Habitat Management Plan
for
Stockport Wildlife Management Area
2016 – 2025

Division of Fish and Wildlife
Bureau of Wildlife

65561 State Route 10, Stamford, NY 12167

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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SUMMARY

Stockport Wildlife Management Area (WMA) consists of 354.3 acres of grasslands, forested uplands, tidal marsh and small areas of freshwater wetlands located along the banks of the Hudson River. The WMA was acquired from Scenic Hudson in 2008 and 2015. The western portion of the WMA is included within the 1,544-acre Stockport Flats component of the Hudson River National Estuarine Research Reserve (HRNERR; Figure 2). Wildlife species commonly found on the WMA include wild turkey, white-tailed deer, gray squirrel, mallard and red-winged blackbird. This property is an important feature of the Hudson River Estuary, providing spawning and nursery habitat for striped bass, American shad, shortnose sturgeon and alewives. Waterfowl, wading birds and shorebirds use the wetlands and marshes as breeding and nesting habitat. This WMA affords multiple recreational opportunities including hunting, trapping and bird watching. Ring-necked pheasants are released on the property in the fall to provide additional hunting opportunities.

Habitat management goals for Stockport WMA include:

- Managing approximately 4.0% of the WMA as young forest (9.3% of the total forested area) to promote wild turkey, American woodcock and white-tailed deer habitat;
- Maintaining approximately 38.3% as mature forest to provide habitat for forest interior species;
- Managing approximately 37.5% as grasslands to provide grassland breeding bird habitat;
- Managing approximately 12.1% as shrublands to provide early successional habitat;
- Maintaining approximately 4.0% as wetlands;
- Maintaining approximately 3.9% as open water; and
- Approximately 0.2% of the WMA will be maintained as roads.

I. BACKGROUND AND INTRODUCTION

PURPOSE OF HABITAT MANAGEMENT PLANS

BACKGROUND

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

year time period, after which the plans and progress on implementation will be assessed and HMPs will be modified as needed.

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

SCOPE AND INTENT

Primary purposes of this document:

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

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

Definitions are provided in Appendix A.

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

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

WMA OVERVIEW

LOCATION

Stockport WMA is located in DEC Region 4, Towns of Stockport and Greenport, Columbia County (Figure 1).

TOTAL AREA

354.3 acres

HABITAT INVENTORY

A habitat inventory of the WMA was conducted in 2015 and updated in 2017. Inventories are proposed to be updated every ten to fifteen years to document the existing acreage of each habitat type and to help determine the location and extent of future management actions. Table 1 summarizes the current acreage by habitat type and the desired acreage after management. Desired conditions were determined with consideration of habitat requirements of targeted wildlife, current conditions on the WMA, and conditions in the surrounding landscape (see Landscape Context section below).

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

Habitat Type	Current Conditions (as of 2017)			Desired Conditions	
	Acres	Percent of WMA	Miles	Acres	Percent of WMA
Forest [a]	149.8	42.3%		135.8	Decrease to 38.3%
Young forest	0	0%		14	Increase to 4.0%
Shrubland	42.9	12.1%		42.9	No change
Grassland	132.9	37.5%		132.9	No change
Agricultural land	0	0%		0	No change
Wetland (natural) [b]	14.3	4.0%		14.3	No change
Wetland (impounded) [b]	0	0%		0	No change
Open water	13.8	3.9%		13.8	No change
Other	0	0%		0	No change
Roads	0.6	0.2%		0.6	No change
Rivers and streams			1.8		No change
Total Acres:	354.3	100%		354.3	

[a] Forest acreage includes all mature and intermediate age classes of natural forest, plantations, and forested wetlands. Young forest is reported separately. Definitions are provided in the Forest section of this plan.
[b] Wetland acreage does not include forested wetlands, since they are included in the Forest category.

ECOLOGICAL RESOURCES

Wildlife Overview:

Wildlife present on Stockport WMA includes many species commonly found throughout Eastern New York and the Hudson River Estuary, such as:

- Wild turkey, pied-billed grebe, bald eagle
- Eastern cottontail, Eastern coyote, white-tailed deer
- Gray treefrog, Northern leopard frog, Northern two-lined salamander
- Common garter snake, Eastern milk snake, snapping turtle
- Striped bass, alewife, short-nosed sturgeon

Wildlife and Plant Species of Conservation Concern:

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

Table 2. Species of conservation concern that may be present on Stockport 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 black duck			HP
	American kestrel			x
	American woodcock			x
	Bald eagle		T	x
	Blue-winged warbler			x
	Bobolink			HP
	Least bittern		T	x
	Louisiana waterthrush			x
	Osprey		SC	
	Pied-billed grebe		T	x
	Prairie warbler			x
	Scarlet tanager			x
	Wood thrush			x
Mammals	Indiana bat	E	E	HP
Amphibians and reptiles	Northern map turtle			x
	Smooth green snake			x
	Snapping turtle			x
Fish	Alewife			x

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

Table 2. Continued

Species Group	Species	Federal Status	NY Status	NY SGCN Status
	American shad			HP
	Blueback herring			x
	Shortnose sturgeon			x
Invertebrates	None known			
Plants	American waterwort		E	
	Golden club		T	
	Smooth bur-marigold		T	

Significant Ecological Communities:

There are five rare and/or significant natural communities located on Stockport WMA as identified by the NY Natural Heritage Program. The state rank reflects the rarity within NY, ranging from S1, considered the rarest, to S5, considered stable; definitions are provided in Appendix A. The following significant ecological communities occur on the WMA; the community description is from *Ecological Communities of New York State, Second Edition* [5] (Figure 3):

- **Tidal river (S3):** the aquatic community of continuously flooded substrates that support no emergent vegetation. Within the river there are two zones; the deepwater zone includes areas where substrates are usually over 2 m (6 ft) deep at low tide, the shallow zone includes submerged areas less than 2 m (6 ft) deep at low tide that lack rooted aquatic vegetation. In the river there is a vertical salinity gradient through most of the year, with a surface layer of fresh water (salinity less than 0.5 ppt) floating over a deeper layer of brackish water (salinity between 0.5 and 18.0 ppt). Salinities at any one place in the river may fluctuate as the tides flow in and out because the "salt wedge" of brackish water alternately rises and falls with the tides. The wedge also fluctuates seasonally and with precipitation runoff.
- **Freshwater intertidal mudflats (S2):** a sparsely vegetated, to non-vegetated, community characterized by low rosette-leaved aquatics. This community occurs on exposed intertidal mudflats, or muddy sand, where the water is fresh (salinity less than 0.5 ppt). This community is best developed where mudflats are nearly level so that broad expanses are exposed at low tide. The plants are completely submerged in 0.9 to 1.2 m (3 to 4 ft) of water at high tide; and they are usually coated with mud.
- **Freshwater tidal swamp (S1):** a forested or shrub-dominated tidal wetland that occurs in lowlands along large river systems characterized by gentle slope gradients coupled with tidal influence over considerable distances. The swamp substrate is always wet and is subject to semidiurnal flooding by fresh tidal water (salinity less than 0.5 ppt).
- **Freshwater tidal marsh (S2):** a marsh community that occurs in shallow bays, shoals, and at the mouth of tributaries of large tidal river systems, where the water is usually

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

fresh (salinity less than 0.5 ppt), and less than 2 m (6 ft) deep at high tide. The vegetation is dominated by aquatics that are emergent at high tide. Typically there are two zones in a freshwater tidal marsh: a low-elevation area dominated by short, broad-leaf emergents bordering mudflats or open water, and a slightly higher-elevation area dominated by tall graminoids.

- **Freshwater intertidal shore (S2S3):** a community of the intertidal gravelly or rocky shores of freshwater tidal rivers and creeks. The community sometimes occurs at the base of cliffs, where the water is fresh (salinity less than 0.5 ppt). The vegetation may be very sparse.

Special Management Zones:

Special Management Zones (SMZs) are areas adjacent to wetlands, perennial and intermittent streams, vernal pool depressions, spring seeps, ponds and lakes, recreational trails, and other land features requiring special consideration. SMZs on Stockport WMA include:

- One wetland regulated by Article 24 of the Environmental Conservation Law and several additional wetlands shown on the National Wetlands Inventory (Figure 4). Each state-regulated wetland is protected by a buffer zone of 100 feet from the delineated wetland boundary, known as the adjacent area. There may be forestry prescriptions associated with forested wetlands and adjacent areas, and each management prescription will be reviewed individually for determination of impacts.
- Four streams (a watercourse entirely within the WMA) or segments of streams (a stream that meanders in and out of the WMA). The Hudson River runs along the western border of the WMA. Streams designated as class C(T) or higher are regulated by Article 15 of the Environmental Conservation Law. The highest stream classification on this property is Class A, the Hudson River. Water quality standards will be adhered to on all streams.
- A number of vernal pools exist on the WMA. Management activities will follow SMZ guidelines established on WMA's.

Guidelines for habitat management projects within these areas are outlined in the Division of Lands and Forests *Rules for Establishment of Special Management Zones on State Forests and Wildlife Management Areas.*[6] Some habitat management activities may either be prohibited or restricted in order to protect these features. Any deviations from these guidelines will be addressed in the individual stand prescriptions.

Soils:

Soil types across Stockport WMA vary greatly as does the topography. The rolling meadows on the northern and eastern portions of the property are dominated by silt loams which vary from somewhat poorly drained to moderately well drained. These areas are classified as prime farmland. Conversely, the wooded areas along the Hudson River are classified as Hudson and Vergennes soils and are steeper and not prime farmland. The farm which used to occupy this site likely practiced agriculture where the terrain permitted and allowed the remainder of the property to become wooded which also provided resources for the farm. The island on the western edge of this WMA has soils classified as dredged udipsamments which are mostly sands pumped (dredged) from the river. This area is similar to a sand dune and as such would be very

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

droughty, however because of its location would be subject to yearly flooding. These growing conditions are perfect for cottonwood trees which nearly exclusively occupy the site.

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 Stockport WMA (Figures 5 and 6). The landscape within a three mile radius of the WMA is primarily privately-owned land including:

- Development (32%)
- Forest (26% combining deciduous, evergreen and mixed forests)
- Pasture/Hay (21%)
- Open water (8%)
- Wetlands (6% combining woody and emergent herbaceous wetlands)
- Cultivated crops (3%)
- Shrub/scrub (3%)
- Grassland/Herbaceous (1%)

Over half of the landscape surrounding Stockport WMA consists of developed land, pasture/hay and forested habitats. The forested habitats are fragmented and surrounded by farmland and developed land. Due to the absence of young forest habitat on the WMA and limited amount in the surrounding landscape, it is the goal of this plan to create young forest habitat to promote regeneration of select forest stands to ensure a healthy forest in the future. The creation of young forest habitat on Stockport WMA increases habitat diversity and benefits many different species of wildlife.

Nearby conservation lands include:

- Vosburgh Swamp WMA (311 acres)
- Stockport Flats site of the Hudson River National Estuarine Research Reserve (1,543 acres)[7]
- Hudson River Islands State Park (59 acres)
- Middle Ground Flats Unique Area (372 acres)
- Several town/state owned boat launches

II. MANAGEMENT STRATEGIES BY HABITAT TYPE

DEC will continue active management of wildlife habitat on Stockport WMA to provide the following benefits:

- Maintain habitat characteristics that will benefit wildlife abundance and diversity within the New York landscape.

[7] Additional information about the Stockport Flats site of the Hudson River National Estuarine Research Reserve is available online at http://www.dec.ny.gov/lands/92355.html.

- Promote Best Management Practices for targeted wildlife and habitats.
- Provide opportunities for wildlife-dependent recreation such as trapping, hunting, and bird watching compatible with the ongoing habitat management practices and species management considerations.
- Improve habitat quality by reducing invasive species, if present and identified for treatment.

FOREST

Forested acreage includes the following forest types:

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

Forest management on Stockport 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.[8] The Initiative's goal is to increase forest management so that a minimum of 10% of the WMA's forested acreage is classified as young forest habitat. The goal at Stockport WMA is to create approximately 14 acres of young forest habitat, which is 9.3% of the total forested acreage. However, only 81.9% of the forested acreage on the WMA is accessible. The remaining 18.1% forested habitat is located on an island (Priming Hook) in the Hudson River and is inaccessible. Due to many factors including accessibility, topography and the percentage of forested habitat currently on the WMA, the young forest acreage goal is slightly under the 10% YFI goal.

MANAGEMENT OBJECTIVES

- Retain the majority of the existing forest (135.8 acres) for forest interior species.
- Increase young forest from 0 to 14 acres (9.3% of the total forested area) to improve habitat for young forest-dependent wildlife, targeting wild turkey, American woodcock and white-tailed deer.
- Encourage dispersal of native hardwoods (oak and hickory) to promote regeneration and increase availability of hard mast for wildlife.

[8] 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.

DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES

There are 149.8 forested acres on Stockport WMA. The majority of the forested area is located on the upland sections of the WMA surrounding the grassland habitat (Table 3; Figure 7). The forests consist mainly of northern hardwoods and white pine. The island in the Hudson River consists almost entirely of Eastern cottonwood. Table 3 provides a summary of the forested areas, including the most common species found in the WMA's forests.

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

Forest Type	Acres (as of 2017)	Desired Acres	Overstory species
Natural forest (mature/intermediate)	116.3	102.3	sugar maple, red oak
Plantation	0	0	red pine, white pine
Forested wetland	33.5	33.5	Eastern cottonwood, red maple
Young forest	0	14	
Young forest (forested wetland)	0	0	
Total Forested Acres:	149.8	149.8	

Target species for young forest include wild turkey, American woodcock, and white-tailed deer. These species rely on forest and young forest areas for nesting, foraging, and cover and will benefit from management that creates the following habitat requirements:

- Wild turkey:
  - Strutting areas – Open fields with short vegetation, <12 inches preferred, and mature hardwoods.
  - Nesting cover – Blowdowns and the bases of trees and stumps in open hardwoods and brushy cover in early successional habitats and field edges.
  - Brood rearing – Best brooding cover are fields with herbaceous vegetation from 12 to 18 inches preferred.
  - Foraging – The habitat required ranges from open field areas to mature forests:
    - Spring diet – Tubers and invertebrates.
    - Summer diet – Poult diets consist primarily of invertebrates. Adult diets consist of invertebrates and tubers, switching over to herbaceous vegetation and soft mast as summer progresses.
    - Fall diet – Hard and soft mast, seeds, and invertebrates.

Wild turkey is a target species at Stockport WMA.

Photo: National Wild Turkey Federation

        - Winter diet – Hard and soft mast, seeds (birch if available) and hardwood buds.
    - Winter cover – Mature conifer stands.
    - Roosting – Mature hardwoods and softwoods. Adults with poults tend to roost on the ground under large trees with a dense understory of young trees, shrubs, downed trees, rock outcrops, or brushy fields. [9, 10]
- American woodcock:
    - Singing/Peenting ground – Open areas from 1 to >100 acres, usually in an abandoned field.
    - Foraging – Moist, rich soils with dense overhead cover of young alders, aspen or birch.
    - Nesting – Young, open, second growth woodlands.
    - Brood rearing – Similar to nesting except also including bare ground and dense ground cover.
    - Roosting – Open fields (minimum of 5 acres) or blueberry fields and reverting farm fields.[11]
- White-tailed deer (in Northern Hardwood Forests):
    - Fawning areas – Vary from open forest to hay fields to brushy cover.
    - Spring/Summer diet – Primarily herbaceous vegetation (clover, *Rubus* sp., forbs, etc.), hardwood foliage, soft mast, and agricultural crops where available.
    - Fall diet – Hard mast, preferably acorns, hardwood foliage, and agricultural crops where available.
    - Winter diet – Hardwood buds, fallen leaves, hard mast and conifers, preferably white cedar.
    - Bedding cover – Varies from open hardwoods with laydowns to dense thickets of early succession shrublands or hard and softwood regeneration. [12]

MANAGEMENT HISTORY

Stockport WMA was acquired from Scenic Hudson in two parcels, one in 2008 and the remainder in 2015. Little is known about the history of forest management on the property. There has been no forest management activity on the property since it was acquired by New York State.

This WMA is old agricultural lands as evidenced by old farm buildings and foundations, trash dumps, fields and barbed wire. The fact that this property was historically a farm allows some insight into past forest management. Forest products were likely harvested "as needed" to support the farm. The species present on this WMA would have provided a farm with many valuable resources; hemlock and white pine for lumber, oak for sturdy barn framing, hickory for firewood and tool handles, locust and cedar for durable fence posts. This type of utilitarian

[9] USDA – NRCS. 1999. Wild Turkey (*Meleagris gallopavo*) Fish and Wildlife Habitat Management Leaflet. 12 pp.
[10] Dickson, J. G. 1992. The Wild Turkey: Biology and Management. National Wild Turkey Federation and USDA Forest Service. Stackpole Books, PA. 480 pp.
[11] 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.
[12] Halls, L. K., ed. 1984. White-tailed Deer: Ecology and Management. The Wildlife Management Institute. Stackpole Books, PA. 864 pp.

forest management likely began when trees were first cleared to make way for agriculture. This WMA has old farm roads leading into the woods which were likely used for many decades to remove forest products when they were needed. There is evidence that the forested acres on this property once contained two significant additional components, American chestnut and American elm. These trees would have also had their own uses on the farm.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

The following management is proposed in order to reach the young forest acreage goal of 14 acres within ten years:

- **Management planned for 2016-2020** (Table 4, Figure 7):
  - Perform a seed tree cut in Stand 1 (2 acres), retaining all cedar within the stand.
  - Clearcut white pine and white ash in Stand 2 (4 acres).
  - Perform a seed tree cut in Stands 3 and 4 (8 acres), retaining oak.
- **Management planned for 2021-2025**:
  - Monitor and control invasives as needed.

Table 4. Forest management schedule for the first five-year period of this HMP (2016-2020).

Compartment -Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
			Current	Future		
B-1	2	Small saw timber 12"-17"DBH	White pine - cedar	Young forest	Wildlife	Seed Tree
B-2	4	Pole Timber 6"-11"DBH	White pine-Natural	Young forest	Wildlife	Clearcut
A-3	5	Small saw timber 12"-17"DBH	White pine-Natural	Young forest	Wildlife	Seed Tree
A-4	3	Small saw timber 12"-17"DBH	White pine-Natural	Young forest	Wildlife	Seed Tree

Stand locations and planned management actions are also summarized in Figure 7. Specific forest stand descriptions and detailed management prescriptions will be prepared for each proposed forest management area prior to implementation (see template, Appendix C). Briefly, habitat management for each of these stands will include the following:

- **Compartment B, Stand 1:** Stand 1 is a natural white pine and cedar stand on an abandoned farm field. A portion of the stand (2 acres) will be harvested using a seed tree method. Cedar will be retained within the stand for the purpose of providing wildlife habitat as well as a mast and seed source. Increasing the young forest habitat as proposed will establish more habitat for wild turkey, American woodcock and white-tailed deer. The invasive species within the stand, including buckthorn and oriental bittersweet, will be removed. Pre- or post-treatment herbicide applications may be necessary to assist in the establishment of desired species.
- **Compartment B, Stand 2:** Stand 2 is a 4 acre white pine and white ash stand. The entire stand will be clearcut and allowed to regenerate naturally to provide nesting areas, cover and a food source for the targeted species. Pre- or post-treatment herbicide applications may be necessary to assist in the establishment of desired species.

- **Compartment A, Stands 3 & 4:** Stands 3 and 4 are white pine, natural hardwood stands. Stand 4 and a portion of Stand 3, totaling 8 acres, will be harvested using a seed tree method, favoring red oak, white oak and shagbark hickory as residuals to provide mast for wildlife and seed for natural regeneration. The initial cut will provide a food source and cover in the form of slash and the resulting regeneration will provide additional habitat for the targeted species. This stand will be evaluated for possible overstory removal at a later date. Invasive brush within the stand include buckthorn, barberry and oriental bittersweet. Pre- or post-treatment herbicide applications may be necessary to assist in the establishment of desired species.

Natural regeneration of the stands will be allowed to occur to create quality habitat for wild turkey, American woodcock and white-tailed deer. Best Management Practices for American woodcock will be incorporated into the young forest acreage created. Forest management prescriptions on this WMA will focus on promoting regeneration will a high stem count per acre (i.e., stump sprouting of native hardwoods). Invasive species within Stands B1, B2, A3 and A4 may be controlled through chemical means if needed.

BEST MANAGEMENT PRACTICES

Forest management on all WMAs follows Best Management Practices to protect soil and water resources, promote quality wildlife habitat, and establish healthy forests (Table 6).

Table 6. Best Management Practices for forest management on WMAs.

Resource	Guidance Document [13]
Soils	*Rutting Guidelines for Timber Harvesting on Wildlife Management Areas*
Water quality	*NYS Forestry Best Management Practices for Water Quality*
Wildlife	*Retention Guidance on Wildlife Management Areas*
Plantations	*Plantation Management Guidance on Wildlife Management Areas*

Wildlife Considerations:

Due to the sensitivity of endangered, threatened, or SGCN grassland birds potentially found on the WMA, cutting of trees and/or brush will be conducted outside the breeding season if the species are known to be on the area or within close proximity. Due to the possibility of Indiana bats being on the area, tree selection for cuts and the timing of cuts will be evaluated to protect the bats.

Forest Health Considerations:

Buckthorn, barberry and oriental bittersweet in Stands B1, B2, A3 and A4 may outcompete hardwood regeneration. Where possible, this interference with native regeneration will be mitigated through mechanical removal or herbicide application.

Pre- and Post-treatment Considerations:

Stands B1, B2, A3 and A4 contain multiple invasive species (i.e., buckthorn, barberry, etc.). Treatment of the interfering vegetation may be required to promote desired regeneration.

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

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

MANAGEMENT EVALUATION

In order to determine whether the desired forest regeneration and wildlife response(s) have been achieved by the management outlined above, pre- and post-management assessments will be conducted in accord with guidelines in the Young Forest Initiative Monitoring Plan: 2016-2025.[14] The Monitoring Plan establishes statewide standards for evaluating vegetation and target wildlife responses to forest management to determine if the outcome is as prescribed. 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. Deer exclosures will be installed and regeneration within the exclosures will be monitored annually. YFI wildlife target species selected for Stockport WMA, which may be assessed to determine response to management, include:

- Wild turkey
- American woodcock
- White-tailed deer

SHRUBLAND

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

MANAGEMENT OBJECTIVES

- Maintain current acreage of shrubland habitat for wildlife.
- Monitor and control invasives when feasible.

DESCRIPTION OF EXISTING SHRUBLAND HABITAT AND TARGET SPECIES

There are 42.9 acres of shrubland on Stockport WMA (Figures 7). These shrublands originated from grasslands and old agricultural fields that were not maintained and naturally succeeded to a shrub-dominated community. These stands vary from sparse shrubs and grasses to extensive and dense shrub thickets with clumps of trees. The shrublands were colonized naturally by nearby vegetation which unfortunately includes a large invasive component (i.e., buckthorn, multiflora rose, honeysuckle). This form of early successional habitat provides habitat for many different species of wildlife throughout the year.

The shrublands provide habitat for species such as:

- American woodcock
- Wild turkey
- Northern cardinal

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

- Eastern cottontail
- White-tailed deer

MANAGEMENT HISTORY

This property was historically farmland and presumably existing shrublands were once used for grazing by cows and/or horses. Very little management has occurred within shrublands on Stockport WMA. Biological control of purple loosestrife, through the use of Galerucella spp. beetles, has occurred since 2014. Starting in 2016, Phragmites has been controlled through chemical and mechanical means.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2016-2025** (Table 7, Figure 7):
    - Maintain 42.9 acres of shrubland habitat.
        - Brush cutting using a forestry mower will be utilized to maintain desired shrubland habitat.
        - Selective removal of larger trees to promote desired vegetation.
        - Monitor and control invasive plants as needed.
    - Release Galerucella spp. beetles for the biological control of purple loosestrife.
    - Monitor and control invasives as needed.

BEST MANAGEMENT PRACTICES

In order to minimize disturbance to shrubland wildlife species, brush-cutting, if possible, should be done outside the bird nesting and brood rearing part of the year (April 15 to August 15). However, management may occur within this timeframe if the intent of management is to provide long term benefits to the habitat/wildlife (such as invasive species management).

MANAGEMENT EVALUATION

Visual evaluations of the shrublands will be conducted annually to assess needed management actions.

GRASSLAND

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

MANAGEMENT OBJECTIVES

- Maintain 132.9 acres of grassland habitat for wildlife.
- Monitor and control invasives when feasible.

DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES

There are 132.9 acres of grassland habitat on Stockport WMA (Figure 7). This habitat is mainly located on the eastern half of the WMA. The fields are managed to provide cover, nesting,

foraging and roosting habitat for many grassland birds, including boblink and Eastern meadowlark. These areas provide important habitat for pheasants released at this property immediately prior to and during the small game hunting season. They also provide foraging habitat for white-tailed deer and wild turkey.

The grasslands provide habitat for species such as:

- Wild turkey
- White-tailed deer
- Bobolink
- Northern harrier

MANAGEMENT HISTORY

This property was historically farmland and presumably existing fields were once used for grazing by cows and/or horses, as well as the production of hay. Most recent management has involved maintaining and reclaiming fields that had become overgrown. Biological control of purple loosestrife, through the use of Galerucella spp. beetles, has occurred since 2014. Starting in 2016, Japanese knotweed has been controlled through chemical and mechanical means.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2016-2025** (Table 7, Figure 7):
    - Mow 132.9 acres of fields every 2-3 years to maintain grassland conditions. Some limited mowing may be done annually to provide hunter access. Mowing will generally occur after August 15 and will be completed prior to release of pheasants in late September.
    - Improve fields by removing three small islands of trees and larger trees within hedgerows and grasslands, to provide continuity between fields. Removal of trees will be limited to winter months for protected bat concerns.
    - Release Galerucella spp. beetles for the biological control of purple loosestrife.
    - Control Japanese knotweed mechanically and/or chemically.

BEST MANAGEMENT PRACTICES

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

General Management Recommendations

- Target management for grassland bird species known to be in the vicinity, and consider the needs of both breeding and wintering grassland bird species.
- Consider the surrounding landscape when making management decisions.
- Conduct baseline grassland bird surveys on newly acquired fields or fields targeted for management changes to determine species present.

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

- Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large fields.
- Conduct invasive species control (glossy buckthorn, pale and black swallowwort, Canada thistle, Phragmites, etc.) to improve habitat quality.
- Consider a variety of factors, such as the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing conditions, and vegetation removal techniques (including herbicide and intensive disking) in developing grassland planting or restoration projects.
- Utilize mowing, haying, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

Timing of Management

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

Additional Mowing Guidelines

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

MANAGEMENT EVALUATION

Fields will be assessed annually to determine the need for mowing. Most of the fields have a substantial component of suppressed shrubs that quickly regrow if not kept in check, so determination as to mowing will largely depend on the height and vigor of shrub regrowth. Grasslands will be monitored for invasive species. If feasible, invasive species will be control through mechanical or chemical means.

AGRICULTURAL LAND

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

DESCRIPTION OF EXISTING AGRICULTURAL LANDS AND TARGET SPECIES

There is no acreage on Stockport WMA that is currently managed as agricultural land. In the future, DEC may utilize a cooperative agricultural agreement to maintain fields.

WETLANDS (NATURAL AND IMPOUNDED)

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

MANAGEMENT OBJECTIVES

- Maintain 14.3 acres of existing wetlands to provide quality habitat for wildlife.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES

A single state wetland, HN-2, is mapped along the western edge of the WMA and is approximately 14.3 acres. This wetland consists of an island in the Hudson River and the shoreline along the WMA's western boundary. This wetland is within the HRNERR boundary. Several federal wetlands exist on the WMA and consist of low-lying wet areas within the grassland fields. Portions of these wetlands are being invaded by non-native phragmites.

The wetlands provide habitat for species such as:

- American woodcock, pied-billed grebe, least bittern
- Muskrat, beaver
- Migratory waterfowl
- Snapping turtle, painted turtle
- Spring peeper, Northern leopard frog, spotted salamander

MANAGEMENT HISTORY

In 2016, stands of phragmites within several of the federal wetlands were cut and treated with herbicide.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

- **Management planned for 2016-2025** (Table 4, Figure 7):
    - Control phragmites both mechanically and chemically, when weather conditions allow.

BEST MANAGEMENT PRACTICES

Timing of the management activities will be limited to ensure impacts to the habitat and wildlife are kept to a minimum. Projects will take into account seasonal weather conditions, along with the breeding and nesting period of wildlife species found on the WMA. Herbicide applications will comply with all applicable state laws, rules and regulations.

MANAGEMENT EVALUATION

Periodic surveys for amphibians in the wetlands may occur as opportunity arises. Phragmites stands will continue to be monitored and identified for control.

OPEN WATER (WATERBODIES AND WATERCOURSES)

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

MANAGEMENT OBJECTIVES

- Maintain the existing 13.8 acres of open water to provide habitat for breeding, nesting and wintering bird species.
- Monitor for invasive species and eradicate where feasible.

DESCRIPTION OF EXISTING OPEN WATER AND TARGET SPECIES

There are 13.8 acres of open water on Stockport WMA consisting of natural ponds, streams and the Hudson River. These areas provide aquatic habitat for many species of amphibians, reptiles and waterfowl.

There are four streams or segments of streams (approximately 1.8 miles) that occur on the WMA. The Hudson River runs along the western boundary of the WMA and is classified as a Class A (drinking water) stream. The other streams located on the WMA are unnamed and are classified as Class C indicating it can support a fishery.

Species that benefit from open water habitat include:

- Striped bass
- Pied-billed grebe
- Northern leopard frog
- Snapping turtle

MANAGEMENT HISTORY

Open water habitat has not been managed on Stockport WMA.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE

No management is planned in the next 10 years.

BEST MANAGEMENT PRACTICES

None.

MANAGEMENT EVALUATION

None.

HABITAT MANAGEMENT SUMMARY

In summary, Table 7 lists the habitat management actions planned for Stockport WMA over the next ten years. Any substantive changes will be appended to this HMP annually or as needed (Appendix D).

Table 7. Summary of habitat management actions recommended for Stockport WMA, 2016-2025. (Also see Figure 7.)

Habitat	Management Action	Acres	Timeframe
Forest	Perform a seed tree cut in Stand B1, retaining red cedar.	2	2016-2020
Forest	Clearcut white pine and hardwoods in Stand B2.	4	2016-2020
Forest	Perform a seed tree cut in Stands A3 and A4, retaining mast producing trees.	8	2016-2020
Grassland	Continue mowing grassland fields (Stand A940 & B940) every 2-3 years to maintain grassland conditions.	≤132.9	2016-2025
Grassland	Remove three small islands of trees to provide continuity between fields.	≤1	2016-2025
Grassland	Monitor and control invasives as needed.	≤132.9	2016-2025
Shrubland	Maintain shrubland acreage through the use of a forestry mower.	≤42.9	2016-2025
Shrubland	Monitor and control invasives as needed.	≤42.9	2016-2025
Wetland	Inventory and control phragmites within wetlands.	≤14.3	2016-2025

III. FIGURES

FIGURE 1. Location and access features at Stockport WMA.

FIGURE 2. Location and access features of the Hudson River National Estuarine Research Reserve.

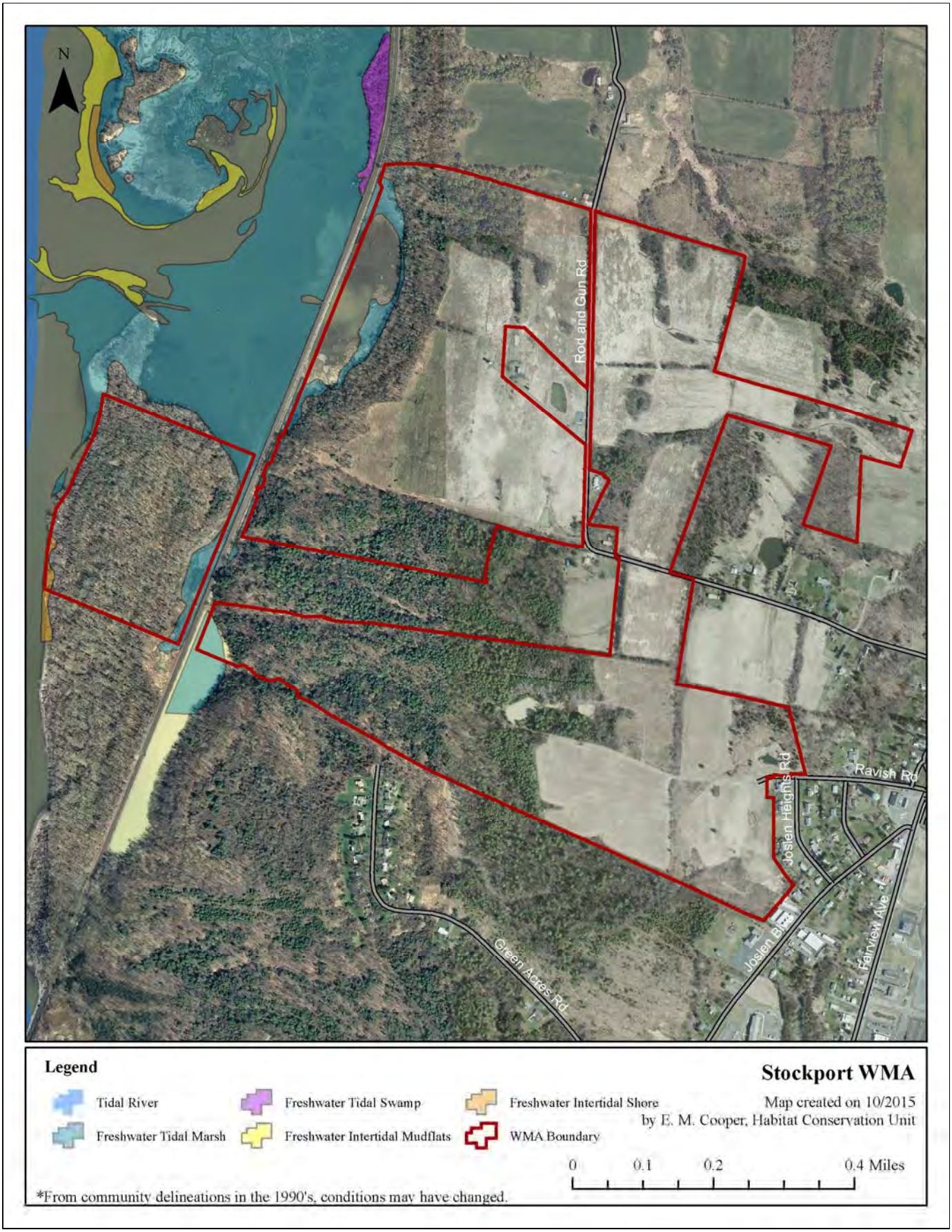

FIGURE 3. Significant ecological communities on Stockport WMA. Data from the NY Natural Heritage Program.

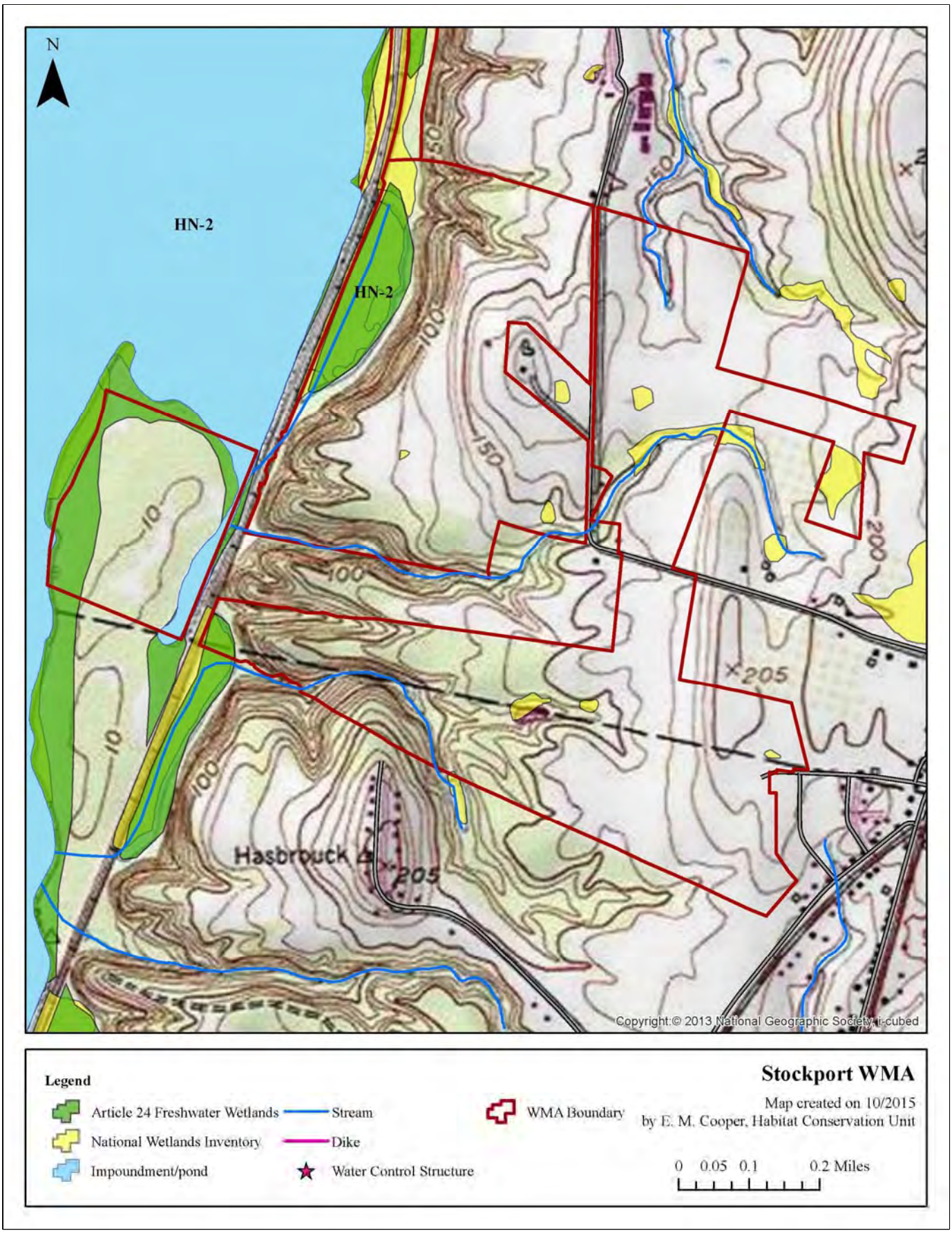

FIGURE 4. Wetlands, open water, and streams of Stockport WMA. Note: Wetland boundaries are not exact and may not be used for regulatory purposes without a current delineation.

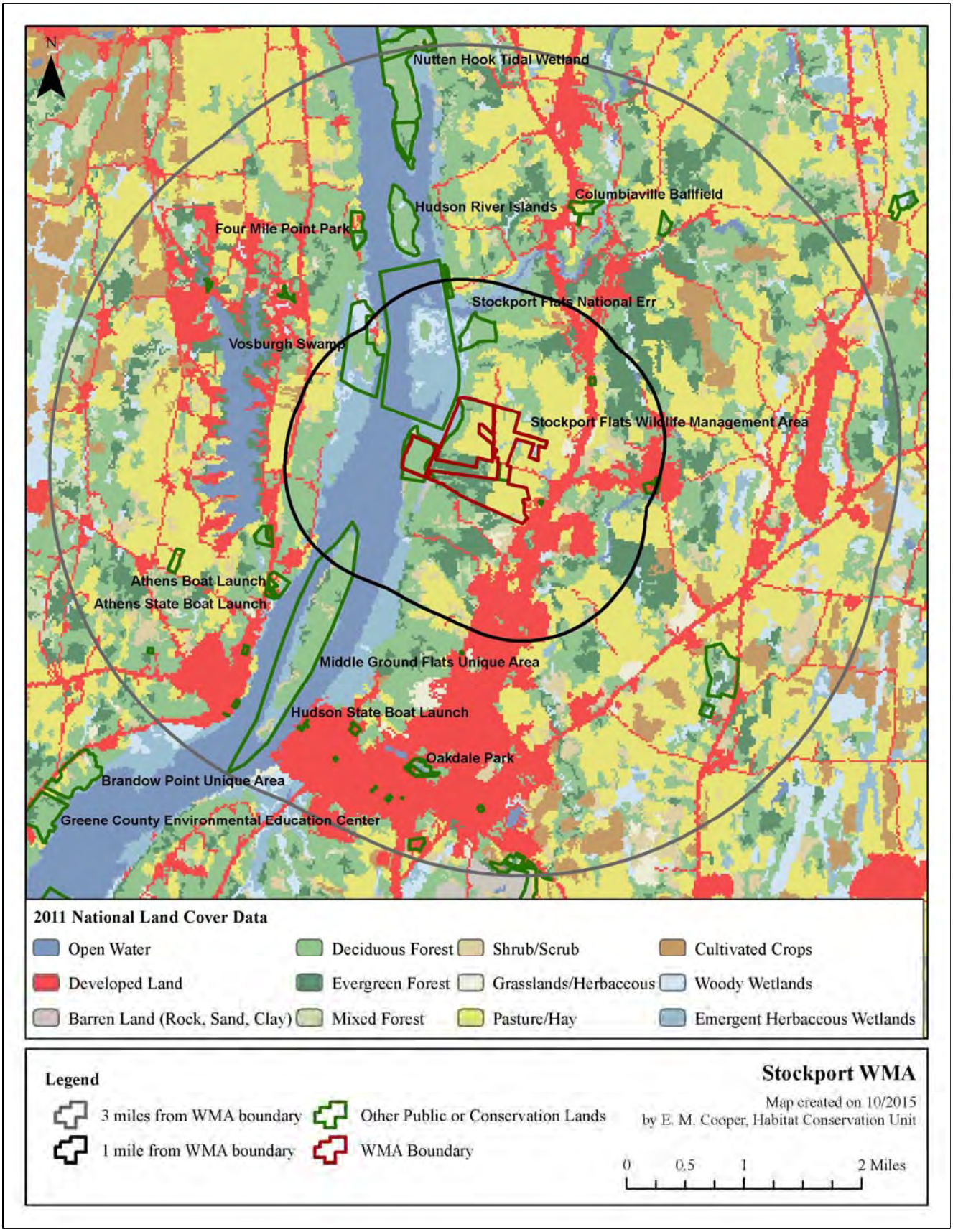

FIGURE 5. Land cover types and conservation lands in the landscape surrounding Stockport WMA. Conservation lands are from the NY Protected Areas Database available online at http://www.nypad.org/. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at http://www.mrlc.gov/nlcd2011.php.

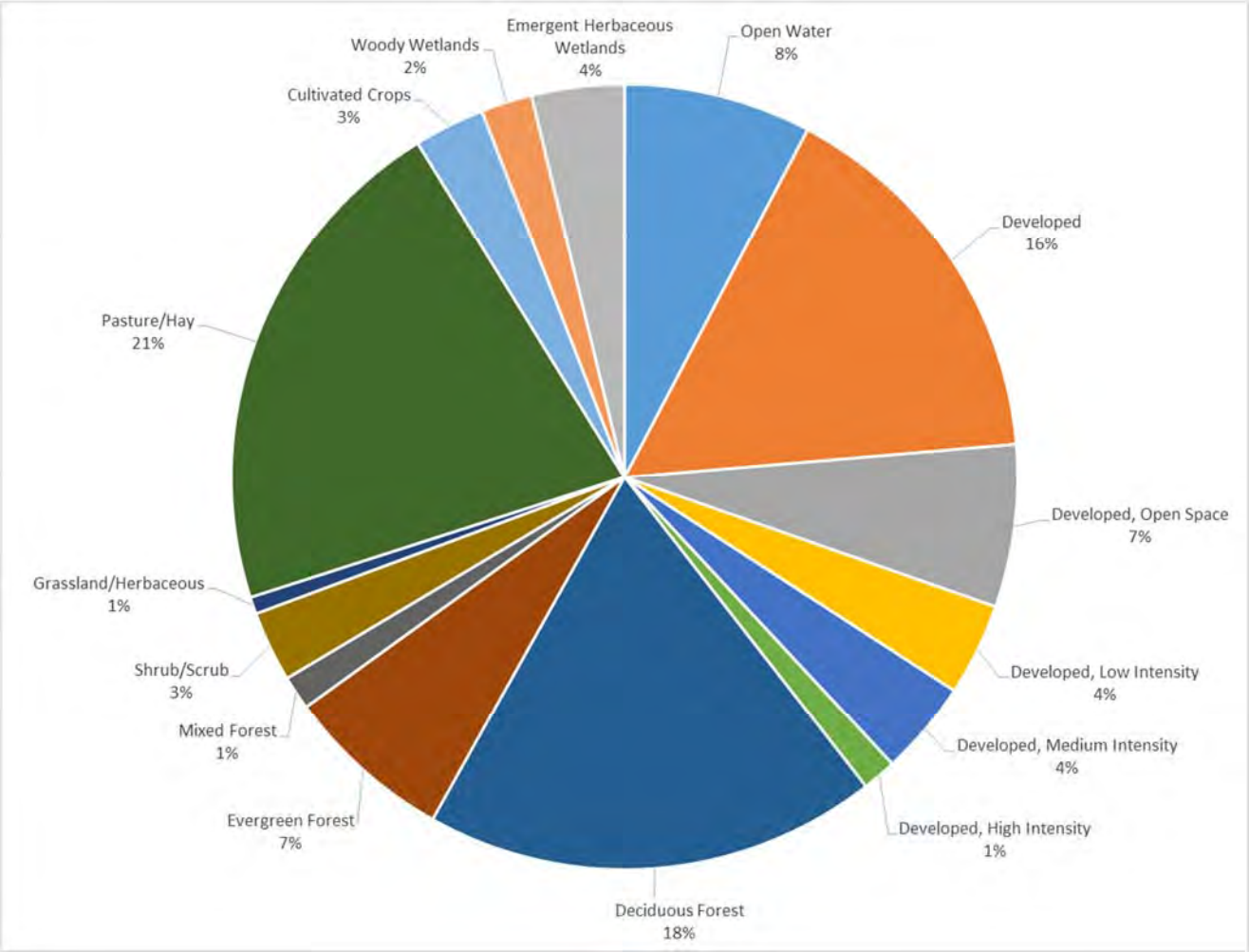

FIGURE 6. Percent cover of land cover types within three miles of Stockport WMA.

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.

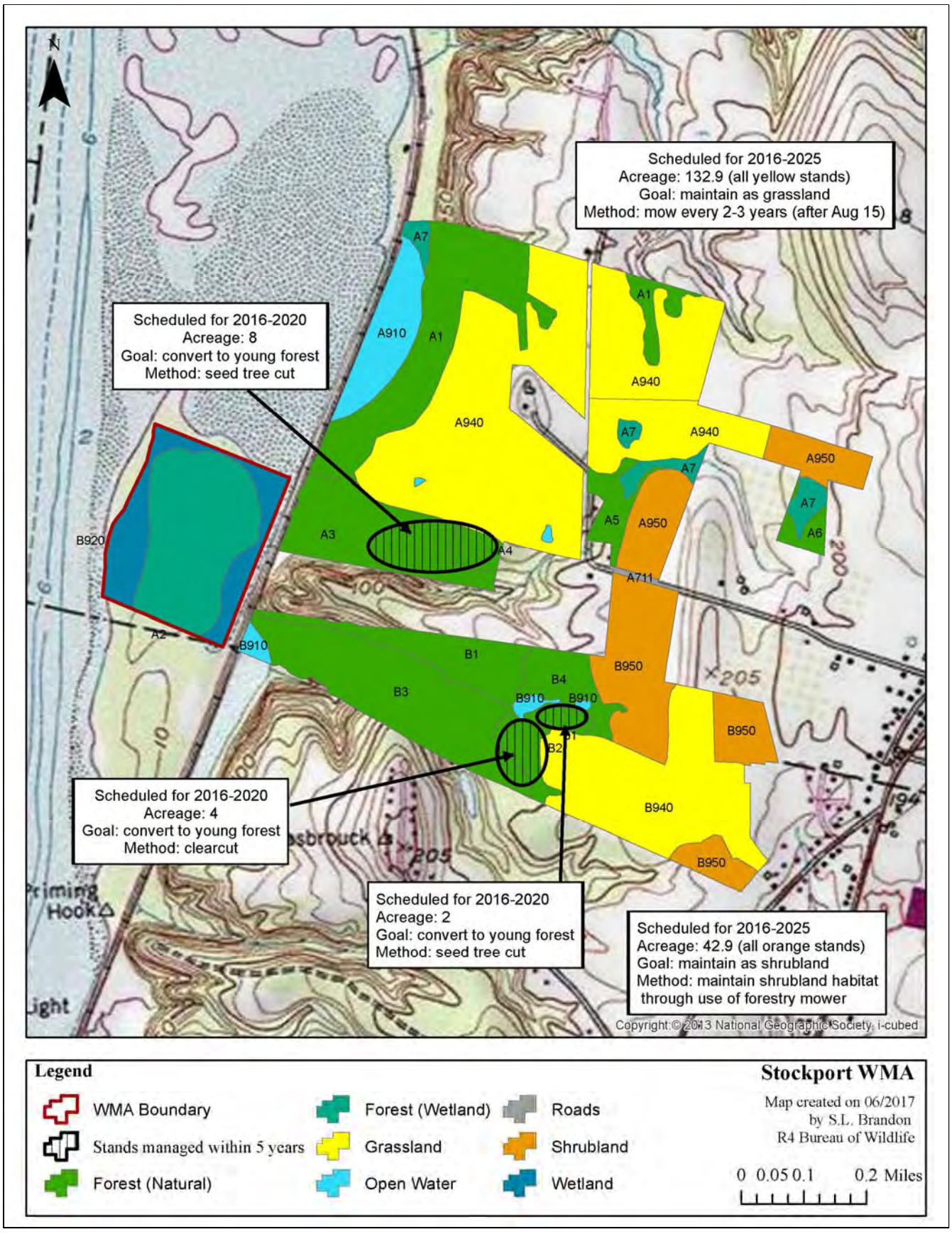

FIGURE 7. Habitat types and locations of proposed management on Stockport WMA. Numbers indicate the stand number from habitat inventory.

IV. APPENDICES

APPENDIX A: DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

Hudson River National Estuarine Research Reserve: Encompasses about 5,000 acres of freshwater and brackish tidal wetlands and uplands distributed at four sites that span the middle 100 miles of the Hudson River. The HRNERR is operated as field laboratories for estuarine research, stewardship and education. The Reserve is operated as a partnership between the New York State Department of Environmental Conservation and the National Oceanic and Atmospheric Administration (NOAA).

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 Stockport WMA include wild turkey, American woodcock, and white-tailed deer.

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

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

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

(a) lands and submerged lands commonly called marshes, swamps, sloughs, bogs, and flats supporting aquatic or semi-aquatic vegetation of the following types: wetland trees, wetland shrubs, emergent vegetation, rooted, floating-leaved vegetation, free-floating vegetation, wet meadow vegetation, bog mat vegetation, and submergent vegetation;
(b) lands and submerged lands containing remnants of any vegetation that is not aquatic or semi-aquatic that has died because of wet conditions over a sufficiently long period, provided that such wet conditions do not exceed a maximum seasonal water depth of six feet and provided further that such conditions can be expected to persist indefinitely, barring human intervention;
(c) lands and waters substantially enclosed by aquatic or semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semi-aquatic vegetation as set forth in paragraph (a) or by dead vegetation as set forth in paragraph (b) the regulation of which is necessary to protect and preserve the aquatic and semi-aquatic vegetation; and
(d) the waters overlying the areas set forth in (a) and (b) and the lands underlying."

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

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

Young Forest: Forests that result from a regeneration cut, typically having a dense understory where tree seedlings, saplings, woody vines, shrubs, and herbaceous vegetation grow together. Young forests are typically 0-10 years old.

(Adapted from www.youngforest.org). It is acknowledged that “young forests” will differ in their character in different ecological areas of the state and that 0-10 years is a continuum into more mature forest types. (Refer to: A DEC Strategic Plan for Implementing the Young Forest Initiative on Wildlife Management Areas 2015-2020)

APPENDIX B. STATEMENT OF CONFORMITY WITH SEQRA

Habitat Management Plans will be in compliance with the 1979 *Programmatic Environmental Impact Statement on Habitat Management Activities of the Department of Environmental Conservation; Division of Fish and Wildlife* by following the criteria for site specific assessments included in this Programmatic Environmental Impact Statement (EIS) and by discussing further in Appendix B, Statement of Conformity with the State Environmental Quality Review Act (SEQRA). Appendix B will be included in each plan, thereby satisfying overall compliance with 6 NYCRR Part 617, the State Environmental Quality Review. If any of these criteria are exceeded an additional site specific environmental review will be required.

Most activities recommended in this HMP are a continuation of habitat management that DEC routinely conducts under the Programmatic EIS. Beginning in 2015, DEC's Young Forest Initiative (YFI) will considerably increase forest management on Wildlife Management Areas (WMA); YFI's conformity with SEQRA is specifically addressed below. The overarching goal of the YFI is to restore and maintain young forest habitat on WMAs in order to address the declining amount of young forest habitat in the state and provide habitat for key species of conservation interest, including both at-risk and game species. The habitat management activities to be carried out under the YFI are in compliance with the above referenced document and these management activities:

- Will not adversely affect threatened or endangered plants or animals or their habitat.
    - Careful review of the NY Natural Heritage Program's "Natural Heritage Element Occurrence" database in conjunction with a field survey when necessary prior to management activities taking place allows field staff to assess the presence or absence of threatened and endangered species. Appropriate actions will be taken if a threatened or endangered plant or animal is encountered in the project area including, but not limited to: establishing adequate buffer zones around known occurrences, moving the project area, or aborting the project altogether.
- Will not induce or accelerate significant change in land use.
    - The forestland affected by the YFI will be regenerated and remain forested land, therefore no land use change will take place.
- Will not induce significant change in ambient air, soil, or water quality.
    - All projects carried out under the YFI will protect air, soil and water quality through careful project planning, use of appropriate NYS Best Management Practices for Water Quality, and establishment of Special Management Zones around sensitive land and water features requiring special consideration.
- Will not conflict with established plans or policies of other state or federal agencies.
    - YFI projects will follow established plans or policies of other state and federal agencies. Additionally, all YFI projects will be in compliance with all relevant US Fish and Wildlife Service rules and regulations.
- Will not induce significant change in public attraction or use.
    - The WMA program is part of a long term effort to establish permanent access to lands in New York State for the protection and promotion of its fish and wildlife resources. Projects carried out under the YFI will continue to protect, promote and maintain public access to WMAs and their wildlife resources.
- Will not significantly deviate from effects of natural processes which formed or maintain area.
    - Habitat management projects under the YFI will be carried out primarily through even-aged forest management. Even-aged silvicultural systems are designed to mimic natural disturbances, such as flooding, wildfire, insect and disease outbreaks and storm damage often found in nature.
- Will not result in areas of significantly different character or ecological processes.
    - The even-aged silvicultural techniques that will be employed for habitat management projects under the YFI intentionally result in areas of different character and ecological processes. However, they are not considered significant as they are ephemeral or transitional and will not permanently alter the landscape.
- Will not affect important known historical or archeological sites.
    - Each YFI project will be reviewed by DEC's State Historic Preservation Officer (SHPO) as well as the Office of Parks, Recreation and Historic Preservation (OPRHP) to determine whether

project sites may potentially affect any historical or archeological sites. In addition, thorough field review prior to management activities taking place allows field staff to assess the presence or absence of any apparent historical or archeological sites that may not be found during the review process. Should known important historical or archeological sites present themselves necessary actions will be taken to protect these resources under the direction of DEC's SHPO and the OPRHP Archaeology Unit staff.

- Will not involve the application of herbicides, pesticides or other such chemicals.
    - YFI projects may involve the judicious use of pesticides which may be necessary to control invasive species, to protect rare and endangered plants from competition, or to control vegetation interfering with forest regeneration. If projects do require the use of herbicides or pesticides an additional site-specific environmental review will be required.
- Will not stimulate significant public controversy.
    - It is not anticipated that YFI projects will stimulate significant public controversy. A significant amount of public outreach and notification will be conducted on an on-going basis as well as prior to projects being implemented on the ground including, but not limited to: public information sessions regarding the Habitat Management Plans for each WMA, signage installation at project sites informing the public of the scope and purpose of the project, establishment of one demonstration area in each region to showcase YFI management techniques to the public, periodic informational articles published in local media outlets and the development of a public YFI website. The YFI has one full time position dedicated to facilitating the program's public outreach and communication efforts.

APPENDIX C: FOREST MANAGEMENT PRESCRIPTIONS

PRESCRIPTION FOR WILDLIFE MANAGEMENT AREA TIMBER HARVEST

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

Species composition:

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

Stand inventory or analysis date:

Regeneration data:

Natural Heritage Element Occurrence layer review:

SMZ layer review:

Retention data:

Soil types and drainage:

Interfering vegetation:

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

Technical guidance/stocking guide:

Treatment purpose:

Management Objective: Even aged or Uneven Aged

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

Clearcut acreage and configuration: (if applicable)

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

Retention considerations and adjustments:

Treatment descriptions:

Name and Title of Preparer:

Central Office Lands and Forests Staff **Date**

Regional Wildlife Manager **Date**

PRESCRIPTION NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX D: AMENDMENTS

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

PRESCRIPTIONS

Silvicultural prescriptions provide a detailed approach for each forest management area (see Appendix C). For additional information about the prescriptions listed below, please contact Ben Peters or Mike Echtner, senior foresters, at (607) 652-7367. The following prescriptions have been prepared for Stockport WMA:

Prescriptions approved as of June 21, 2017:

- Stand A-3
  Approximately 5 acre seed tree harvest for wild turkey, American woodcock and white-tailed deer.
- Stand A-4
  Approximately 3 acre seed tree harvest for wild turkey, American woodcock and white-tailed deer.
- Stand B-1
  2.1 acre seed tree harvest and invasive removal for wild turkey, American woodcock and white-tailed deer.
- Stand B-2
  Approximately 4 acre clearcut and invasive removal for wild turkey, American woodcock and white-tailed deer.

REVISIONS

Revisions made on June 21, 2017:

In 2017, the land manager, regional manager and diversity staff determined that 42.9 acres of grassland would be allowed to revert to shrubland. Previously there was no shrubland habitat acreage within the WMA. This determination was made based on the size of the fields, fragmentation in relation to the higher quality grasslands and the presence of shrubland plant species already established within the fields. The addition of shrubland habitat within the WMA increases the habitat diversity and creates additional habitat for wildlife. A section of previously designated wetland was also changed to forested wetland. The addition/changes of habitat type caused WMA habitat type acreages to change.

References to the Hudson River National Estuarine Research Reserve (HRNERR) were also added to the HMP. The extreme western portion of the WMA lies within the boundary for the HRNERR and that portion of the WMA is managed jointly between DEC and the HRNERR.

The changes listed above are referenced in the bulleted list below.

- Page 3
  - Description of Stockport WMA location was changed from “adjacent to” to

"included within" the HRNERR.
    - The following habitat goal percentages have changed:
        - Mature forest- 34.9% to 38.3%
        - Grassland- 50% to 37.5%
        - Shrubland- 0% to 12.1%
        - Wetland- 5.7% to 4%
        - Roads- 1.6% to 0.2%
- Table 1 (Page 5)
    - Current Conditions (as of 2017) acreage and percentage changes
        - Acres
            - Forest- 137.6- to 149.8
            - Shrubland- 0 to 42.9
            - Grassland- 177.1 to 132.9
            - Wetland- 20.3 to 14.3
            - Roads- 5.5 to 0.6
        - Percent of WMA
            - Forest- 38.8% to 42.3%
            - Grassland- 50% to 37.5%
            - Shrubland- 0% to 12.1%
            - Wetland- 5.7% to 4%
            - Roads- 1.6% to 0.2%
    - Desired Conditions acreage and percentage changes
        - Acres
            - Forest- 123.6 to 135.8
            - Shrubland- 0 to 42.9
            - Grassland- 177.1 to 132.9
            - Wetland- 20.3 to 14.3
            - Roads- 5.5 to 0.6
        - Percent of WMA
            - Forest- 34.9% to 38.3%
- Page 9
    - Acreage was changed for Vosburgh Swamp WMA from 290 to 311.
    - Acreage was changed for the Stockport Flats site of the HRNERR from 472 to 1543.
    - Hudson River Islands was changed to Hudson River Islands State Park
    - A footer was added to provide a website link for additional information on the HRNERR.
- Page 10
    - Existing forest acreage at Stockport WMA was changed from 123.6 to 149.8.
    - The percent of young forest out of the forested acreage on the WMA was changed from 10.2% to 9.3%.
    - Justification was added to explain why young forest acreage is now below 10%.
- Table 3 (Page 11)
    - Acres (as of 2015)
        - Natural forest acreage changed from 110.5 to 116.3

        - Forested wetland acreage increased from 27.1 to 33.5
            - 6.4 acres of habitat previously designated as wetland was changed to forested wetland.
        - Total forested acreage changed from 137.6 to 149.8
    - Desired Acres
        - Natural forest acreage changed from 96.5 to 102.3
        - Forested wetland acreage increased from 27.1 to 33.5
        - Total forested acreage changed from 137.6 to 149.8
- Page 13
    - Monitor and control invasives was added under Management Planned for 2021-2025.
- Page 15
    - A shrubland section was added to the HMP.
- Page 16
    - Management Objectives
        - The acreage of grassland habitat was decreased from 177.1 to 132.9.
- Page 17
    - Description of Existing Habitat
        - This paragraph was changed to reflect the removal of shrubland habitat from the grassland acreage and describe the increase in quality of the remaining grassland fields.
        - The acreage of grassland habitat was decreased from 177.1 to 132.9.
    - Implementation Plan and Schedule
        - The acreage of grassland habitat was decreased from 177.1 to 132.9.
        - The following bullet was added to the schedule: “Improve fields by removing three small islands of trees and larger trees within hedgerows and grasslands, to provide continuity between fields. Removal of trees will be limited to winter months for protected bat concerns.”
- Page 19
    - Management Objectives
        - Wetland acreage was changed from 20.3 to 14.3.
    - Description of Existing Wetland Habitat and Target Species
        - The following sentence was added “This wetland is within the Hudson River National Estuarine Research Reserve boundary.”
- Table 7 (Page 21-22)
    - The table was updated to reflect the acreage/management changes to the forest, grassland, shrubland and wetland sections.
- Figure 1 (Page 23)
    - The HRNERR boundary was added to the Stockport WMA map.
- Figure 2 (Page 24)
    - A map of the HRNERR was added. All subsequent figures were renumbered.
- Figure 7 (Page 29)
    - This map was updated to reflect the acreage/management changes to the forest, grassland, shrubland and wetland sections.