Habitat Management Plan for
Clear Lake Wildlife Management Area
2021 – 2030

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| Summary | ................................................................. | 3 |
| I. BACKGROUND AND INTRODUCTION | ................................................................. | 3 |
| PURPOSE OF HABITAT MANAGEMENT PLANS | ................................................................. | 3 |
| WMA OVERVIEW | ................................................................. | 4 |
| LANDSCAPE CONTEXT | ................................................................. | 8 |
| II. MANAGEMENT STRATEGIES BY HABITAT TYPE | ................................................................. | 10 |
| FOREST | ................................................................. | 10 |
| SHRUBLAND | ................................................................. | 16 |
| GRASSLAND AND OTHER OPEN SPACE | ................................................................. | 18 |
| AGRICULTURAL LAND | ................................................................. | 21 |
| WETLANDS (NATURAL AND IMPOUNDED) | ................................................................. | 22 |
| OPEN WATER (WATERBODIES AND WATERCOURSES) | ................................................................. | 23 |
| III. FIGURES | ................................................................. | 27 |
| IV. APPENDICES | ................................................................. | 33 |
| APPENDIX A: DEFINITIONS | ................................................................. | 33 |
| APPENDIX B: COMPLIANCE WITH STATE ENVIRONMENTAL QUALITY REVIEW | ................................................................. | 36 |
| APPENDIX C: FOREST MANAGEMENT PRESCRIPTIONS | ................................................................. | 37 |
| APPENDIX D: AMENDMENTS | ................................................................. | 40 |

**LIST OF FIGURES**

Figure 1. Location and access features at Clear Lake WMA. ................................................................. 27
Figure 2. Significant ecological communities on Clear Lake WMA. ................................................................. 28
Figure 3. Wetlands, open water, and streams of Clear Lake WMA. ................................................................. 29
Figure 4. Land cover types and conservation lands in the landscape surrounding Clear Lake WMA. ................................................................. 30
Figure 5. Percent cover of land cover types within three miles of Clear Lake WMA. ................................................................. 31
Figure 6. Habitat types and location(s) of proposed management on Clear Lake WMA. ................................................................. 32
SUMMARY

Clear Lake Wildlife Management Area (WMA) is 526.8 acres and exhibits a variety of habitat types, including a 50.6-acre lake. The WMA is in the southcentral portion of Erie County in the Town of North Collins. In April 2020, The New York State Office of Mental Health (OMH) transferred the ownership of the Clear Lake property to DEC to be managed as a WMA. The lake was a reservoir constructed in the 1920s as a water source for the former Gowanda Psychiatric Center and was later used by the Collins Correctional Facility for the same purpose.

Habitat management goals for Clear Lake WMA include:

- Increase young forest acreage to 42.6 acres (12% of the total forested acreage) to provide high stem density habitat for ruffed grouse and American woodcock;
- Manage 6.5% as shrubland habitat;
- Manage 59.1% as intermediate and mature forest, including forested wetland, to provide habitat and hard mast for a variety of wildlife species including cavity nesters;
- Manage approximately 13.9% of the WMA as grassland to provide habitat for grassland-dependent species and waterfowl nesting;
- Manage 2.3% as natural wetlands; and
- Manage 9.6% as open water including maintaining water control structures, dikes, spillways, and berms on Clear Lake; provide aquatic habitat for waterfowl, reptiles, and amphibians; and resting habitat for birds during spring and fall migration.

I. BACKGROUND AND INTRODUCTION

PURPOSE OF HABITAT MANAGEMENT PLANS

BACKGROUND

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

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

**SCOPE AND INTENT**

Primary purposes of this document:

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

Within the next 5 years, this HMP will be integrated into a comprehensive WMA/MUA Management Plan that will include management provisions for facilitating compatible wildlife-dependent recreation, access, and facility development and maintenance. Definitions are provided in Appendix A.

The effects of climate change and the need to facilitate habitat adaptability and resilience under projected future conditions will be considered during the habitat management planning process and in any actions that are recommended in HMPs. Changing conditions that may affect habitat composition include warmer temperatures, milder winters, longer growing seasons, increased pressure from invasive species, more frequent intense storms, and moisture stress. It is also important to consider landscape-level effects to maintain the connectedness of habitats to allow range adjustments of both plant and wildlife species.

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

**WMA OVERVIEW**

**LOCATION**

Clear Lake Wildlife Management Area is located in DEC Region 9, Town of North Collins, Erie County (Figure 1).

**TOTAL AREA**

526.8 acres
Habitat Inventory

A habitat inventory of the WMA was conducted in 2021 and is proposed to be updated every ten to fifteen years to document the existing acreage of each habitat type and to help determine the location and extent of future management actions. Table 1 summarizes the current acreage by habitat type and the desired acreage after management. Desired conditions were determined with consideration of habitat requirements of targeted wildlife, current conditions on the WMA, and conditions in the surrounding landscape (see Landscape Context section below).

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

<table>
<thead>
<tr>
<th>Habitat Type</th>
<th>Current Conditions (as of 2021)</th>
<th>Desired Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acres</td>
<td>Percent of WMA</td>
</tr>
<tr>
<td>Forest a</td>
<td>375.1</td>
<td>71.2%</td>
</tr>
<tr>
<td>Young forest</td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Shrubland</td>
<td>13.2</td>
<td>2.5%</td>
</tr>
<tr>
<td>Grassland</td>
<td>73.0</td>
<td>13.9%</td>
</tr>
<tr>
<td>Agricultural land b</td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Wetland (natural) b</td>
<td>12.0</td>
<td>2.3%</td>
</tr>
<tr>
<td>Open water</td>
<td>50.6</td>
<td>9.6%</td>
</tr>
<tr>
<td>Other (Parking lot)</td>
<td>2.9</td>
<td>0.55%</td>
</tr>
<tr>
<td>Other (Utilities)</td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Roads</td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Rivers and streams</td>
<td>50.6</td>
<td>9.6%</td>
</tr>
<tr>
<td>Total Acres:</td>
<td>526.8</td>
<td>100%</td>
</tr>
</tbody>
</table>

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 Clear Lake WMA include species commonly found on the Appalachian Plateau region of western New York such as:
- White-tailed deer, red fox, eastern coyote
- Beaver, raccoon, woodchuck, fisher, muskrat
- Ruffed grouse, American woodcock, wild turkey, American crow, blue jay, Northern harrier
- Wood duck, mallard, Canada goose, hooded merganser
- Eastern American toad, spring peeper, wood frog
- Snapping turtle, painted turtle, Eastern garter snake

Wildlife and Plant Species of Conservation Concern:
The following federal or state listed Endangered (E), Threatened (T), or Special Concern (SC)
species and/or SGCN may occur on the WMA (Table 2). 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, NY Reptile and Amphibian Atlas, DEC wildlife surveys and monitoring, and eBird.

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

<table>
<thead>
<tr>
<th>Species Group</th>
<th>Species</th>
<th>Federal Status</th>
<th>NY Status</th>
<th>NY SGCN Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds</td>
<td>American woodcock</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>American kestrel</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bald Eagle</td>
<td>T</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Black-billed cuckoo</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blue-winged warbler</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bobolink</td>
<td></td>
<td>HP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brown thrasher</td>
<td></td>
<td>HP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eastern meadowlark</td>
<td></td>
<td>HP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Horned lark</td>
<td></td>
<td>HP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Louisiana waterthrush</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Northern harrier</td>
<td>T</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Osprey</td>
<td>SC</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Red-shouldered hawk</td>
<td>SC</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Ruffed grouse</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scarlet tanager</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wood thrush</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Amphibians and reptiles</td>
<td>Snapping turtle</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Mammals</td>
<td>None known</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>None known</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invertebrates</td>
<td>None known</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plants</td>
<td>None known</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2 Available online at https://www.dec.ny.gov/animals/7312.html.
3 Available online at https://www.dec.ny.gov/animals/7140.html.
4 Available online at https://ebird.org/content/ebird/about. © Audubon and Cornell Lab of Ornithology.
**Significant Ecological Communities:**
There are roughly 13 ecological communities present on Clear Lake WMA, none of which are classified as significant natural communities. The state rank reflects the rarity within NY, ranging from S1, considered the rarest, to S5, considered stable; definitions are provided in Appendix A. The following significant ecological communities occur on the WMA; community descriptions are from *Ecological Communities of New York State, Second Edition* ⁵ (Figure 2):

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

**Soils:**
Clear Lake WMA is composed of a Volusia-Mardin-Lordstown soil series group. These soils are moderately deep to very deep and range from somewhat poorly drained to well drained. They are made from loamy and sandstone/siltstone tills common of glaciated upland plateaus. Volusia and Mardin each have a dense fragipan at 10-22 inches and 14-26 inches, respectively. These soils are suitable for a wide range of tree species, including northern hardwoods, oaks, hemlock, and white pine.

**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 Clear Lake WMA include:
- Clear Lake with an A Classification.
- Currently, there are no mapped state-regulated wetlands on the WMA (Figure 3). However, there appears to be wetlands that may meet DEC criteria (>12.4-acre threshold) on a portion of the WMA and extending onto private land. Should further review in the future conclude that mapping criteria has been met, those areas may become regulated pursuant to Article 24 of the NYS Freshwater Wetland Law (including a 100-foot adjacent area). The National Wetlands Inventory (NWI) maps show wetland acreage separate from state regulated wetlands due to a difference in mapping criteria. Several forested/shrub and emergent wetlands are noted along with open water and riverine habitats. There may be forestry prescriptions associated with forested wetlands and each management prescription will be reviewed individually for determination of impacts.
- Six streams (a watercourse entirely within the WMA) or segments of streams (a stream that meanders in and out of the WMA). Clear Lake and the six tributaries that flow into the lake have an A Classification⁶. Classification A is assigned for waters used as a drinking supply, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The waters shall be suitable for fish, shellfish, and wildlife propagation and survival.


⁶ Information about stream classification is available online at [https://www.dec.ny.gov/permits/6042.html](https://www.dec.ny.gov/permits/6042.html).
• Vernal pools and spring seeps exist on the WMA. Management activities will follow 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. 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 Clear Lake WMA (Figures 4 and 5). The landscape within a three-mile radius of the WMA is primarily privately-owned land including:

- Pasture/Hay (29.6%)
- Cultivated crops (23.6%)
- Deciduous forest (17.1%)
- Mixed forest (13.1%)
- Evergreen forest (7.0%)
- Developed (4.9%)
- Wetlands (includes emergent herbaceous and woody wetlands) (3.9%)
- Open water (0.5%)
- Shrub/Scrub (0.2%)
- Grasslands (0.1%)

Two properties managed by the DEC’s Division of Lands and Forest are located 7.5 and 8 miles to the south of Clear Lake WMA:

- Zoar Valley Multiple Use Area (MUA) – 3,014 acres
- East Otto State Forest – 1,354 acres

Within Zoar Valley MUA, a separate land management area, known as the "unique area", has been designated. Zoar Valley Unique Area is comprised of the gorge and a buffer area along the rim of the gorge. Management within the “unique area” is minimal and involves annual mowing of the existing grasslands, planting of wildlife shrubs, utility right of way maintenance and the administration of public safety concerns.

The remaining hardwood and softwood stands of these state forests are managed through a suite of silvicultural practices specifically applied with regard to existing conditions and desired outcomes. The conifer stands of pine and spruce were planted in old farm fields by the Civilian Conservation Corps to prevent soil erosion on abandoned farmland. They are usually managed.

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7 Available online at [https://www.dec.ny.gov/outdoor/104218.html](https://www.dec.ny.gov/outdoor/104218.html).
by a series of partial harvest thinnings, which provide openings for sunlight to encourage natural regeneration of native hardwoods. The removal of the conifer overstory in the final harvest allows the hardwood seedlings to grow to maturity. Hardwood stands are also thinned via selective cuts providing more growing space for residual trees, improving forest health, and creating openings for seed germination and seedling growth. When regeneration is determined to be adequate, the remaining overstory trees are then harvested. Removal of the overstory allows ample sunlight to reach the forest floor stimulating seedling growth.

Two additional Wildlife Management Areas are located 9.5 and 19 miles, respectively, to the north of the Clear Lake and include:

- Hampton Brook Woods WMA – 77 acres; 9.5 miles north
- Cazenovia Creek WMA – 127 acres; 19 miles north

HMPs for these two smaller WMAs have not been completed. Due to the smaller acreages, topographic restrictions and urban setting of these two WMAs, management will be limited. Clear Lake WMA consists primarily of upland forest and the reservoir, with smaller acreages of grasslands, shrubland, and wetlands. A much larger percentage of young forest acreage will be created with regards to the overall forested acreage.

Several properties managed by the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) are relatively close to the WMA and include:

- Evangola State Park – 743 acres; 11.5 miles west
- Woodlawn Beach State Park – 101 acres; 15 miles north
- Knox Farm State Park – 667 acres; 16.9 miles northeast
- Buffalo Harbor State Park – 189 acres; 19 miles north

Minimal habitat management occurs at these parks. Forest management in general, and specifically young forest management, are not priorities at these suburban and urban parks. Evangola, Woodlawn Beach, and Buffalo Harbor are situated on the shore of Lake Erie with management centered around the extensive beach areas.

The remaining property surrounding Clear Lake WMA is in private ownership. Private landowners generally follow a diameter-limit management or uneven-aged management strategy that is primarily income driven. This achieves an immediate economic gain with the harvest but does not create young forest as described in DEC’s Young Forest Initiative Strategic Plan. A goal at Clear Lake is to create young forest habitat on the WMA using even-aged management (e.g., clearcuts) as the primary management technique to benefit the target species of the WMA. A minimum of 12% of the forested acreage on the WMA will be maintained in a young forest stage.

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8 Additional information about DEC’s Young Forest Initiative and the YFI Strategic Plan is available online at [https://www.dec.ny.gov/outdoor/104218.html](https://www.dec.ny.gov/outdoor/104218.html).
II. MANAGEMENT STRATEGIES BY HABITAT TYPE

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

- Maintain habitat characteristics that will benefit wildlife abundance and diversity within the New York landscape.
- 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 Clear Lake 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 young forest acreage from an existing 0 acres to approximately 42.6 acres intended to improve habitat for young forest target species, specifically ruffed grouse and American woodcock.

**DESCRIPTION OF EXISTING FOREST HABITAT AND TARGET SPECIES**

Clear Lake WMA contains 375.1 acres of forested habitat (Figure 6). Most of the forested stands are Norway spruce plantations, ranging in size from poletimber to sawtimber. The natural stands on the property include softwood stands of Eastern hemlock or white pine and hardwood stands consisting of black cherry, maples, white ash, American beech, and tulip poplar. Clear Lake WMA is composed of one compartment to aid in management purposes. Major challenges to forestry management include access due to hydrology and extensive public use. Due to safety concerns, management projects could result in temporary closures of access points on the property. Normal access will resume once habitat work is completed. Table 3 provides a summary of the current and desired forest types for Clear Lake WMA.

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

<table>
<thead>
<tr>
<th>Forest Type</th>
<th>Acres (as of 2021)</th>
<th>Desired Acres</th>
<th>Overstory species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural forest (mature/intermediate)</td>
<td>169.7</td>
<td>169.7</td>
<td>Black cherry, sugar maple, American beech</td>
</tr>
<tr>
<td>Plantation</td>
<td>205.4</td>
<td>141.7</td>
<td>Norway spruce, red pine, scotch pine</td>
</tr>
<tr>
<td>Forsted wetland</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Young forest</td>
<td>0</td>
<td>42.6</td>
<td></td>
</tr>
<tr>
<td>Young forest (forested wetland)</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Forested Acres:</strong></td>
<td><strong>375.1</strong></td>
<td><strong>354</strong> a</td>
<td></td>
</tr>
</tbody>
</table>

*a Change in total forested acres is due to the conversion of forest to shrubland habitat (21.1 acres).

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

- **Ruffed Grouse Habitat Requirements:**
  - Drumming areas – Downed trees surrounded by small diameter woody cover.
  - Foraging – Open areas with dense overhead cover of young forest with good mast production.
  - Nesting – Young open forest stands or second growth woodlands.

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9 Additional information about DEC’s Young Forest Initiative and the YFI Strategic Plan is available online at [https://www.dec.ny.gov/outdoor/104218.html](https://www.dec.ny.gov/outdoor/104218.html).
Brood rearing – Herbaceous ground cover with a high midstory stem density.  

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

**Management History**
Limited forest management has taken place on Clear Lake WMA and no specific young forest habitat has been created.

**Implementation Plan and Anticipated Schedule**
The following management is proposed in order to reach the goal of 42.6 acres of young forest habitat or approximately 12% young forest habitat of the total forest acreage within ten years:

- **Management planned for 2021-2025** (Table 4, Figure 6):
  - Clearcut the southern half of a Norway spruce stand in Stand 24 and patch clearcut Norway spruce in Stand 29 to create young forest habitat (15.5 acres).

- **Management planned for 2026-2030** (Table 5, Figure 6):
  - Clearcut a Norway spruce plantation in Stand 14 to regrow as shrubland habitat (21.1 acres).
  - Clearcut Norway spruce in Stands 36, 39, and 41 to create young forest habitat (15.3 acres).
  - Clearcut the northern half of Stand 24 and all of Stand 30 to create young forest habitat (11.8 acres).

Table 4. Forest management schedule for the first five-year period of this HMP (2021-2025).

<table>
<thead>
<tr>
<th>Stand</th>
<th>Acres</th>
<th>Size Class</th>
<th>Forest Type</th>
<th>Management Direction</th>
<th>Treatment Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Current</td>
<td>Future</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>9.1</td>
<td>Sawtimber</td>
<td>Plantation</td>
<td>Young Forest</td>
<td>Wildlife</td>
</tr>
<tr>
<td>29</td>
<td>6.4</td>
<td>Sawtimber</td>
<td>Plantation</td>
<td>Young Forest</td>
<td>Wildlife</td>
</tr>
</tbody>
</table>

Table 5. Forest management schedule for the second five-year period of this HMP (2026-2030).

<table>
<thead>
<tr>
<th>Stand</th>
<th>Acres</th>
<th>Size Class</th>
<th>Forest Type</th>
<th>Management Direction</th>
<th>Treatment Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Current</td>
<td>Future</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>21.1</td>
<td>Sawtimber</td>
<td>Plantation</td>
<td>Shrubland</td>
<td>Wildlife Clearcut</td>
</tr>
<tr>
<td>36</td>
<td>7.2</td>
<td>Sawtimber</td>
<td>Plantation</td>
<td>Young Forest</td>
<td>Wildlife Clearcut</td>
</tr>
<tr>
<td>39</td>
<td>4.6</td>
<td>Sawtimber</td>
<td>Plantation</td>
<td>Young Forest</td>
<td>Wildlife Clearcut</td>
</tr>
<tr>
<td>41</td>
<td>3.5</td>
<td>Sawtimber</td>
<td>Plantation</td>
<td>Young Forest</td>
<td>Wildlife Clearcut</td>
</tr>
<tr>
<td>24</td>
<td>9.1</td>
<td>Sawtimber</td>
<td>Plantation</td>
<td>Young Forest</td>
<td>Wildlife Patch Clearcut</td>
</tr>
<tr>
<td>30</td>
<td>2.7</td>
<td>Sawtimber</td>
<td>Plantation</td>
<td>Young Forest</td>
<td>Wildlife Clearcut</td>
</tr>
</tbody>
</table>

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

**Management for 2021-2025 (15.5 acres):**

**Plantation (15.5 acres):**

**Stand 24**

This mature Norway spruce plantation would better serve targeted wildlife species as young forest habitat. The forest canopy is too high off the forest floor to offer any cover or protection and the understory is void of any desired regeneration. It is also in an ideal location bordering Field 940 which will create a nice juxtaposition of early successional habitat. The southern half of the stand will be cut in combination with Stand 29.

**Stand 29**

This stand is also a Norway spruce plantation, very similar in status to Stand 24. It will be cleared at the same time as the southern half of Stand 24 to create a larger patch of young forest habitat.
Management for 2026-2030 (48.2 acres):

Plantation (48.2 acres)

Stand 14

This mature Norway spruce stand will be cleared to create shrubland habitat. The stand borders a field, a forested stand, and two wetland areas. This makes Stand 14 a prime location for habitat conversion to early successional habitat. Management will be further detailed in the Shrubland section below.

Stand 36

This small Norway spruce plantation will be cut as one part of a larger management treatment. This stand runs along a bench overlooking a small drainage. There is no desirable regeneration throughout the stand aside from sporadic Norway spruce saplings. This management will create an ideal juxtaposition of multiple young forest stands.

Stand 39

This small Norway spruce plantation will be cut as one part of a larger management treatment. This stand borders a field and runs along a bank above a drainage. It lacks any sort of desirable regeneration and will provide ideal habitat as young forest. Nearby aspen should readily spread to the cleared stand.

Stand 41

This small Norway spruce plantation will be cut as one part of a larger management treatment. This stand contains sign of old wind damage and contains a moderate amount of hardwood, especially black cherry. The understory contains ferns and little desirable regeneration.

Stand 24

The northern half of this stand will be cleared in conjunction with Stand 30. This will create new young forest cover that borders a field and approximately seven-year-old young forest habitat from previous management.

Stand 30

This Norway spruce plantation has similar stand characteristics as Stand 24. This management will create young forest habitat along a field and drainage, as well as next to other young forest habitat that was created from clearing the southern half
of Stand 24 and Stand 29. This will establish an ideal age gradient of early successional habitat.

**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.

<table>
<thead>
<tr>
<th>Resource</th>
<th>Guidance Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soils</td>
<td>Rutting Guidelines for Timber Harvesting on Wildlife Management Areas</td>
</tr>
<tr>
<td>Water quality</td>
<td>NYS Forestry Best Management Practices for Water Quality</td>
</tr>
<tr>
<td>Wildlife</td>
<td>Retention Guidance on Wildlife Management Areas</td>
</tr>
<tr>
<td>Plantations</td>
<td>Plantation Management Guidance on Wildlife Management Areas</td>
</tr>
</tbody>
</table>

**Wildlife Considerations:**

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

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

**Forest Health Considerations:**

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

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

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12 All guidance documents referenced here are available online at [https://www.dec.ny.gov/outdoor/104218.html](https://www.dec.ny.gov/outdoor/104218.html).
White-tailed deer herbivory varies across Clear Lake WMA and has been observed at high intensities in some of the forested stands. In areas where deer browse could pose a threat to desirable regeneration deer enclosures (natural or artificial) may be constructed to protect regeneration.

Common forest pests such as, hemlock woolly adelgid (HWA), Asian longhorned beetle (ALB), gypsy moth, or spotted lanternfly have not been observed on the WMA. Unfortunately, Emerald ash borer has been found throughout the property.

**Pre- and Post-treatment Considerations:**

Pre- and post-treatments occur at the stand level and aim to promote the regeneration of desired species. The establishment of desired regeneration is primarily achieved by reducing competing vegetation, exposing mineral soil, and improving the seedbed. Additionally, deer browse also greatly impacts the success of desired regeneration. Treatment actions are typically carried out through mechanical and/or chemical means. It should also be noted that certain ecological situations are best treated through a prescribed burning regimen.

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

**Management Evaluation**

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

- American woodcock
- Ruffed grouse

**Shrubland**

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

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**Management Objectives**

- Manage approximately 34.3 acres as shrubland habitat (6.5% of the WMA), providing habitat for a variety of shrubland dependent species. This is a combined acreage of 13.2 acres of wetland shrubland and 21.1 acres of upland shrubland.
- Convert 21.1 acres of plantation to shrubland.
- Brush piles for cottontail rabbit habitat will be constructed from the slash generated after tree removal.
- Maintain selected shrubland stands/partial stands via a forestry mower every 3-5 years or as necessary.
- Conduct apple tree releases as necessary.
- Invasive species monitoring will be conducted annually. Treatment of invasive species will occur as deemed necessary and as funding becomes available.
- Plantings of soft-mast shrubs and conifers in clumps will be considered.

**Description of Existing Shrubland Habitat and Target Species**

Currently 13.2 acres of shrubland exist on Clear Lake WMA composed of wetland shrubland species such as alder, red osier dogwood, silky dogwood, and elderberry. Species present in drier soil conditions include: crab apple, wild apple, honeysuckle, grey-stemmed dogwood, multi-flora rose, autumn olive, and sumac. These densely stemmed habitats provide foraging and escape cover for both young of year and adults of numerous wildlife species, including the YFI target species:

- American woodcock
- Ruffed grouse

Other species benefitting from this habitat type:

- Common yellowthroat
- black-billed cuckoo
- cottontail rabbits

**Management History**

Unknown.

**Implementation Plan and Anticipated Schedule**

- Management planned for 2026-2030 (Figure 6):
  - **Stand 14:** Convert entire stand to shrubland (21.1 acres) by clearcutting the stand. Slash from removed trees will be stacked to form brush piles scattered throughout the stand and along the stand boundary. Maintenance of the stand will be conducted with a forestry mower every 3 to 5 years or as necessary. Conifer clump plantings will be considered and incorporated into the stand.

Habitat management will include the following:
• **Stand 14:** Currently this 21.1 acre stand is a mixed conifer plantation. Slash from the removed trees will be stacked into brush piles forming habitat for rabbits and small rodents. Future planting of soft mast shrubs will be considered depending on the stand’s response to the overstory removal. Scattered conifer clump plantings will be strategically located to enhance escape cover and provide vital winter thermal cover.

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

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

**GRASSLAND AND OTHER OPEN SPACE**

Grasslands are open areas dominated by grasses and forbs, with less than 25% woody vegetation. Ideally, the forb component should not exceed 25% by area. Grasslands may contain shrubs and other woody vegetation, but not to the point beyond which maintenance would require significant brush cutting (i.e., not suitable for brush-hogging). Grasslands are open, grassy areas with a minimal amount of shrub and tree cover (<325%) that are maintained, or could be maintained, without significant brush cutting. Grasslands may include areas where hay is harvested by late season mowing once per year.

**MANAGEMENT OBJECTIVES**
- Maintain 73 acres of grassland and open areas (13.9 % of the WMA) to provide nesting and brooding habitat for a variety of wildlife species including bobolinks, woodcock, wild turkeys, and Eastern meadowlarks. These areas will also provide hunting opportunities during the fall pheasant hunting season from stocked pheasants.
- Maintain grasslands and smaller fields annually to suppress encroachment of woody vegetation.
- Periodically lime and fertilize the grasslands to enhance annual growth.
- Re-seed grasslands/fields to re-establish desirable species.
- Construct brush piles periodically along the perimeter of the grassy openings.
**DESCRIPTION OF EXISTING GRASSLAND HABITAT AND TARGET SPECIES**

Observations of the existing grasslands indicate some maintenance has occurred prior to acquisition. It appears stand 941 was mowed annually to reduce woody stem competition. Areas of conifer seedlings naturally occurring, and plantings of scattered conifers have been avoided. Stand 942 was a settling pond for the water treatment plant. The pond has since been filled in and converted to a grassland.

Species that benefit from grassland best management practices include:
- Eastern meadowlark
- Bobolink

**MANAGEMENT HISTORY**

Observations indicate some mowing was occurring in the grassland stands to prevent woody stems from establishing, however, the timing and frequency of this management is unknown.

**IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE**

- **Management planned for 2021-2030** (Figure 6):
  - **Stands 940 through 942:** Continue field maintenance following an annual mowing schedule.
  - All grasslands will be periodically limed and fertilized.
  - Construct brush piles periodically along field perimeter.

Habitat management will include the following:
- **Stands 940, 941, and 942:** The perimeter of stands will be mowed annually to suppressed woody vegetation encroachment.
• Strip mowing following a predetermined pattern will provide areas of uncut vegetation in the fields for the release of adult pheasants for the fall pheasant season.
• Hedgerows of desired shrubland species will be established separating stand 940 into thirds.

**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*. In particular, refer to the plan for species-specific habitat requirements and detailed recommendations regarding grassland management and restoration techniques.

**General Management Recommendations**

- Target management for grassland bird species known to be in the vicinity and consider the needs of both breeding and wintering grassland bird species.
- Consider the surrounding landscape when making management decisions.
- Conduct baseline grassland bird surveys on newly acquired fields or fields targeted for management changes to determine which species are present.
- Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large open fields.
- Control invasive plant species (honeysuckle, multiflora rose, Phragmites, etc.) to improve habitat quality.
- When developing grassland planting or habitat restoration projects, consider a variety of factors including the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing site conditions, and vegetation removal techniques (including herbicide and intensive disking).
- Utilize mowing, haying, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

**Timing of Management**

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

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management). In some cases, if nesting locations can be avoided, such as using spot treatment for invasive species, work can be done as long as any negative impacts to the species of concern are eliminated.

- Fields under 25 acres (including all contiguous fields) with no history of listed species:
  - Fields can be managed/mowed between April 23 and August 15 if necessary to accomplish other goals and priorities that benefit other species that use the habitat. If early management is proposed, then the habitat requirements and nesting periods of other species should be considered (e.g., nesting waterfowl, American bittern, reptiles, and amphibians).
- Wintering Restrictions: Avoid mowing and other management from November 1 to March 1 within fields over 25 acres (including all contiguous fields) and fields with a history of listed wintering raptors (regardless of field size). If management to improve habitat is planned during this time, conduct pre-treatment winter raptor surveys using established protocols to confirm there is no use by listed wintering raptors (short-eared owl and northern harrier). Other activities that cause excessive disturbance such as frequent high-speed snowmobile, ATV, motorized vehicle operation, or other loud noises should be avoided from November 1 to March 1, inclusive, for the protection of wintering raptors.

**Additional Mowing Guidelines**

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

**Management Evaluation**

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

**Agricultural Land**

Agricultural lands on WMAs include any acreage on which crops are grown, primarily areas that are under cooperative agreements or farming contracts, but also including wildlife food plots.
DESCRIPTION OF EXISTING AGRICULTURAL LANDS AND TARGET SPECIES
Clear Lake WMA does not contain any stands that are currently managed as agricultural land. Future management plans do not include adding agricultural fields to the existing habitat.

WETLANDS (NATURAL AND IMPOUNDED)

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

MANAGEMENT OBJECTIVES
• Maintain 12 acres of natural wetland as it currently exists.
• Maintain 13.2 acres of scrub-shrub wetlands; management objectives covered in the shrubland section of this HMP.
• Maintain natural hydrology and water quality on the WMA.
• Manage beaver and muskrat occupancy at levels that will not jeopardize the integrity of dikes and water control structures.
• Repair dikes, emergency spillways, and water control structures as needed.

DESCRIPTION OF EXISTING WETLAND HABITAT AND TARGET SPECIES
There are 12 acres of natural wetlands and 13.2 acres of scrub-shrub wetlands on Clear Lake WMA. The wetland acreage is a combination of small, shallow water areas, emergent aquatic vegetation, wet meadow, and scrub-shrub species.

The wetlands provide habitat for species such as:
• American woodcock
• Beaver, muskrat, mink
• Migratory waterfowl, shorebirds
• Wood frog, spring peeper, bull frog
• Snapping turtle, painted turtle, northern water snake

MANAGEMENT HISTORY
Unknown.

IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE
• Management planned for 2021-2030 (Figure 6):
  o Stand 930: Manage the 13.2-acre scrub-shrub wetland with a forestry mower or chainsaw to enhance the habitat for woodcock and other wetland dependent species. Maintain small irregular shaped openings within stand.
Habitat management will include the following:

- **Stand 930:** Maintain desirable habitat species through periodic cutting using a forestry mower or chainsaw depending on current soil and moisture conditions. Establish and maintain small irregular shaped openings to provide foraging opportunities for wetland dependent species such as woodcock.

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

**Management Evaluation**
None.

**Open Water (Waterbodies and Watercourses)**

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

**Management Objectives**

- Maintain the dike, berm, water control structures, and emergency spillway on Clear Lake.
- Manage beaver and muskrat occupancy at levels that will not jeopardize the integrity of the dike, berm, and water control structures.
- Protect water quality on all streams and segments of stream as management activities are conducted.
- Construct additional ponds as funding becomes available.

**Description of Existing Open Water Habitat and Target Species**
Clear Lake is a 50.6-acre freshwater impoundment with an A Classification. Once used as a drinking water reservoir for the Gowanda Psychiatric Center and later the Collins Correctional Facility, the lake now supports many recreational opportunities including fishing, waterfowl hunting, trapping, and bird observation. Surveys of fish species and populations are being conducted by the Region 9 DEC Fisheries Unit.
There are six streams and associated tributaries (approximately 1.96 miles) located on the WMA. The Clear Lake outlet serves as the headwaters of the North Branch of Clear Creek. All of the streams and tributaries immediately associated with Clear Lake have been given an A Classification.

**MANAGEMENT HISTORY**

The dike, water control structure and spillway of Clear Lake were rehabilitated to comply with current Division of Water regulations. The construction project was completed in 2019. The structures will be monitored by Wildlife staff and maintained by the Division of Operations.

**IMPLEMENTATION PLAN AND ANTICIPATED SCHEDULE**

- **Management planned for 2021-2030** (Figure 6):
  - Routine maintenance on the dike, berm, and water control structures including yearly inspections, annual mowing of the dike, berm, and monitoring of beaver and muskrat activity.
  - Initiate construction of additional ponds and vernal pools as funding becomes available. Potential locations for ponds include stand 940 and 941. Vernal pool construction would be best suited for stands 10, 11, and 13 which are adjacent to stand 921 (a wet meadow) and stand 930 (a shrubland wetland).

**BEST MANAGEMENT PRACTICES**

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

**Management Evaluation**

None.
Habitat Management Summary

In summary, Table 7 lists the habitat management actions planned for Clear Lake 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 Clear Lake WMA, 2021-2030. (Also see Figures 6.)

<table>
<thead>
<tr>
<th>Habitat</th>
<th>Management Action</th>
<th>Acres</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest</td>
<td>Clearcut softwoods in the southern half of Stand 24 and all of Stand 29 for young forest habitat.</td>
<td>15.5</td>
<td>2021-2025</td>
</tr>
<tr>
<td>Forest</td>
<td>Clearcut softwood plantations in Stands 36, 39, and 41 for young forest habitat.</td>
<td>15.3</td>
<td>2026-2030</td>
</tr>
<tr>
<td>Forest</td>
<td>Clearcut softwoods in the northern half of Stand 24 and all of Stand 30 for young forest habitat.</td>
<td>11.8</td>
<td>2026-2030</td>
</tr>
<tr>
<td>Shrubland</td>
<td>Convert Stand 14 from a softwood plantation into shrubland habitat.</td>
<td>21.1</td>
<td>2026-2030</td>
</tr>
<tr>
<td>Shrubland</td>
<td>Stand maintenance every 3-5 years or as deemed necessary.</td>
<td>-</td>
<td>2021-2030</td>
</tr>
<tr>
<td>Grassland</td>
<td>Annual field maintenance.</td>
<td>-</td>
<td>2021-2030</td>
</tr>
</tbody>
</table>
III. FIGURES

CLEAR LAKE
Wildlife Management Area

FIGURE 1. Location and access features at Clear Lake WMA.
Figure 2. Significant ecological communities on Clear Lake WMA. Data from the NY Natural Heritage Program.
Figure 3. Wetlands, open water, and streams of Clear Lake WMA. Note: Wetland boundaries are approximate and may not be used for regulatory purposes without a current delineation.
Figure 4. Land cover types and conservation lands in the landscape surrounding Clear Lake WMA. Conservation lands are from the NY Protected Areas Database available online at http://www.nypad.org/. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at https://www.mrlc.gov/data/legends/national-land-coverdatabase-2011-nlcd2011-legend.
Figure 5. Percent cover of land cover types within three miles of Clear Lake WMA.

Conservation lands are from the NY Protected Areas Database available online at http://www.nypad.org/. Land cover types are from the 2011 National Land Cover Data (NLCD) and differ from the habitat types used in the WMA habitat inventory. NLCD definitions are available online at https://www.mrlc.gov/data/legends/national-land-cover-database-2011-nlcd2011-legend.
Figure 6. Habitat types and location(s) of proposed management on Clear Lake WMA. Numbers indicate the stand number from habitat inventory.
IV. APPENDICES

APPENDIX A: DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

Landscape: A spatial mosaic of several ecosystems, landforms, and plant communities across a defined area irrespective of ownership or other artificial boundaries and repeated in similar form throughout.
**Mast:** The fruit of trees considered as food for wildlife. Hard mast is the fruits or nuts of trees such as oak, beech, walnut, and hickories. Soft mast is the fruits and berries from plants such as dogwood, viburnum, elderberry, huckleberry, hawthorn, grape, raspberry, and blackberry.

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

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

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

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

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

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

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

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

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

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

**State Rank of Significant Ecological Communities:**
- **S1** = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.
- **S2** = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.
- **S3** = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.
- **S4** = Apparently secure in New York State.
- **S5** = Demonstrably secure in New York State.
- **SH** = Historically known from New York State, but not seen in the past 15 years.
- **SX** = Apparently extirpated from New York State.
- **SE** = Exotic, not native to New York State.
- **SR** = State report only, no verified specimens known from New York State.
- **SU** = Status unknown.
Stand: In forestry, a contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable and manageable unit. In this HMP, the term “stand” is also applied to other habitat types (e.g., grassland, shrubland) to describe an area composed of similar vegetation composition and structure, as delineated during the habitat inventory.

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

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

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

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

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

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

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

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

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

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

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

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

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

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 [https://www.dec.ny.gov/regulations/28693.html](https://www.dec.ny.gov/regulations/28693.html).
APPENDIX C: FOREST MANAGEMENT PRESCRIPTIONS

PRESCRIPTION FOR WILDLIFE MANAGEMENT AREA TIMBER HARVEST

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

Species composition:

Basal area:      Trees per acre:       Mean stand diameter:

Stand inventory or analysis date:

Regeneration data:

Natural Heritage Element Occurrence layer review:

SMZ layer review:

Retention data:

Soil types and drainage:

Interfering vegetation:

Acres to be treated:    Target basal area:

Technical guidance/stocking guide:

Treatment purpose:

Management Objective:    Even aged or Uneven Aged

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

Clearcut acreage and configuration: (if applicable)

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

Retention considerations and adjustments:

Treatment descriptions:

Name and Title of Preparer:

Central Office Lands and Forests Staff                                                                 Date

Regional Wildlife Manager                                                                                     Date
**PRESCRIPTION NOTES**

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

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

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

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

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

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

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

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

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

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

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

*Retention considerations:* Indicate whether or not existing levels meet the standards set forth in the Division’s policy on Retention on State Forests, or whether they are expected to do so as a result of the proposed treatment. Also indicate if or how the treatment was adjusted in order to improve compliance with the policy standards.
**Treatment description:** The intended treatment should be clearly described. The amount of information necessary to accomplish this will vary greatly. For instance, in a row thinning of a pole timber sized plantation that had no SMZs or other special features, it may be sufficient to simply indicate “Remove two out of every six rows, taking two adjacent rows and leaving four rows between successive pairs being removed.” An intermediate thinning in a sawtimber sized hardwood stand with a recreational trail, two streams and a known occurrence of an endangered plant community would require significantly more detail. One rule of thumb that could be used is to describe the treatment so that a qualified forestry professional could use it to assist in marking the harvest.

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

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

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