

**Habitat Management Plan
for
Conesus Inlet Wildlife Management Area
2018 - 2027**



Photo: Mike Palermo

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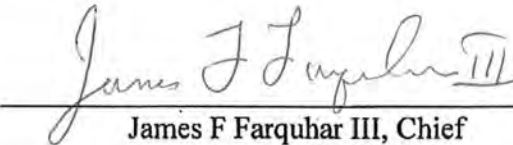
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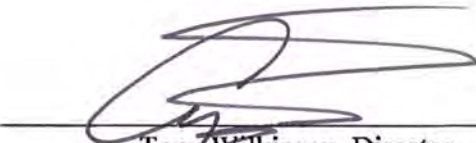
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SUMMARY

Conesus Inlet Wildlife Management Area (WMA) is located in Livingston County, directly south of Conesus Lake, and consists of 1,142 acres that are primarily wetland. These wetlands were formed approximately 10,000 years ago, after the last glaciers receded. European settlement here began in the early-1800s, which cleared much of the land along the wetlands for agriculture. Throughout the early-1900s the shore of Conesus Lake was intensely developed, leading the State to acquire the wetlands complex to protect and enhance its value. Most of the WMA was purchased in 1969, with an additional 83 acres in 1979, and 48 acres in 2000.

Wetland habitats on the WMA are extensive and diverse, composed of emergent marsh, scrub-shrub swamp, and forested wetlands. Several wetlands have been enhanced by constructing dams and excavating potholes to impound water, including the approximately 375-acre main marsh just south of Sliker Hill Road. Uplands are a minor component of the WMA and are generally found along the roads that surround the wetlands complex. Most of these uplands are grassland fields; however, there are also a few agricultural fields and several small forest stands and hedgerows.

Large numbers of wetland-dependent wildlife occur here, and the site is a valuable migratory stopover for waterfowl and other wetland-dependent birds of the Atlantic Flyway. The WMA contains the primary northern pike spawning grounds on Conesus Lake. Several threatened or special concern species and Species of Greatest Conservation Need (SGCN) use the various habitats on the WMA, and popular game species, such as mallard, wood duck, Canada goose, and white-tailed deer are plentiful here.

This plan elaborates upon habitat objectives described in the Livingston Unit Management Plan (UMP).¹ Conesus Inlet WMA is primarily managed to provide a diversity of wetland and upland habitats and affords multiple recreational opportunities including hunting, fishing, trapping, and bird watching.

Habitat management goals for Conesus Inlet WMA include:

- Managing wetland impoundments to provide a diversity of habitats important to fish and wildlife, especially spawning northern pike and migrating waterfowl (38% of WMA);
- Maintaining the habitat value of natural wetlands and the water quality of Conesus Inlet and its tributaries (11% of WMA);
- Maintaining the majority of forest cover, including forested wetlands, in an intermediate or mature age-class to provide a diversity of forest habitats (29% of WMA);
- Establishing young forest habitat to promote American woodcock, wild turkey, and other young forest wildlife (2% of WMA, 5% of forested acreage);
- Maintaining grasslands to provide breeding habitat for waterfowl, and forage and cover for white-tailed deer and wild turkey (17% of WMA);
- Managing some fields as agricultural lands to provide diverse food and cover for wildlife, especially deer, turkey, and waterfowl (2% of WMA); and
- Maintaining access features (1% of WMA).

¹ Information about the Livingston UMP is available online at <http://www.dec.ny.gov/lands/22561.html>.

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, considering juxtaposition of all habitat types to guide the conservation and management of popular game species and 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.

As of the writing of this HMP, an update to the Livingston UMP has been drafted and is pending approval. The UMP addresses habitat objectives detailed in this HMP, as well as 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 storm intensity, 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

Conesus Inlet WMA is located in DEC Region 8, Town of Conesus in Livingston County (Figure 1, Image 1).

TOTAL AREA

1,142 acres

HABITAT INVENTORY

A habitat inventory of the WMA was conducted in 2014 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).

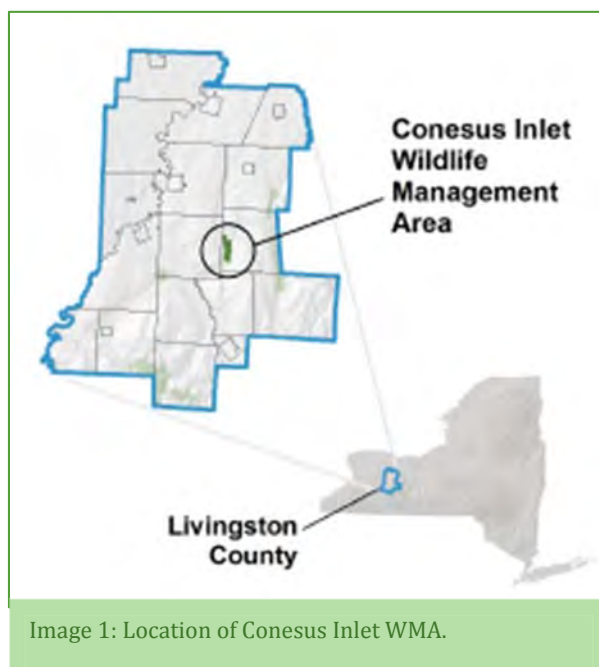


Image 1: Location of Conesus Inlet WMA.

Table 1. Summary of current and desired habitat acreage on Conesus Inlet WMA.

Habitat Type ^a	Current Conditions (as of 2014)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Wetland (impounded)	438	38%		438	38%
Wetland (natural)	115	10%		115	10%
Streams	6	1%	9.8	6	1%
Forest ^b	351	31%		336	Decrease to 29%
Young forest	3	<1%		18	Increase to 2%
Shrubland	0	0%		0	0%
Grassland	185	16%		196	Increase to 17%
Agricultural land	31	3%		20	Decrease to 2%
Roads and parking	13	1%	3.5	13	1%
Total Acres:	1,142	100		1,142	

^a A right of way easement (approximately 50-foot-wide) for an underground gas pipeline crosses the WMA. This easement is maintained to control woody plant growth, and habitats present are grassland and emergent marsh.

^b 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.

ECOLOGICAL RESOURCES

Fish and Wildlife Overview:

Conesus Inlet WMA is primarily a complex of wetland habitats composed of open water, emergent marsh, scrub-shrub swamp, and forested wetland. Uplands cover a smaller percentage of the WMA and consist of grassland fields, crops, and forest. Most common wildlife species associated with wetlands and adjacent uplands are present. Several rare or declining species also occur here, utilizing the large expanse of diverse habitats. Species diversity and abundance varies widely throughout the year, being largely influenced by seasonal migrations.

Species likely occurring on the WMA include:

- Waterfowl (e.g., mallard, wood duck, hooded merganser, blue-winged teal, Canada goose, bufflehead, wigeon, gadwall, green-winged teal, pintail, ring-necked duck)
- Marshbirds (e.g., least bitterns, great blue heron, pied-billed grebe, sora, Virginia rail)
- Songbirds (e.g., bluebird, cedar waxwing, common grackle, gray catbird, marsh wren, red-winged blackbird, song and swamp sparrows, tree swallow, yellow warbler)
- Amphibians and reptiles (e.g., bull frog, green frog, leopard frog, spotted salamander, common garter snake, northern water snake, milk snake, painted turtle, snapping turtle)
- Furbearers (e.g., beaver, mink, muskrat, otter)
- Upland game (e.g., cottontail, coyote, fox, raccoon, white-tailed deer, wild turkey)
- Warm water fish (e.g., alewife, black crappie, bluegill, brown bullhead, large and smallmouth bass, northern pike, pumpkinseed, walleye, yellow perch)

Wildlife and Plant Species of Conservation Concern:

There are no federally listed Endangered or Threatened species known to occur on the WMA.

The following 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).² Species listed below have been documented on or within the vicinity of the WMA and are likely to occur in suitable habitat on the WMA. Other species of conservation concern may also be present. Data sources include: the NY Natural Heritage Program, NY Breeding Bird Atlases,³ NY Reptile and Amphibian Atlas,⁴ DEC wildlife surveys and monitoring, and eBird.⁵

Table 2. Species of conservation concern that may be present on Conesus Inlet 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		SC	x
	American black duck			HP
	American kestrel			x
	American woodcock			x
	Bald eagle		T	x
	Black-billed cuckoo			x
	Black-crowned night-heron			x
	Black tern		E	HP
	Blue-winged teal			x
	Blue-winged warbler			x
	Bobolink			HP
	Brown thrasher			HP
	Canada warbler			HP
	Cerulean warbler		SC	x
	Common nighthawk		SC	HP
	Cooper's hawk		SC	
	Eastern meadowlark			HP
	Golden-winged warbler		SC	HP
	Great egret			x
	Horned lark		SC	HP
	Least bittern		T	x
	Northern harrier		T	x
	Osprey		SC	
	Pied-billed grebe		T	x
	Prothonotary warbler			HP
	Red-headed woodpecker		SC	HP
	Red-shouldered hawk		SC	x
	Ruffed grouse			x
	Ruddy duck			x
	Rusty blackbird			HP

² 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>.

³ Available online at <http://www.dec.ny.gov/animals/7312.html>.

⁴ Available online at <http://www.dec.ny.gov/animals/7140.html>.

⁵ 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
	Scarlet tanager			x
	Sedge wren		T	HP
	Semipalmated sandpiper			HP
	Sharp-shinned hawk		SC	
	Wood thrush			x
Mammals	None known to occur			
Amphibians and reptiles	Blue-spotted salamander		SC	HP
	Eastern ribbon snake			x
	Jefferson salamander		SC	
	Smooth green snake			x
	Snapping turtle			x
	Western chorus frog			x
Fish	Blackchin shiner			x
	Bridle shiner			x
Invertebrates	None known to occur			
Plants	None known to occur			

Significant Ecological Communities:

There is one significant natural community located on Conesus Inlet WMA as identified by the NY Natural Heritage Program. The state rank reflects the rarity within NY, ranging from S1, considered the rarest, to S5, considered stable; definitions are provided in Appendix A. The following significant ecological community occurs on the WMA; community description is from *Ecological Communities of New York State, Second Edition*⁶ (Figure 2):

- **Silver maple-ash swamp (S3)** - a hardwood basin swamp that typically occurs in poorly drained depressions or along the border of large lakes, and less frequently in poorly drained soils along rivers. These sites are characterized by uniformly wet conditions with minimal seasonal fluctuations in water levels.

Additional information about ecological communities is available in the Conesus Inlet WMA Biodiversity Inventory Final Report (1996) prepared by the NY Natural Heritage Program.

Soils and Topography:

Conesus Inlet WMA is located in a valley at the south end of Conesus Lake with elevations that vary from 818 to 860 feet above sea level. The eastern and western portions of this property begin to gently slope upwards toward the valley ridgetops, while the central portion is flat.

⁶ Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero. 2014. Ecological Communities of New York State, Second Edition. Available online at <http://www.dec.ny.gov/animals/97703.html>.

The upland soils consist of a clay loam surface soil underlain by a gravel subsoil. The clay has eroded from the surrounding hills of shale and deposited in the valley by streams, while the gravel subsoil is a product of glaciation. In the marsh, the soil profile from the surface down consists of one foot of muck, two feet of clay, and then peat to a depth of 9+ feet.

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. Approximately 926 acres of SMZs (81% of the WMA) are on Conesus Inlet WMA, including:

- One wetland (CO-1) regulated by Article 24 of the Environmental Conservation Law that covers the majority of the WMA, and 87 wetlands shown on the National Wetlands Inventory (NWI; Figure 3). State-regulated wetlands are protected by a buffer zone of 100 feet (regulated adjacent area). There may be habitat management activities within wetlands and adjacent areas, and each action is reviewed individually for determination of impacts.
- Approximately 9.8 miles of streams, composed of Conesus Inlet and its tributaries, including part of South McMillan Creek (Figure 3). These streams are classified as C and therefore not regulated by Article 15 of the Environmental Conservation Law; however, water quality standards will be adhered to.⁷

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

- Forest, combining deciduous, evergreen, and mixed (39%)
- Pasture/hay and grassland (26%)
- Cultivated crops (15%)
- Early-successional shrubland (10%)
- Developed (5%)
- Open water (4%)
- Wetland, combining emergent and woody (1%)

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>.

Two other conservation lands exist within three miles of the WMA; however, they are quite small and cover less than 1% of the surrounding landscape (Figure 4). This includes:

- Ricky Greene Memorial Park (16 acres) – this property contains developed recreational facilities and protects mature forest and a tributary stream of North McMillan Creek.
- A private conservation property (33 acres) – this protects mature forest and gully terrain surrounding a tributary to North McMillan Creek.

Conesus Lake is the western-most of the Finger Lakes, and each of these lakes typically has a wetland system at its southern end. These lakes provide important resting areas for migrating waterfowl, and the related wetlands produce important food sources. Of the Finger Lakes closest to Conesus Lake (i.e., Hemlock, Canadice, and Honeoye Lakes), the wetlands system south of Conesus Lake contains the largest expanse of emergent marsh habitat and supports high numbers of migrating waterfowl and other wetland-dependent birds. Additionally, only 1% of the landscape within three miles of the WMA is wetland; therefore, it is an important goal of this HMP to maintain the high value of this wetland system.

Forest composes 39% of the landscape surrounding the WMA, with the majority located to the south and east. Much of this forest is adjacent to the WMA, located on the hillsides rising from the valley bottom, and is fairly connected to larger forests to the east. On steeper slopes, stands are quite mature, on gentler terrain they are approximately 40-50 years old, and several abandoned fields are scattered throughout, regenerating with young trees and shrubs. These shrublands and young forests currently provide important habitat diversity to the forested landscape; however, they are temporary and without future forest management or additional field abandonment, this early-successional component will decrease. Young forest habitat and several associated wildlife species have steeply declined in the northeast over recent decades due to maturing forests caused by a lack of natural and human-caused forest disturbances. Although upland forest is a small component of the WMA, the establishment and maintenance of young forests here will add to the distribution of this habitat on the landscape and ensure that it is present in perpetuity.

II. MANAGEMENT STRATEGIES BY HABITAT TYPE

DEC will continue active management of wildlife habitats on Conesus Inlet 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.

WETLANDS (NATURAL AND IMPOUNDED)

Wetland acreage includes ponds, emergent marsh, and scrub-shrub wetlands, and is categorized as natural or impounded. Forested wetlands compose an additional 320 acres of wetland (approximately 28% of the WMA) and are addressed in the Forest section of this HMP.

Natural wetland: includes areas where the soil or substrate is periodically saturated or covered by water, the vegetative community is predominantly composed of hydrophytes, and hydrologic processes are not greatly altered by human construction.

Impounded wetland: are areas similar to natural wetlands, but where water is held back by a berm, road, or other human-made structure.

MANAGEMENT OBJECTIVES

- Maintain 115 acres of natural emergent and scrub-shrub wetlands.
- Manage 438 acres of impounded wetlands to provide diverse habitats that benefit fish and wildlife, especially spawning northern pike and migrating waterfowl.
- Maintain integrity of impoundment dikes and water control structures.
- Identify and control invasive plant species.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

There are 115 acres of natural wetlands and 438 acres of impounded wetlands managed on Conesus Inlet WMA (Figures 3 and 6). Wetlands are the primary habitat on the WMA, with a mosaic of diverse conditions throughout the property, including deep and shallow emergent marsh, scrub-shrub swamp, sedge meadow, and ponds.

The largest wetland impoundment is approximately 375 acres and is located just south of Sliker Hill Road (Photo 1). This impoundment, referred to as the Main Marsh, contains a large area of open water on its northern end, an expanse of hemi-marsh throughout its center, and an abundance of scrub-shrub swamp with standing dead timber at its south end and along several edges.

Hemi-marsh contains roughly a 50:50 ratio of open water to emergent vegetation (e.g., cattails, bulrushes, sedges) and is a valuable habitat for several wildlife species, providing dense cover, submerged aquatic vegetation, and abundant secluded areas. The numerous



Photo 1: The Main Marsh provides an expanse of diverse wetland habitats, including open water, emergeant marsh, and shrub swamp.

Photo: Michael Palermo, DEC

large snags in the Main Marsh also offer valuable habitat, providing nesting sites for wood duck, bald eagle, and red-headed woodpecker. A pair of bald eagles have successfully nested on the WMA since 2006.

North of Sliker Hill Road are three wetland impoundments, totaling approximately 9 acres, that are specifically managed to provide spawning habitat for northern pike (Photo 2). These marshes are the principle spawning grounds for pike inhabiting Conesus Lake. Northern pike usually spawn in early spring as soon as the ice leaves the spawning areas, which is generally between late-March and late-April here. This is preceded by a spawning migration from the lake to the marshes.

Also north of Sliker Hill Road is a canal system that was excavated around 1970, before DEC ownership of the parcels. The intent for the canal was to subdivide and develop the surrounding uplands; however, DEC acquired the property to prevent development that would have negatively impacted the lake, wetland habitats, and public recreation. Today, most of the canal is impounded, is approximately 50 feet wide by a mile long, holds water year-round, and due to the abundant trees along its edge, provides excellent wood duck habitat. A shorter section of canal (approximately ¼ mile) is not impounded, is directly connected to the inlet near the lake, and is considered natural wetland in this HMP.

Several other small wetland impoundments and potholes have been constructed on the WMA, ranging from less than an acre up to 18 acres. The largest of these are Trolley Marsh (10 acres), Willow Marsh (18 acres), and Swamp Road Marsh (8 acres). These three marshes, as well as the Main Marsh, and the spawning marshes, each have control structures installed to allow draining and manipulation of water levels. Drawdowns typically occur here to allow vegetation to establish on the exposed soils and then be reflooded. When drawn down, the exposed mud flats are prime shorebird habitat as well.



Photo 2: Flooded grass in spawning marshes on the WMA provides important breeding habitat to northern pike.

Photo: Matt Sanderson, DEC

Natural wetlands on the WMA (Photo 3) are those influenced by natural water levels and not a constructed berm. The majority of these are located at the southern end of the WMA, with other smaller wetlands at the northern end. Most of these are characterized as shallow emergent marsh, dominated by dense cattails, with pockets of sedge meadow and shrub growth.

Target species for wetland management on Conesus Inlet WMA are:

- Migrating waterfowl (e.g., Canada goose, mallard, gadwall, blue and green-winged teals, black duck, northern pintail, ring-necked duck, and wigeon)
- Breeding waterfowl (e.g., mallard, wood duck, hooded merganser, and Canada goose)
- Marshbirds (American and least bitterns, pied-billed grebe, sora, and Virginia rail)
- Furbearers (muskrat, beaver, and otter)
- Northern pike

In some cases, habitat requirements of these species overlap, while some species have specific requirements or factors that limit their numbers that must be addressed. For example, the hemi-marsh condition in the main marsh benefits many species; waterfowl use the secluded areas for brood-rearing and courtship, muskrat find easy access to forage on cattail stands, and marshbirds nest and forage in dense cover along the water's edge. Promoting habitat that benefits the local muskrat population can also benefit several other species, as muskrat huts and feeding platforms are sometimes used by various marsh birds for nesting and turtles for basking. Flooded grasses in spring are a necessity for northern pike spawning, which requires annual drawdowns and mowing.

Management targeting these species, as well as the overall continued protection of this wetland complex, will also benefit numerous species of amphibians, reptiles, fish, and invertebrates that use these habitats. This includes many common species and several SGCN (e.g., eastern ribbon snake, western chorus frog, and snapping turtle).

MANAGEMENT HISTORY

When the State first acquired the WMA in 1969, most of the wetlands complex was relatively unaltered and contained large areas of marsh and forested swamp. In spring, the wetlands would be inundated by two to three feet of water and by late summer the marsh was almost completely drained, leaving a moist surface.

Under DEC management, several impoundments and potholes have been created to improve habitat values for waterfowl and other wetland-dependent species. The most notable enhancement projects include construction of Trolley Marsh in 1975, the pike spawning marshes in 1987, the Main Marsh in 1990, and Swamp Road and Willow Marshes in 1995.



Photo 3: Natural wetlands on the WMA are typically emergent marsh dominated by cattails with scattered patches of shrubs and trees.

Photo: Michael Palermo, DEC

Management of wetlands on the WMA has occurred routinely and has included maintenance of spawning marsh water levels and grass growth, occasional drawdowns of other marshes, mowing and inspecting dikes, and invasive plant control.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Figure 6):
 - Maintain integrity of existing marsh impoundments in accordance with Dam Safety Inspection and Management Plans (currently being developed).
 - Mow dikes annually to prevent establishment of woody vegetation.
 - Inspect dams and spillways annually and repair as needed.
 - Inspect water control structures; repair and replace as needed.
 - Manage spawning marshes (north of Sliker Hill Road) to provide northern pike spawning habitat.
 - Water levels should allow adult pike to enter and exit impoundment during the spring spawning run.
 - Levels should then remain relatively constant until mid-May and then be lowered to facilitate the emigration of juvenile pike to the lake.
 - On areas exposed by lowered water levels, grass growth should be encouraged to provide egg laying structure.
 - Manage remaining marsh impoundments to provide a variety of wetland habitat conditions, especially those most beneficial to migrating waterfowl.
 - To achieve diverse conditions, water levels should be manipulated as needed. This includes periodic drawdowns and reflooding. Drawdowns should be timed after spring nesting season for waterfowl.
 - Drawdowns should occur to balance interspersions of emergent vegetation and open water over time or to encourage the lush regrowth of seed-producing annual plants (e.g., smartweed and barnyard grass).
 - Excavate ditches and/or potholes in marshes as needed to increase open water interspersions in dense emergent vegetation.
 - Monitor for invasive vegetation and as needed control mechanically, biologically, and/or with herbicide (e.g., Phragmites, knotweed, and purple loosestrife).
 - A priority for control is the knotweed present at the southern end of the WMA, where Conesus Inlet crosses under Guiltner Road.
 - Monitor for mute swans and control as needed to remove them from the WMA.
 - Currently, mute swans have only been observed on the WMA in winter.
 - Implementation is pending finalization of the NYS Mute Swan Management Plan.
 - Consider additional wetland projects that will benefit wetland-dependent species as opportunities and funding arise.

BEST MANAGEMENT PRACTICES

Management activities within wetlands will take into consideration the timing of wildlife breeding and hibernating seasons and when practicable these periods of time will be avoided. Wetland management will follow guidelines established in the General Permit *GP-0-16-003: Habitat Management by NYSDEC*, and any necessary permits will be obtained.

MANAGEMENT EVALUATION

Current monitoring of wetland habitat use at Conesus Inlet WMA includes surveys to document pike spawning, bald eagle nesting, and marshbird presence. These surveys should continue; however, the establishment of periodic surveys for additional species would be beneficial to better understand species diversity and use.

STREAMS

Streams are defined as any watercourse on the WMA, including both year-round and intermittent flows. This includes the aquatic habitat associated with the stream channel, but does not include the wetland habitat that may occur within the floodplain or riparian zone of a watercourse. For management purposes and habitat acreage calculations, some streams are lumped within surrounding habitat stands (e.g., an intermittent stream that flows through a forest stand is included in that stand's acreage calculation).

MANAGEMENT OBJECTIVES

- Maintain the value of streams used by northern pike and walleye for spawning runs.
- Maintain the high-quality of waters found on the WMA.

DESCRIPTION OF EXISTING OPEN WATER HABITAT AND TARGET SPECIES

Approximately 9.8 miles of streams occur on Conesus Inlet WMA (Figures 3 and 6). This includes approximately 3 miles of Conesus Inlet (Photo 4), 0.4 miles of South McMillan Creek, and several intermittent streams (Photo 5) flowing off the surrounding hill sides. Stream length calculations include distances where streams flow through wetlands. During normal flow levels Conesus Inlet and South McMillan Creek compose approximately 6 acres of the WMA.

Conesus Inlet (downstream of the main marsh) and South McMillan Creek provide important habitat for annual spawning runs of northern pike and walleye. From late March to early April, numerous northern pike and walleye migrate from Conesus Lake up Conesus Inlet, with pike heading to the spawning marshes and the Main Marsh, and walleye continuing on up South McMillan Creek.

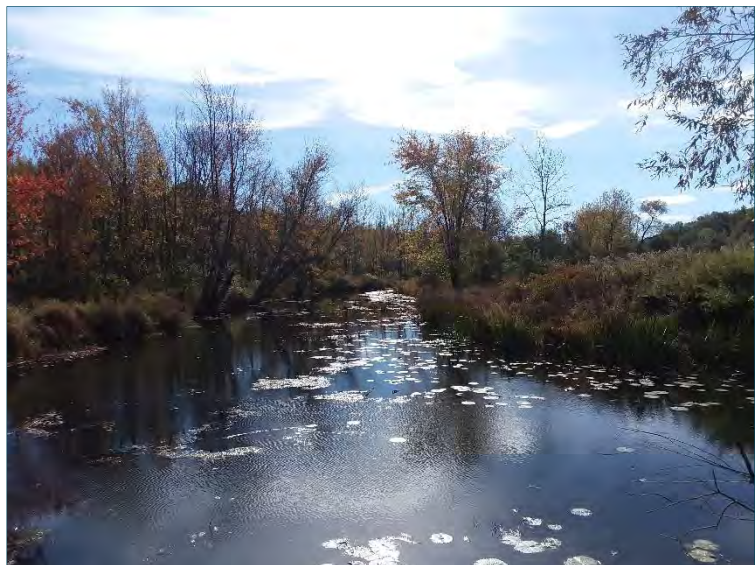


Photo 4: Conesus Inlet is an important pathway for pike and walleye migrating from Conesus Lake to their spawning grounds.

Photo: Michael Palermo

Two SGCN fish, bridle and blackchin shiners, are known to occur in this lower stretch of Conesus Inlet and the nearby canals. Most common warm water fish species (e.g., small and large mouth bass, bluegill, minnows) are also present in this part of Conesus Inlet, and may also occur in the Main Marsh (but in relatively low numbers).

Target species for stream management on Conesus Inlet WMA are:

- Northern pike and walleye

MANAGEMENT HISTORY

At the time of DEC acquisition in 1969, the extent of Conesus Inlet with a defined channel was slightly less than today. Aerial imagery from 1970 shows the inlet's channel dissipate into extensive marsh just north of Guiltner Road and then reemerge just south of Sliker Hill Road.

DEC management has channelized and rerouted some stretches of the inlet since. In 1985, the inlet just north of Guiltner Road was excavated and channelized while a few potholes were constructed nearby. The construction of the Main Marsh in 1990 rerouted the inlet to flow over the spillway, and has influenced inlet flows by holding back water that would otherwise flow down into the lake.



Photo 5: After heavy storms, numerous intermittent streams flow off the surrounding hills and into the wetlands of the WMA. These streams often transport large amounts of shale and woody debris.

Photo: Michael Palermo, DEC

DEC management of other streams on the WMA has typically been indirect and has included following best management practices to protect water quality while implementing upland habitat management. Occasional streambed clearing has occurred, with the largest incident in the late 1980s, when the stretch of South McMillan Creek on the WMA was stabilized and reinforced.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Figure 6):
 - Maintain and improve the high-quality of waters found on the WMA.
 - All habitat management activities on the WMA will adhere to the Environmental Conservation Law and follow best management practices.

BEST MANAGEMENT PRACTICES

All management activities on the WMA will comply with the New York State Freshwater Wetlands Act (ECL Article 24) and Water Resources Law (ECL Article 15, Title 5).

MANAGEMENT EVALUATION

Surveys for fish in Conesus Inlet and South McMillan Creek are routine. Current monitoring of wildlife use of streams is informal and data are often derived opportunistically, and will be continued. The establishment of consistent periodic surveys would be beneficial to better understand wildlife species diversity and use.

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 vegetation accounts for greater than 50% of hydrophytic vegetative cover and the soil or substrate is periodically saturated or inundated.

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 Conesus Inlet 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.⁹

MANAGEMENT OBJECTIVES

- Increase upland young forest from 3 to 18 acres (5% of WMA forested acreage) to improve stand quality and provide habitat for young forest-dependent wildlife.
- Maintain the majority of forest cover in an intermediate to mature age class to benefit associated wildlife (percentage will vary depending on future ash mortality).
- Monitor infestation of emerald ash borer and subsequent regeneration of forested wetlands. As needed, treat stands to ensure desirable tree and shrub composition.
- Encourage regeneration of native hardwoods and conifers (e.g., aspen, maples, oak, cedar, and hemlock) to increase availability of mast and cover for wildlife.
- Control non-native invasive vegetation to maintain forest biodiversity.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 354 acres of forest covering approximately 31% of Conesus Inlet WMA (Figure 6). Table 3 provides a summary of the forested areas, including the most common tree species present in each. The majority of forest on the WMA is forested wetland (91%) that is flooded at least part

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>.

of the year (Photo 6). Upland stands occur around the edges of the WMA where the terrain slopes upward, many of which are small, fragmented, and located along intermittent streams draining into the wetlands.

Dominant forest communities within the forested wetlands include: floodplain forest, silver maple-ash swamp, red maple-hardwood swamp, and hemlock-hardwood swamp. Upland stands on the WMA are successional northern hardwoods and mostly contain white ash, black walnut, and black locust, with scattered aspen, maple, and oak.



Photo 6: The majority of forest cover on the WMA is forested wetland that is seasonally inundated. Hummock-hollow microtopography, as shown in this photo, is common in these stands.

Photo: Michael Palermo, DEC

Only 3 acres of young forest are currently present on the WMA and are the result of two fields not being maintained since approximately 2010. Most upland stands here are of an intermediate age, having reverted from old agricultural fields after DEC acquisition in the late 1960s. Much of the understory of these upland stands is composed of non-native invasive shrubs that should be controlled (Photo 7). The majority of forested wetlands on the WMA are of a mature structure, containing pole and sawtimber sized trees with abundant woody debris. Some forested wetland stands are predominantly pole-sized, likely due to wet conditions stunting growth.

The only significant ecological community on the WMA, as identified by the NY Natural Heritage Program, is a silver maple-ash swamp. This community is present within most forested wetland stands here, with varying ratios of ash to maple throughout. In general, green ash typically composes greater than 70% dominance and silver maple composes less than 40%.

Emerald ash borer (EAB) has not yet been detected on the WMA; however, it is present nearby and may already occur here. Infestation of EAB is considered imminent and is expected to cause extensive mortality of ash trees on the WMA, which will significantly alter forest composition, especially in the forested wetlands. However, these changes may be beneficial to some species; recent studies have shown increases in abundance for some woodpecker and nuthatch species after EAB infestation, and an increase in snags and nest cavities may benefit wood duck, hooded merganser, and prothonotary warbler. Likewise, cerulean warbler has been shown to respond positively to a reduction in forest stocking levels, and several wildlife species would benefit from the abundant young forest habitat that should naturally establish.

It is not possible to accurately predict how much young forest habitat may become naturally established following future ash mortality on the WMA. Considering forest inventory data for the WMA (i.e., percent ash species, stand stocking level, and trees per acre) it is estimated that

approximately 100 to 200 acres of young forest may become established within the next 10 years. This will likely occur in patches where ash is most abundant, and not in one large contiguous block. Monitoring forest regeneration and controlling invasive vegetation in these stands will be important.

Throughout New York there has been a decline in young forest due to maturing forests and a lack of natural and human caused disturbances. Several wildlife species that depend upon young forests are experiencing steep declines. The forests surrounding the WMA currently contain a fair component of abandoned fields filled with shrubs and young trees that provide valuable habitat to young forest wildlife. Without future forest management or continued field abandonment, this young forest component will decrease. Providing a young forest component on the WMA will benefit wildlife both on the property and those inhabiting nearby forests.



Photo 7: Parts of Stand 8 are dominated by black locust and walnut and contain a dense understory of honeysuckle and blackberry. Planned treatment will control invasives and regenerate the stand.

Photo: Michael Palermo, DEC

Table 3. Summary of acreage and dominant overstory species present on Conesus Inlet WMA.

Forest Type	Acres (as of 2014)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	31	16	Black locust, black walnut, and white ash
Plantation	0	0	Currently not present on WMA
Forested wetland (mature/intermediate)	320	220 ^a	Ash, silver and red maple, cottonwood, willow, and hemlock
Young forest	3	18	Ash and black walnut
Young forest (forested wetland)	0	100 ^a	Currently not present on WMA
Total Forested Acres:	354	354	

^a Due to the uncertainty of exactly when and how severe the infestation of EAB will be, accurately projecting the future conditions of forested wetlands on the WMA is not feasible. These two numbers are estimated predictions.

Young Forest Target Species:

Target species for young forest habitat management at Conesus Inlet WMA are American woodcock and wild turkey. Both of these species are experiencing population declines and are popular game animals.

These species rely on areas of young forest adjacent to mature forest for breeding, foraging, and cover and will benefit from management that creates the following habitat conditions:

- American woodcock (Photo 8):
 - Singing/Peenting Ground – Open areas from 1 to >100 acres.
 - Foraging areas – Moist, rich soils with dense overhead cover of young trees.
 - Nesting – Young, open, second growth woodlands.
 - Brood rearing – Similar to nesting, also including bare ground and dense cover.
 - Roosting – Open fields (minimum of 5 acres) or reverting farm fields.¹⁰
- Wild turkey:
 - Foraging – Mast producing hardwood stands and herbaceous fields.
 - Nesting – Hardwood forest, brushy cover, downed trees, and field edges.
 - Roosting – Mature hardwoods and softwoods.
 - Brood rearing – herbaceous fields and forest openings.

Management actions to create young forest will also benefit several other SGCN known to occur on or near the WMA, including blue-winged warbler, brown thrasher, Canada warbler, ruffed grouse, and smooth green snake. More common wildlife species, such as bobcat, cottontail, and white-tailed deer are expected to benefit as well from the abundant food and cover found in young forests. This should provide enhanced hunting opportunities on the WMA, having reliable sites to pursue associated game.



Photo 8: Woodcock require the dense cover of young forest for nesting and foraging.

Photo: Jeff Thompson, DEC

A variety of pollinator species, such as bees and butterflies, are also expected to benefit from the abundance of flowering plants in young forests. Pollination is critical to the reproduction of wild and cultivated plants and providing habitat to sustain these pollinator populations is important both ecologically and economically.¹¹

It is important to note that young forest habitat is beneficial to many species typically associated with mature forest. The abundant and diverse food (e.g., berries, catkins, insects) present in young forests attract juvenile interior nesting bird species, such as black-throated blue warbler, during critical growth periods as well as juveniles and adults preparing for energy intensive migrations.

¹⁰ US Department of Agriculture, Natural Resources Conservation Service. 2010. American Woodcock: Habitat Best Management Practices for the Northeast by Scot J. Williamson. Wildlife Insight. Washington, DC.

¹¹ The NYS Pollinator Protection Plan can be viewed at <http://www.dec.ny.gov/animals/279.html>.

Mature Forest Target Species:

Target species for mature forest habitat management on Conesus Inlet WMA are:

- Hooded merganser
- Wood duck (Photo 9)

Both of these species are plentiful on the WMA and are popular among hunters and bird watchers alike because of their attractive plumage. These waterfowl nest in the abundant tree cavities and maintained nest boxes found in or near flooded forests on the WMA. After nesting, broods make their way to open water to forage within forested wetlands, shrub swamps, or emergent marshes.

Management actions to maintain mature forest habitat, especially in the abundant forested wetlands of the WMA, will also benefit several SGCN, including red-headed woodpecker, rusty blackbird, scarlet tanager, and wood thrush. Likewise, these mature forested wetlands will continue to provide valuable breeding locations for woodland salamanders that occupy nearby upland forests.



Photo 9: Wood duck nest in tree cavities in forested wetlands and in upland forest near water.

Photo: Art Kirsch

MANAGEMENT HISTORY

Prior to DEC ownership, the majority of upland forest stands on the WMA were open fields used for agriculture. In general, many of these fields had narrow hedgerows covering the numerous intermittent streams coming off the adjacent hillsides. Under DEC management, many of these streams were buffered and allowed to revert to forest. Trees and shrubs have also been planted on the WMA, sometimes including non-native species, and this was likely a significant source of most invasive shrub species that have become established here.

DEC management of forests on the WMA has been minimal. Small scale fuelwood sales took place in the mid-1980s and early-1990s, but no timber harvests have occurred since. The construction of the main marsh impoundment in 1990 flooded approximately 100 acres of forested wetland, remnants of which remain as standing dead timber.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed during the timeframe of this plan:

- **Management planned for 2023-2027** (Table 4, Figure 6):
 - A combination of patch cuts (15 acres) and timber stand improvement (16 acres) in Stands 8 and 12 (total 31 acres).
 - Control competing invasives in Stand 8.1 (1 acre).

Management is proposed throughout the entirety of Stands 8 and 12 to improve stand quality. It is estimated that approximately half of the total acreage of these stands (15 acres) will receive patch cuts, which removes most of the canopy and establishes beneficial young forest habitat. Several intermittent streams cross these stands and a buffer of mature canopy will be retained; however, control of undesirable invasive plants will still occur in these areas.

Table 4. Forest management is scheduled for the second five-years of this HMP (2023-2027).

Stand	Acres	Size Class	Forest Type		Treatment Type
			Current	Future	
8	25	Small Saw Timber 12"-17" DBH	Pioneer Hardwoods	Pioneer Hardwoods / Young Forest	Patch cuts / TSI
8.1	1	Seedling/Sapling <5" DBH	Young forest	Young Forest	Control invasives
12	6	Pole Timber 6"-11" DBH	Pioneer Hardwoods	Pioneer Hardwoods / Young Forest	Patch cuts / TSI

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

- **Stand 8:** This stand is located toward the southern end of the WMA and includes five fragmented forest blocks. Each of these are approximately 40-50 years old, having reverted from what were previously agricultural fields. This stand is mostly composed of pole and sawtimber sized black walnut, black locust, and white ash, with scattered aspen, bur oak, and red maple. The understory is dense and contains an abundance of non-native invasive shrubs. The entire stand will be treated to control invasive shrubs, and small patches (1 to 3 acres) will be cut, removing most of the canopy within the patch. Approximately half of the stand will receive these patch cuts which will provide suitable conditions for young forest establishment. A selection of mature trees will be retained within patch cuts to provide mast for wildlife. Several special management zones (e.g., stream and wetland buffers) overlap this stand and management actions will occur within these areas. Management in SMZs is intended to improve forest health and best management practices will be used to prevent negative impacts.
- **Stand 8.1:** This stand is a young forest composed of numerous tree and shrub saplings, including ash, locust, sumac, and walnut. Non-native invasive shrubs are spread throughout the stand and could suppress tree growth if not controlled. Planned management will include the mechanical and chemical control of invasives to release the young trees from competition.
- **Stand 12:** This stand is located on the north side of Sliker Hill Road, along the western side of the WMA. It is mostly composed of pole-sized black willow, black locust, and ash. Similar to Stand 8, this stand was agricultural field prior to DEC acquisition and has reverted to forest since. Planned management is the same as for Stand 8.

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 ¹²
Soils	<i>Rutting Guidelines for Timber Harvesting 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:

Sensitive species known to be present on or near Conesus Inlet WMA that warrant special consideration include:

- *Bald eagle*. Eagles are known to nest on the WMA. Forest management here will avoid disturbing any nesting should it occur within or adjacent to a stand with proposed timber harvest actions. This may include delaying nearby harvest actions until after the breeding season and/or the establishment of a forested buffer around the nest.
- *Forest raptors*. Pre-timber harvest surveys will be conducted and if nesting is documented, harvest activities nearby may be adjusted to occur outside the breeding season and nest buffers may be established.
- *Indiana, northern long-eared, and tri-colored bats*. There are no known occurrences of these species on the WMA. However, surveys will occur in suitable habitat prior to timber harvest activities to detect presence or probable absence, or harvests will take place in winter to avoid potential impacts.
- *Woodland salamanders*. The forested wetlands on the WMA provide valuable breeding habitat for woodland salamanders, which then spend the rest of the year in nearby upland forests. Limited upland forest occurs on the WMA, but upland stands here may provide spring migration corridors between the wetlands and surrounding, larger upland forests. Habitat management in these stands should avoid the salamander spring migration.

Due to the sensitivity of endangered, threatened, and special concern species, and SGCN, special management guidelines may be implemented if additional species become known to occur in or within close proximity to the forest stand to be harvested.

Forest Health Considerations:

Forest pests and invasive vegetation are an ongoing problem for habitat management. When pests attack forests in high numbers and cause decline and mortality, habitat values can shift to the detriment of many resident wildlife species. Likewise, as invasive plants invade an area, outcompeting and dominating native vegetation, a lower diversity plant community is created. This decrease in habitat values means less wildlife may be able to utilize the area. All efforts to manage habitats on Conesus Inlet WMA must consider these forest pests and invasive species

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

and ensure that measures are taken to control their presence or prevent their establishment.

Infestations of introduced insects such as EAB, gypsy moth, hemlock wooly adelgid (HWA), pear thrips, and pine shoot beetle are of present concern and bear persistent monitoring. Gypsy moth and pear thrips densities fluctuate and occasionally can reach outbreak levels where complete defoliation of host trees can occur. Gypsy moth most commonly attacks oak and aspen species while pear thrips favors sugar maple. EAB and HWA are not yet known to be present on the WMA; however, they are present nearby and infestation is considered imminent. EAB infests ash trees and HWA infests hemlock trees, and both cause mortality of host trees within a few years. One stand (10 acres) on the WMA is a hemlock dominated swamp and although management actions to prevent or control HWA infestation are currently limited, they may be implemented should effective methods be developed.

Native insect species such as fall cankerworms and eastern tent caterpillar are cyclic in population and may impact vegetation through defoliation at some time in the future.

Non-native invasive plants that are known to be on or near the forested areas of the WMA include: autumn olive, buckthorn, garlic mustard, honeysuckle, knotweed, multiflora rose, and Phragmites.

Pre- and Post-treatment Considerations:

Regeneration of a forest stand requires suitable conditions to ensure that desired species will succeed. Non-native invasive vegetation and undesirable native trees and shrubs (e.g., hawthorn, ironwood, and striped maple) are present in the understory of many stands here and left untreated could likely interfere with forest regeneration. Although these native species have many beneficial qualities, they are considered undesirable when they have the potential to interfere with forest regeneration. Pre-treatment herbicide application will be necessary in some of the forest stands planned to be managed.

Deer herbivory may be an issue at Conesus Inlet WMA. If it is determined that herbivory is intense enough to prevent regeneration of desired tree species, fencing in of treatment areas or installation of tree shelters may be necessary. Efforts to promote deer hunting on the WMA to manage the local deer herd at desired levels will continue.

If it is concluded post-treatment that desired tree species are not regenerating in a high enough frequency, or that undesirable species are dominating the area and suppressing regeneration, then the stand may be re-treated. This may include mechanical and/or herbicidal control of undesirable species, removal of additional trees to increase available sunlight, scarification of forest floor to stimulate seedling establishment, and/or the direct seeding of desired tree species.

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

MANAGEMENT EVALUATION

In order to determine whether the desired forest regeneration and wildlife responses have been achieved by the management outlined above, pre- and post-management assessments will be conducted in accord with guidelines established in the *Young Forest Initiative Monitoring*

Plan.¹³ The Monitoring Plan provides 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 Conesus Inlet WMA, which may be assessed to determine response to management, include:

- American woodcock
- Wild turkey

Monitoring of these species may include woodcock singing-ground surveys and turkey spring gobbler surveys to determine habitat use and abundance in response to forest management. The establishment of periodic bird point counts and amphibian and reptile surveys in all forest types would be beneficial to better understand species diversity and use.

SHRUBLAND

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

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

There is no shrubland habitat managed 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. Grasslands may include areas where hay is harvested by late season mowing once per year.

MANAGEMENT OBJECTIVES

- Increase grassland acreage from 185 acres to 196 acres by converting 11 acres of agricultural land to grassland.
- Maintain all grasslands to encourage favorable herbaceous species and prevent reversion to shrubland and forest.
- Temporarily (3 to 5 years) convert approximately 32 acres of grasslands to crops as a means to restore grassland quality.
- Identify and control invasive plant species to prevent their dominance in fields.

¹³ Available online at <http://www.dec.ny.gov/outdoor/104218.html>.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

There are currently 185 acres of grassland habitat on Conesus Inlet WMA (Figure 6). This is composed of several small fields, ranging from 1 to 10 acres, which are generally adjacent to wetlands and forest.

A diversity of warm and cool season grasses and forbs (e.g., legumes and wildflowers) have been planted in these fields to provide habitat diversity. For example, warm season grasses, such as big blue stem (Photo 10), often grow in bunches, which provide bare ground between plants that allows for wildlife movement and foraging. Many bunch grass species also retain their upright form through winter, providing valuable cover when most vegetation is matted down by heavy snow. Cool-season grasses (Photo 11), such as timothy, develop rapidly in spring, providing a flush of valuable cover with high forage value.



Photo 10: Warm-season grasses, such as this field of big blue stem, provide valuable habitat for wildlife throughout the year.

Photo: Michael Palermo, DEC

Maintenance of these fields as grassland is intended to benefit several wildlife species that inhabit the surrounding forests and wetlands. For example, grassland adjacent to wetland provides important nesting habitat for waterfowl, such as mallard, and grassland adjacent to forest provides habitat for upland animals, such as deer (fawning) and turkey (brood rearing). Pollinators and various other insects also thrive in these herbaceous areas and this provides an important high-protein food for grouse chicks, turkey poults, and songbirds.

Some of the fields on the WMA contain an abundance of woody growth (e.g., ash, dogwood, buckthorn, and honeysuckle). These shrubs and tree saplings are typically suppressed by routine mowing, but not completely controlled. Continued restoration and replanting



Photo 11: This field contains cool-season grasses and an abundance of milkweed and goldenrod, which are important for pollinators.

Photo: Michael Palermo, DEC

of fields is necessary to prevent reversion to shrubland and to maintain long-term grassland habitat values for wildlife.

The entire WMA is within the Western New York Grassland Focus Area. These focus areas are regions of the state that support key, residual populations of grassland birds. Grassland dependent bird species typically require large patches (25+ acres) of grassland with low perimeter-to-area ratios in an open landscape; therefore, the small fields on the WMA do not provide significant habitat for grassland birds (e.g., bobolink and eastern meadowlark).

Target species for grassland management on Conesus Inlet WMA are:

- Breeding waterfowl (e.g., mallard and blue-winged teal)
- White-tailed deer and wild turkey
- Bees, butterflies, and other pollinators

MANAGEMENT HISTORY

Historically, the fields at Conesus Inlet WMA were used for agriculture. Under DEC management, these fields have been maintained as open habitat through routine mowing, agricultural practices, and replanting to provide herbaceous plants favored by wildlife. Over the years a variety of warm-season (e.g., switchgrass and big blue stem) and cool season grasses (e.g., timothy and orchard grass) have been planted.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Figure 6):
 - Throughout all grassland stands, routinely perform maintenance actions.
 - Mow fields every 1-3 years to prevent establishment of woody vegetation.
 - Mowing of fields heavily invaded by woody plants may be most effective if conducted in early spring and again before senescence.
 - When resources are available, utilize prescribed fire where appropriate.
 - Control invasive vegetation mechanically and/or with herbicide.
 - As needed: lime, fertilize, disk, and reseed grasslands. Promote native herbaceous species where practical.
 - Replant approximately 11 acres of agricultural lands (Fields 17 and 36b) to grass and forb mixes favored by target wildlife.
 - Temporarily (3 to 5 years) convert 32 acres of grassland (Fields 7, 8, 9, 10, 18, 22 and 24) to crops as a means to restore grassland quality. Removal of some hedgerows between stands will be considered.
 - Over a few years, the repeated tilling associated with cultivated crops disrupts root systems and depletes the seed bank of woody vegetation and other undesirable plants. This provides a clean slate for seeding desired herbaceous plants to establish a grassland of improved habitat value.
 - As needed, additional fields may be temporarily converted to agricultural lands to facilitate grassland restoration.

BEST MANAGEMENT PRACTICES

Due to the small, fragmented nature of grasslands on the WMA, and the related lack of important grassland bird habitat, best management practices followed here intend to enhance habitat value

for waterfowl and forest wildlife using grasslands. For detailed information regarding grassland bird habitat and management see *A Plan for Conserving Grassland Birds in New York*.¹⁴

General Management Recommendations

- Conduct invasive species control (e.g., buckthorn, Canada thistle, hogweed, honeysuckle, multiflora rose, Phragmites, swallow-wort, etc.) to improve habitat quality.
- Consider a variety of factors, such as the targeted wildlife 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, disking, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

Timing of Management

- Fields under 25 acres (including all contiguous fields) with no history of listed species:
 - Mowing and other management actions should avoid April 23 through August 15.
 - Fields can be managed/mowed between April 23 and August 15 if necessary to:
 - Control the growth of woody or invasive vegetation in fields where grassland habitat value is degraded.
 - Ensure that suitable grass cover will be present to provide important winter habitat for wildlife.
 - If early management is proposed, then the habitat requirements of other species should be considered (e.g., breeding waterfowl, 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 can be accomplished in a wandering style. Strip mowing should be limited.
- Unmowed blocks should be in the shape of a square as opposed to long rectangles.
- When mowing, consider mowing from one side of the field to the other side or start in the center and mow outwards to avoid concentrating animals in the area yet to be mowed.
- In general, mow grass to a residual height of 6-12 inches.

MANAGEMENT EVALUATION

Current monitoring of grassland habitat use at Conesus Inlet WMA is informal and data are often derived opportunistically, and will be continued. However, the establishment of periodic wildlife surveys would be beneficial to better understand species diversity and habitat use. Monitoring of invasive vegetation control efforts will be necessary to ensure success and prevent future spread.

¹⁴ 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.

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.

MANAGEMENT OBJECTIVES

- Continue to manage 20 acres consistently as crops to provide diverse food and cover for wildlife, especially white-tailed deer, wild turkey, and migrating waterfowl.
- Convert 11 acres of existing agricultural lands to grasslands.
- Temporarily (3 to 5 years) convert approximately 32 acres of existing grasslands to crops as a means to restore grassland quality.

DESCRIPTION OF EXISTING AGRICULTURAL LANDS AND TARGET SPECIES

There are currently 31 acres of agricultural lands on Conesus Inlet WMA (Figure 6, Photo 12). This consists of three fields that are under “Cooperative Agreement for the Use of State Land.”

The cooperative agreement in place allows a local farmer to grow crops on the WMA in exchange for habitat management services. Crops are generally rotated each year, and then at the expiration of the agreement the fields are planted to a grass mix favorable to wildlife. The cultivation of crops in fields on the WMA is an important tool to provide diverse food and cover for wildlife as well as to restore grassland habitat quality.

The presence of crops, such as corn and grains, have important value for wildlife, including high-quality forage for deer, pheasant, turkey, and geese.

When crops are grown on the WMA, conditions of the cooperative agreement require some grain and cover be left for wildlife after harvest.

Target species for crop management on Conesus Inlet WMA are:

- Migrating waterfowl
- White-tailed deer
- Wild turkey

Hunters also value being able to hunt agricultural land habitat types on public land. This is particularly true regarding field hunting for geese, as nearly all public land waterfowl hunting is limited to marshes or open water.



Photo 12: Crops on the WMA, such as this corn field, provide habitat for wildlife and is a tool for grassland restoration.

Photo: Michael Palermo, DEC

MANAGEMENT HISTORY

Cooperative agreements with local farmers have been utilized on the WMA consistently since 1975 and allowed farmers to harvest hay or temporarily plant crops in exchange for payment or habitat management services. The existing cooperative agreement began in 2015 and will expire in 2019.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2018-2027** (Figure 6):
 - Manage approximately 20 acres as crops to provide agricultural habitat (Field 5).
 - Replant approximately 11 acres of agricultural lands (Fields 17 and 36b) to grass and forb mixes favored by target wildlife.
 - Temporarily (3 to 5 years) convert approximately 32 acres of grassland (Fields 7, 8, 9, 10, 18, 22 and 24) to crops as a means to restore grassland quality.

BEST MANAGEMENT PRACTICES

Agricultural activities involve mowing, tilling, and the use of pesticides, which have potential to impact wildlife and the environment; therefore, guidelines are provided within cooperative agreements to minimize impacts. For Conesus Inlet WMA this includes: soil conservation practices, buffers between crops and wetlands, review of planned pesticide use, no fall plowing without a winter cover crop; and no harvest of hay, alfalfa, or other grasses prior to July 15.

MANAGEMENT EVALUATION

Annual agricultural activities, such as timing of mowing and crops planted, will be tracked. Fields should be monitored for control of invasives to prevent spread to adjacent areas, or in preparation for rotating agricultural fields to grassland.

HABITAT MANAGEMENT SUMMARY

In summary, Table 6 lists the habitat management actions planned for Conesus Inlet 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 Conesus Inlet WMA, 2018-2027 (also see Figure 6).

Habitat	Management Action	Acres	Timeframe
Wetlands	Manipulate wetland habitat conditions within impounded marshes (e.g., drawdowns, flooding, mowing, tilling, excavation of potholes)	≤ 438	2018-2027, as needed
Wetlands	Maintain impounded wetland dikes and control structures (e.g., inspect, mow, burn, and repair)	18,500 ft	Annually
Wetlands / Streams	Monitor and control invasive species	≤ 559	2018-2027, ongoing
Forest	Patch cut harvest (15 acres) and timber stand improvement (16 acres) in Stands 8 & 12	31	2023-2027
Forest	Control non-native invasive shrubs in existing young forest Stand 8.1	1	2023-2027
Forest	Monitor infestation of EAB in forested wetlands and treat stands to ensure desirable regeneration	≤ 320	2018-2027, as needed
Forest	Monitor and control invasive vegetation throughout all forest stands	≤ 354	2018-2027, ongoing
Grassland	Maintain grassland acreage with mowing and potentially prescribed fire	≤ 196	Annual, biennial, or triennial
Grassland	Improve grassland quality (e.g., lime, fertilize, disk, and/or reseed)	≤ 196	2018-2027, as needed
Grassland	Monitor and control invasive species	≤ 196	2018-2027, ongoing
Grassland	Temporarily covert Fields 7, 8, 9, 10, 18, 22 and 24 from grassland to crops to restore grassland quality	32	2018-2027
Agricultural Lands	Convert Fields 17 and 36b to grassland	11	2019
Agricultural Lands	Manage Field 5 as crops	20	2018-2027, ongoing

III. FIGURES

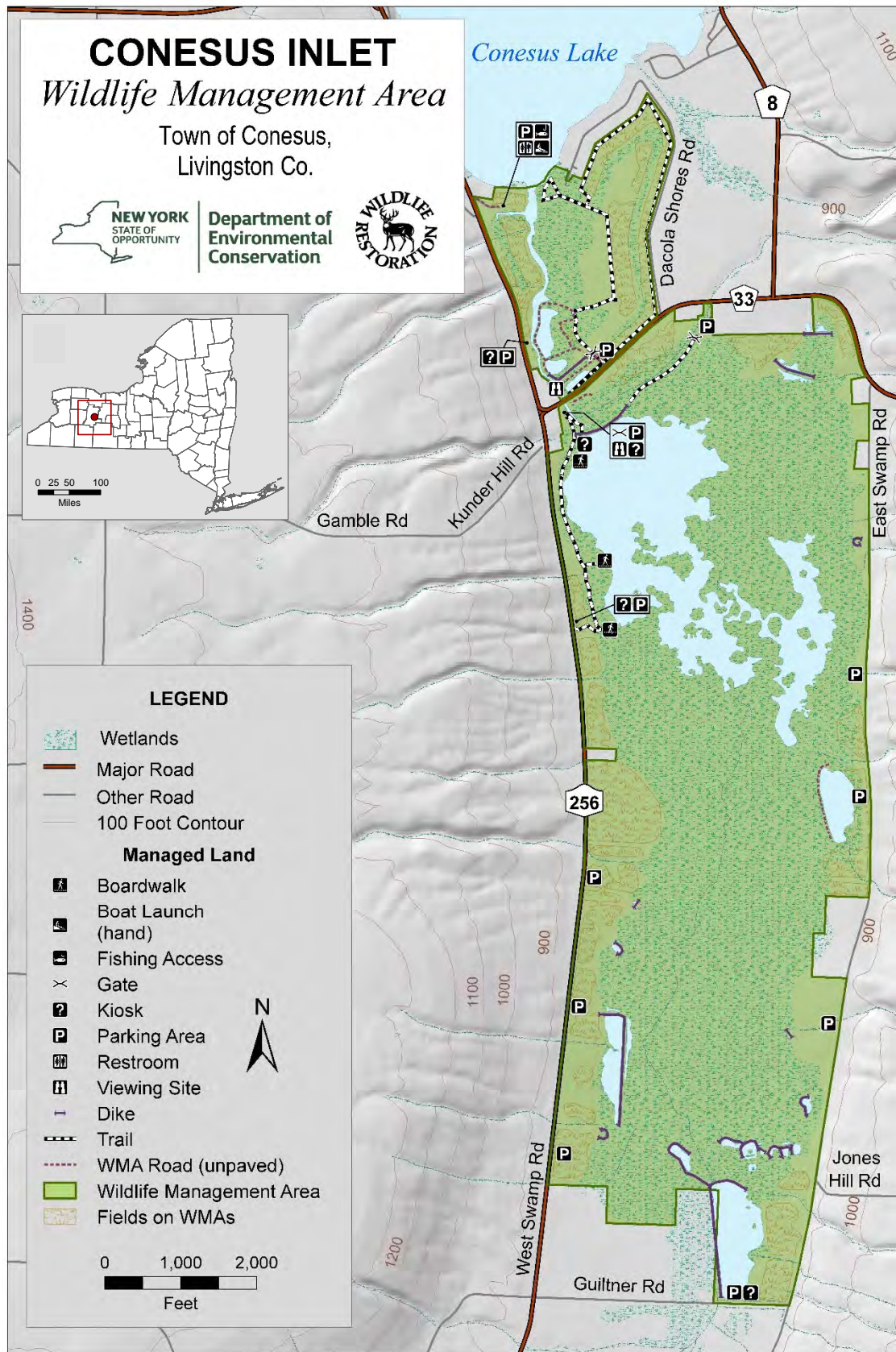
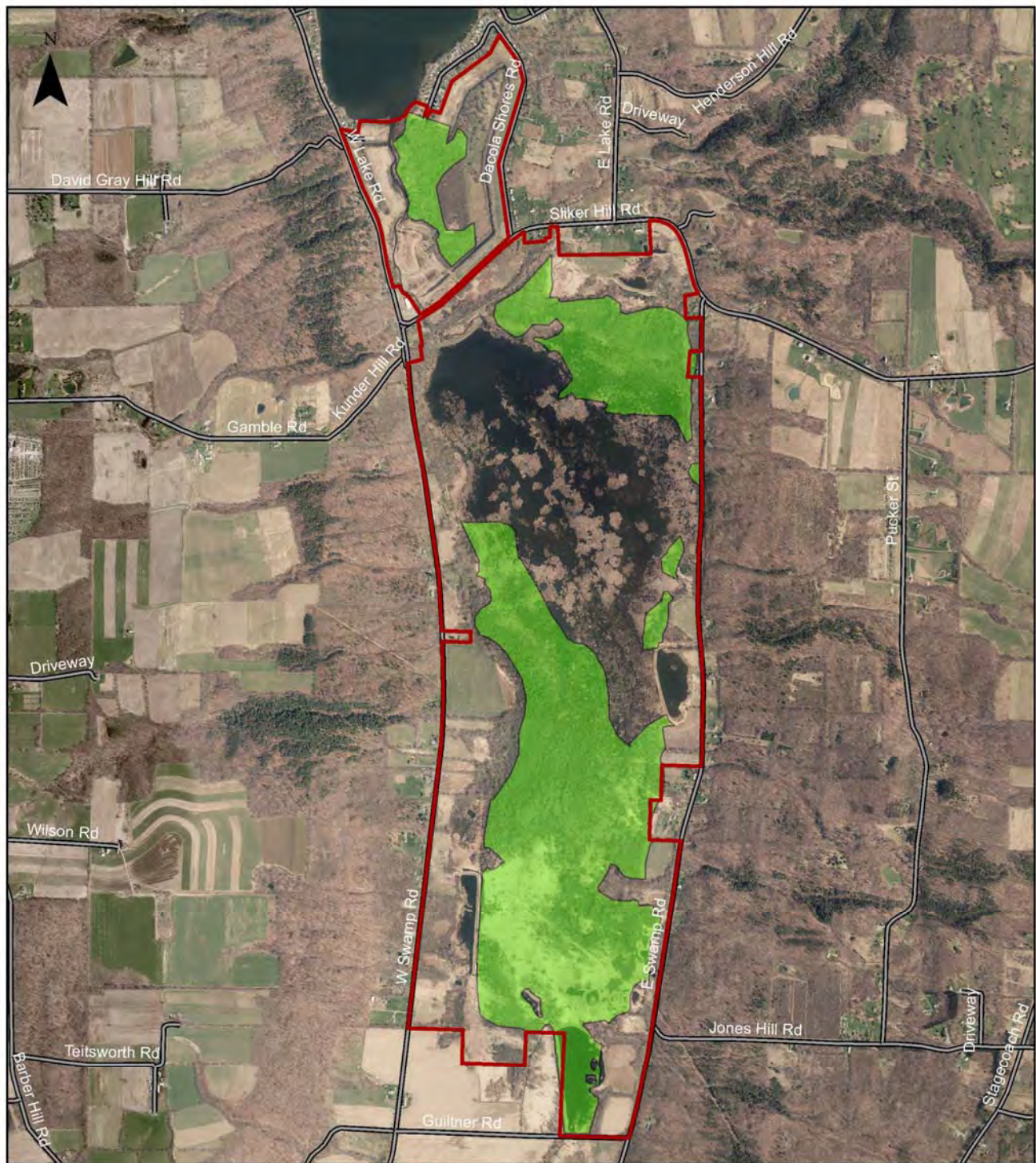


FIGURE 1. Location and access features at Conesus Inlet WMA.



Legend



Silver Maple-Ash Swamp



WMA Boundary

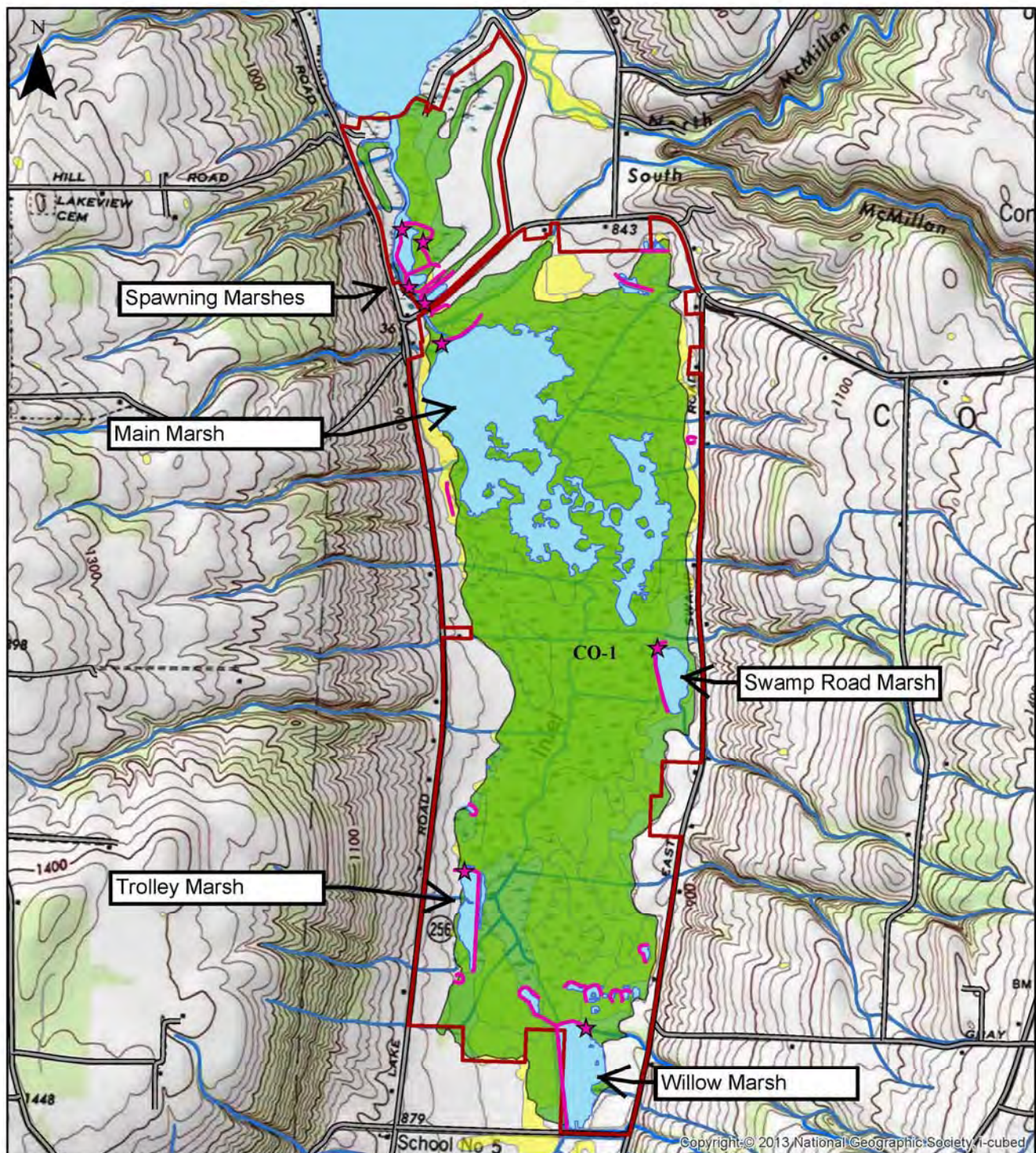
Conesus Inlet WMA

Map created on 9/2017
by E. M. Cooper, Habitat Conservation Unit

0 0.25 0.5 1 Miles

*From community delineations in the 1990s, conditions may have changed.

FIGURE 2. Significant ecological communities on Conesus Inlet WMA. Data from the NY Natural Heritage Program.



Legend

- Article 24 Freshwater Wetlands
- Stream
- National Wetlands Inventory
- Dikes
- Impoundment/pond
- ★ Water Control Structure

■ WMA Boundary

Conesus Inlet WMA

Map created on 9/2017
by E. M. Cooper, Habitat Conservation Unit

0 0.25 0.5 1 Miles

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

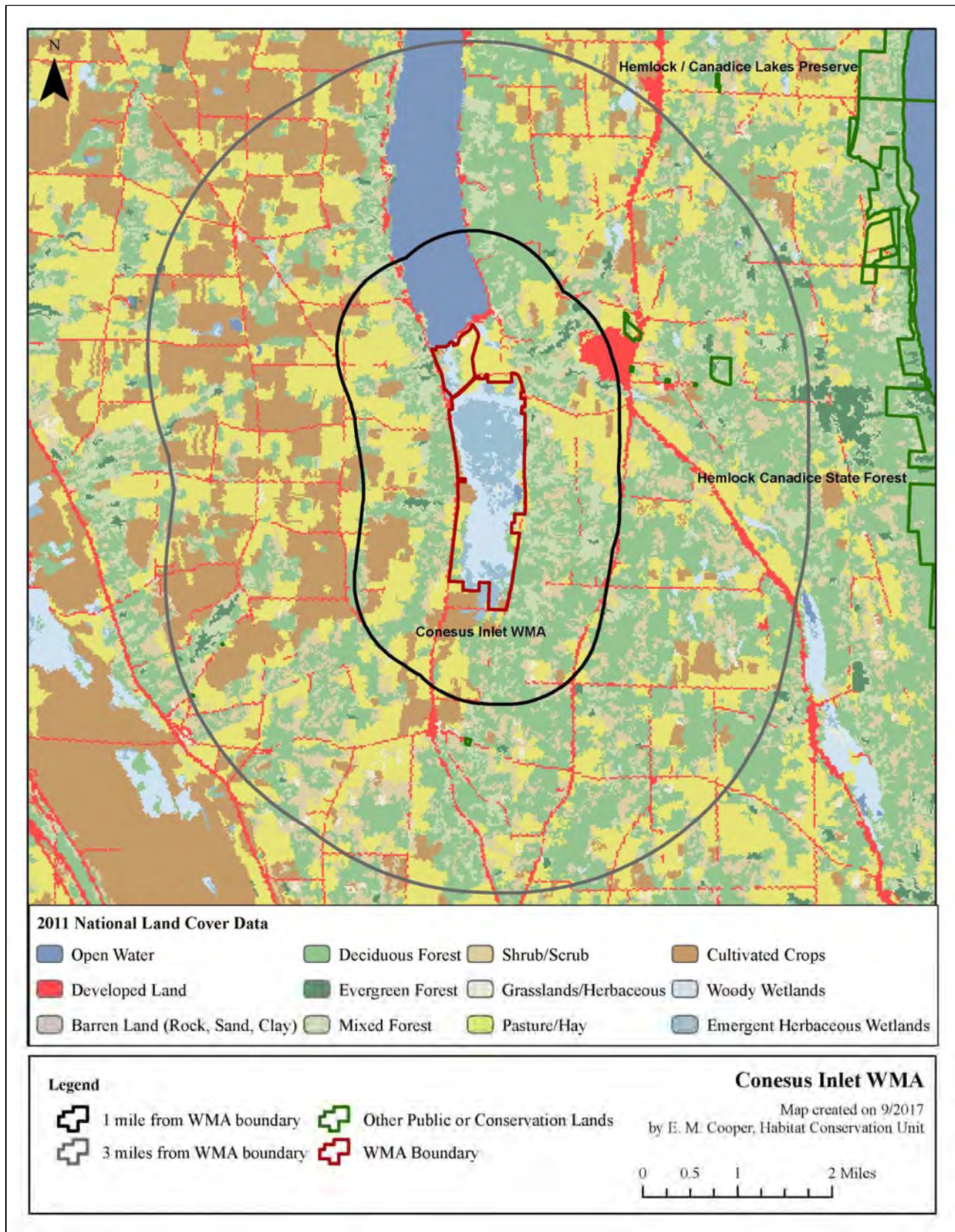


FIGURE 4. Land cover types and conservation lands in the landscape surrounding Conesus Inlet WMA. Conservation lands are from the NY Protected Areas Database available online at <http://www.nypad.org/>. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types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

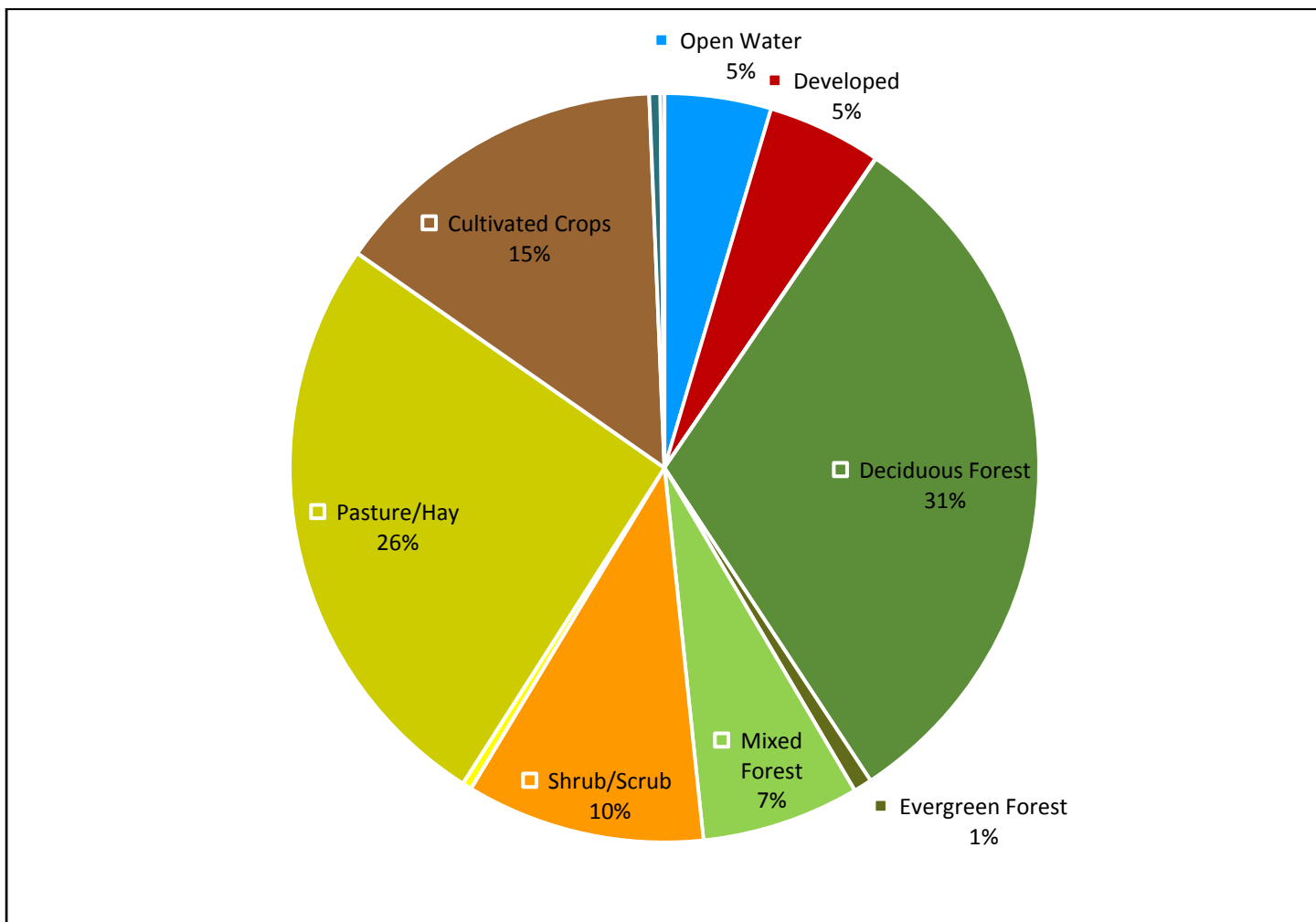


FIGURE 5. Percent cover of land cover types within three miles of Conesus Inlet WMA. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at <http://www.mrlc.gov/nlcd2011.php>.

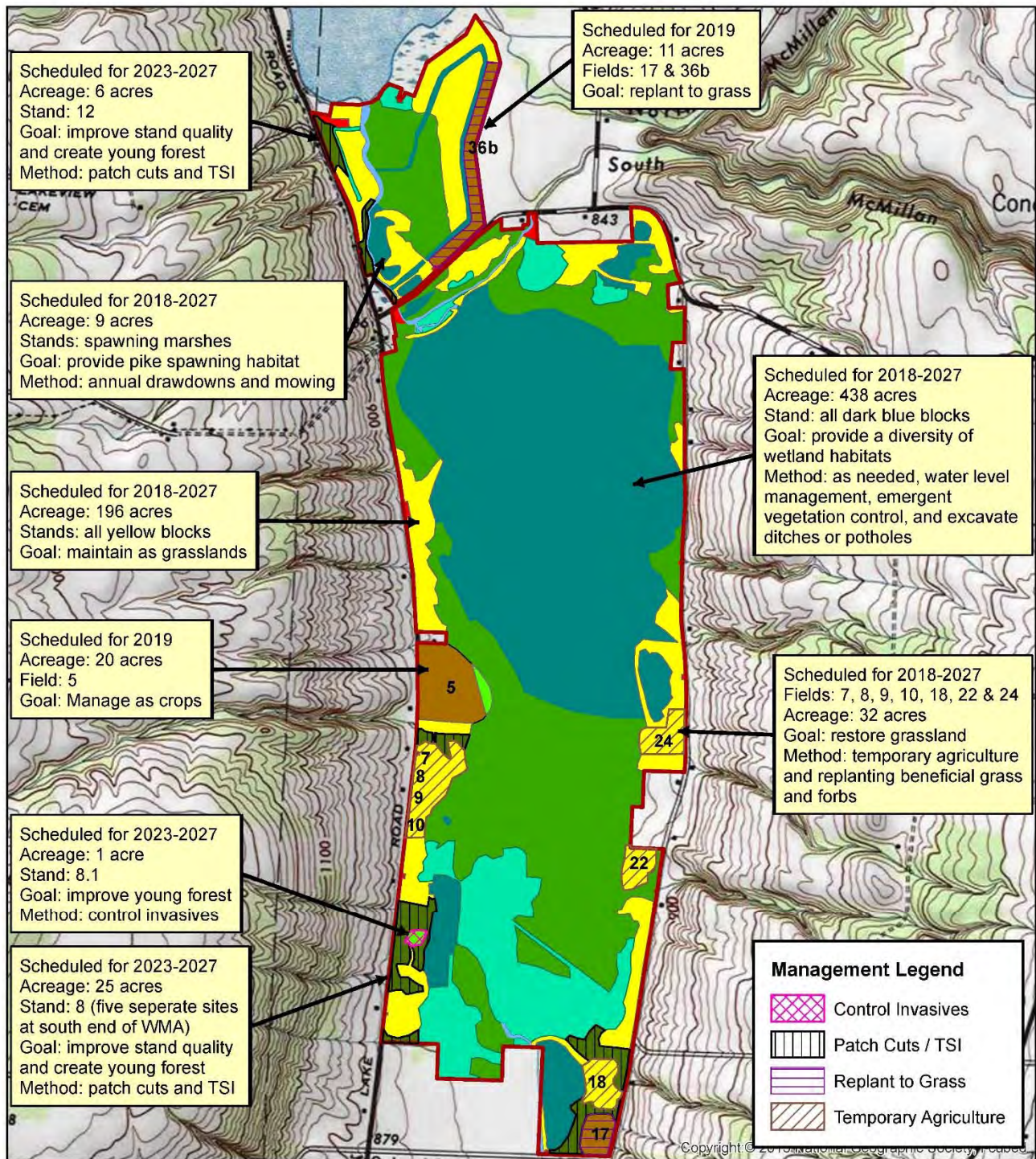


FIGURE 6. Habitat types and locations of proposed management on Conesus Inlet WMA. Numbers indicate stand and field numbers from habitat inventory.

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-leaved, herbaceous plant other than those in the Poaceae (Gramineae), Cyperaceae, and Juncaceae families (i.e., not grass-like).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

State Rank of Significant Ecological Communities:

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

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

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

S4 = Apparently secure in New York State.

S5 = Demonstrably secure in New York State.

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

SX = Apparently extirpated from New York State.

SE = Exotic, not native to New York State.

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

SU = Status unknown.

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

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

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

Target Species: A suite of high priority wildlife species of conservation interest that are being targeted to benefit from management of a particular habitat type. For example, young forest target species at Conesus Inlet WMA include: American woodcock and wild turkey.

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).¹⁵ 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).¹⁶

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.

¹⁵ Available online at <http://www.dec.ny.gov/regulations/28693.html>.

¹⁶ 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 “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.