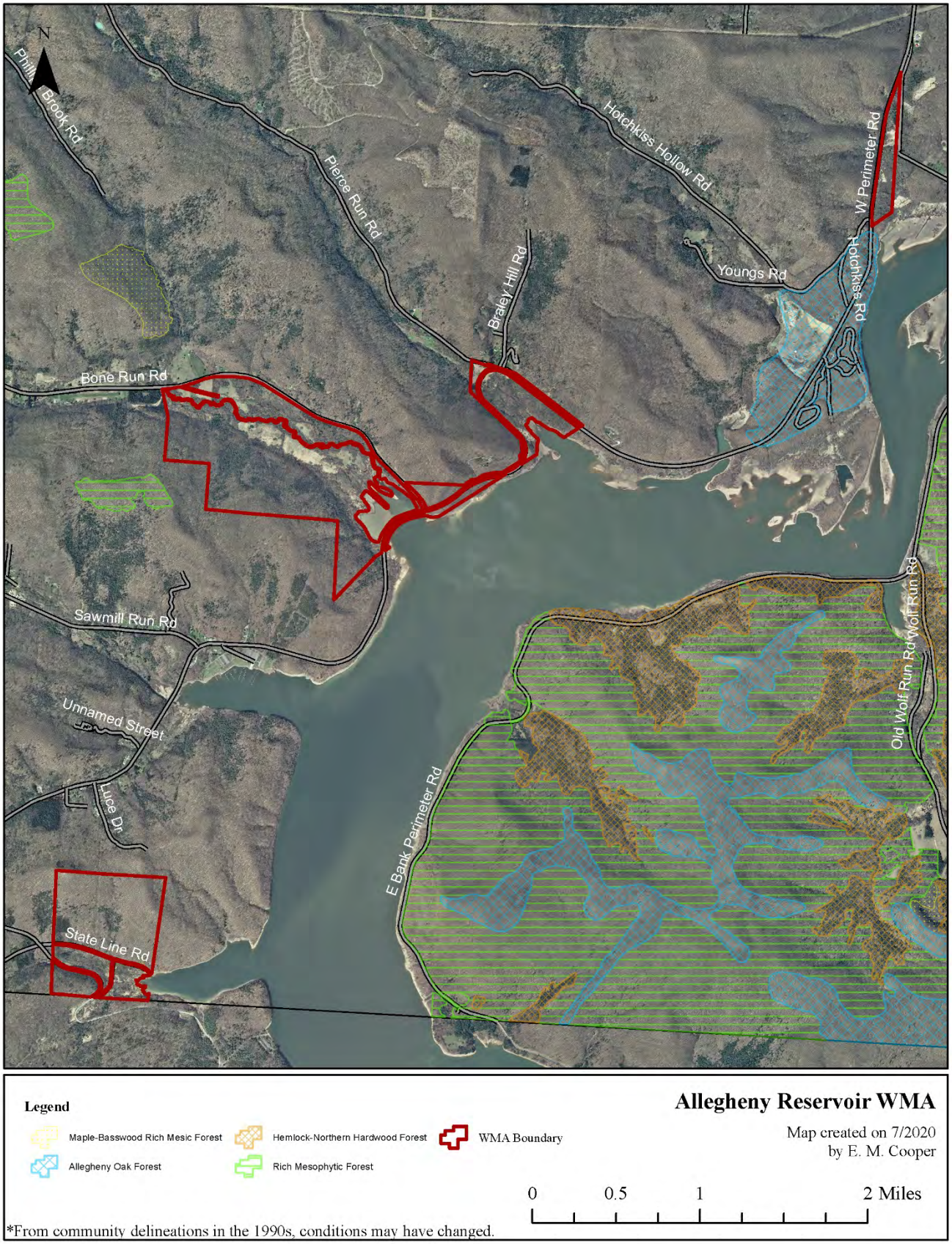

Figure 2. Significant ecological communities on Allegheny Reservoir WMA. Data from the NY Natural Heritage Program.

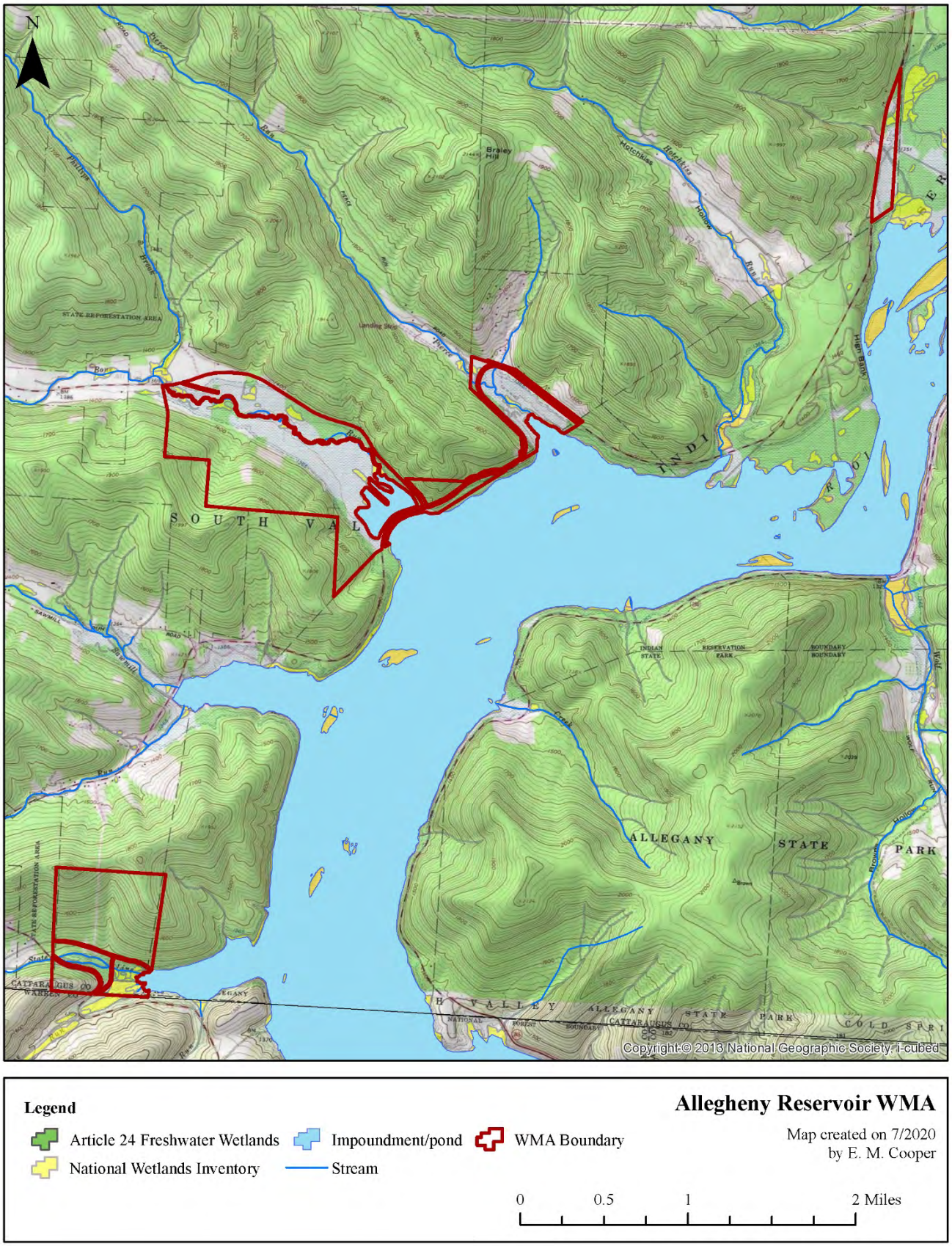

Figure 3. Wetlands, open water, and streams of Allegheny Reservoir WMA. Note: Wetland boundaries are approximate and may not be used for regulatory purposes without a current delineation.

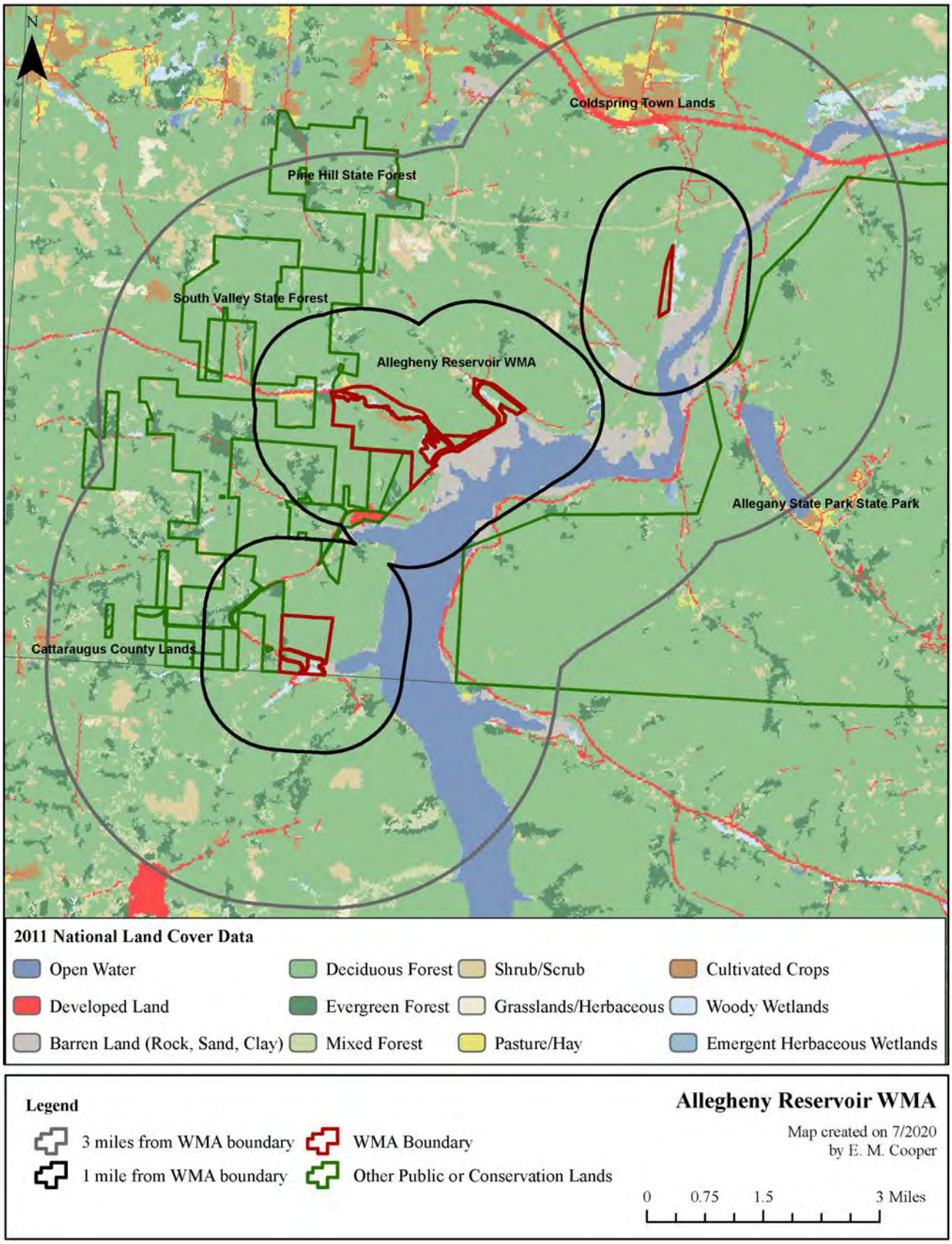

Figure 4. Land cover types and conservation lands in the landscape surrounding Allegheny Reservoir WMA.

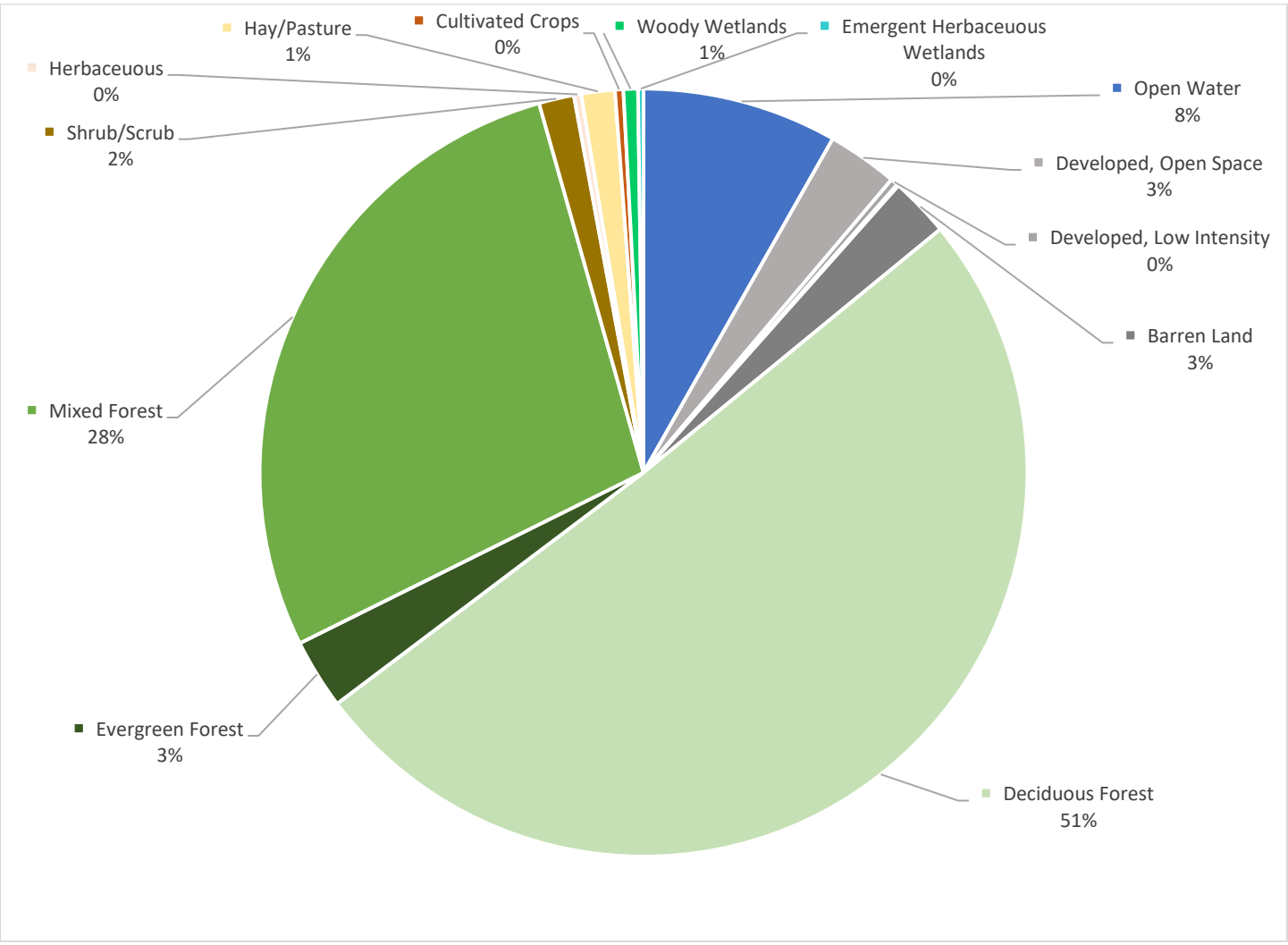

Figure 5. Percent cover of land cover types within three miles of Allegheny Reservoir WMA.

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 https://www.mrlc.gov/data/legends/national-land-cover-database-2011-nlcd2011-legend.

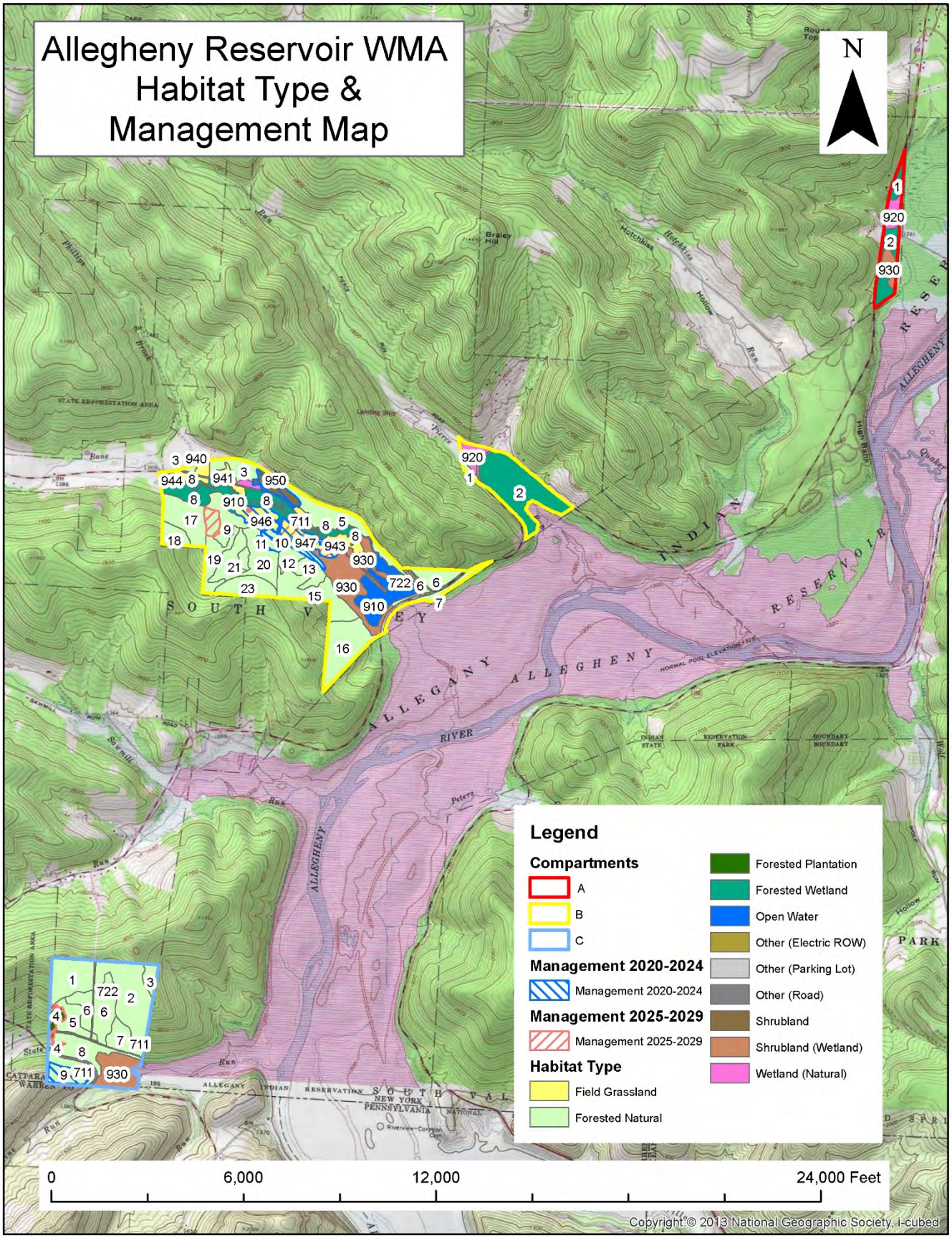

Figure 6. Habitat types and location(s) of proposed management on Allegheny Reservoir WMA. Numbers indicate the stand number from habitat inventory.

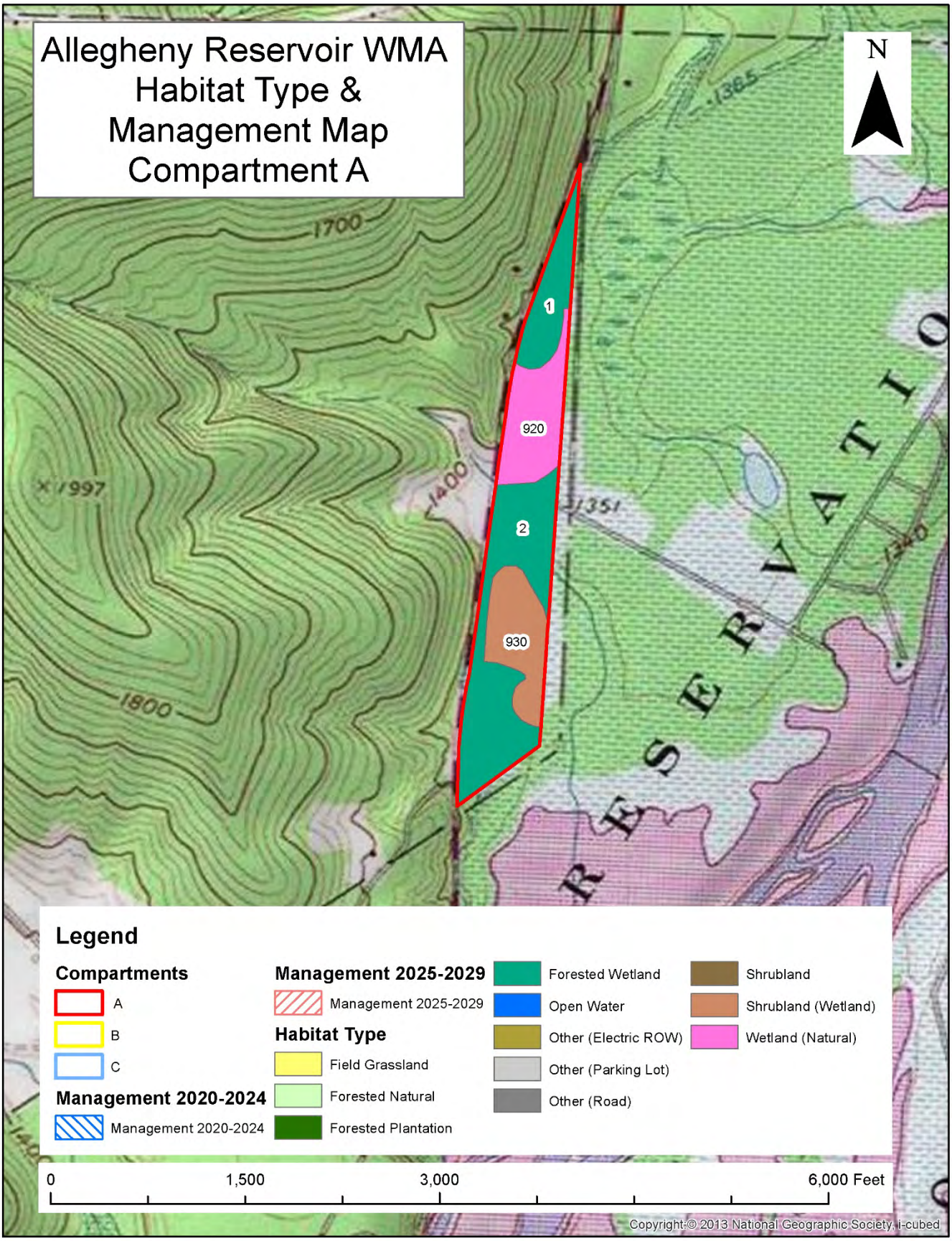

Figure 7. Habitat types and location(s) of proposed management on Allegheny Reservoir WMA for Compartment A. Numbers indicate the stand number from habitat inventory.

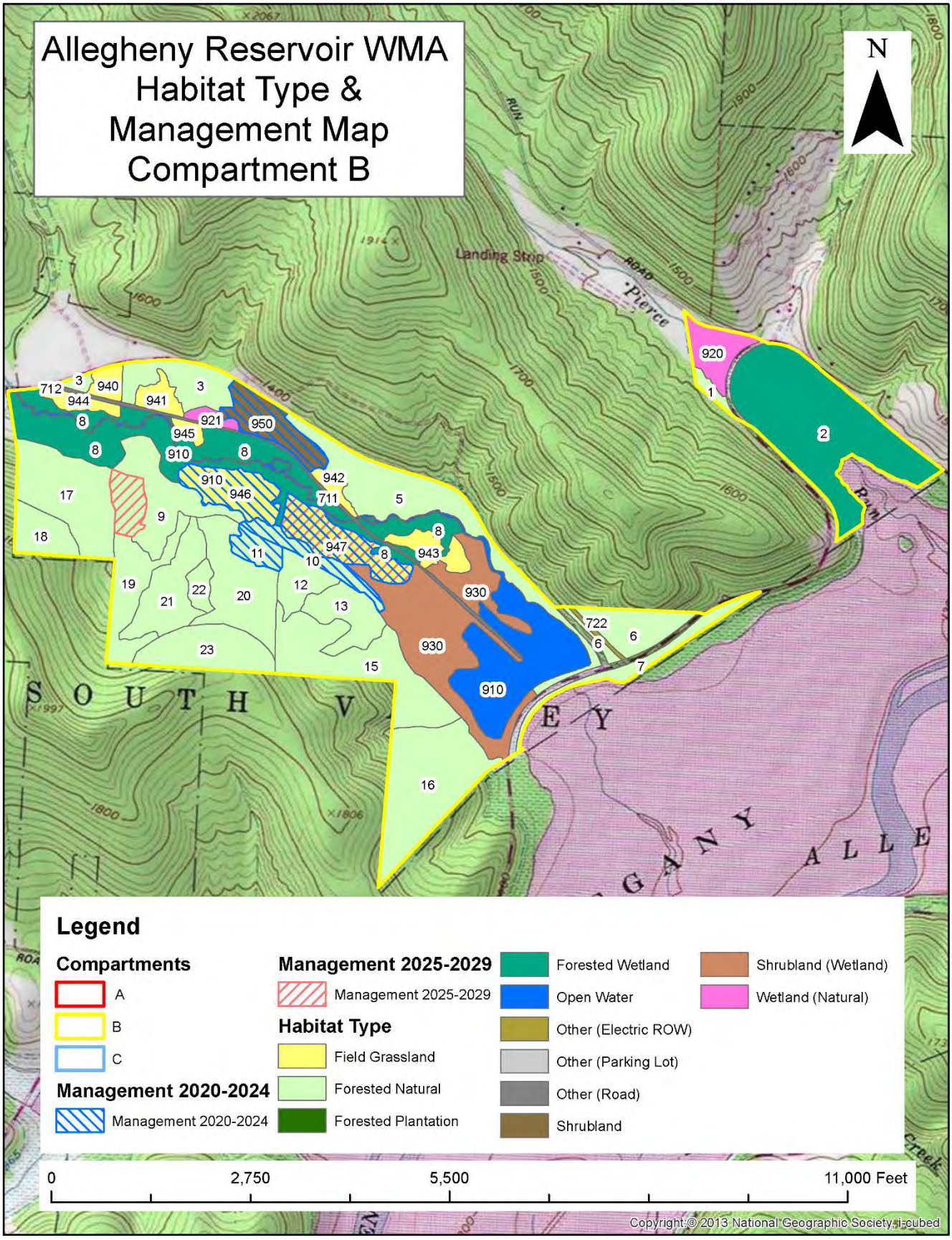

Figure 8. Habitat types and location(s) of proposed management on Allegheny Reservoir WMA for Compartment B. Numbers indicate the stand number from habitat inventory.

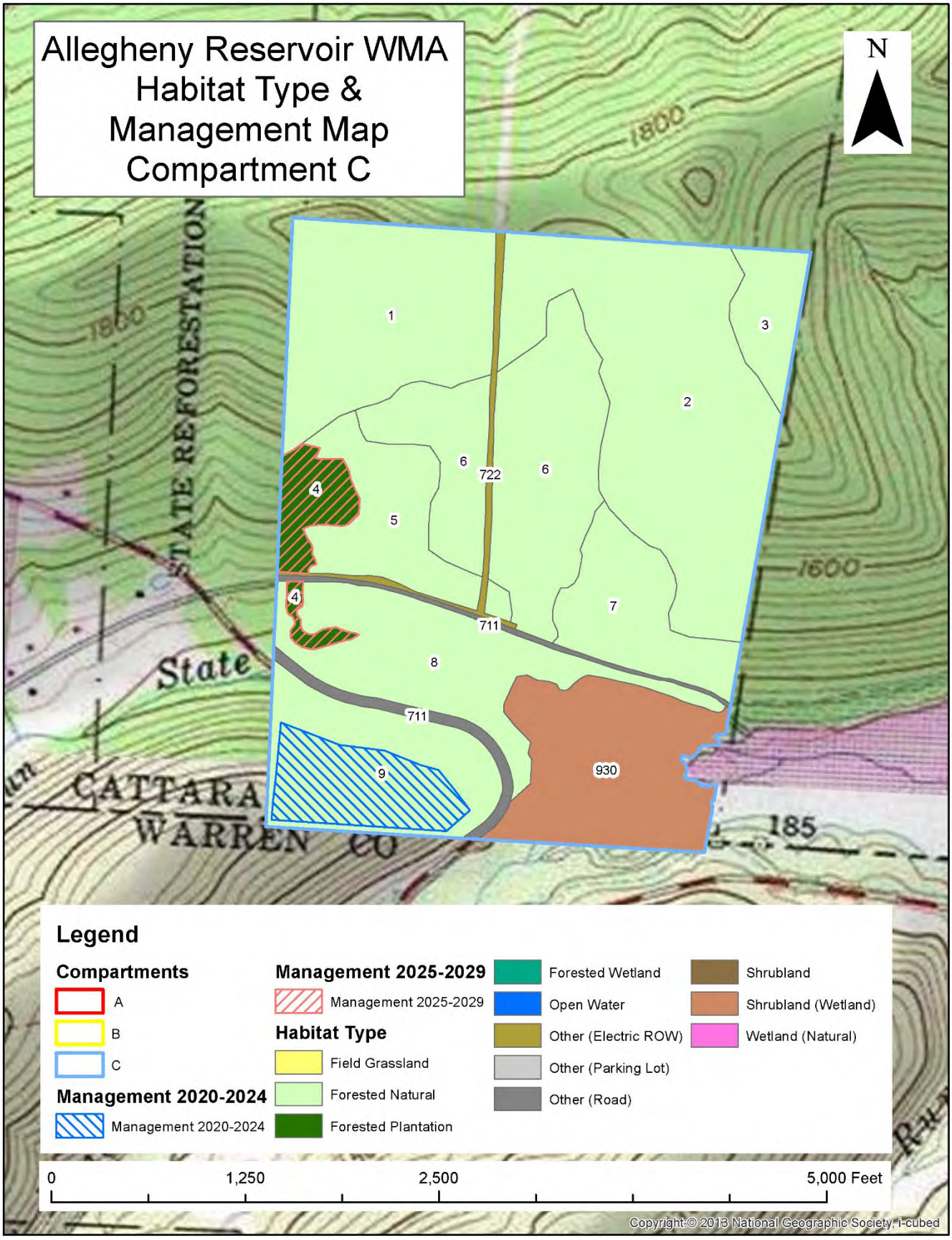

Figure 9. Habitat types and location(s) of proposed management on Allegheny Reservoir WMA for Compartment C. Numbers indicate the stand number from habitat inventory.

IV. APPENDICES

APPENDIX A: DEFINITIONS

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

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

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

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

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

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

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

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

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

Grassland Focus Area: Regions of NY that support key, residual populations of grassland birds. There are currently eight focus areas, within which there is a concentrated conservation effort for these species. (A Plan for Conserving Grassland Birds in New York, Audubon NY.)

Habitat: A place that provides seasonal or year round food, water, shelter, or other environmental conditions for an organism, community, or population of plants or animals.

Hardwood: A broad leaved, flowering tree belonging to the botanical group Angiospermae, such as red maple, yellow birch, American beech, black cherry, etc.

Impoundment: A pond caused by a dam across a stream and used for purposes such as water supply, water power, or wildlife habitat. (Edinger et al. 2002. Ecological Communities of New York State, Appendix B)

Landscape: A spatial mosaic of several ecosystems, landforms, and plant communities across a defined area irrespective of ownership or other artificial boundaries and repeated in similar form throughout.

Mast: The fruit of trees considered as food for wildlife. Hard mast is the fruits or nuts of trees such as oak, beech, walnut, and hickories. Soft mast is the fruits and berries from plants such as dogwood, viburnum, elderberry, huckleberry, hawthorn, grape, raspberry, and blackberry.

Multiple Use Area: Lands that were acquired by DEC to provide outdoor recreation and wherever possible the conservation and development of natural resources. As their name suggests, they are to be managed for a broader range of public use. (Public Use of Lands Managed by the Bureau of Wildlife)

Native: A plant or animal indigenous to a particular locality.

Old Growth Forest: Forest with an abundance of late successional tree species, at least 180 - 200 years of age in a contiguous forested landscape that has evolved and reproduced itself naturally, with the capacity for self-perpetuation, arranged in a stratified forest structure consisting of multiple growth layers throughout the canopy and forest floor, featuring canopy gaps formed by natural disturbances creating an uneven canopy, and a conspicuous absence of multiple stemmed trees. (Adapted from the NYS Strategic Plan for State Forest Management)

Pole: A tree of a size between a sapling (1" to 5" diameter at breast height) and a mature tree.

Regeneration Cut: A cutting procedure by which a new forest age class is created; the major methods are clearcutting, seed tree, shelterwood, selection, and coppice. The Young Forest Initiative includes these silvicultural treatments: clearcuts, seed tree cuts, and shelterwood cuts. Salvage (following a natural disturbance) will be considered based on the size and scope of the disturbance.

Seed Tree Method: A forest regeneration or harvest method that entails cutting of all trees except for a small number of widely dispersed trees retained for seed production and to produce a new age class in fully exposed microenvironment.

Shelterwood Method: A forest regeneration or harvest method that entails the cutting of most trees, leaving those needed to produce sufficient shade to produce a new age class in a moderated microenvironment.

Shrubland: A community dominated by woody plants typically less than ten feet tall with scattered open patches of grasses and forbs that provide floristic diversity. Typically characterized by >50% cover of shrubs and <25% canopy cover of trees. (Adapted from Edinger et al. 2002. Ecological Communities of New York State, Appendix B)

Softwood: A coniferous tree belonging to the botanical group Gymnospermae, such as white pine, Eastern hemlock, balsam fir, red spruce, etc.

Special Management Zone: A vegetation strip or management zone extending from wetland boundaries, high-water marks on perennial and intermittent streams, vernal pool depression, spring seeps, ponds and lakes, and other land features requiring special consideration. (Adapted from DEC Division of Lands and Forests Management Rules for Establishment of Special Management Zones on State Forests)

State Rank of Significant Ecological Communities:

S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.
S2 = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.
S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.
S4 = Apparently secure in New York State.
S5 = Demonstrably secure in New York State.
SH = Historically known from New York State, but not seen in the past 15 years.
SX = Apparently extirpated from New York State.
SE = Exotic, not native to New York State.
SR = State report only, no verified specimens known from New York State.
SU = Status unknown.

(Edinger et al. 2002. Ecological Communities of New York State, Appendix A)

Stand: In forestry, a contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable and manageable unit. In this HMP, the term "stand" is also applied to other habitat types (e.g., grassland, shrubland) to describe an area composed of similar vegetation composition and structure, as delineated during the habitat inventory.

Stand Prescription: A planned series of treatments designed to change current stand structure to one that meets management goals. Note: the prescription normally considers ecological, economic, and societal constraints.

Target Species: A suite of high priority wildlife species of conservation interest that are being targeted to benefit from management of a particular habitat type.

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

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

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

(a) lands and submerged lands commonly called marshes, swamps, sloughs, bogs, and flats supporting aquatic or semi-aquatic vegetation of the following types: wetland trees, wetland shrubs, emergent vegetation, rooted, floating-leaved vegetation, free-floating vegetation, wet meadow vegetation, bog mat vegetation, and submergent vegetation;

(b) lands and submerged lands containing remnants of any vegetation that is not aquatic or semi-aquatic that has died because of wet conditions over a sufficiently long period, provided that such wet conditions do not exceed a maximum seasonal water depth of six feet and provided further that such conditions can be expected to persist indefinitely, barring human intervention;

(c) lands and waters substantially enclosed by aquatic or semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semi-aquatic vegetation; and

(d) the waters overlying the areas set forth in (a) and (b) and the lands underlying."

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

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

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

APPENDIX B. COMPLIANCE WITH STATE ENVIRONMENTAL QUALITY REVIEW

This plan identifies habitat management activities to be conducted on the Wildlife Management Area. These activities were analyzed in the 1979 *Programmatic Environmental Impact Statement on Habitat Management Activities of the Department of Environmental Conservation; Division of Fish and Wildlife* (PEIS), as updated and amended in 2017 by the *Supplemental Final Environmental Impact Statement* (SFEIS).[16] 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).[17]

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.

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

APPENDIX C: FOREST MANAGEMENT PRESCRIPTIONS

PRESCRIPTION FOR WILDLIFE MANAGEMENT AREA TIMBER HARVEST

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

Species composition:

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

Stand inventory or analysis date:

Regeneration data:

Natural Heritage Element Occurrence layer review:

SMZ layer review:

Retention data:

Soil types and drainage:

Interfering vegetation:

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

Technical guidance/stocking guide:

Treatment purpose:

Management Objective: Even aged or Uneven Aged

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

Clearcut acreage and configuration: (if applicable)

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

Retention considerations and adjustments:

Treatment descriptions:

Name and Title of Preparer:

Central Office Lands and Forests Staff **Date**

Regional Wildlife Manager **Date**

PRESCRIPTION NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX D: AMENDMENTS

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