

Habitat Management Plan for Collins Landing Wildlife Management Area 2019 - 2028



Landscape view and forested area on Collins Landing WMA.

Photo: James Canevari, DEC

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Department of
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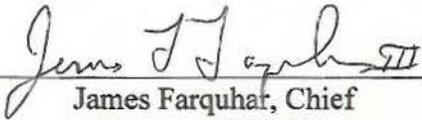
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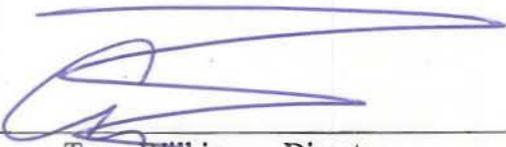
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SUMMARY

Collins Landing Wildlife Management Area (WMA) is located adjacent to the St. Lawrence River in the Towns of Orleans and Alexandria and was acquired to protect its natural wetlands. Due to its small size and location, potential management opportunities on this WMA are limited. The wetlands associated with the WMA and river are important nesting and resting areas for migratory waterfowl, Osprey, northern pike, muskellunge, Bald Eagle, and Blanding's turtles. The WMA was acquired in 1974 and 1975 using transfer of jurisdiction.

Habitat management goals for Collins Landing WMA include:

- Maintaining 65% of the area as mature forested habitat to provide high-quality nesting and roosting habitat for Osprey and Bald Eagles and;
- Maintaining 33% of the wetland habitat for warm water fisheries spawning and for nesting or hibernating Blanding's turtles.

I. BACKGROUND AND INTRODUCTION

PURPOSE OF HABITAT MANAGEMENT PLANS

BACKGROUND

Active management of habitats to benefit wildlife populations is a fundamental concept of wildlife biology and has been an important component of wildlife management in New York for decades. Beginning in 2015, NYS Department of Environmental Conservation (DEC) Division of Fish and Wildlife (DFW) initiated a holistic planning process for wildlife habitat management projects. Habitat Management Plans (HMPs) are being developed for WMAs and other properties administered by DFW Bureau of Wildlife, including select Multiple Use and Unique Areas. The goal of HMPs is to guide habitat management decision-making on those areas to benefit wildlife and facilitate wildlife-dependent recreation. HMPs guide management for a ten-year time period, after which the plans and progress on implementation will be assessed and HMPs will be modified as needed.

HMPs serve as the overarching guidance for habitat management on WMAs. These plans incorporate management recommendations from Unit Management Plans (UMPs), existing WMA habitat management guidelines, NY Natural Heritage Program's WMA Biodiversity Inventory Reports, Bird Conservation Area guidelines, and other documents available for individual WMAs.

SCOPE AND INTENT

Primary purposes of this document:

- Provide the overall context of the habitat on the WMA and identify the target species for management;
- Identify habitat goals for WMA-specific target species, contemplating juxtaposition of all habitat types to guide the conservation and management of sensitive or unique species or ecological communities;
- Identify acreage-specific habitat goals for the WMA to guide management actions;
- Provide specific habitat management prescriptions that incorporate accepted best management practices;
- Establish a forest management plan to meet and maintain acreage goals for various forest successional stages;
- Address management limitations such as access challenges (e.g., topography); and
- Provide the foundation for evaluating the effectiveness of habitat management.

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

Definitions are provided in Appendix A.

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

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

WMA OVERVIEW

LOCATION

Collins Landing WMA is located in DEC Region 6, Towns of Orleans and Alexandria, Jefferson County (Figure 1).

TOTAL AREA

51 acres

HABITAT INVENTORY

A habitat inventory of the WMA was conducted in 2015 and is proposed to be updated every 10 to 15 years to document the existing acreage of each habitat type and to help determine the location and extent of future management actions, if any. 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 Collins Landing WMA.

Habitat Type	Current Conditions (as of 2015)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest ^a	33	65%		33	No change
Young forest	0	0%		0	No change
Shrubland	0	0%		0	No change
Grassland	0	0%		0	No change
Agricultural land	0	0%		0	No change
Wetland (natural) ^b	17	33%		17	No change
Wetland (impounded) ^b	0	0%		0	No change
Open water	0	0%		0	No change
Other (Easements)	0	0%		0	No change
Roads	1	2%	0.2	1	No change
Rivers and streams			0		No change
Total Acres:	51	100%		51	

^a Forest acreage includes all mature and intermediate age classes of natural forest, plantations, and forested wetlands. Young forest is reported separately. Definitions are provided in the Forest section of this plan.

^b Wetland acreage does not include forested wetlands, since they are included in the Forest category.

ECOLOGICAL RESOURCES

Wildlife Overview:

Wildlife present on Collins Landing WMA includes many species commonly found throughout northern New York and the St. Lawrence River valley, such as:

- Beaver, muskrat, mink

- Red-winged Blackbird, Osprey, Pileated Woodpecker, Wood Duck
- White-tailed deer, Wild Turkey, coyote, raccoon
- Midland painted turtle
- Bullfrog, northern leopard frog, green frog, eastern American toad, spring peeper
- Northern water snake, garter snake

Wildlife and Plant Species of Conservation Concern:

The following federal or state listed Endangered (E), Threatened (T), or Special Concern (SC) species and/or Species of Greatest Conservation Need (SGCN) may occur on the WMA (Table 2).¹ SGCN listed below include species that have been documented on or within the vicinity of the WMA that are likely to occur in suitable habitat on the WMA. Other SGCN may also be present on the WMA. Data sources include: the NY Natural Heritage Program, NY Breeding Bird Atlases,² NY Reptile and Amphibian Atlas,³ DEC wildlife surveys and monitoring, and eBird.⁴

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

Species Group	Species	Federal Status	NY Status	NY SGCN Status
Birds	American Bittern			x
	American Black Duck			HP
	Bald Eagle		T	x
	Blue-winged Teal			x
	Brown Thrasher			HP
	Northern Harrier		T	x
	Osprey		SC	
	Ruffed Grouse			x
Mammals	Little brown myotis (little brown bat)			HP
	Northern myotis (long-eared bat)	T	T	HP
Amphibians and reptiles	Blanding’s turtle		T	HP
	Common ribbon snake			x
	Smooth green snake			x
	Snapping turtle			x
Fish	American eel			HP
	Muskellunge			x
Invertebrates	None known			
Plants	None known			

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.

Significant Ecological Communities:

There are no rare and significant natural communities located on Collins Landing WMA as identified by the NY Natural Heritage Program (Figure 2).

Additional information about significant ecological communities is available in *Ecological Communities of New York State, Second Edition*⁵ and in the Collins Landing WMA Biodiversity Inventory Final Report (1997) prepared by the NY Natural Heritage Program.

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 Collins Landing WMA include:

- Two wetlands 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 are no forest management activities proposed for this WMA.
- One stream (a watercourse entirely within the WMA) or segment of stream (a stream that meanders in and out of the WMA), known as the St. Lawrence River. The highest stream classification is Class A therefore the stream is regulated by Article 15 of the Environmental Conservation Law, and water quality standards will be adhered to.⁶

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*.⁷ Some habitat management activities may either be prohibited or restricted to protect these features. Any deviations from these guidelines will be addressed in the individual stand prescriptions.

Soils:

Soil groups include Galoo Rock outcrop-Rhinebeck-Kingsbury-Hollis.⁸ The soils range from poorly drained in the wetlands and low-lying areas, to excessively drained in the areas of exposed bedrock in the eastern portion of the WMA. The shallow or poorly drained soils will limit forest regeneration.

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

⁶ Information about stream classification is available online at <http://www.dec.ny.gov/permits/6042.html>.

⁷ Available online at <http://www.dec.ny.gov/outdoor/104218.html>.

⁸ Soil classification information available from: US Department of Agriculture, Natural Resources Conservation Service. Available online at <http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=NY>.

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

- Wetlands (36% combining open water, emergent, and woody wetlands)
- Deciduous forest (29%)
- Pasture/hay and grassland (14%)
- Development (9%)
- Early successional shrubland (4%)
- Grassland/Herbaceous (5%)
- Cultivated crops (1%)
- Evergreen forest (1%)
- Mixed forest (1%)

Sound habitat management involves maintaining a diversity of habitat types within an area. When planning management, it is important to consider not only the habitat types on the WMA but also the surrounding landscape to determine what habitat types are available in the area and which ones may be lacking or of poor quality. Collins Landing WMA is located in an area with a significant amount of development, as well as open water and wetland habitat. Most of the existing forested habitat is fragmented deciduous forest. Mature forest, particularly evergreen or mixed mature forest such as is found on the WMA, is lacking in the surrounding landscape.

Currently, the forested landscape on Collins Landing WMA includes 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.⁹ The uniqueness of the intermediate to mature forest on the WMA (as mentioned above), makes the goal of creating young forest habitat on the WMA undesirable. In addition, wildlife use of the area and the topography of the WMA should be taken into consideration. Several threatened or endangered species, as well as SGCN, are known to use the mature forest habitat on the WMA, most notably Bald Eagles and Osprey. The exposed rock and pockets of poorly drained soils would make management challenging and would slow regeneration of desirable trees, leaving openings for invasive plants to potentially inhabit the site. Rather than improving the forest habitat, attempting to create young forest habitat would result in a loss of important intermediate to mature forest and likely increase poor-quality forest, which already makes up the majority of forested habitat in the surrounding landscape. For these reasons, it is recommended that the intermediate to mature forest be retained on the WMA.

Nearby conservation lands include:

- Cranberry Creek WMA
- Wellesley Island State Park
- Thousand Island Bridge Authority Park and Lands
- Grass Point State Park
- Keewaydin State Park

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



Forested area on Collins Landing WMA.

Photo: James Canevari, DEC

DEC will perform limited active management of wildlife habitats on Collins Landing 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 where feasible.

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.

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. Creating young forest habitat on this WMA is not a priority and will not provide significant benefits for any species while potentially reducing habitat for Bald Eagles and Osprey. Currently Osprey are known to nest in the tall trees within Collins Landing WMA. Bald Eagles are also known to roost in the mature trees of the WMA and scavenge for food on the St. Lawrence River.

MANAGEMENT OBJECTIVES

- Retain the existing mature forest (33 acres) due to the relative scarcity of intermediate and mature forest in the surrounding landscape.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 33 forested acres on Collins Landing WMA (Figure 6). Table 3 provides a summary of the forested areas, including the most common tree species found in each.

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

Forest Type	Acres (as of 2015)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	33	33	White pine, eastern hemlock, maple, ash, aspen
Plantation	0	0	
Forested wetland	0	0	
Young forest	0	0	
Young forest (forested wetland)	0	0	
Total Forested Acres:	33	33	

The forested area on Collins Landing WMA is primarily intermediate to mature white pine mixed with maple, ash, oak, and pockets of mature eastern hemlock. The understory is highly variable; it is open in some sections while other sections have dense thickets of honeysuckle, dogwood, or wild raisin. Tree roots are close to the soil surface due to the high water table and shallow soils. Low ledges of exposed bedrock are interspersed with pockets of poorly drained soil throughout the eastern part of the WMA.

Target species for forest management include Bald Eagle and Osprey.

MANAGEMENT HISTORY

In 1980 and 1998, seven cords and eight cords (respectively) of firewood were marked in Stand A-1 and cut by a local homeowner (Figure 6). No other forest management has occurred in recent years.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed for the next 10 years:

- **Management planned for 2019-2028** (Table 4, Figure 6):
 - Monitor the WMA for invasive species such as pale swallowwort, emerald ash borer, and hemlock wooly adelgid.

Table 4. Forest management schedule for the ten-year period of this HMP (2019-2028).

Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
A-1, A-3	33	-----	-----	-----	Intermediate/ Mature	Monitor for invasive insects and plants

Management for 2019-2028:

While no projects are planned at this time, low-impact forest management to remove invasive species or to maintain forest health and mature forest characteristics may occur within the timeframe covered by this plan. Any forest management will retain the existing canopy cover.

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 ¹⁰
Soils	<i>Rutting Guidance on Wildlife Management Areas</i>
Water quality	<i>NYS Forestry Best Management Practices for Water Quality</i>
Wildlife	<i>Retention Guidance on Wildlife Management Areas</i>
Plantations	<i>Plantation Management Guidance on Wildlife Management Areas</i>

Wildlife Considerations:

Collins Landing supports nesting Osprey (special concern) and foraging Bald Eagles (threatened). The mature forest should be retained to continue to provide habitat for these species. Blanding’s turtles were also found on the WMA. If heavy equipment is used on the WMA, such as for construction or habitat management, seasonal restrictions should be considered as protection for the Blanding’s turtles.

Forest Health Considerations:

The primary forest health concerns will focus on invasive insects and plants. The damage caused by emerald ash borer (EAB) and hemlock wooly adelgid (HWA) has the potential to change the forest composition and structure on the WMA and in the surrounding area; possibly creating pockets of young forest or invasive plants where there was previously intermediate or mature forest. Neither species has been confirmed on the WMA; however, EAB has been found in several locations along the St. Lawrence River and there is at least one confirmed occurrence in Jefferson County, so it is expected that the beetle will soon be on the WMA if it isn’t already. As of this writing, the nearest location that HWA has been found is in northern Cayuga County. If EAB or HWA are confirmed on Collins Landing WMA, affected trees may be removed if they pose a safety risk.

¹⁰ All guidance documents referenced here are available online at <http://www.dec.ny.gov/outdoor/104218.html>.

Invasive plants can be found throughout the WMA. Currently, the invasive plants of greatest concern are pale swallowwort, honeysuckle, and buckthorn. These species will be monitored, and herbicide treatments may be used to control their spread.

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

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

GRASSLAND

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

MANAGEMENT OBJECTIVES

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

AGRICULTURAL LAND

Agricultural lands on WMAs include any acreage on which crops are grown, primarily areas that are under cooperative agreements or farming contracts, but also including wildlife food plots.

DESCRIPTION OF EXISTING AGRICULTURAL LANDS HABITAT

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

WETLANDS (NATURAL AND IMPOUNDED)

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

MANAGEMENT OBJECTIVES

- Retain 17 acres of natural wetlands as they currently exist.
- Provide recreational opportunities related to the area's wildlife resources, compatible with the ongoing habitat management practices. This includes muskrat and beaver trapping, waterfowl hunting, bird watching, and small game bird hunting.
- Retain habitat for wetland dependent wildlife such as waterfowl, muskrats, and northern pike by preserving existing habitat.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

There are 17 acres of natural wetlands on Collins Landing WMA (Figure 3). The wetlands consist of scrub-shrub and emergent wetlands. The wetlands are diverse and provide habitat for species such as:

- Beaver, muskrat
- Osprey, Bald Eagle
- Blanding's turtle, painted turtle
- Bullfrog, northern leopard frog, green frog, eastern American toad, spring peeper
- Migratory waterfowl

MANAGEMENT HISTORY

None – The water levels of the wetlands within Collins Landing WMA are controlled by the Robert-Moses Hydroelectric Dam located downstream on the St. Lawrence River.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2019-2028:**
 - None

BEST MANAGEMENT PRACTICES

If wetland management is warranted, date restrictions for equipment in wetlands will be followed to protect species such as Blanding's turtle (October 1st – March 31st). Water levels fluctuate with the Robert-Moses Dam operated by the New York Power Authority and in collaboration with the International Joint Commission. Water level management is currently through the Water Level Management Plan of 2014¹¹.

MANAGEMENT EVALUATION

None

¹¹ Available online at <http://www.ijc.org/en/Plan2014/home>.

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).

DESCRIPTION OF EXISTING OPEN WATER HABITAT

There is 1 stream or segments of stream on the WMA totaling about 0.2 miles. Beyond this stream, there is no other open water (no named lakes or ponds) or any plan to develop such habitat.

HABITAT MANAGEMENT SUMMARY

In summary, Table 6 lists the habitat management actions planned for Collins Landing 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 Collins Landing WMA, 2019-2028. (Also see Figure 6.)

Habitat	Management Action	Acres	Timeframe
Forest	Monitor, and potentially treat, invasive species	33	Every 5 to 10 years

III. FIGURES



FIGURE 1. Location and access features at Collins Landing WMA.



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

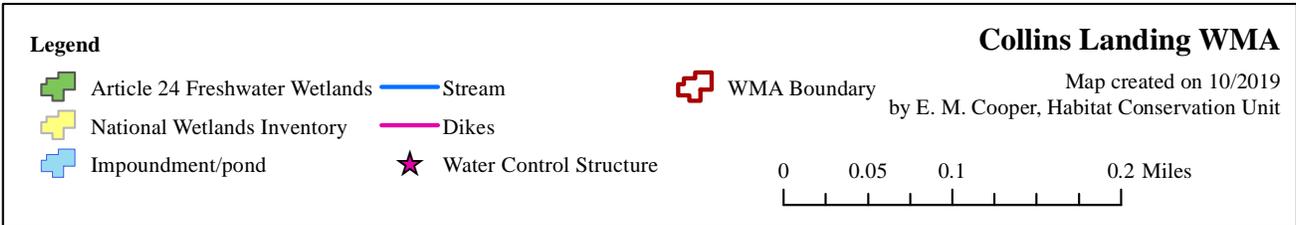


FIGURE 3. Wetlands, open water, and streams of Collins Landing WMA. Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

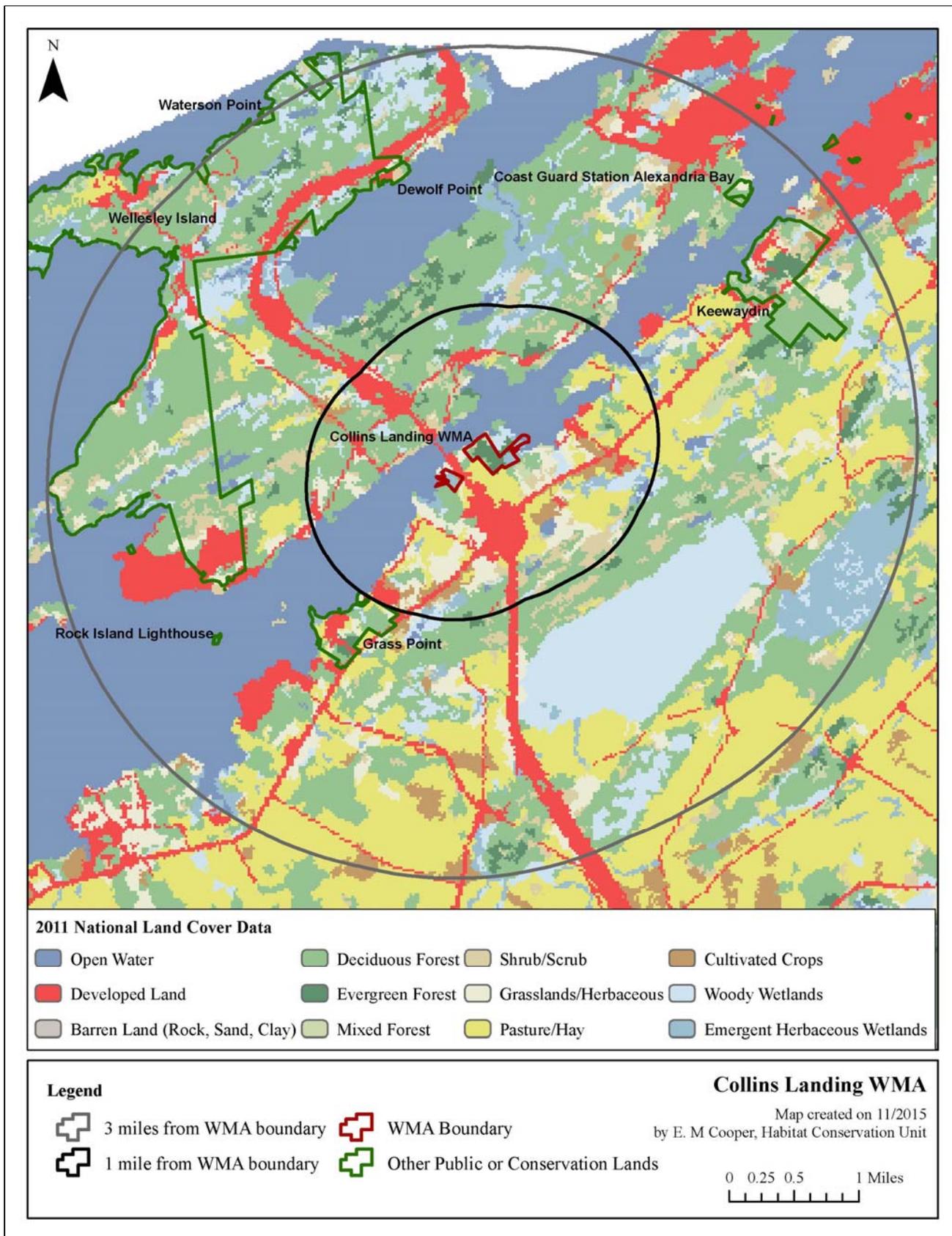


FIGURE 4. Land cover types and conservation lands in the landscape surrounding Collins Landing WMA. Conservation lands are from the NY Protected Areas Database available online at <http://www.nypad.org/>. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types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

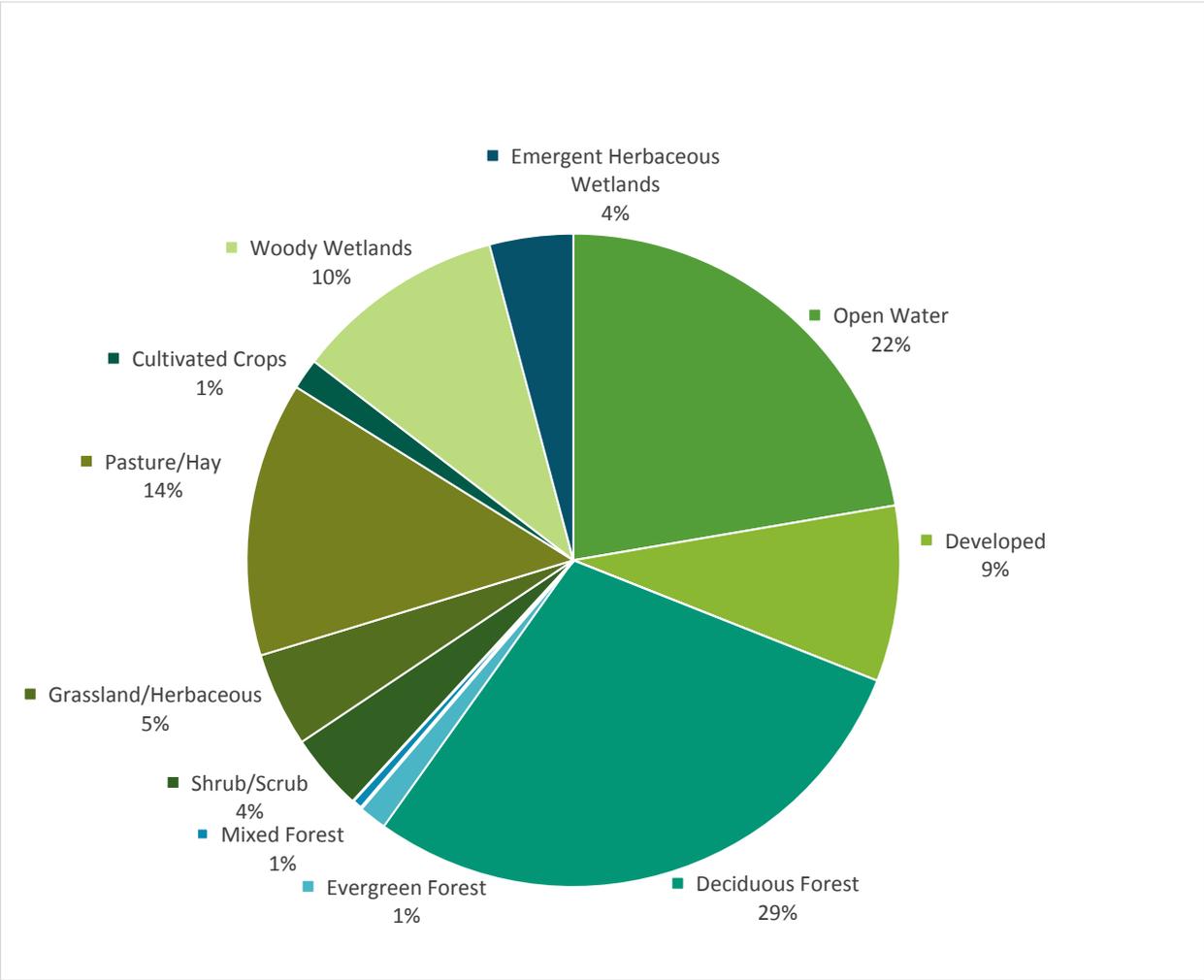
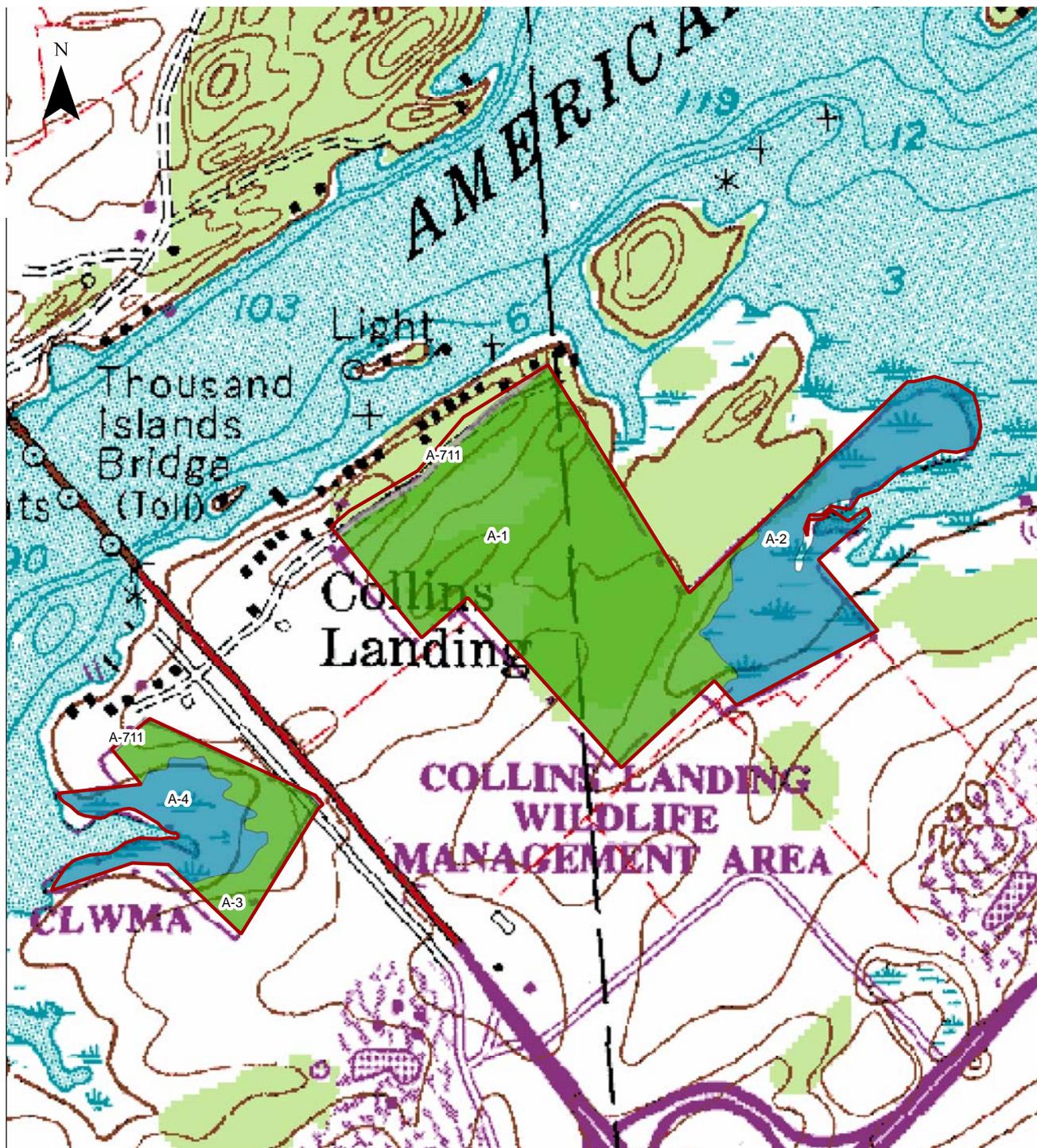


FIGURE 5. Percent cover of land cover types within three miles of Collins Landing WMA.

Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at <http://www.mrlc.gov/nlcd2011.php>.



Legend

- | | | |
|----------------------------|---------------------------------------|---------------|
| DEC Lands | Forest (wetland) | Ponds |
| Stands_Managed_10_yrs | Forest (young/regenerating) | Shrubland |
| Stands_Managed_5_yrs | Forest (wetland - young/regenerating) | Grassland |
| Reg 6 Forest Stands | Forest (all other) | Agricultural |
| Cover_Type | Wetlands (Open) | Other (Dunes) |
| Forest (plantation) | Wetlands (Impounded) | Roads |

Collins Landing WMA

Map created on 10/2019
by E. J. Latremore, Habitat Conservation Unit

0 0.05 0.1 0.2 Miles

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

IV. APPENDICES

APPENDIX A: DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

State Rank of Significant Ecological Communities:

S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

S2 = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.

S4 = Apparently secure in New York State.

S5 = Demonstrably secure in New York State.

SH = Historically known from New York State, but not seen in the past 15 years.

SX = Apparently extirpated from New York State.

SE = Exotic, not native to New York State.

SR = State report only, no verified specimens known from New York State.

SU = Status unknown.

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

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

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

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

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).¹² 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).¹³

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.

¹² Available online at <http://www.dec.ny.gov/regulations/28693.html>.

¹³ Available online at <http://www.dec.ny.gov/enb/enb.html>.

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 “Hershisier-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.