NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

NIAGARA FRONTIER

UNIT MANAGEMENT PLAN

DRAFT

Towns of Newstead, Collins, East Otto, Otto and Persia

Counties of Erie and Cattaraugus

May 2021

DIVISION OF LANDS AND FORESTS
Bureau of Forest Resource Management, Region 9

182 East Union Street, Suite 3

Allegany, NY 14706

Niagara Frontier

Unit Management Plan

A planning unit consisting of Onondaga Escarpment Unique Area, Zoar Valley Multiple Use and Unique Area and East Otto State Forest, in Erie and Cattaraugus Counties.

May 2021

Prepared by the Niagara Frontier Unit Management Planning Team:

Daniel Shaffer, Forest Technician III
Patrick Marren, Forester III
Shawn Plaisted, Captain Forest Ranger
Emilio Rende, Wildlife Biologist

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Charles Thropp, Retired Mineral Resources
Jeremy Hurst, Wildlife Biologist
Michael Schiavone, Wildlife Biologist
Charles Vandrei, Historic Preservation Officer
Robert Stanton, Retired Real Property Supervisor
Daniel Richter, Retired Captain Forest Ranger
Nate Morey, Forester I
David Paradowski, Retired Forester III

New York State Department of Environmental Conservation

Division of Lands and Forests

Region 9

182 East Union Street, Suite 3, Allegany, NY 14706
(716) 372-0645

https://www.dec.ny.gov/lands/4979.html

DEC's Mission

"The quality of our environment is fundamental to our concern for the quality of life. It is hereby declared to be the policy of the State of New York to conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being." - Environmental Conservation Law 1-0101(1)

Vision Statement

State land on the Niagara Frontier Unit (Onondaga Escarpment Unique Area, Zoar Valley Multiple Use and Unique Area, and East Otto State Forest) will be managed in a sustainable manner by promoting ecosystem health, enhancing landscape biodiversity, protecting soil productivity and water quality. In addition, the State Forests on this unit will continue to provide the many recreational, social and economic benefits valued so highly by the people of New York State. DEC will continue the legacy which started more than 80 years ago, leaving these lands to the next generation in better condition than they are today.

This plan sets the stage for DEC to reach these ambitious goals by applying the latest research and science, with guidance from the public, whose land we have been entrusted to manage.

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Preface

State Forest Overview

The public lands comprising this unit play a unique role in the landscape. Generally, the State Forests of the unit are described as follows:

- large, publicly owned land areas;
- managed by professional Department of Environmental Conservation (DEC) foresters;
- green certified jointly by the Forest Stewardship Council® (FSC®) & Sustainable Forestry Initiative® (SFI®);
- set aside for the sustainable use of natural resources, and;
- open to recreational use.

Management will ensure the **sustainability**, **biological diversity**, and protection of **functional ecosystems** and optimize the ecological benefits that these State lands provide, including the following:

- maintenance/increase of local and regional biodiversity
- response to shifting land use trends that affect habitat availability
- mitigation of impacts from invasive species
- response to climate change through carbon sequestration and habitat, soil and water protection

This unit also contains State lands categorized as Wildlife Management Area (WMA) and Multiple Use Area (MUA) that are managed by DEC biologists from the Division of Fish, Wildlife & Marine Resources. Those lands have different management priorities than described herein, and as such, are not included in this plan. These lands include Cazenovia Creek WMA, Great Baehre Swamp WMA, Hampton Brook Woods WMA, Hartland Swamp WMA, Motor Island WMA, Silver Lake Outlet WMA, Spicer Creek WMA, Tillman Road WMA, Tonawanda WMA, Clear Lake WMA and Carlton Hill MUA.

Legal Considerations

Article 9, Titles 5 and 7, of the Environmental Conservation Law (ECL) authorize DEC to manage lands acquired outside the Adirondack and Catskill Parks. This management includes **watershed protection**, production of **timber** and other forest products, **recreation**, and **kindred purposes**.

For additional information on DEC's legal rights and responsibilities, please review the statewide Strategic Plan for State Forest Management (SPSFM) at http://www.dec.ny.gov/lands/64567.html. Refer specifically to pages 33 and 317.

CP-42 Contact Cooperation, and Consultation with Indian Nations

The Commissioner's Policy (CP-42) (https://www.dec.ny.gov/public/36929.html) provides guidance to DEC staff concerning cooperation and consultation with Indian Nations on issues relating to protection of environmental and cultural resources within New York State. Specifically, this policy (i) formally recognizes that relations between the Department and Indian Nations will be conducted on a government-to-government basis; (ii) identifies the protocols to be followed by Department staff in working with Indian Nations; and (iii) endorses the

development of cooperative agreements between the Department and Indian Nations to address environmental and cultural resource issues of mutual concern.

Nine Indian Nations reside within, or have common geographic borders with New York State: the Mohawk, Oneida, Onondaga, Cayuga, Seneca, Tonawanda Seneca, Tuscarora, Unkechaug, and Shinnecock. Communication between DEC and the Indian Nations should be direct and involve two-way dialogue and feedback. Face-to-face meetings are generally desirable; however, phone calls, correspondence, and other methods of communication are also encouraged. Therefore, DEC staff should be reaching out to the respective Nations as early in the UMP planning process as possible. The Department wishes to ensure that its actions, with respect to the environment and cultural resources, are sensitive to the concerns of Indian Nations, and that the perspective of the recognized Indian Nations is sought and taken into account when the Department undertakes an action having implications for indigenous peoples, their territories, and their culture. The Department and Indian Nations share key roles in protecting and preserving natural and cultural resources important to all citizens, and early consultation and cooperation between the Department and Indian Nations will foster more comprehensive protection and preservation of those resources.

Management Planning Overview

The Niagara Frontier Unit Management Plan (UMP) is based on a long-range vision for the management of Onondaga Escarpment Unique Area, Zoar Valley Multiple Use and Unique Area and East Otto State Forest, balancing long-term ecosystem health with current and future demands. This Plan addresses management activities on this unit for the next ten years, though some management recommendations will extend beyond the ten-year period. Factors such as budget constraints, wood product markets, and forest health problems may necessitate deviations from the scheduled management activities.

Public Participation

One of the most valuable and influential aspects of UMP development is public participation. Public meetings and public comment periods are held to solicit public comments and collect stakeholder input on proposed draft management plans. Mass mailings press releases and other methods for soliciting input are often also used to obtain input from adjoining landowners, interest groups and the general public.

Strategic Plan for State Forest Management

This Unit Management Plan (UMP) is designed to implement DEC's statewide Strategic Plan for State Forest Management (SPSFM). Management actions are designed to meet local needs while supporting statewide and eco-regional goals and objectives.

The SPSFM is the statewide master document and Generic Environmental Impact Statement (GEIS) that guides the careful management of natural and recreational resources on State Forests. The plan aligns future management with principles of landscape ecology, ecosystem management, multiple use management and the latest research and science available at this time. It provides a foundation for the development of Unit Management Plans. The SPSFM divides the State into 80 geographic "units," composed of DEC administered State Forests that are adjacent and similar to one another. For more information on management planning, see SPSFM page 21 at http://www.dec.ny.gov/lands/64567.html.

DEC's Management Approach and Goals

Forest Certification of State Forests

In 2000, New York State DEC-Bureau of State Land Management received Forest Stewardship Council® (FSC®) certification under an independent audit conducted by the National Wildlife Federation - SmartWood Program. This certification included 720,000 acres of State Forests in DEC Regions 3 through 9 managed for water quality protection, recreation, wildlife habitat, timber and mineral resources (multiple-use). To become certified, the Department had to meet more than 75 rigorous criteria established by FSC. Meeting these criteria established a benchmark for forests managed for long-term ecological, social and economic health. The original certification and contract was for five years.

By 2005 the original audit contract with the SmartWood Program expired. Recognizing the importance and the value of dual certification, the Bureau sought bids from prospective auditing firms to reassess the Bureau's State Forest management system to the two most internationally accepted standards – FSC and the Sustainable Forestry Initiative® (SFI®) program. However, contract delays and funding shortfalls slowed the Department's ability to award a new agreement until early 2007.

Following the signed contract with NSF-International Strategic Registrations and Scientific Certification Systems, the Department was again audited for dual certification against FSC as well as SFI program standards on over 762,000 acres of State Forests in Regions 3 through 9. This independent audit of State Forests was conducted by these auditing firms from May until July 2007 with dual certification awarded in January 2008.

State Forests continue to maintain certification under the most current FSC and SFI standards. Forest products derived from wood harvested off State Forests from this point forward may be labeled as "certified" through chain-of-custody certificates. Forest certified labeling on wood products may assure consumers that the raw material was harvested from well-managed forests.

The Department is part of a growing number of public, industrial and private forest landowners throughout the United States and the world whose forests are certified as sustainably managed. The Department's State Forests can also be counted as part of a growing number of working forest land in New York State that is *third-party certified* as well managed to protect habitat, cultural resources, water, recreation, and economic values now, and for future generations.

The mark of responsible forestry
FSC® C002027

DEC'S MANAGEMENT APPROACH

Ecosystem Management Approach

State Forests on this unit will be managed using an ecosystem management approach which will holistically integrate principles of landscape ecology and multiple use management to promote habitat biodiversity, while enhancing the overall health and resiliency of the State Forests.

Landscape ecology seeks to improve landscape conditions, taking into account the existing habitats and land cover throughout the planning unit, including private lands

Ecosystem management is a process that considers the total environment - including all non-living and living components; from soil micro-organisms to large mammals, their complex interrelationships and habitat requirements and all social, cultural, and economic factors. For more information on ecosystem management, see SPSFM page 39 at http://www.dec.ny.gov/lands/64567.html.

Multiple-use Management

DEC will seek to simultaneously provide many resource values on the unit such as fish and wildlife, wood products, recreation, aesthetics, minerals, watershed protection, and historic or scientific values.

Landscape Ecology

The guiding principle of multiple use management on the unit will be to provide a wide diversity of habitats that naturally occur within New York, while ensuring the protection of rare, endangered and threatened species and perpetuation of highly-ranked unique natural communities. The actions included in this plan have been developed following an analysis of habitat needs and overall landscape conditions within the planning unit (i.e. the geographical area surrounding and including the State Forests), the larger ecoregion and New York State.

Ecosystem Management Strategies

The following strategies are the tools at DEC's disposal, which will be carefully employed to practice landscape ecology and multiple-use management on the unit. The management strategy will affect species composition and habitat in both the short and long term. For more information on these management strategies, please refer to Page 81 of the SPSFM at http://www.dec.ny.gov/lands/64567.html.

Passive Management

DEC foresters will employ passive management strategies through the designation of natural and protection areas, and buffers around those areas, such as along streams, ponds and other wetlands, where activity is limited.

Silviculture (Active Management)

DEC foresters will practice silviculture; the art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands, in an effort to promote biodiversity and produce sustainable forest products. There are two fundamental silvicultural systems which can mimic the tree canopy openings and disturbances that occur naturally in all forests; even-aged management and uneven aged management. Each system favors a different

set of tree species. In general, even-aged management includes creating wide openings for large groups of trees that require full sunlight to regenerate and grow together as a cohort, while uneven-aged management includes creating smaller patch openings for individual trees or small groups of trees that develop in the shade but need extra room to grow to their full potential.

State Forest Management Goals

Goal 1 – Provide Healthy and Biologically Diverse Ecosystems

Ecosystem health is measured in numerous ways. One is by the degree to which natural processes are able to take place. Another is by the amount of naturally occurring species that are present, and the absence of non-native species. No single measure can reveal the overall health of an ecosystem, but each is an important part of the larger picture. The Department will manage State Forests so that they demonstrate a high degree of health as measured by multiple criteria, including the biodiversity that they support.

Goal 2 – Maintain Man-made State Forest Assets

Man-made assets on State Forests include structures, boundary lines, trails, roads and any other object or infrastructure that exists because it was put there by people. Many of these items need no more than a periodic check to make sure they are still in working order. Others need regular maintenance to counteract the wear of regular use. It is the Department's intent to ensure that all man-made items on State Forests are adequately maintained to safely perform their intended function.

Goal 3 – Provide Recreational Opportunities for People of all Ages and Abilities

State Forests are suitable for a wide variety of outdoor recreational pursuits. Some of these activities are entirely compatible with one another, while others are best kept apart from each other. Equally varied are the people who undertake these activities, as well as their abilities, and their desire to challenge themselves. While not all people will be able to have the experience they desire on the same State Forest, the Department will endeavor to provide recreational opportunities to all those who wish to experience the outdoors in a relatively undeveloped setting.

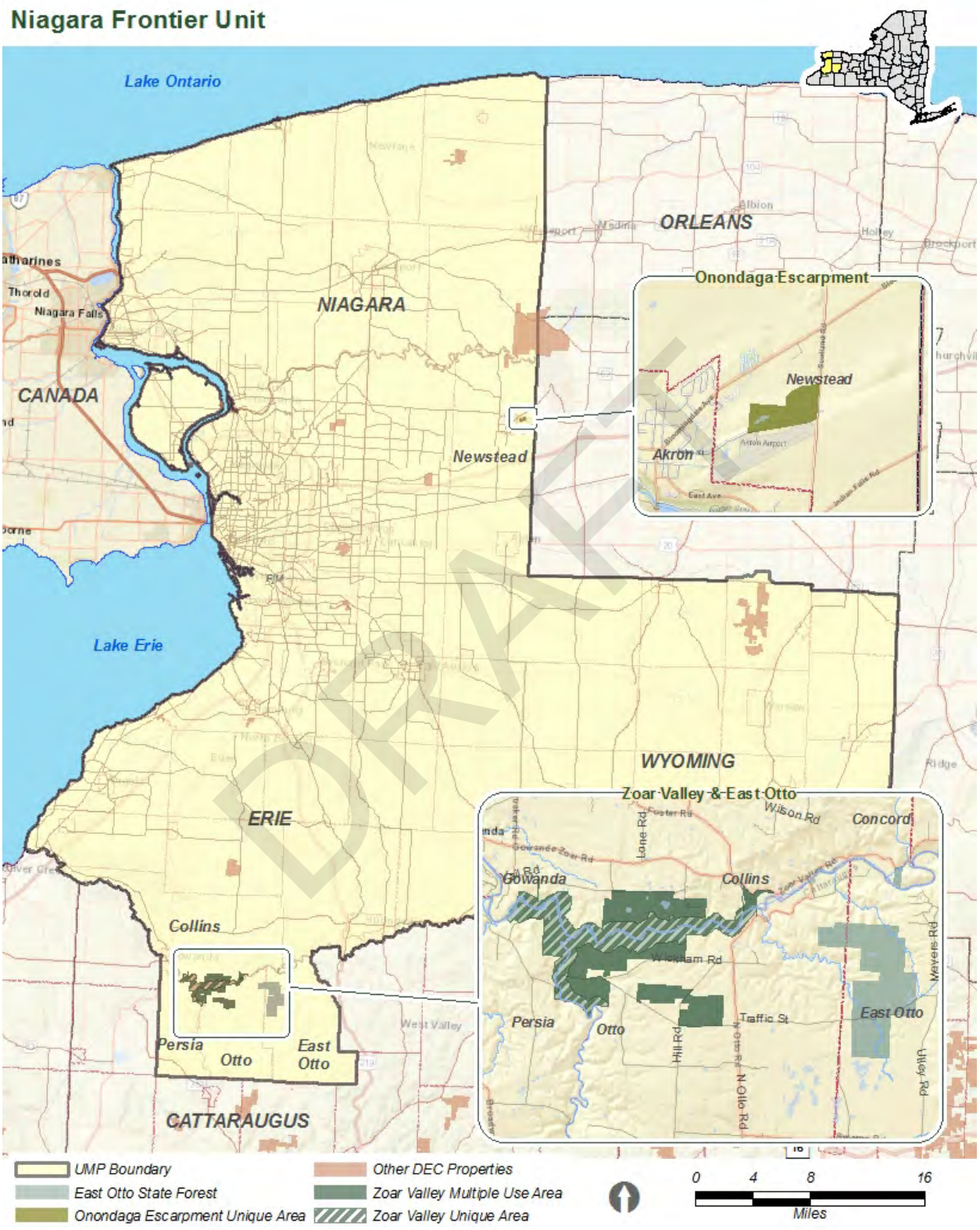
Goal 4 – Provide Economic Benefits to the People of the State

ECL §1-0101(1) provides in relevant part that "It is hereby declared to be the policy of the State of New York to conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being." (Emphasis added) In considering all proposed actions, the Department will attempt to balance environmental protection with realizing potential economic benefit.

Goal 5 – Provide a Legal Framework for Forest Conservation and Sustainable Management of State Forests

Staff must have clear and sound guidance to direct their decisions and actions. Likewise, the public must have clear information regarding what they are and are not allowed to do on State Forests. Both of these are provided by well-written laws, regulations, and policies. The Department will continue to review and improve existing legal guidance as needed.

Location Map



Information on the Niagara Frontier Unit

State Lands in the Unit

Table I.A. contains the names of the state land facilities that make up this unit. A web page has been developed for each of the State Forests. Each web page features an updated map of the State Forest with recreational information and natural features.

Table I.A. – State Lands in the Unit

Facility Name and Webpage	Acreage
Onondaga Escarpment Unique Area (Erie 18) https://www.dec.ny.gov/lands/108647.html	49.4
Zoar Valley Multiple Use (Cattaraugus-Erie 01) https://www.dec.ny.gov/lands/36931.html	1,486.4
Zoar Valley Unique Area (Cattaraugus-Erie 02) https://www.dec.ny.gov/lands/36931.html	1,492.2
East Otto State Forest (Cattaraugus 15) https://www.dec.ny.gov/lands/67743.html	1,384.5
TOTAL	**4,412.5**

Facilities Not Included in this UMP

Additional facilities located within the planning unit include Cattaraugus Creek Fishing Access Parking, Cattaraugus Creek Waterway Access, East Koy Creek Fishing Access, Eighteen Mile Creek Access, Tonawanda Creek Fishing Access, Wiscoy Creek Fishing Access, and Reinstein Woods Nature Preserve and Education Center. These facilities are managed by other DEC Divisions with different management priorities.

High Conservation Value Forests

High Conservation Value Forests (HCVF) are those portions of State Forests which have known high conservation values that the Department feels should take precedent over all other land use and management decisions. HCVFs may not be identified on every Unit and State Forests that have an HCVF designated will not necessarily have multiple classifications. Areas that are identified as having exceptional values may be managed for timber, wildlife and/or recreation, however management activities must maintain or enhance the high conservation values present. Currently, HCVFs are assigned to one or more of five land classifications, four of which may be found on State Forests:

1. Rare Community - Forest areas that are in or contain rare, threatened or endangered ecosystems.

2. Special Treatment - Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, and refugia).

3. Cultural Heritage – Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health) and are critical to their traditional cultural identity

(areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

4. Watershed - Forest areas that provide safe drinking water to local municipalities.

5. Forest Preserve* - Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.

**Forest Preserve lands inside both the Adirondack and Catskills Park Blue Line. Although Forest Preserve is not considered State Forest, they offer a significant high conservation value for lands managed by the Department.*

Portions of the Niagara Frontier Unit have been identified as having high conservation value. Acreage totals for designated HCVFs located within the unit can be found in the appropriate sections below. For more information on HCVFs please go to http://www.dec.ny.gov/lands/42947.html.

Soils

Soils provide the foundation, both figuratively and literally, of forested ecosystems. They support an immense number of microorganisms, fungi, mosses, insects, herpetofauna and small mammals which form the base of the food chain. They filter and store water and also provide and recycle nutrients essential for all plant life. For information on DEC's policies for the protection of forest soils, as well as water resources please see SPSFM page 108 at http://www.dec.ny.gov/lands/64567.html.

Table I.B. – Soils

Facility Name	Predominant Soil Types	Acres
Onondaga Escarpment Unique Area	Benson very channery loam Honeoye loam Lima loam Wassiac-Rock outcrop complex	19.4 18.2 5.8 5.9
Zoar Valley Multiple Use and Unique Area	Alton fine gravelly loam Arkport very fine sandy loam Canaseraga silt loam Chautauqua silt loam Chenango fine gravelly sandy loam Chenango gravelly silt loam Fluvaquents and Udifluvents Langford channery silt loam Middlebury silt loam Rock outcrop Towerville silt loam Valois gravelly silt loam	68.8 399.9 95.3 79.9 153.9 75.5 100.1 216.2 132.9 629.9 88.8 271.32

Table I.B. – Soils		
Facility Name	**Predominant Soil Types**	**Acres**
East Otto State Forest	Hudson silt loam Rhinebeck silt loam Varysburg gravelly silt loam	1,086.8 200.2 26.1

The soils of the Unit are mostly of glacial origin. Unlike the shallow glacial hardpan soils of many of the surrounding counties, most of the soils in the Unit are quite deep and were deposited at the edge of the retreating glaciers. As a result, the soils here are quite different from those of un-glaciated areas like Allegany State Park. Some of the areas of the Unit that have soil limitations do not support upland forests and have high erosion potential, poor drainage, seasonal perched water table and low permeability. The Onondaga Escarpment and adjacent soils are shallow, yet rich in dissolved calcium carbonate, forming the basis for rich limestone woodlands.

Water Resources

DEC's GIS data contains an inventory of wetlands, vernal pools, spring seeps, intermittent streams, perennial streams, rivers and water bodies on the unit. This data is used to establish special management zones and plan appropriate stream crossings for the protection of water resources. Table I.C. contains a summary of water resources data on the unit.

Table I.C. – Water Resources (see Figure 1 for maps)	
***Watersheds* - Hydrologic Unit (12-digit HUC)**	**Acres**
Clear Creek (041201020208)	58
Headwaters South Branch Cattaraugus Creek (041201020204)	9
Lower Murder Creek (041201040203)	49
South Branch Cattaraugus Creek (041201020205)	454
Thatcher Brook-Cattaraugus Creek (041201020209)	561
Waterman Brook-Cattaraugus Creek (041201020206)	3,279
Watershed HCVF	***Acres***
Waterman Brook-Cattaraugus Creek	1,359
Thatcher Brook-Cattaraugus Creek	562
Wetlands	***Acres***
NYS Regulatory Freshwater Wetlands	51.4
Federal Wetlands	
Freshwater Emergent Wetland	15.5
Freshwater Forested/Shrub Wetland	107.3
Freshwater Pond	43.0
Riverine	803.7

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Table I.C. – Water Resources (see Figure 1 for maps)		
Streams/Rivers *		**Miles**
Intermittent streams		14.8
Perennial streams/rivers	AA or A	0
	B	6.8
	C	0.4
	D	0
Trout streams/rivers	AA (T), A (T), B (T) or C (T)	4.6
Water Bodies		**Acres**
Water bodies (open-water ponds and lakes)		21.1

*For information regarding stream classifications please refer to http://www.dec.ny.gov/permits/6042.html

Major Streams, Rivers and Water Bodies

Cattaraugus Creek is a large stream running 68 miles from Java Lake in southwest Wyoming County to its mouth at Lake Erie. Cattaraugus Creek offers anglers one of the best steelhead fishing opportunities in the eastern United States. Each year from October through April, thousands of steelhead ascend the stream on their migratory mission to spawn on the gravel shoals of the main stream and its tributaries. In addition to steelhead, a fair number of brown trout also run the stream in fall. The creek is impounded by Scoby Dam in Springville. Over seven miles of the Cattaraugus main stream and South Branch flow through public land on the Zoar Valley Multiple Use/Unique Area. In addition, there are approximately 1.9 miles of public fishing rights easements just upstream of the Zoar Valley Multiple Use/Unique Area. Several tributaries of Cattaraugus Creek also offer steelhead fishing opportunities, including Coon Brook, Utley Brook, and Waterman Brook, all of which flow through East Otto State Forest.

Biodiversity

Information regarding biodiversity has been gathered to support the following goals:

- "Keep Common Species Common" by maintaining landscape-level habitat diversity and a wide variety of naturally occurring forest-based habitat as well as managing plantations according to DEC natural resources policy.
- Protect, and in some cases, manage known occurrences and areas with potential to harbor endangered plants, wildlife and natural communities.
- Consider other "at-risk species" whose population levels may presently be adequate but are at risk of becoming imperiled due to new incidences of disease or other stressors.

Common Species

The following information sources indicate which common species (among other species) are present over time:

- **NYS Breeding Bird Atlas**

Block Numbers: 1770A, 1770B, 1770C, 1770D, 1870A, 1870C, 2176A

Breeding Bird Atlas blocks can be searched at http://www.dec.ny.gov/cfmx/extapps/bba/

- **Herp Atlas**

  Block Numbers: 2386, 2387, 3083

  Herp Atlas information on amphibians, toads, frogs, turtles, lizards and snakes can be found at http://www.dec.ny.gov/animals/7140.html

- **Game Species Harvest Levels**

  Wildlife Management Unit (WMU) Numbers: 8G, 9H, 9M

  WMU 8G – Deer Take (2019): 3,210 bucks / 7,675 total
  WMU 9H – Deer Take (2019): 4,1706 bucks / 9,156 total
  WMU 9M – Deer Take (2019): 1,562 / 3,115 total

  WMU 9H – Bear Take (2019): 2 total
  WMU 8M – Bear Take (2019: 4 total

  White-Tailed Deer Harvest Summary 2019
  (https://www.dec.ny.gov/docs/wildlife_pdf/2019deerrpt.pdf)

  Black Bear Harvest Summary 2019
  (http://www.dec.ny.gov/docs/wildlife_pdf/bbrpt2019.pdf

  Spring Turkey Take by County
  (http://www.dec.ny.gov/outdoor/30420.html)

  Fall Turkey Take by County
  (http://www.dec.ny.gov/outdoor/30412.html)

Habitat

The following information provides several representations of habitat types on the unit.

Vegetative Types and Stages

Table I.D. – Vegetative Types and Stages within the Unit (see Figure 4 for maps)

Vegetative Type	Acres by Avg. Tree DBH Size Class					
	0 -5 in (seedling-sapling)	6 - 11 in (pole)	12+ in (sawtimber)	Other	**Total Acres**	**% of Total**
Natural Forest Hardwood	17.8	529.4	1,508.8	-	2,056	46.6%
Natural Forest Conifer		4.5	31.5	-	36.0	0.8%
Plantation	41.5	349.9	74.5	-	465.9	10.6%
Open/Brush/Ag	-	-	-	194.7	194.7	4.4%

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Table I.D. – Vegetative Types and Stages within the Unit (see Figure 4 for maps)

Vegetative Type	Acres by Avg. Tree DBH Size Class					
	0 -5 in (seedling-sapling)	6 - 11 in (pole)	12+ in (sawtimber)	Other	**Total Acres**	**% of Total**
Forested Wetlands	-	-	-	-	-	-
Wetlands	-	-	-	101.9	101.9	2.3%
Ponds	-	-	-	43	43	1.0%
Other (Roads, Parking lots, etc.)	-	-	-	22.8	22.8	0.5%
Protected Area Gorge	-	-	-	1,492.2[†]	1,492.2	33.8%
Total (Acres)	59.3	883.8	1,614.8	1,854.6	4,412.5	100%

[†] Resource Protection Area in Zoar Valley UA.

Representative Sample Areas

Representative Sample Areas (RSA) are stands which represent *common* ecological communities (i.e. forest types) of high or exceptional quality in their natural state. RSAs are established to serve one or more of the following purposes:

1. To establish and/or maintain an ecological reference condition; or
2. To create or maintain an under-represented ecological condition (i.e. includes samples of successional phases, forest types, ecosystems, and/or ecological communities); or
3. To serve as a set of protected areas or refugia for species, communities and community types not captured in other protection standards such as an endangered species or a High Conservation Value Forest.

RSAs can simply be viewed as an effort to keep high quality examples of common ecosystems or assemblages from becoming rare in the landscape. An RSA designation does not prevent future management and in certain cases might require silvicultural treatment to achieve site conditions that will perpetuate the representative community. In addition, treatment of an RSA to mitigate unfavorable conditions that threaten the continuation of the target community will be allowed (e.g. fire, natural pests or pathogens). Although allowed, silvicultural treatment or infrastructure development should not impact the RSA in a way that will degrade or eliminate the viability of the specific assemblage or community. For more information on RSAs please go to http://www.dec.ny.gov/lands/42947.html.

Table I.E. – RSAs and Rare Community HCFVs within the Unit

Community Name	Vegetative Type	Facility Name (Stand Numbers)	NYNHP Rank	Acres
Representative Sample Areas of Commonly Occurring Natural Communities				
Intermittent Stream	Utley Brook and Waterman Brook Woods	East Otto SF (1-4, 13-19, 29-32,34)	S4	38.8
Rocky Headwater Stream	Utley Brook	East Otto SF (7-9)	S4	2
Rich Mesophytic Forest	Cattaraugus Creek - Zoar Valley	Zoar Valley MUA (8.2,10, 13,15,22.1,39.1,40.1,41, 42.1,43,44.1,46.1,47.2,48,49,50.2,51,52,53.2,55.2, 56,57,59,60,62,64.21,66.1,66.2,68.1,68.2,69.1,70.1, 70.2,71)	S2S3	594.2
Shale Cliff and Talus Community	Cattaraugus Creek - Zoar Valley	Zoar Valley UA (39.1)	S3	69.2
Riverside Sand Gravel Bar	Cattaraugus Creek - Zoar Valley	Zoar Valley UA (39.1)	S3S4	23.5
Hemlock Northern Hardwood Forest	Cattaraugus Creek - Zoar Valley & East Otto SF	East Otto SF (1-18,22,24, 28-36) Zoar Valley MUA (10,13,20.2,22.1,23.1,24, 25,29.1,30.1,39.1,40.1,41,42.1,43,44.1,60,50.2,53.2,55.2,56,64.12,64.21,66.1, 66.2,68.2,69.1)	S4	2,060.3
Rare Community HCVF				
Rare Community	Calcareous Shoreline Outcrop	Zoar Valley UA	S2	1.5
Rare Community	Calcareous Cliff Community	Onondaga Escarpment UA	S3	2
Rare Community	Limestone Woodland	Onondaga Escarpment UA	S2S3	49.4
Rare Community	Rich Graminoid Fen	Zoar Valley UA	S1S2	.7
Rare Community	Rich Sloping Fen	Zoar Valley MUA	S1S2	5.5
Rare Community	Confined River	Zoar Valley UA	S3S4	211
Special Treatment Area	Woodland Agrimony	East Otto SF	S2	9.8
Special Treatment Area	Appalachian Tiger Beetle	Zoar Valley UA	S2	23

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Table I.E. – RSAs and Rare Community HCFVs within the Unit

Community Name	Vegetative Type	Facility Name (Stand Numbers)	NYNHP Rank	Acres
Special Treatment Area	Pine Drops	Zoar Valley UA	S1	94.8
Special Treatment Area	Northern Long-eared Bat	Zoar Valley MUA	S1	1,495.6
Special Treatment Area	Gray Petaltail	Zoar Valley MUA	S2	3
Special Treatment Area	Rough leaf Dogwood	Zoar Valley UA	S1	7.7
Special Treatment Area	Golden seal	Onondaga Escarpment UA	S2	15
Watershed Protection Area	n/a	East Otto SF	n/a	1,381.9
Watershed Protection Area	n/a	Zoar Valley UA	n/a	412
Watershed Protection Area	n/a	Zoar Valley MUA	n/a	149.7

Resource Protection Areas

In the course of practicing active forest management, it is important to identify areas on the landscape that are either reserved from management activity or where activity is conducted in such a manner as to provide direct protection and enhancement of habitat and ecosystem functions. For more information on these protective measures, see SPSFM page 85 at http://www.dec.ny.gov/lands/64567.html.

Special Management Zones (SMZs) provide continuous over-story shading of riparian areas and adjacent waters, by retaining sufficient tree cover to maintain acceptable aquatic habitat and protect riparian areas from soil compaction and other impacts. DEC's buffer guidelines also maintain corridors for movement and migration of all wildlife species, both terrestrial and aquatic. Buffers are required within SMZs extending from wetland boundaries, high-water marks on perennial and intermittent streams, vernal pool depression, spring seeps, ponds and lakes, recreational trails, campsites and other land features requiring special consideration. See Figure 1 for a map of the SMZs as applied on the unit. For more information regarding Special Management Zones, please see www.dec.ny.gov/sfsmzbuffers.pdf

The identification of large, unfragmented forested areas, also called matrix forest blocks, is an important component of biodiversity conservation and forest ecosystem protection. In addition, securing connections between major forested landscapes and their imbedded matrix forest blocks is important for the maintenance of viable populations of species, especially wide-ranging and highly mobile species, and ecological processes such as dispersal and pollination over the long term.

Maintaining or enhancing matrix forest blocks and connectivity corridors must be balanced against the entire array of goals, objectives and demands that are placed on a particular State

Forest. Where matrix forest block maintenance and enhancement are chosen as a priority for a given property, management actions and decisions should emphasize closed canopy and interior forest conditions. The following areas have been identified to meet demands at the landscape level:

- Matrix Forest Block 4,027 acres
- Forest Landscape Connectivity Corridor 49 acres
- USFWS Critical Habitat Area 1,530.8 acres

More information regarding Matrix Forest blocks, connectivity corridors and associated management considerations can be found in the SPSFM page 85 at http://www.dec.ny.gov/lands/64567.html.

At-Risk Species

The presence of at-risk species and communities on the Niagara Frontier Unit and in the surrounding landscape has been investigated to inform appropriate management actions and protections. This investigation was conducted in development of this UMP and the associated inventory of State Forest resources. A more focused assessment will be conducted before undertaking specific management activities in sensitive sites. Appropriate protections may include reserving areas from management activity or mitigating impacts of activity. For more information on protection of at-risk species, please see SPSFM page 115 at http://www.dec.ny.gov/lands/64567.html.

Investigation included the following:

- A formal plant survey was conducted on this Unit in the spring of 2005 by the New York Natural Heritage Program.
- Element Occurrence Records for the New York Natural Heritage Program's (NHP) Biological and Conservation Data System were consulted for information.
- Consultation of NHP species guides.
- Consultation of the NYS Comprehensive Wildlife Conservation Strategy.

Table I.F. lists the species confirmed or predicted on the lands that comprise this Unit and in the larger landscape, as well as their required habitats.

*Table I.F. – At-Risk Species**

Species Name	NYNHP Rank	Habitat	Record Source	NYS Status
Confirmed or Predicted within the Unit				
Northern Long-eared Bat *Myotis septentrionalis*	S1	Trees with cavities loose bark or crevices	CONF	T

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*Table I.F. – At-Risk Species**

Species Name	NYNHP Rank	Habitat	Record Source	NYS Status
Appalachian Tiger Beetle *Cicindela ancocisconensis*	S2	Vegetated sandy cobble terraces and gravel bars	CONF	SGCN
Gray Petaltail *Tachopteryx thoreyi*	S2	Rich, moist spring fed open, herbaceous area	CONF	PSC
Bald Eagle *Haliaeetus leucocephalus*	S2S3B, S2N	Steep slopes along waterbodies mixed forests dominated by conifers	CONF	T
Golden-seal *Hydrastis canadensis*	S2	Rich limestone woodland	CONF	T
Giant Pine-drops *Pterospora andromedea*	S1	Oak-pine forest well-drained south facing slope	CONF	E
Rough-leaf Dogwood *Cornus drummondii*	S1	Floodplain forest talus slopes	CONF	E
Woodland Agrimony *Agrimonia rostellata*	S2	Northern hardwoods dominated by Sugar Maple	CONF	T
Confirmed or Predicted in the Landscape and May Be Affected by Management				
Mountain Watercress *Cardamine rotundifolia*	S1	Steep slopes oak stands	CONF	E
Nodding Pogonia *Triphora trianthophora*	S2	Shale-cliff ravine Northern hardwood hemlock	CONF	T
Bigmouth Shiner *Notropis dorsalis*	S2	Intermittent Stream clay loam substrate	CONF	Un-listed

*Defined as NYNHP rank S1, S2, S2-3, G1, G2 or G2-3 OR identified as an SGCN

Key to Codes
BBA - Breeding Bird Atlas
(PRED) - Predicted Species
(CONF) - Confirmed Species

Status
E - Endangered Species (New York)
T - Threatened Species (New York)
PSC - Protected, Special Concern Species (New York)
SGCN - Species of Greatest Conservation Need

Visual Resources

The aesthetic quality of State Forests is considered in management activity across the unit. However, some areas have greater potential to preserve or create unique opportunities for public enjoyment. These especially scenic areas are inventoried below. For information on the protection of visual resources, please see SPSFM page 81 at http://www.dec.ny.gov/lands/64567.html.

The Onondaga Escarpment Unique Area scenic attributes include a diversity of seasonal wildflowers, and a rich woodland species mix along an exposed limestone escarpment.

East Otto State Forest has many interesting wetland areas including several ponds interspersed throughout the forest. Most notable is Stickney Pond, surrounded by an open meadow along Kriedeman Public Forest Access Road.

Cattaraugus Creek and the Zoar Valley gorge are likely the two most prominent scenic resources on lands within the Niagara Frontier Unit. The main branch of Cattaraugus Creek flows approximately 7.5 miles through the Zoar Valley gorge, running mostly east to west. The South branch flows northerly through a separate gorge. The main branch intersects with the South Branch of Cattaraugus Creek at the confluence near Valentine Flats. The Holcomb Pond Trail, Forty Road parking area and Valentine Flats trail offer very scenic views of the gorge walls, including exposed sedimentary shale and talus slopes between 100 and 480 feet tall. Zoar Valley also contains large forested areas with trees of unusual size and height.

Late Devonian shales and silt stones of the Canadaway formation make up the local geology, which is the focal point of Zoar Valley. Surface expressions of the Alleghenian Bass Island Trend are exposed in the main branch as joints and a pop-up fold trending northeast. Other joint sets trend north, east northeast and northwest. Surficial deposits and landforms provide clues to the sequence of events leading to gorge formation but present more mysteries. Although flowing parallel to strike, Cattaraugus Creek is not a typical subsequent stream. The stream traverses at least three pre-glacial north-flowing stream valleys dammed by the Valley Heads Moraine. There is a curious erosional remnant at the confluence of the main branch and the South Branch of the Cattaraugus Creek. The creek drops at an average gradient of 0.3 percent from the head of the gorge to the first rapid, 0.6 percent from the first rapid to the mouth of the gorge and 0.4 percent to the end of the rapids one mile downstream of the mouth. Practically all the drops occur in 19 rapids. A strong correlation exists between rapids, silt stone beds, joints and cross channel cobble and boulder deposits (Meyers 1999).

Historic and Cultural Resources

History of the Unit

Onondaga Escarpment Unique Area

The property derives its name from the Onondaga Escarpment, which is similar to, but less prominent than the more familiar Niagara Escarpment that created Niagara Falls. The scarp runs east to west and creates a north facing bluff, rising to a height of over 100 feet.

The mining of limestone and gypsum from the underlying bedrock was commonplace in the villages and towns surrounding the Onondaga Escarpment UA. Remnants of a mining shed foundation is still evident on the property. Portions of the property were used for animal grazing and a pond was dug at the base of the escarpment prior to State ownership.

More recently, after the DEC acquired the property, the plant community has recovered well from past stressors, including unbridled forms of recreation. On October 13, 2016 an early season snowstorm damaged many of the overstory trees and broke large branches of trees throughout the area.

Zoar Valley Multiple Use Area and Unique Area

Zoar Valley has a rich history. Two sites with archeological evidence of early human use are documented on private property near Zoar Valley. Since much of the area has been disturbed by farming and other activities, it is not known whether Zoar Valley was occupied by early Native Americans. However, the presence of archeologic findings on nearby parcels indicates it may have been used or inhabited by early people. The valley was given its biblical name by Ahaz Allen, an early settler of the area.

The surrounding area including the Zoar MUA/UA was deeded to the Holland Land Company in the early 1800s. It was surveyed, subdivided and sold in the 1820s. Historic records from 1842 reveal farming was practiced along both sides of Cattaraugus Creek near what is now Forty Road. A cheese factory was located on private property near the intersection of Forty and Wickham Roads.

The shale of the valley had apparently been mined for local use. There are also reports of two lime kilns that existed in the area, one near present day Valentine Flats Parking Area, which has not been located, and the other near the former Forty Road Bridge site on the South Branch of Cattaraugus Creek. These lime kilns were probably operated in the early 1800s.

Historically, at least two sawmills were known to be in the area. Reports indicate that logs and produce were often moved along Cattaraugus Creek. Trees of saw log quality near the river, or that could be easily pulled to the river, would have been cut, leaving older trees in hard to reach areas along the gorge.

Oil and gas wells were drilled on the property in the late 1890s. One of these abandoned wells was recently plugged near the Valentine Flats Parking Area.

Around 1865 the Atlantic and Great Western railroad was planned to cross near North Otto Road. The approaches to the bridge were built and most of the grade work was done up to Collins Center before the project was abandoned. Some parts of the constructed grade can still be seen today from North Otto Road.

For many years a Boy Scout Camp existed on the north side of the confluence of Cattaraugus Creek and its South Branch. A cable car was used to cross the main branch. Foundations of the camp buildings remain visible today.

The current Valentine Flats area, a level floodplain downstream of the confluence of Cattaraugus Creek and its South Branch, was first deeded by the Holland Land Company to Elisha Derby (pronounced “Darby”) in l837. The land became known as “Darby Flats” after Derby located his house there. In l900, the land was sold to Ernest and Caroline Valentine and later became known as "Valentine Flats."

In 1926, the Valentine property was deeded to Niagara, Lockport and Ontario Power Company. The power company purchased land from the Valentine Flats and downstream to Overlook Point, to build a hydroelectric power dam. Test borings were made in the area just

above Overlook Point to determine if the rock would hold a dam. However, the brittleness of the shale made dam building impractical. The Valentine family stayed on the farm as tenants for a time. After the house was no longer occupied, the field in the Flats area was rented out for bean farming.

In l952, Mr. Herbert Darling purchased land, including the Valentine Flats area, from the Niagara Mohawk Power Corporation, the successor to Niagara, Lockport and Ontario Power Company. Mr. Darling gifted 1,425 acres to the State of New York in l96l and l962. This marked the beginning of New York State ownership and stewardship of the Valentine Flats area. Other parcels were added later using Bond Act funds.

The old road access to Valentine Flats contributed to the popularity of this location as a historic recreation area for hiking, wading, fishing, and picnicking. Irresponsible behavior on the part of some campers led to the State banning overnight camping and motor vehicles in l97l. The Valentine Flats and Forty Road areas remain popular spots for outdoor recreation. Public access to the South Branch area is limited by the fact that the Forty Bridge was closed and removed in 1986 and by erosion along the unmaintained section of road in the Town of Otto.

In April l968, a black walnut plantation was established in the Valentine Flats area. About 7,300 black walnut trees were planted on approximately 12 acres in the center of the Flats. Many of the other upland areas used as fields and pasture were planted with conifers, hardwoods or are maintained as grasslands by the DEC. One of the fields along Vail Road has an experimental American Chestnut plantation managed for research to bring back the species. Many other open areas once used as pasture have reverted to native hardwood stands. Evidence of the old farms, fields, fences, roads, and final resting places of those who were here before is still visible throughout the MUA (Zoar, 2006).

East Otto State Forest

Some of the early settlers of East Otto came into the area known as the South Woods, from the Valley of Zoar to the north, across Cattaraugus Creek in Erie County. The woods were first cleared for building materials and agricultural purposes. Much of the area that is now state forest was historically farmland, however, some of the steeper ravines remained forested. In the early 1900s much of the area was also leased for oil and gas exploration.

The state acquired what is now East Otto State Forest starting in the 1930s and continued to add parcels until the 1960s. Much of the abandoned farm fields which remained opened were reforested as conifer plantations to promote conservation. Remnants of old buildings can still be found within the state forest (DEC, Internal).

Inventory of Resources

The term cultural resources encompasses a number of categories of human created resources including structures, archaeological sites and related resources. The Department is required by the New York State Historic Preservation Act (SHPA) (PRHPL Article 14) and SEQRA (ECL Article 8) as well as Article 9 of Environmental Conservation Law, 6NYCRR Section 190.8 (g) and Section 233 of Education Law to include such resources in the range of environmental values that are managed on public lands. For more information on protection of historic and cultural resources, please see SPSFM page 139 at http://www.dec.ny.gov/lands/64567.html.

As a part of the inventory effort associated with the development of this plan the Department arranged for the archaeological site inventories maintained by the New York State Museum and the Office of Parks, Recreation and Historic Preservation to be searched in order to identify

known archaeological resources that might be located within or near the unit. The two inventories overlap to an extent but do not entirely duplicate one another. The purpose of this effort was to identify any known sites that might be affected by actions proposed within the unit and to assist in understanding and characterizing past human use and occupation of the unit.

Many remains of past colonial/pioneer settlements appear on the unit. There are no known historic and cultural archaeological resources found on the unit, but there are several found within a mile or less:

- NYSM 856 - The Chas Allen Site: unidentified and undated precontact.
- NYSM 858 – The Cain Mound: reported burial mound between 0 AD and 1000AD.
- NYSM 2865 – The Point Peter Site: unidentified and undated precontact.
- NYSM 6598 - unidentified and undated precontact.

The following generic cultural resources and archaeological site protection text will be valid only after a Structural Archaeological Assessment Form has been completed for planned site developments scheduled within the first two years of the plan or if there are no such developments within the first two years of the plan. Site developments include things such as roads, parking areas and the like.

Historic and Archaeological Site Protection

The historic and archaeological sites located within the unit as well as additional unrecorded sites that may exist on the property are protected by the provisions of the New York State Historic Preservation Act (SHPA - Article 14 PRHPL), Article 9 of Environmental Conservation Law, 6NYCRR Section 190.8 (g) and Section 233 of Education Law. No actions that would impact known resources are proposed in this Unit Management Plan. Should any such actions be proposed in the future they will be reviewed in accordance with the requirements of SHPA. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of Environmental Conservation Law and Section 233 of Education Law. In some cases, additional protection may be afforded these resources by the federal Archaeological Resources Protection Act (ARPA).

Archaeological Research

The archaeological sites located on this land unit, as well as additional unrecorded sites that may exist on the property, may be made available for appropriate research. Any future archaeological research conducted on the property will only be conducted under the auspices of all appropriate permits. Research permits will be issued only after consultation with the New York State Museum and the Office of Parks, Recreation and Historic Preservation. Extensive excavations are not contemplated as part of any research program in order to ensure that the sites are available to future researchers who are likely to have more advanced tools and techniques as well as more fully developed research questions.

Real Property

DEC's Bureau of Real Property GIS system contains maps and some deeds for State Forest properties. Original deeds were also consulted to complete the information below.

Boundary Lines

Table I.G. – Status of Boundary Lines

Facility Name	Length of Boundary (mi.)	Length Needing Maintenance	Length Needing Survey
Onondaga Escarpment Unique Area	1.4	1.4	0
Zoar Valley MUA/UA	25.2	25.2	0
East Otto State Forest	10.2	10.2	6.8

For more information on boundary line maintenance, please see SPSFM page 153 at http://www.dec.ny.gov/lands/64567.html.

Exceptions and Deeded Restrictions

Table I.H. – Exceptions and Deeded Restrictions

Facility Name	Description (e.g., deeded ROW, easement, access lane, water rights, cemetery, etc.)	Proposal ID (Surveyor's Reference)
East Otto SF	National Fuel Gas has all the mineral rights, with surface rights for buildings, pipelines, roads etc. (Liber 2967, Page 171)	
Zoar Valley UA	Laws of New York 2007, Chapter 130 reserve 1,492 acres Zoar Valley Unique Area to the state and nature historical preserve	
Zoar Valley MUA	Supplemental Area 5.72 ac. (Map 2)	Map 11435
Zoar Valley MUA	Ross Family Burial Ground	P. 8.3.20
Zoar Valley MUA	Water rights	P. 8.3.9
Zoar Valley MUA	National Fuel Gas – Collins gas storage field; Erie County portion of MUA	

In l961 and 1962, Herbert Darling deeded 1,425 acres, including the Valentine Flats and the Forty Bridge areas, to the State of New York. There were 5 deeds involved, and each deed contained the following statement:

"*This land is conveyed as a gift to the State of New York in the thought that its gorges be retained in their wild state; that for the enjoyment of the public no development other than simple foot trails be made with [sic] the gorges, and that only such development be made at the immediate gorge rims as are necessary to insure the safety of those enjoying the scenic values of the gorges. The state insofar as possible will keep it so but this shall not be deemed a condition as to the grant*."

Although this statement is not a deed restriction, the Department intends to follow the spirit of this request by protecting the gorge and the gorge rim as outlined, with public access afforded.

Use and Demand Related to Exceptions and Deeded Restrictions

Historically, there has been a large industrial natural gas presence throughout western New York and within the unit. Many of the leases on the state land wells inherited by the Department have now expired. Gas wells have been capped and abandoned according to relevant laws and regulations. National Fuel continues to maintain a large, underground gas storage field in the Zoar Valley area, some of which exists under state lands along Vail Road in the town of Collins. Evidence of the underground storage is visible on private property but goes unnoticed on state lands. Permits are occasionally issued to work on pipelines along Traffic Street, at which time Best Management Practices (BMPs) are enforced by the Department during operations.

Encroachments

Table I.I. – Encroachments

Facility Name	RA #	Description	Proposal ID (Surveyor's Reference)
Zoar Valley MUA	CE 1	Wooden structure across line	Parcel 14
Zoar Valley MUA	CE 1	Driveway and metal building	P. 8.3.13

Well-marked boundary lines that are readily identifiable to the public help to reduce unintentional trespass. However, encroachments onto state lands do sometimes occur. Such issues requiring resolution are listed in the above table. Staff will coordinate with the Bureau of Real Property, Division of Forest Protection, and Office of General Counsel to investigate and resolve encroachment issues.

Land Acquisition

Acquisition of property from willing sellers on the landscape surrounding the unit may be considered in the following priority areas:

- In-holdings and adjoining properties that would reduce management costs and benefit resource protection and public access goals
- the mineral estate wherever it is split from a State Forest tract
- properties within identified matrix forest blocks and connectivity corridors
- forested lands in underserved areas of the state
- forested lands in areas that are in need of watershed protection
- for other reasons, as identified in the current NYS Open Space Plan

For more information on land acquisition, please see SPSFM page 147 at http://www.dec.ny.gov/lands/64567.html.

Public Safety Planning

Zoar Valley is one of the most scenic and ecologically diverse environmental areas in western New York. It is known for the spectacular scenery created by its deep gorge, sheer cliffs, flowing waterfalls, and dense forests. These same features come with inherent hazards. Yet, the property continues to be very popular for recreational visitors either seeking this rugged and varied terrain or those unprepared for it. There have been several serious injuries to visitors in

the last decade, including fatalities, the most recent of which occurred in the summer of 2020. Some of these incidents occurred on neighboring private lands. The Department acknowledges and is grateful for the cooperation and support of the Divisions of Operations and Forest Protection, local communities, elected officials, adjacent property owners and, in particular, the many members of local rescue crews and emergency responders.

The Department does not want to deter public use and enjoyment of state land; however, it has a responsibility to ensure public safety and protect natural resources. Efforts to ensure a safe visitor experience will include outreach and education, staffing, enforcement, facility upgrades and maintenance, signage, and potential regulatory changes. Fencing and/or other physical barriers may be considered as well. This will require cooperation from the Division of Operations, Forest Protection and the Office of Communication Services. The actions proposed in this plan, considered in their entirety, are intended to provide a safer, more environmentally sustainable user experience. In addition to the routine inspection of signs, kiosks, gates, boundary lines, and trails, the following is a list of some of the recent safety improvements implemented at Zoar Valley:

- Developed and installed new signage to convey important warnings and safety messages;
- Created a georeferenced, digital map;
- Closed and re-routed portions of the Holcomb Pond Trail System;
- Closed unofficial trails (continuous);
- Hired a seasonal Assistant Forest Ranger;
- Updated webpages to identify safe creek and gorge access points.

The following is a list of some of the key improvements underway and planned:

- Install additional signage;
- Coordinate with local EMS to establish E911 addresses for main access points on the property;
- Upgrade kiosks to include a map and important property and safety information
- Install map boxes at key access points;
- Coordinate with online map providers to promote the use of accurate property information;
- Perform upgrades to the Valentine Flats trail to enhance emergency response operations;
- Construct a universal access trail with overlooks at the Valentine Flats Parking Area;
- Perform upgrades to the Valentine Flats Parking Area for emergency response;
- Coordinate with the Division of Forest Protection to provide training opportunities to the local emergency response community;
- Hire seasonal stewards for outreach and education;
- Pursue regulatory amendments to prohibit climbing the gorge walls, establish a restricted area within 15 feet of the edge of the gorge, and prohibit traveling upstream of the Forty Road Parking Area;
- Pursue property acquisitions to enhance safety and emergency response;

- Seek agreements with individuals and groups to provide basic trail maintenance, and educate visitors about safe, responsible recreation;
- Monitor and replace signage continuously and as needed;
- Re-assess webpage and FAQ and develop better safety messaging;
- Assess methods to document and manage visitation and recreational demand, including the use of trail registers, trail and vehicle counters, and self-permitting access systems. An example of a self-permitting system is at the Peekamoose Blue Hole on Sundown Wild Forest in Ulster County.

Public Safety and Resource Protection by Regulation

State land, including those in this planning Unit, contain features of unique interest. Unique geological formations, deep woods, waterfalls and cultural resources such as old homesteads, cemeteries and historical sites can draw inquisitive visitors. State lands can also harbor rare and endangered plant communities and ecosystems. These special habitats add emphasis to the stewardship responsibilities of land management. Some of these same unique features come with certain risks to visitor safety.

In order to minimize impacts related to public use and safety, the Department relies on a combination of management planning, along with public education, enforcement of regulations and permit issuance. When public education and enforcement of general regulations are not sufficient to protect resources and public safety in a particular area, property-specific regulations may be developed.

Specific regulations for Zoar Valley were first adopted in 2006. The regulations were amended in 2010 to recognize the new distinction between the MUA and the protected Unique Area, while also adding several new subdivisions. The current regulations covering Zoar Valley are located in 6 NYCRR 190.25 of the official codes, rules and regulations of New York State. While the following is believed to be accurate, this is not a certified copy of the current regulations and therefore should not be relied upon for legal interpretation.

190.25 Zoar Valley Multiple Use Area including Zoar Valley Unique Area.

(a) Applicability.
For purposes of this section, Zoar Valley Multiple Use Area including Zoar Valley Unique Area means all those State lands, excluding East Otto State Forest, lying and situated in the Towns of Otto and Persia, Cattaraugus County, and the Town of Collins, Erie County, including a five-mile segment of Cattaraugus Creek and a two-mile segment of the south branch of Cattaraugus Creek, and being the same lands as more particularly described in several deeds conveying said lands to the people of the State of New York, on file in the Department of Environmental Conservation, Albany, NY, and duly recorded in the office of the county clerk of the County of Cattaraugus and the office of the county clerk of the County of Erie, respectively. Said Zoar Valley Multiple Use Area including Zoar Valley Unique Area shall be hereinafter referred to in this section as “area.” The provisions of this section shall not apply to, and the references hereinafter to the “area” shall not include, the detached parcel of Zoar Valley Multiple Use Area, generally located between Wickham Road and Forty Road. The provisions of this section shall supersede the general regulations enumerated in this Part in the event of a conflict.
(b) The area shall be closed to any and all public use of any kind between the hours of

sunset and sunrise.
(c) Motor vehicles, including snowmobiles but not limited thereto, are prohibited from operating in or on the area, except on town or county roads therein, or as permitted on roads and parking areas designated and marked for motor vehicle use by the commissioner.
(d) No person shall park any motor vehicle, including self-propelled and nonself-propelled vehicles, except on and within areas designated and marked as such parking areas by the commissioner.
(e) No person, other than employees of the department, State Police and police officers, shall possess, carry, discharge or use firearms, ammunition, explosives or explosive substances or fireworks on the area, except that during the small game and big game hunting seasons, provided for by law, firearms and bows and arrows may be possessed and discharged.
(f) No fires shall be permitted in the area.
(g) No person shall deposit in or on any part of the area any garbage, sewage, refuse, waste or other obnoxious material otherwise than in receptacles provided for such purposes.
(h) No person shall throw, cast, lay, deposit or discharge into or leave in any waters flowing within or standing on said area, any substance, matter or thing, liquid or solid, which may or shall result in the pollution of said waters.
(i) No person shall bathe or swim in any of the waters flowing or standing through or on the area.
(j) No camp, tent, trailer, shelter, lean-to or structure of any kind shall be erected or maintained within the area.
(k) No person shall injure, deface, disturb, steal, molest or befoul any part of the area or building, spring, well, sign equipment or other structure or property found therein; nor shall any tree, flower, fern, shrub, grass, rock or other mineral, or any part thereof, be removed, injured or destroyed.
(l) No person shall: disobey an order of a ranger, member of the State Police or any other police officer, or refuse to obey a lawful order given by an employee of the department authorized to give orders and identified by a uniform, badge or other identification; or disobey the directions of any departmental sign; use threatening, abusive, insulting language; do any obscene or indecent acts; throw stones or other missiles; annoy persons, interfere with, encumber, obstruct or render dangerous any drive, spring, well, path, walk or public place; do any act tending to or amounting to a breach of peace; engage in, instigate, aid or encourage a contention or fight; or assault any person.
(m) No person shall erect a sign, notice or poster at any place within the area without a permit therefor; nor shall any musical instrument, radio, talking machine or drum be operated or any noise be made for the purpose of attracting attention to any exhibition of any kind.
(n) No person shall erect any structure, stand or platform, hold any meeting, perform any ceremony, make a speech, address or harangue, exhibit or distribute any sign, placard, notice, declaration or appeal of any kind or description; or being in or on a vehicle, race with another vehicle, whether such race be founded on any stake, bet or otherwise; except by permit.

(o) No parade, drill or maneuver of any kind shall be conducted, nor shall any procession form for parade or proceed on the area without a permit therefor.
(p) No person shall possess or carry alcoholic beverages or glass containers, except for prescription medicines.
(q) No bicycles, skateboards or similar equipment, horses or other work animals shall be permitted in or on the area, except on town or county roads therein, or as permitted on roads and parking areas designated and marked for motor vehicle use by the commissioner.

An amendment to 6 CRR-NY 190.25 is proposed in this UMP to address unregulated activities that may result in situations where visitors are injured or require search and rescue operations. The amendment will also deter trespass complaints from adjacent property owners. Specifically, the amendment will provide that:

- No person shall proceed upstream, either by land or water, in the area beginning at the abandoned Forty Road bridge abutments, and extending upstream on the South Branch of Cattaraugus Creek to the State land boundary line, except for licensed anglers for the purpose of fishing, or by authorized permit issued by the department;
- No person shall enter any area designated as restricted by the department, except on trails designated and marked by the department, or by authorized permit issued by the department;
- No person shall enter the area within 15 feet of the cliff edge, except on trails designated and marked by the department, or by authorized permit issued by the department;
- No person shall scale or climb cliff walls, including any waterfall, except by authorized permit issued by the department.

Currently, there are no specific regulations for Onondaga Escarpment UA. The existing regulations for 6 NYCRR Part 190 are not sufficient to control public use to the extent necessary to maintain and protect the natural resources of the property. This UMP proposes regulations that will address protection of this unique area from resource damage caused by unregulated activities that are incompatible with the small and sensitive nature of the site. The proposed amendment will provide that in the Onondaga Escarpment Unique Area:

- the area is open for public entry and use only from one-half hour before sunrise until one-half hour after sunset;
- fires are prohibited at all times, except prescribed fires as directed by the department;
- parking of motor vehicles permitted in designated sites only;
- camping is prohibited;
- bathing and swimming are prohibited;
- the use of snowmobiles is prohibited;
- off-road vehicle traffic is prohibited;
- the riding, driving, or leading of horses is prohibited
- discharging of a firearm is prohibited;
- hunting and trapping are prohibited, except by authorized permit issued by the department.

The general state land regulations covering East Otto State Forest are sufficient to manage public use and safety. No changes are proposed for East Otto SF.

Forest Rangers in the Division of Forest Protection have the direct responsibility to enforce all laws and regulations on these State lands. This necessitates regular patrols, especially in areas prone to greater use.

Infrastructure

State Forests are managed with a minimal amount of improvements to accommodate rustic, forest based recreational opportunities while providing for resource protection; public health and safety; and access for individuals of all ability levels. For more information on infrastructure policies, please see SPSFM page 157 at http://www.dec.ny.gov/lands/64567.html.

Roads and Trails DEC's GIS data contains an inventory of public forest access roads, haul roads and multiple-use-trails on the unit, including a representation of the allowable uses along each road or trail segment. Table I.J. contains a summary of roads, trails and related infrastructure on the unit.

ADDITIONAL INFORMATION

DECinfo Locator – An interactive online mapper can be used to view recreational trails and assets on this Unit to help people plan outdoor activities. Located at DEC's Mapping Gateway: http://www.dec.ny.gov/pubs/212.html

Google Earth Virtual Globe Data - Some of DEC's map data, including accessible recreation destinations, boat launches, lands coverage, roads and trails on this Unit can be viewed in Google Maps or Google Earth. (Also located at DEC's Mapping Gateway)

Use and Demand on Roads, Haul Roads and Parking Areas

Table I.J. – Existing Access and Parking (see Figure 2 for maps)

Category	Total Amount	Needing Improvement
Public Forest Access Roads	2 mi.	2 mi.
Haul Roads	1.56 mi.	.32 mi.
Trails	21.6 mi.	21.6 mi.
Stream Crossings		
Bridges	0	0
Culverts	28	28
Related Infrastructure		
Parking Areas / Trailheads	11	11
Gates / Barriers	10	10

The existing access and parking areas, particularly at Zoar Valley, are heavily used by numerous recreational users, particularly during summer. During the milder months there is a tremendous amount of hiking, as well as hunting and fishing during the appropriate seasons. There is noticeably less pressure on these properties during the winter. It is important to note that limiting parking is a necessary tool used by land managers to control public use and protect the natural resources on managed lands within the Unit. Forest Rangers work closely with local officials to monitor and enforce parking rules.

Public Forest Access Roads (PFAR) are permanent, unpaved gravel roads that are seasonally open to the public. They were constructed to Department's Forest Road Handbook standards and typically are open to vehicle access from mid-April to late December. Seasonal closure is necessary for public safety due to lack of maintenance during winter. PFARs are typically closed after the last day of the late deer season and remain closed, until and including spring mud season. These roads may also be closed for maintenance purposes and during any unforeseen extreme weather event. The only PFAR on the unit is Kriedeman Forest Road on East Otto State Forest.

Haul Roads are also permanent, unpaved roads, but they are not constructed or maintained for all season travel. Their primary use was historically for the removal of natural resources. Haul roads on the unit are closed to the public and will remain closed until time and funding become available to make the necessary improvements based on the procedures listed in the Forest Road Handbook.

The Trails category might more accurately be labeled skid or access trails. Many of the existing trails were previously used for the removal of forest products and other forest management objectives. The public commonly use these trails to access state lands for hiking and during hunting seasons. Some of these trails were not laid out properly according to modern day BMPs, and as such will likely not be used again by logging equipment. The public can continue to use these trails to access these properties where they are designated and marked by the Department.

Virtually all the trails listed in Table I. J. were created to improve access to forest stands on the state lands within the unit. These access trails facilitate forest management, including forest inventory projects and forest health evaluations. Many of the trails were constructed prior to state ownership as part of a timber sale or by homesteaders. Some are now integral parts of a multiple use trail system, while others may support different management objectives.

Information on public use of the area has not been routinely collected. Parking lots are typically reported full during summer weekends. Cars then spill out onto town roads, impairing traffic flow and posing a possible hinderance to emergency response. Town officials in 2020 posted the south side of Valentine Flats Road as "No Parking." It is evident that many of the parking areas near water access are most heavily used. The Department may at times propose the limiting or restricting of parking to help protect resources from degradation. Note this data collected from a creel survey of steelhead anglers, "*The total number of cars at the Valentine Flats and the Forty Road access sites indicated that between 7,000 and 12,000 people used the area in the eight-month period between September 2002 and May 2003. These figures were obtained by taking the average number of people per vehicle and multiplying by the number of cars counted. The*

number of anglers interviewed accounted for about 16% of the total number of users at the Valentine Flats access site." (Zoar Valley UMP, 2006)

Use and demand on multiple use trails is discussed under Recreation.

Maintenance and improvements are needed on parking areas throughout the Unit. All parking areas will receive routine monitoring of signage and inspections for overuse and abuse. Overall priority is on improvements to the Valentine Flats Parking Area, to include accessible parking and consideration for emergency response operations. The Department is currently in the design stage of planning this project, with anticipation of project completion in 2022. Improvements are also desired at Forty Road, town of Persia and to the Ross and Holcomb Pond parking areas along Vail Road, town of Collins.

Additionally, the following parking and road improvements are proposed:

- Develop emergency access points at Zoar Valley MUA/UA, coordinated with rescue personnel.
- Improve signage and maps to better educate the public.
- Improve Kriedeman PFAR at East Otto SF, grade surface gravel.
- Upgrade Wildlife Access south of Traffic Street at East Otto SF, possible Class A road.
- Research Button Road Access at Zoar Valley MUA/UA and improve to the extent possible.
- Research Gowanda Zoar Road Parking at Zoar Valley MUA/UA, northeast end of property.
- Review parking needs along Traffic Street with town of East Otto.
- Research an expansion of the Scotland Road Parking Area at Onondaga Escarpment UA is desired. Alternatively, consider developing parking access on John Street.

Signs / Kiosks

There are 10 identification signs and 5 kiosks on the unit. Improvements are desired at all existing kiosks to incorporate current design guidelines and standards for viewing and displaying information and regulations. The addition of signs and kiosks is continuously reviewed, and installations made as needed to better inform visitors. Maps and signage containing rules, along with education and instructions for public safety and environmental protection, will be developed and installed as needed.

The following are priority areas for map and kiosk improvements:

- Zoar Valley MUA/UA - Valentine Flats Parking Area
- Zoar Valley MUA/UA - Forty Road Parking, town of Persia
- Zoar Valley MUA/UA - Ross Pond Parking Area
- Zoar Valley MUA/UA - Holcomb Pond Parking Area
- East Otto SF – East Otto Parking Area (develop map and information panel)
- Zoar Valley MUA/UA - Button Road access
- Onondaga Escarpment UA – Scotland Road Parking Area

INFRASTRUCTURE

Boating and Fishing Facilities

There are several boat launches on the many tributaries of Lake Erie within the unit. There is one on Cattaraugus Creek along North Otto Road just south and east of the bridge. This site is managed by the Division of Fish and Wildlife. It is a launch site for rafting and boating through the Zoar Valley gorge. There are several ponds on the Zoar Valley and East Otto properties, which are all heavily used by the public.

Boating and fishing facilities as well as their use and demand are discussed under Recreation.

Designated Campsites and Lean-tos

East Otto Camping Area on Kriedeman Road has 14 designated campsites. This area is heavily used throughout the recreational camping season. These sites are considered primitive sites with no amenities. Campsites are available on a first-come, first-serve basis. A free permit is only required if the group size is 10 or more, or if the stay will be more than three nights. Local Forest Rangers issue permits. Leave no Trace methods should be practiced, including Carry In, Carry Out. See https://www.dec.ny.gov/outdoor/41282.html for more information. These sites require maintenance upkeep/oversite from the Division of Operations, and public safety patrols from Forest Rangers. Implementation of a “camping by permit only” system will be considered to minimize camping impacts to resources. Campsites may be closed or relocated based on site conditions or availability of Department resources to address concerns.

Camping facilities, as well as their use and demand are discussed under Recreation.

Utility Transmission and Collection Facilities

National Grid (NG) has a utility line Right of Way (ROW) across Zoar Valley Multiple Use and Unique Area totaling 1.16 miles. NG has 3.73 miles of electric transmission line ROW crossing East Otto SF and Zoar Valley MUA/UA. Annual pruning permits are issued by Central Office or regional TRPs for other work along this line.

Seed Production Areas

There have been many acres of reforestation plantings on both East Otto State Forest and Zoar Valley MUA/UA. Zoar Valley MUA/UA also has some experimental seed orchards and plantings. The first is a black walnut plantation established in 1968 at Valentine Flats. The plantation covers approximately 12 acres. The Department cooperated with the US Forest Service in 1970 to establish a 14-acre black cherry planting. This was followed by a 2.4-acre black walnut planting in 1971, and in 1973, a 5-acre yellow poplar planting at the Ross site.

In 1991 and 1992 the Department cooperated with the American Chestnut Foundation in the planting of American chestnut trees as seed sources for future plantings. The plantation was increased to approximately 18 acres in 1999 with a large volunteer effort. The Chestnut Foundation currently maintains a Volunteer Stewardship Agreement with the Department to maintain this area and collect seeds each fall. There is a 500-foot safety zone in place around the chestnut plantation, pursuant to Section 11-0931 of NYS Environmental Conservation Law.

Non-recreational Uses

Off-Highway and All-Terrain Vehicle Use

For a comprehensive discussion of DEC's policy regarding ATV use on State Forests, please refer to page 213 of the SPSFM at www.dec.ny.gov/lands/64567.html.

Motor vehicle use is not considered to be a recreational program of the Department, but rather a means of access for recreation and other uses. Attributes of recreational ATV use make it incompatible with management goals. There are no designated trails on managed lands within the Unit. Site limitations and public safety are the major concerns. 6 NYCRR 190.25 (c) prohibits its use on Zoar Valley MUA/UA. 6 NYCRR 190.8 (m) prohibits its use on State Lands Managed by the Department. Specific regulations are sought for Onondaga Escarpment to prohibit the use of ATVs.

Military Field Exercises

Permits have been issued to various local US Military units to conduct training on State Forests on nearby UMP Units. Training typically includes search and rescue, orienteering, land navigation, and camping. This may be appropriate on East Otto State Forest and could be considered there.

Agricultural Use

There are currently no lease or contractual agricultural agreements on managed lands within the Unit. Division of Fish and Wildlife (DFW) maintains the open fields on Zoar Valley MUA/UA. If DFW was no longer able to maintain these fields, the Department would seek agricultural leases or the cooperation of conservation partners to help manage the fields.

Formal and Informal Partnerships and Agreements

Conservation and stewardship partnerships are increasingly important, especially for public land management agencies. Considering the fact that resources will always be limited, collaboration across political, social, organizational and professional boundaries is necessary for long-term success and sustainability. Encouraging the development of cooperative and collaborative relationships is and can be done through volunteer agreements with the department. For more information on these and other partnerships, please see SPSFM page 181 at http://www.dec.ny.gov/lands/64567.html.

The Finger Lakes Trail Conference entered into a Volunteer Stewardship Agreement (VSA) in 2019, agreeing to maintain trails in Zoar Valley MUA/UA. The Department has worked with the American Chestnut Foundation since 1991 in the "William White Chestnut Plantation". The Erie County Sheriff's Office works with DFW to raise and release pheasants on Zoar Valley MUA/UA. The Department has worked with land conservancy groups on many projects within the Unit. The Department works closely with the Nature Conservancy, local towns and villages, and supports a formal agreement between these partners to address issues. There has also been staff contact with conservation groups like American Rivers, Adirondack Mountain Club, Finger Lakes Trail Conference, National Audubon Society, Ducks Unlimited, National Turkey Federation, Pheasants Forever, Trout Unlimited, US Fish and Wildlife Service, the US Forest Service, and Zoar Valley Paddling Club. A VSA is desired to maintain the trails and parking lot at Onondaga Escarpment UA.

RECREATION

Recreation

Recreation is a major component of planning for the sustainable use of State Forests on this unit. DEC accommodates diverse pursuits such as snowmobiling, horseback riding, hunting, trapping, fishing, picnicking, cross-country skiing, snowshoeing, bird watching, geocaching, mountain biking, and hiking. Outdoor recreation opportunities are an important factor in quality of life. We often learn to appreciate and understand nature by participating in these activities. However, repeated use of the land for recreational purposes can have significant impacts. For further discussion of recreational issues and policies, please see SPSFM page 187 at http://www.dec.ny.gov/lands/64567.html. The following section includes an inventory of recreational opportunities available on this unit as well as a description of use and demand for each activity. Recreational maps and geographic data are available at DEC's Mapping Gateway http://www.dec.ny.gov/pubs/212.html in Google format or in the State Lands Interactive Mapper.

Public Use Surveys

A press release and pre-plan scoping meeting was conducted April 12, 2018, to collect information from the Public for this UMP. The public comment period was open until May 25, 2018. Additional public meetings will be scheduled as needed, after a draft is completed. Feedback received from another open comment period will be incorporated into the final plan.

Exceptional Recreational Opportunities

There are many recreational opportunities within the Unit. Department staff intend to manage the varying users and uses to accommodate a variety of activities while at the same time protecting the resources and visitors. Adjustments will be made to reduce user conflicts. Public safety is of utmost importance. Overuse and over development are additional concerns for the management of the state properties covered in this plan.

Onondaga Escarpment UA is primarily a local hiking destination.

Zoar Valley MUA/UA has many recreational opportunities including hiking, hunting, fishing and rafting.

East Otto SF has many camping opportunities. This is the primary draw to this property. Big game and small game hunting are also popular on East Otto SF.

Wildlife-related Recreation

Hunting

East Otto SF and Zoar Valley MUA/UA are open to hunting (subject to limitations as provided in the ECL). Hunting has value as a land management tool and is encouraged.

Deer are likely more abundant in the State Lands surrounded by agriculture which can have negative impacts on the forest stands therein. These localized landscape settings factor heavily into the management of these forests.

The parking areas, roads, trails and camping areas start to show heavy use from hunters starting in late September and continuing through late December. The most popular areas are accessible by town road. There are some town roads that do not receive maintenance after December 1st, at which point access is limited to these state lands. For a list of Region 9 Wildlife Management Units see link for DECinfo Locator: https://gisservices.dec.ny.gov/gis/dil/

Small game is also very abundant and hunting small game on state land is popular. During the spring, the state forests fill with activity from spring turkey hunters. The parking areas, roads and trails are commonly used by turkey hunters. During the fall, many small game hunters pursue ruffed grouse in forest stands near past logging operations on State Forests and MUAs. There are several Wildlife Management Areas adjacent to State Forests where pheasants are released. Zoar Valley MUA is managed for pheasants including the releasing of pheasants for small game hunting in cooperation with Erie County Sheriff's Office. For more information on pheasant hunting permits follow link: https://www.dec.ny.gov/press/121416.html For more information on Small Game Hunting follow link: http://www.dec.ny.gov/outdoor/27801.html

Lands and Forests staff work cooperatively with local conservation groups such as: National Audubon Society, Cattaraugus and Erie County Sportsman Federation, Ruffed Grouse Society, National Wild Turkey Federation, Pheasants Forever and Quality Deer Management Association.

Due to the small size and location of Onondaga Escarpment UA, including its proximity to a school, hunting is not considered a compatible recreational use. A regulatory change is desired to formalize this restriction.

Fishing

The most prominent fishing area within the Unit is Cattaraugus Creek, which is known regionwide for its steelhead fishery. Follow the link for more information on steelhead fishing on Cattaraugus Creek: https://www.dec.ny.gov/docs/fish_marine_pdf/cattcreeksteelhead.pdf. The Department is committed to improve angling opportunities on the remaining ponds on managed lands in the Unit. The Department will develop and implement fisheries management plans for Unit ponds greater than one (1) acre in size and five (5) feet in depth. Lands and Forests will work with DFW to sample fish populations in existing ponds to develop management plans. DFW will be consulted to review recommendations including, but not limited to, stocking of pan/game fish and ongoing assessments as necessary. Other ponds within the Unit will be inventoried when possible to determine if they can be considered for fisheries management. The Department will consider naming un-named ponds for management proposes and public information and display on published maps.

Fishing opportunities also exist at:

- Stickney Pond - East Otto SF
- Ross Pond - Zoar Valley MUA/UA
- Holcomb Pond - Zoar Valley MUA/UA

Demand is heavy on Cattaraugus Creek and local ponds on the Unit.

Follow link for more information on Upper Cattaraugus Creek Fisheries Management Plan: https://www.dec.ny.gov/docs/fish_marine_pdf/fmpuppercattck.pdf

Follow the link for more information on places to fish in Western New York: http://www.dec.ny.gov/outdoor/32658.html.

RECREATION

Trapping

There are many opportunities for trapping on the Unit. The road and trail network on the Unit provide access to a mix of habitat and cover types for furbearers. DFW staff have recently conducted studies monitoring fishers and bobcats. These studies were conducted on nearby state lands and many sightings were documented of both species. Many other furbearing species with open seasons are common in the Unit as evidenced by this study. In a 2012 survey conducted by the New York State Trappers Association, over 88% of the respondents reported they trapped on State Land. See link for Trapping BMP and Trapping Public Land: http://www.dec.ny.gov/outdoor/81564.html.

Due to the small size and location of Onondaga Escarpment UA, including its proximity to a school, trapping is not considered a compatible recreational use. A regulatory change is desired to formalize this restriction.

Current trapping opportunities appear to meet demand.

Viewing Natural Resources

There are beautiful views of wooded and wetland/pond settings on East Otto SF and Onondaga Escarpment UA.

The views of the Zoar Valley gorge along the Cattaraugus Creek are renowned region-wide. There are access points and designated trails at Zoar MUA/UA that safely lead visitors to vistas of the gorge. **The Forty Road Parking Area and the Valentine Flats Parking Area, both in the town of Persia, are the only two safe areas to access the gorge in Zoar Valley MUA/UA.** These areas provide a unique opportunity to explore a riverine environment along Cattaraugus Creek in the gorge. The Forty Road parking area features a short accessible trail that leads to an overlook at the old bridge abutments. **Due to private land concerns, visitors should only proceed downstream from the Forty Road parking area.** A regulatory change is desired to formalize this by creating a restricted area. The Valentine Flats trail offers views of the valley and leads to a prominent and unique rock formation known as the “Pyramid” down along the “Flats” on the banks of the creek. Ross Parking Area and the Holcomb Pond Parking Area, both in the town of Collins, Erie County, provide access to the Ross Pond Loop Trail and the Holcomb Pond Trail.

Due to safety concerns at Zoar Valley MUA/UA and the unstable shale rock formation, climbing the gorge walls is not a compatible recreation use. Visitors are advised to keep back 15 feet from the cliff’s edge. Warning signs have been posted while the Department initiates a regulatory change to define this 15-foot zone as a restricted area.

Demand to reach these scenic vistas is exceptionally high, which requires support from Forest Rangers and the Division of Operations. Improvements are sought at the Valentine Flats parking area to create an accessible trail with safe overlooks and upgrade the Valentine Flats trail to the confluence.

Camping

Currently there are 14 designated camping sites on East Otto State Forest. All camping sites are Carry in, Carry out and must always be kept clean. Backwoods camping or primitive camping can be enjoyed almost anywhere on East Otto State Forest. Camping is prohibited

within 150 feet of any road, trail, spring, stream, pond or other body of water except at camping areas designated by the Department. A permit is required for camping in one location for four or more nights, but no more than fourteen nights, or with a group of more than ten campers. Contact the local New York State Forest Ranger to apply for a camping permit. Campsites cannot be reserved. Inventory of campsites will be conducted annually to document usage and site conditions. This information will be used as evidence to direct management decisions requiring use restrictions or improvement projects. For Camping Regulations, see 6 NYCRR 190.3- 190.4. See Appendix I for Regulations. See Figure 3 for map of locations.

Currently the demand for camping opportunities is very high, particularly at East Otto State Forest. This has placed a strain on resources needed to manage these campsites. Implementation of a "camping by permit only" system will be considered to minimize camping impacts to resources. Campsites may be closed or relocated based on site conditions or availability of Department resources to address concerns.

Camping is prohibited on Zoar Valley MUA-UA and Onondaga UA. The 2006 UMP for Zoar Valley MUA proposed amending the prohibition on Camping in 6 NYCRR 190.25 (B), (F), and (J), to allow Camping on the Multiple Use Area. There are no changes recommended at this time.

Due to the small size and location of Onondaga Escarpment UA camping is not considered a compatible recreational use. A regulatory change is desired to formalize this restriction.

For more information about primitive camping see https://www.dec.ny.gov/outdoor/41282.html.

See https://www.dec.ny.gov/about/667.html#Region_9 for local contacts for primitive camping permits.

Water-based Recreation

The Cattaraugus Creek is a draw region-wide for fishing and rafting during their respective seasons. Valentine Flats and Forty Road parking areas in the town of Persia are used by anglers to access the creek. The North Otto Road Fishing Access managed by DFW is used during the rafting season as a launch site. It has been reported that this site is not ideal for this purpose. Department staff are working with local landowners through the land acquisition process at a site that would better suit the needs of waterway access. The waterway throughout the gorge is used heavily during the summer to float and walk along the Main Branch and South Branch of Cattaraugus Creek.

There are no boat launch sites within the Unit. Demand is high.

Demand for water-based recreation is high on Cattaraugus Creek. Department staff are working with the local rafting community to establish a Volunteer Stewardship Agreement to better communicate between their use and the local community needs.

Due to private land concerns visitors should only proceed downstream from the Forty Road parking area. A regulatory change is desired to formalize this by creating a restricted area.

RECREATION

Trail-based Recreation

Table I.K. – Multiple Use Trails (see Figure 2 for maps)*

Use	Length (miles)
Foot Trail Use	5.0
Cross Country Skiing	2.9
Equestrian	0
Mountain Biking	0
Snowmobile	0

* Length available for each use includes use on PFARs; does not include municipal roads

At Zoar Valley MUA/UA, the trails accessible from Vail Road at the Ross and Holcomb Pond Parking Areas, are the only multiple-use trail system on the Unit. These trails are for hiking, snow shoeing and cross-country skiing.

Due to the small size and sensitive nature of Onondaga Escarpment UA, mountain biking, snowmobiling and equestrian uses are considered incompatible recreational uses. A regulatory change is desired to formalize this restriction.

The Department does not support the promotion or use of trails not covered under a VSA. Lands and Forests staff work diligently with many volunteers to create and maintain all the trails within the Unit and are committed to continuing this effort. Whenever possible the strictest standards in trail construction are followed using State and Federal guidelines. Please see SPSFM, chapter page 163-166 at: http://www.dec.ny.gov/lands/64567.html

- Trail Registers will be implemented at all trailheads at Zoar Valley MUA/UA. There are unapproved paths on the managed lands within the Unit that are not sustainable or safe. These unapproved trails will be closed and remediated when discovered and possible. Demand for hiking is extremely high, especially at Zoar Valley MUA/UA. Because of this recreational demand, which overflowed the parking area and compromised emergency response, local officials implemented parking restrictions on Valentine Flats Road in the Summer of 2020.
- Trail counters are desired as a means to document and monitor trail usage.

Foot Trail Use

The trails listed in Table I.L. are all built on native material with no improvements other than signage and vegetation management. The trails are unique to their setting and the visitors seek individual trails due to this uniqueness. There are no designated hiking trails on East Otto SF. Onondaga Escarpment has a system of hardened trail tread which can support moderate to heavy use.

The upland trails on the Erie County side of Zoar Valley MUA.UA are accessible from the Ross and Holcomb Pond Parking Areas. The trail network takes visitors through woodlands and around ponds and forested wetlands. A tremendous view of the gorge can be seen along the rim trail section of the Holcomb Pond Trail. **Visitors should stay on marked trails and keep**

back 15 feet from the cliff's edge. There is no safe creek access from the Erie County side of the property.

The Valentine Flats Trail and a short overlook trail is accessible from the Valentine Flats Parking Area. The overlook trail provides spectacular views of the valley and gorge walls. The Valentine Flats Trail takes visitors down to the confluence of the Main and South Branches and Cattaraugus Creek. These trails are only suitable for hiking. State land visitors should stay on marked trails and keep back 15 feet from the cliff's edge**.** Visitors also commonly walk downstream to the confluence by accessing the creek from the Forty Road Parking Area. The Department recognizes the public interest in this use and will explore the feasibility of designating a shoreline trail for public use during the recreation season. Upon approval, the route will be designated and mapped for public use.

The local and regional use seems to be stable and demand for hiking seems moderate year-round, with the highest use being in the summer season. Trail conditions will be continually monitored, inspecting environmental and safety concerns. The Department is committed to limiting hiking to designated trails only. This will require constant attention and efforts to educate the public on low impact activities, including remediating undesirable trails that are unsafe and unsustainable. Inventory of trails will be conducted annually to document usage and trail conditions. This information will be used as evidence to direct management decisions requiring use restrictions or improvement projects.

Cross Country Skiing

Trails accessible from the Ross and Holcomb Pond Parking Areas at Zoar Valley MUA/UA are designated cross country ski trails. These trails are not groomed but are signed and cleared annually. A volunteer stewardship agreement is desired to help maintain these trails during the winter season. The trails accessible from the Valentine Flats Parking Area are restricted to hiking only. The lower main trail at Onondaga Escarpment is suitable for cross country skiing. It is not groomed for this use.

Demand appears low and sustainable.

Equestrian

In the past, there was a Volunteer Stewardship Agreement (VSA) on the detached portion of Zoar Valley MUA. A VSA would be required if there was interest in the future to maintain horse trails at this location. There are no other equestrian opportunities on managed lands in the Unit. 6 NYCRR 190.25 (q) prohibits this use on Zoar Valley MUA/UA. Due to the small size and sensitive nature of Onondaga Escarpment UA, equestrian trails are not considered compatible recreational uses. A regulatory change is desired to formalize this restriction.

Demand is low and opportunities are limited due to less than conducive site conditions.

Mountain Biking

No designated trails on managed lands within the Unit. Site limitations are the major concern currently. 6 NYCRR 190.25 (Q) prohibits the use on Zoar Valley MUA/UA. Due to the small size and sensitive nature of Onondaga Escarpment UA, mountain biking is not considered a compatible recreational use. A regulatory change is desired to formalize this restriction.

Demand is low and opportunities are limited due to less than conducive site conditions.

RECREATION

Snowmobiling

There are no designated trails on managed lands within the Unit. There are also no corridor trails in the area, and no trail system on the properties to tie into. Kriedeman PFAR is gated closed during the winter months. 6 NYCRR 190.25 (c) prohibits the use on Zoar Valley MUA/UA. Due to the small size and sensitive nature of Onondaga Escarpment UA, snowmobiling is an incompatible recreational use. A regulatory change is desired to formalize this restriction.

Demand is low and opportunities are limited.

Other Recreational Activities

Orienteering

There is no interest currently from organized clubs to develop any courses on managed lands. East Otto SF would be the likely property if a club was interested in setting up a course. The Zoar Valley UA would not be considered for a course. The Zoar Valley MUA could be a possibility, but on designated trails only. Onondaga Escarpment UA is limited by size.

Demand is low.

Dog Training / Field Trials

The training of dogs on state forests is permitted. Competitive events such as field trials require special licensing and events with more than 20 people would require a TRP. These activities are regulated under Environmental Conservation Law section 11-0923, which sets specific dates for these activities. Dogs are restricted during the 48-hour period immediately preceding the opening day of fall pheasant season, pursuant to Sections 11-2101, 11-2111 and 6 NYCRR Part 190.8 (p).

Demand for pheasant hunting at Zoar MUA is high. It is not currently known how popular dog training is at Zoar.

Target Shooting

Recreational target shooting is popular locally. There are areas within the Unit that have been vandalized in the past, which can lead to the closing of these areas to target shooting. It would not appear that any of the vandalism was ever connected to recreational shooters who seem concerned about having places to shoot. Shooters must always shoot into a safe backstop, and wear ear and eye protection. Never use a tree to place or hang a target to shoot at. Recreational areas and trails must be considered, to avoid shooting into or across these areas. Never shoot across any maintained road or trail. Target shooting on State Lands is regulated by ECL and 6 NYCRR 190.8 (ab). Breakable targets are never allowed.

Shooting is restricted on Zoar Valley MUA/UA, 6 NYCRR 190.25 (e). A similar restriction is sought at Onondaga UA. Areas near the Campsites on East Otto SF have safety concerns, as well as conflicting uses.

Demand is high. East Otto is the most compatible site within the Unit. There is significant interest in a site along Traffic Street that is currently closed to target shooting. This topic will be reviewed with local officials to determine if this location can be improved to open it up to shooting again.

Overall Assessment of the Level of Recreational Development

It is important that recreational use is not allowed to incrementally increase to an unsustainable level. DEC must consider the impact on the unit from increased use on other management goals or other recreational uses. DEC must consider the full range of impacts, including long-term maintenance and the balancing of multiple uses.

Recreation is the most significant use on the properties managed by the Department listed in this plan. “So rapid is the increase of travel to the parks that it is none too early to anticipate the time when their popularity shall threaten their primary purpose… While we are fighting for the protection of the… parks… from its enemies, we may also have to protect it from its friends.” (Yard, Robert S. *Scientific Monthly*, April 1923, pg. 386-387.)

In 2007, a portion of Zoar Valley received the Unique Area designation under the1972 Environmental Quality Bond Act (NYS ECL § 51-0703(4)) and was added to the State Nature and Historical Preserve Trust, NYS ECL § 45-0117(3)(n). The State Nature and Historical Preserve Trust allows for the protection of lands outside of the forest preserve counties because of their “special natural beauty, wilderness character or geological, ecological, or historical significance so that present and future generations may share their ecological, educational and recreational value.” The Zoar Valley Unique Area will be managed according to all applicable NYS laws and the deeds listed previously. The Department will strive to balance trail development and maintenance to meet usage demand, but not at the risk to public safety or degradation of the resource.

Recreational management on the lands in this Unit will be done in such a manner to limit over development and a degrading of recreational experiences and the natural surroundings. Limiting development will reduce user conflict and protect the habitats on these managed lands. The Department will annually inventory, monitor and record usage and site degradation using GIS and GPS. This data will guide future management of recreational uses. Information from the National Parks Service, US Forest Service and the Interagency Visitor Use Management Council will be applied to determine appropriate amounts of infrastructure and visitors.

The Department will strive to reduce user conflict and will continue to manage the State Forests with BMPs, design, and planning that will benefit multiple uses on these managed lands.

Volunteer Stewardship Agreements are continuously sought to aid with the management of recreational trails. The Department's ability to adequately maintain these resources is greatly enhanced with the help of many individuals and groups that volunteer their time and talent to help preserve and enhance these resources for all to enjoy. Volunteers can help by routinely clearing brush from trails, picking up litter and trash, maintaining trail markers alerting the Department to safety and resource concerns, and providing educational or interpretive services. For more information on becoming a Volunteer Steward on the Niagara Frontier Unit, visit https://www.dec.ny.gov/regulations/90822.html.

Accessibility

DEC has an essential role in providing access to recreational activities that are often rustic and challenging by nature, and ensuring that facilities are not only safe, attractive and sustainable, but also compatible with resources. For more information on accessibility policies, please see SPSFM page 173 at http://www.dec.ny.gov/lands/64567.html.

ACCESSIBILITY

Zoar Valley MUA/UA has a short universal access trail at the Forty Road Parking Area in the town of Persia. The trail leads from a designated parking site to the abandoned bridge abutments. An overlook at the end provides a view of Cattaraugus Creek and the gorge walls.

The Department is currently developing plans for an access trail at the Valentine Road Parking Area at Zoar Valley MUA/UA. The project will also include improvements to the parking area to provide universal access parking. Construction is tentatively planned for 2022.

A universal access trail will also be considered at Onondaga Escarpment UA. Preliminary research will be conducted to determine feasibility, scope and funding sources.

The Department's Motorized Access Program for People with Disabilities (MAPPWD) permits the use of motor vehicles along specific routes for access to programs, such as hunting, fishing, camping, and wildlife viewing on state lands. These routes are provided to facilitate access to these traditional programs and not for the support of ORV or ATV riding activities. This program provides access to recreational opportunities throughout the state and is one more way that New York is opening the outdoors to people with disabilities. This permit program is maintained pursuant to DEC Commissioner's Policy 3 (CP3). For more information and a list of designated routes see https://www.dec.ny.gov/outdoor/2574.html.

There are currently no designated MAPPWD routes within the Unit, but a new route is proposed for the Ross Pond access at Zoar Valley MUA. This route would permit access to the maintained wildlife areas. In cooperation with DFW, plans are to install a gate to better accommodate this activity. The route is an option for a case by case permit until the new gate is installed. After the gate install, the route will be opened, posted and added to the regional list of designated routes.

Existing and potential MAPPWD routes will be assessed along with other recreational facilities and assets. Routes will be evaluated for the degree to which they provide inclusion and access to Department programs and recreational opportunities. MAPPWD routes are carefully located in areas that can support this use. The Department will monitor MAPPWD routes to prevent overuse, abuse or unacceptable impacts.

Application of the Americans with Disabilities Act (ADA)

The Americans with Disabilities Act of 1990 (ADA), along with the Architectural Barriers Act of 1968 (ABA) and the Rehabilitation Act of 1973, Title V, Section 504, has a profound effect on the manner by which people with disabilities are afforded equality in their recreational pursuits. The ADA is a comprehensive law prohibiting discrimination against people with disabilities in employment practices, use of public transportation, use of telecommunication facilities, and use of public accommodations.

Consistent with ADA requirements, DEC incorporates accessibility for people with disabilities into siting, planning, construction, and alteration of recreational facilities and assets supporting them. In addition, Title II of the ADA requires, in part, that services, programs, and activities of DEC, when viewed in their entirety, are readily accessible to and usable by people with disabilities. DEC is not required to take any action which would result in a fundamental alteration to the nature of the service, program, or activity, or would present an undue financial or administrative burden. When accommodating access to a program, DEC is not necessarily

required to make each existing facility and asset accessible, as long as the program is accessible by other means or at a different facility.

This plan incorporates an inventory of all the recreational facilities and assets on the unit or area, and an assessment of the programs, services, and facilities provided to determine the level of accessibility. In conducting this assessment, DEC employs guidelines which ensure that programs are accessible, including buildings, facilities, and vehicles, in terms of architecture and design, and the transportation of and communication with individuals with disabilities.

In accordance with the US Department of Justice's ADA Title II regulations, all new DEC facilities, or parts of facilities, that are constructed for public use are to be accessible to people with disabilities. Full compliance is not required where DEC can demonstrate that it is structurally impracticable to meet the requirements [28 CRF § 35.151 (a)]. Compliance is still required for parts of the facility that can be made accessible to the extent that it is not structurally impracticable, and for people with various types of disabilities. In addition, all alterations to facilities, or part of facilities, that affect or could affect the usability of the facility will be made in a manner that the altered portion of the facility is readily accessible to and usable by individuals with disabilities [28 CRF § 35.151 (b:1-4)].

DEC uses the Department of Justice's 2010 Standards for Accessible Design in designing, constructing, and altering buildings and sites. For outdoor recreational facilities not covered under the current ADA standards, DEC uses the standards provided under the ABA to lend credibility to the assessment results and to offer protection to the natural resource (ABA Standards for Outdoor Developed Areas; Sections F201.4, F216.3, F244 to F248, and 1011 to 1019).

Any new facilities, assets, and accessibility improvements to existing facilities, or assets proposed in this plan, are identified in the section containing proposed management actions. A record of accessibility determination is kept with the work planning record.

For further information, please contact the DEC Statewide ADA Accessibility Coordinator at accessibility@dec.ny.gov.

Mineral Resources

Oil, Gas and Solution Exploration and Development

Oil and gas production from State Forest lands, where the mineral rights are owned by the state, are only undertaken under the terms and conditions of an oil and gas lease. As surface managers, the Division of Lands and Forests will evaluate any concerns as they pertain to new natural gas leases on State Forest lands. Consistent with past practice, prior to any new leases, DEC will hold public meetings to discuss all possible leasing options and environmental impacts. A comprehensive tract assessment will be completed as part of this process. For more information on natural gas and other mineral resource policies, please see SPSFM page 225 at http://www.dec.ny.gov/lands/64567.html.

Existing leases on the unit:

- NFG maintains an underground gas storage field in the town of Collins, Erie County. This storage field covers a portion of Zoar Valley MUA (not the Unique Area). Of the leases on the MUA, one is a no-drilling, no-entry lease. The other leases were inherited

by the State when the property was acquired, and the State is bound to the terms of the leases. Typical terms of the leases allow NFG entry and drilling rights for storing and withdrawing natural gas. NFG also maintains ¾ miles of pipeline along Traffic Street ROW that crosses East Otto SF. The Department will work with NFG to minimize all impacts through the strict use of appropriate BMPs.

Table I.L. – Current Oil and Gas Leases

Facility Name	Contract #	Lessee	Town	Acres
CAT-ERIE 1	R 4050	National Fuel	Collins	222
CAT-ERIE 1	R 776.9	National Fuel	Collins	70
CAT-ERIE 1	R 775.9	National Fuel	Collins	37
CAT-ERIE 1	R 774.9	National Fuel	Collins	100
CAT-ERIE 1	R 176772	National Fuel	Collins	142

Active wells on the unit:

- None

Inactive wells on the unit:

- 31009699990000 – Plugged Well – Zoar Valley MUA, town of Persia
- 31009012370000 – Plugged Well – Zoar Valley MUA, town of Persia

Pipelines

The Department, pursuant to ECL § 9-0507, may lease State lands for the construction and placement of oil and gas pipelines only if a portion of the mineral resources to be transported was extracted from State lands. Pipeline and road development must be in compliance with State Forest tract assessments, the Strategic Plan for State Forest Management, and the Generic Environmental Impact Statement and Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program.

Pipelines will be located immediately adjacent to Public Forest Access Roads. The location of the roads and pipelines will be in compliance with tract assessments. Pipelines may be located in stands managed for closed canopy conditions only along pre-existing roads that intersect such area. Additional surface disturbance associated with such construction will be considered only in areas other than stands which are managed for relatively unbroken canopy conditions. Areas managed for unbroken canopy conditions may be referred to using various terms such as “uneven-aged,” “uneven-aged variable retention,” “all aged,” “high canopy,” “closed canopy” or others.

Pipeline development on State land will not be permitted if the Department determines that it creates a significant long-term conflict with any management activities or public use of the State Forests, or with other management objectives in this plan. All pipelines will be gated to restrict motorized access, and if necessary hardened crossings or bridges will be installed, to allow heavy equipment access across pipelines. These requirements will be satisfied by the Lessee.

Exceptions to the above guidance must be approved by the Division of Lands and Forests, in consultation with the Division of Mineral Resources.

- None

Mining

Gravel/shale pits and other surface mines

- Purdy Road Pit

There are no opened, active mines or pits on the Unit. No exploration or extraction of minerals will be allowed on Onondaga Escarpment Unique Area or Zoar Valley Unique Area. Historically there were areas that were mined for gravel/shale and stone on Zoar Valley MUA/UA. Mining for gypsum also occurred in the area around Onondaga Escarpment UA. A small existing gravel pit will be evaluated for restoration and reclamation to natural vegetative cover. The Department is currently evaluating a proposal to mine a narrow ROW (approximately 1 acre) that runs between two private properties at the Zoar Valley MUA, Town of Collins. If authorized, the Department would seek to include options for land acquisitions of nearby reclaimed, private parcels, as additions to the MUA.

Supporting Local Communities

Tourism

State Forests can be an economic asset to the local communities that surround them. It is estimated that more than three out of every four Americans participate in active outdoor recreation of some sort each year. When they do, they spend money, generate jobs, and support local communities. For more information, please see SPSFM page 245 at http://www.dec.ny.gov/lands/64567.html.

Recreationists often spend money for such things as gas, food, lodging, supplies and equipment while traveling to and from State lands. The size of this economic contribution is difficult to determine without direct surveys of State land users, but the Outdoor Industry Foundation estimates that active outdoor recreation generates nearly $800 million in annual state tax revenue and produces $11.3 billion annually in retail sales and services in New York.

Local communities can take advantage of the presence of nearby State lands by encouraging businesses to cater to these users as part of their business planning. Local chambers of commerce or regional RC&D councils might undertake surveys of recreationists to find out what goods and services they would be most likely to purchase during their stay in the area.

Due to high recreational use of Zoar Valley MUA/UA, the most significant tourism impact is to the town of Persia and the Village of Gowanda. The DEC is committed to maintain good communication with local communities. The Department is proposing a cooperative agreement with the local communities near Zoar to share information and coordinate efforts for public activities, including education, cleanup/maintenance, and reviewing opportunities to improve access along the creek and trailheads.

FOREST PRODUCTS

Taxes Paid

The New York State Real Property Tax Law provides that all reforestation areas are subject to taxation for school and town purposes. Some reforestation areas are also subject to taxation for county purposes. Most unique areas and multiple use areas are exempt from taxation. All of the taxable lands are assessed as if privately owned.

Detailed tax information can be obtained by contacting

Cattaraugus County: https://www.cattco.org/real-property-and-gis/rolls-rates

Erie County: https://www2.erie.gov/ecrpts/index.php?q=real-property-parcel-search . The following taxes are projected for State lands in this unit for the 2020 tax year:

- Township Tax (incl. highway, general, fire taxes, etc.): Collins: $128.54; East Otto: $14,787.51; Newstead: $ 44.51; Otto: $7,475.50; Persia: $973.19
- Total School Tax: East Otto: $23,251.40; Otto: $9,208.85; Persia: $3,041.98
- Total County Tax: Cattaraugus County: $37,320.30; Erie County: $187.01
- Other Tax: East Otto: $1,579.24; Otto: $940.47; Persia: $192.75

Forest Products

Timber

Timber management provides a renewable supply of sustainably-harvested forest products and can also enhance biodiversity. The products harvested may include furniture-quality hardwoods, softwoods for log cabins, fiber for paper making, firewood, animal bedding, wood pellets, biofuel, and chips for electricity production. For more information, please see SPSFM page 251 at http://www.dec.ny.gov/lands/64567.html.

Information on upcoming timber expected to be produced from timber management activities on the unit is contained in the land management action schedules in the Appendices at the end of this document.

The authority to sell forest products from DEC administered lands is provided by the Environmental Conservation Law. To perpetuate the growth, health and quality of the forest resources, the Department has implemented a sustained yield timber management program for State Forest lands.

Forest stands being considered for timber harvesting are selected based on the following criteria:

1) Adequate access;
2) Wildlife considerations;
3) Present and future forest health concerns (including invasive plants and pests);
4) Current distribution of vegetative stages within the unit management land area and surrounding landscape, including the eco-regional habitat gaps as per the Strategic Plan for State Forest Management;
5) Ability to regenerate stands (if a regeneration harvest);
6) Existing timber and vegetation management needs from other unit management plans;

7) Market conditions;
8) Potential growth response of stands to treatment;
9) Presence of rare, threatened and endangered species and unique natural communities.

By law, any trees to be removed in a harvest must be designated and paid for prior to removal. Designation (marking) of trees is made by DEC forestry staff. After designation is completed, a fair market appraisal is conducted. No products may be sold at less than the fair market value. Forest stands are selected for harvest based on the criteria outlined above, and the desired future conditions identified by this Unit Management Plan

The Environmental Conservation Law requires that different procedures are employed based on the appraised value of a timber sale. Sales that are appraised greater than $10,000 are called revenue sales and sales that are appraised at less than $10,000 are known as local sales. Revenue sales contracts must be approved by DEC's Central Office staff, and revenue sale contracts valued at $25,000 or more must be approved by the Office of the State Comptroller. The Regional Forester has the authority to execute local sale contracts. All sales valued at more than $500 (and those less than $500 which are thought to have substantial public interest) are publicly advertised and competitively bid.

Forest stand management is an economical and sustainable way for the Department to both manage and enhance the biodiversity of the lands within the Unit. There has been little habitat management on these properties in the last several years. The signs of this are evident in the abundance of invasive species found throughout the Unit (see Table I.N.). Forest management will seek to use both commercial and non-commercial options to implement projects. Forest stands will be identified for management treatments, including wildlife habitat improvements. These improvements could be conducted using forest product sales or completed in cooperation with conservation groups previously listed. East Otto SF will be the focus of these activities, though select areas of Zoar Valley MUA are proposed for stand management to enhance habitat and/or respond to forest health concerns. Other forest stands, including those in the Zoar Valley UA, are identified as protection areas and will not be considered for timber management.

Regional demand for timber from State lands is stable. This is due in part to the relative size, age, quality, and volume of the forest products included in those sales

Non-Timber Forest Products

At the time of the writing of this plan, there is no significant demand for non-timber forest products. If conditions change, the option to sell, license or permit the sale of non-timber forest products is a very important option to manage non-forested stands and wildlife habitat. Stands which may be considered will be identified as per FP Action 7 of the SPSFM.

Forest Health

Forest health is pursued with the goal of maintaining biodiversity. Any agent that decreases biodiversity can have a deleterious effect on the forest as a whole and its ability to withstand stress. Forest health in general should favor the retention of native species and natural communities or species that can thrive in site conditions without interrupting biodiversity. For

more information on forest health, please see SPSFM page 277 at http://www.dec.ny.gov/lands/64567.html.

Invasive Species

As global trade and travel have increased, so has the introduction of non-native species. While many of these non-native species do not have adverse effects on the areas in which they are introduced, some become invasive in their new ranges, disrupting ecosystem function, reducing biodiversity and degrading natural areas. Invasive species have been identified as one of the greatest threats to biodiversity, second only to habitat loss. Invasive species can damage native habitats by altering hydrology, fire frequency, soil fertility and other ecosystem processes.

Table I.M. – Invasive Species, Pests and Pathogens

Plants	**Status**
Garlic Mustard *(Alliaria petiolata)*	Common throughout the Unit.
Autumn Olive *(Elaeagnus umbellata)*	Common along old skid trails and landings and other roads and trails. Seeds easily transported by birds.
Buckthorn *(Rhamnus spp.)*	Common in the scrub/brush areas in most forests throughout the Unit.
Japanese Barberry *(Berberis thunbergii)*	Not a significant problem. When found attempts to eradicate will be undertaken.
Japanese Knotweed *(Polygonum cuspidatum)*	Prevalent along waterways and road ditches. Management will be considered in uplands and for isolated populations.
Exotic Bush Honeysuckle *(Lonicera spp.)*	Common. Manage in stands where treatments are scheduled and along trails.
Multiflora Rose *(Rosa multiflora)*	Common. Manage in stands where treatments are scheduled and along trails.
Common Reed *(Phragmites australis)*	Common along waterways and road ditches. Management will be considered in uplands and for isolated populations.
Black Swallowwort *(Vincetoxicum nigrum)*	Known to be in Erie County. It is not known if it is on managed lands in the Unit.
Water Cress *(Nasturtium officinale)*	An occurrence was reported within the Unit. When found attempts to eradicate will be undertaken.
Insects	**Status**
Hemlock Woolly Adelgid *(Adelges tsugae)*	The adelgid has not caused any known significant damage to hemlock trees in either Erie or Cattaraugus County. In 2014, it was found in Allegany State Park, and in Zoar Valley MUA. Chemical insecticides were applied to infested trees and other nearby trees to control and prevent spread. Monitoring continues for further infestations.

Table I.M. – Invasive Species, Pests and Pathogens	
Gypsy Moth *(Lymantria dispar)*	In 2012-2013 numerous patches of forest canopy were defoliated in western NY. Many of the trees, especially red oak, survived and regrew a new set of leaves in late summer. Populations increased during the summer of 2020.
Forest Tent Caterpillar *(Malacosoma disstria)*	Native to New York, but populations occasionally increase enough to cause noticeable defoliation. In 2010-2012 heavy infestations of the forest tent caterpillar were seen in localized areas of western New York. Sugar maples were especially affected, and some did not survive the consecutive years of defoliation.
Eastern Tent Caterpillar *(Malacosoma americanum)*	Native to New York and not a major forest threat, as it prefers fruit trees including ornamental crabapples and pears. No significant infestations have been observed.
Elm Spanworm *(Ennomos subsignarius)*	In 1991–1993 an infestation in western New York defoliated oaks, maples, ash and beech.
Cherry Scallop Shell Moth *(Hydria prunivorata)*	In 1992–1993 an infestation caused heavy defoliation of trees on poor sites.
Peach Bark Beetle *(Phloeotribus liminaris)*	In the mid-1990s the population of the beetle increased after several years of forest tent caterpillar and cherry scallop shell moth activity.
Emerald Ash Borer *(Agrilus planipennis* Fairmaire*)*	EAB was first discovered in New York State in 2009, in Randolph, Cattaraugus County. EAB is established throughout the state. Biologic controls have been released.
Beech Scale *(Cryptococcus fagisuga)*	Common on all forests of this Unit.
Spotted Lanternfly *(Lycorma delicatula)*	First discovered in Pennsylvania in 2014 and has since been found in New Jersey, Delaware, Maryland, Virginia, and New York. Nearest NY infestation is in the Finger Lakes region.
Diseases	**Status**
Beech Bark Disease – fungus *(Nectria spp.)*	Common on all forests of the Unit.
Dutch Elm Disease – fungus *(Certatocystis ulmi)*	Common throughout the Unit, but mature elm trees are still occasionally found.
Chestnut Blight – fungus *(Cryphonectria parasitica)*	American chestnut saplings are present within the Unit. Most trees do not survive to seed bearing age.
Beech Leaf Disease (unknown)	This disease has only been discovered in recent years and much about it, including the full cause and how it spreads, is still unknown. Infected trees have been found in Erie and Cattaraugus Counties.

Table I.M. – Invasive Species, Pests and Pathogens

Animals	Status
Sea Lamprey – fish *(Petromyzon marinus)*	Nonindigenous known to be established in Lake Erie and surrounding tributaries. Cattaraugus Creek has been treated in the past (2019).

Alarmingly, over half of the trees found in New York are host species for one or more of these forest pests. Many pests displace the native insects, plants, fish or animals, which may not seem like a big deal on a small scale. On the larger scale, this can cause drastic impacts and disrupt entire ecosystems. These impacts can also affect people through direct economic loss, by impairing water quality, increasing management costs, economic, and diminishing the outdoor experience.

Past management efforts for invasive species has primarily focused on minimizing the spread of newly documented and recent infestations before they have the chance to become well-established. The long-term strategy for managing invasive species on these State lands uses a combination of the following techniques: prevention, cooperation and collaboration, inventory and monitoring, early detection and rapid response (EDRR), treatment and control, and restoration. State lands must be managed carefully so as not to expose ecological systems to damage. State lands must be monitored for the presence of damaging agents that can include fungi, insects, diseases and harmful plants.

Efforts will be made to maintain or increase diversity and control invasive species where possible and in line with protocols adopted by the Bureau of State Lands Management.

Department staff will work cooperatively to achieve invasive species goals. Partners include the Department's Bureau of Invasive Species and Ecosystem Health, Western New York PRISM, Cornell University/Cooperative Extension, and other landowners and associated agencies involved in joint efforts to identify, inventory and control perceived environmental threats. The Department will also promote the use of BMPs to prevent the spread of invasive species by providing education and outreach to contractors working on these State lands.

Management options will be considered within the context of Integrated Pest Management (IPM). IMP is a science driven, decision making process to aid land managers in determining the effective solution to a specific pest situation. Management options will be selected with consideration for the likelihood of success, the location and size of forest stands, the age of infestation, past methods used at the site, time of year, sensitive native flora or fauna within or adjacent to the target infestation, available resources, and adjoining and nearby land uses. Silvicultural treatments will be considered, prescribed and implemented where appropriate and practical to aid the management of invasive species.

NY iMapInvasives (https://www.nyimapinvasives.org/) will be used to identify and record infestations, locations and species involved, and develop specific management strategies.

There are two prominent invasive species found within the Unit that have the potential to severely impact the local forested landscape, emerald ash borer (EAB) and hemlock woolly adelgid (HWA).

EAB was found in the town of Randolph, NY in 2009. It is now well established throughout the Unit. Ash stands within the Unit will be evaluated annually for public safety and forest stand health.

HWA was found in Allegany State Park and Zoar Valley MUA/UA in 2014. Important hemlock resources within the Unit will be identified and protected. Approximately 1,400 acres have been identified as hemlock stands, listing hemlocks as the prominent tree species in those stands. Management may include chemical and biological control and suppression methods. Silvicultural methods will be considered outside of Zoar Valley UA. The Department will continue to cooperate with the New York State Hemlock Initiative (https://blogs.cornell.edu/nyshemlockinitiative/) to facilitate management, research and outreach.

Spotted lanternfly (SLF) is an emerging invasive pest from Asia that primarily feeds on tree of heaven (*Ailanthus altissima*) but can also feed on a wide variety of plants such as grapevine, hops, maple, walnut, fruit trees and others. This insect could impact New York's forests as well as the agricultural and tourism industries. SLF is not known to present anywhere within the Unit. The Department will cooperate with the NYS Department of Agriculture and Markets for surveying, control, and education and outreach efforts.

For more information about invasive species in NY please follow the link:
https://www.dec.ny.gov/animals/265.html

For information about invasive species regulations in NY please follow the link:
https://www.dec.ny.gov/animals/99141.html

For more information on invasive species in the Northeast please follow link:
http://na.fs.fed.us/fhp

For more information on Emerald Ash Borer please follow the links:
http://www.nyis.info/?action=eab

http://www.dec.ny.gov/animals/7253.html

For more information on Hemlock Woolly Adelgid please follow the links:
http://www.nyis.info/index.php?action=invasive_detail&id=24

http://www.dec.ny.gov/animals/7250.html

For more information on Spotted lanternfly please follow the link:
https://www.dec.ny.gov/animals/113303.html

Managing Deer Impacts

There is limited ability to manage deer impacts using silvicultural systems. The most effective method of keeping deer impacts in line with management objectives is to monitor impacts while working with the Division of Fish, Wildlife and Marine Resources to observe and manage the herd. On properties where deer are suspected of impacting values and objectives associated with biodiversity and timber management, such impacts must be inventoried and assessed. For

more information on managing deer impacts, please see SPSFM page 291 at http://www.dec.ny.gov/lands/64567.html.

A discussion of the proper forest management of the State Forests within this Unit would be incomplete without mentioning habitat health in direct relation to local deer populations. Deer are a non-selective browsing species. As a generalist, they eat a wide range of herbaceous and woody plants. However, they do have preferred foods, consuming mainly native woody browse and forbs. This can create an over browsing problem in an area with high deer densities. The native plant species can be removed from the local landscape by this over browsing, leaving voids filled by undesirable, and in some cases nonnative invasive plants. With proper herd and habitat management, deer can live in harmony on the landscape, which makes for a healthy forested ecosystem. Without proper forestry and wildlife management, the deer population may have a negative impact on the landscape by consuming more than habitat can support.

Properly managed habitat will provide a balance of food, shelter and needed space without undue stress to the animals living there. When the local carrying capacity is exceeded, the landscape ecology starts to decline and some preferred species, may be removed from the local landscape. It is at this point that anything within reach of the deer can be impacted negatively, including plant growth rates and seedling/sapling survival. This situation is compounded because some non-preferred plant species start to colonize the sites and gain an advantage over the preferred browse species. This trend can have long lasting impacts on future forest stands and the overall diversity of a forest affecting other plants, mammals and birds.

Scientists at Cornell University estimate the current deer populations to be ten times the pre-colonial historical populations. Studies show that properly managed forests can support 10 to 15 deer per square mile and still successfully regenerate tree and plant species. This number, although favored by those in the field of forestry, is often a point of debate amongst the general public, preferring to see more deer on the landscape. Finding common ground on this matter while using sound science is the key to better management of the public resources. Using data from DFWMR in 2019, it is estimated that there are approximately 24 deer per square mile within the Unit. State Forests in areas of high agricultural use show heavy browse during winter months. A harvested stand in the heavily forested areas of the county also shows extreme signs of deer browse during winter months.

Regularly scheduled forest inventories will be conducted and will collect deer browse data in relation to deer population. In areas where deer damage is identified, efforts will be made to gather specific information to estimate the local deer population based on USFS data. This data will be shared with the Regional Big Game Biologist to plan any required response to conditions specific to the deer population and forest health. The information will also be used to select appropriate treatments prior to any forest management. Deer Management Assistance Program (DMAP) permits and other measures, such as adjusting the size, type and timing of a harvest, and the use of enclosures, may be necessary. If DMAP permits are required, Department staff, including Lands and Forests and Wildlife, will work together to publicize the permit system to interested parties. The Department will adhere to guidance in SPSFM, Chapter 6, Managing Deer Impacts. See Appendix H, for WMU maps and deer harvest numbers.

Summary of Eco-Region Assessments

To practice ecosystem management, foresters, must assess the natural landscape in and around the management unit. State Forest managers utilized The Nature Conservancy Eco-Region Assessments to evaluate the landscape in and around this management unit. The Niagara Frontier UMP falls within the Great Lakes Ecoregion(s).

Eco-Region Summary

The Great Lakes (GL) Ecoregion encompasses 234,000 square miles in parts of eight Midwestern states and one Canadian province (The Nature Conservancy, Great Lakes Ecoregional Planning Team 1999). The ecoregion extends from northeastern Minnesota across to north central New York, and south to northern Indiana and Ohio. The entire landscape was glaciated during the last Ice Age, and is characterized by level lake plains, level to gently rolling lowlands, and hillier upland areas. Elevation across the ecoregion ranges from 300 to over 2,000 feet. Michigan's Porcupine and Huron Mountains and Minnesota's North Shore are some of the areas with higher elevations, while the southern shores of Lakes Michigan, Erie and Ontario have lower elevations and less relief.

In New York, the Great Lakes Ecoregion represents the watersheds of the Finger Lakes, Lake Ontario and Lake Erie, including the Mohawk River Valley. Historically, the northern part of the ecoregion was dominated by northern hardwood forests, pine forests, and spruce-fir forests. Many of these forests were cut over by 1910 and are now in second growth; some areas are even in third growth. Much of the Great Lakes Ecoregion in New York was dominated by tallgrass prairies and savannas, with some beech-maple and other hardwood forests mixed in. This area has been almost completely converted to agricultural and urban or residential uses. The primary disturbance events that helped to shape these ecosystems were fire, blow- downs, and insect and disease outbreaks in the forested parts of the ecoregion, and fire in the grasslands and savannas.

Eco-Region Assessment

Table II.A. – Land Use and Land Cover for the Landscape Surrounding the Niagara Frontier Unit

Land Use and Land Cover	Approximate Acres	Percent of Landscape
Mixed Forest	48,442	4.4
Crop Land and Pasture	833,202	74.9
Conifer Forest	11,525	1.0
Shrub and Brush Range Land (includes seedling/sapling type)	242	0.0
Residential	95,952	8.6
Commercial & Services	33,509	3.0
Transportation & Utilities	13,404	1.2
Other Urban/Built-up Land	22,027	2.0

Table II.A. – Land Use and Land Cover for the Landscape Surrounding the Niagara Frontier Unit

Land Use and Land Cover	Approximate Acres	Percent of Landscape
Mixed Urban/Built-up Land	2,029	0.2
Strip Mines, Quarries & Gravel Pits	5,047	0.5
Lakes	876	0.1
Reservoirs	4,928	0.4
Forested Wetland	8,710	0.8
Non-forested Wetlands	757	0.1
Industrial	11,903	1.1
Other Agricultural Land	1,026	0.1
Old Growth	17,320	1.6
Streams and Canals	931	0.1
Total	**1,111,803**	**100%**

Local Landscape Conditions

The predominate land use in the Unit is agriculture, making up over 76% of the total area, and the predominate land cover directly related to the land use is crop land and pasture. The second highest land use within the Unit is developed land, which includes urban, commercial and residential at approximately 16%. This is notably more than forested areas. Mixed deciduous hardwood forests only account for approximately 4% and conifer forests for only 1% of the landcover. See Table II.A for details. Less than 1% of the forested cover type is considered young or early successional habitat (ESH). This cover type is being lost at a faster rate than any other cover type.

The US Forest Service – Forest Inventory and Analysis Unit reported that seedling sapling forests have declined 30% since 1980 statewide. The average for this ecoregion as of 2009 was 14%. ESH in the Unit is less than the region wide average. With so much of the lands within the Unit privately owned and managed, cooperation is needed to manage and maintain this critical habitat type. Over 56% of the forests in the Unit are 60 years old and older. This is because forests are maturing at a faster rate than young, immature forests are being created. As the forest ages it becomes less compatible for a wide range of species and impacts the overall diversity of the landscape. For a list of species dependent on this cover type, see www.youngforest.org. The list includes as many as 56 species of concern dependent on this type of habitat for the State of New York.

The 2005 Comprehensive Wildlife Conservation Strategy for New York (updated in 2015), recognizes the value of this land cover type and identifies these species as species of Greatest Conservation Need (SGCN) due to their critical habitat needs. ESH is especially important in

that it supports a high diversity of birds, mammals and reptiles (Perlman and Midler 2005). Many species, both flora and fauna, dependent on this habitat are declining and would benefit from the maintenance and creation of early successional habitat. Studies have shown that habitats with both young, middle, and mature forests hold more species (Thompson et al. 1992 and Welsh and Healy 1993). A study on mature-forest and shrubland birds shows that both species will use seedling sapling through mature forests during the season for nesting and feeding (King and DeGraaf, 2000).

Habitat Related Demands

This plan serves State Forests, Multiple Use Areas and Unique Areas. To be very clear, there is no scheduled forest management in Zoar Valley Unique Area. The Unique Area of Zoar is part of the Nature and Historic Preserve Trust, which protects it under the State Constitution. Most of the habitat management in this plan is scheduled for East Otto State Forest; however, some stands are identified for management in the Multiple Use Area of Zoar. See Management Tables.

Forest management referred to in this plan incorporates very complex social and environmental issues as well as liability and legal issues - while balancing entire suites of ecological systems never believed to be relevant to past forestry practices. Modern-day forest management is so much more than simply growing short rotation, large volume saw logs. Management techniques may include silvicultural treatments in forest stands. Mechanical treatments may be prescribed in fields and as forest stand improvements for non-commercial treatments. Another non-commercial treatment is prescribed fire, which is recommended for managing grasslands and scrub/shrub habitat.

The proper management of the forest stands in the Unit is based on using sound silviculture, which will lead to long-term improvements in forest product yield, water quality, wildlife habitat and recreational opportunities. The best methods to accomplish these tasks will depend on many factors such as: stand type, age, forest health, stocking levels, topography and location. Data from forest inventories completed in 2007-2012, show there are just over 1,484.8 (53%) of uneven aged forested stands and just over 775.7 acres (28%) of even-aged forested stands within the Unit. As much as 68% of the forest stands are deciduous hardwoods and about 20% are conifer.

The conifer component can be divided between native stands and plantation stands. Approximately 13.7% of the conifer stands consist of native conifer species. These stands will be managed to perpetuate future conifer stands barring any unforeseen environmental event or pest infestation. Virtually all native conifer stands will be managed to retain the native species. Using even-aged treatments, many of the plantation stands will be converted to native species, including hardwoods and reforestation of native conifers. To restore and maintain a conifer component within the Unit, plantation stands will be evaluated for retention based on site, species and their ability to regenerate perpetual native conifer stands.

Even-aged treatments will be considered in stands that are determined to be approximately the same age and species composition, such as conifer plantations and hardwood stands of oak and black cherry. The stand should also contain large quantities of shade intolerant species, also known as pioneer species, that would be difficult to regenerate in shaded environments. The silvicultural systems in even-aged treatments include shelterwood, seed-tree and

clearcutting. Prescriptions for the forest management of even-aged stands may also include scarification techniques and prescribed fire where plant and wildlife species would benefit the most. Herbicides are another option where conditions warrant control of interfering species. These silvicultural treatments will be used to maintain a diverse habitat balance and species composition of both flora and fauna while also considering mass producing tree species for wildlife.

The shelterwood and seed-tree systems are generally a two-step process, scheduled harvesting may extend over approximately 10 to 25 years. During these treatments, approximately 70% or more of a stand is removed leaving residual trees to provide food, cover, seed source and shelter to the future stand and remaining wildlife. Clearcutting is an even-age timber harvesting practice where most of the trees in a selected area are harvested at the same time. These treatments produce high quality sawlogs and veneer due to the spacing and training capabilities of the dense, regenerating saplings. The rapid growth and density of these pioneer species tend to out compete many invasive and other undesirable plants. The large quantities of seedlings all maturing at the same time tend to overwhelm the browsing animals.

The harvesting of trees with even aged prescriptions is an efficient method to improve forested stand conditions, habitat and the ecological diversity of the property. The abundance of light can also have a limiting effect on shade tolerant, invasive and interfering plants. The large numbers of regenerating seedling/sapling stems are of great importance to many bird and animal species seeking food, nesting cover and an area of protection from predators.

Uneven aged stands have been determined through stand analysis to have multiple age classes, usually made up of shade tolerant and intermediate tree species. The two primary uneven aged silvicultural systems are single-tree selection and group selection. The most notable difference between an even and uneven aged treatment is the varying age classes being removed, which thins the stand and retains uniform age classes. This method leaves the forested tree canopy mostly intact or connected, which is important to several interior bird and animal species.

Properly managed selection cuts grow high quality trees while increasing tree volume. This improves overall forest health and ensures proper growth and yield within a stand which leads to improved performance of the forest ecologically and biologically. A byproduct is the highest quality growth, shortest rotation, saw log and veneer lumber with any byproducts going into low-grade log and pulpwood markets.

Assessments will be made prior to developing a sale prescription of the species type and factors including invasive species, the local deer population and local site conditions such as aspect of the stand, soils and soil conditions. An example of this would be a north facing, Sugar maple stand with rich, moist soils will be managed to promote future Sugar maple stands. Another example is a south facing oak stand, a much drier site, that will be managed for species tolerant of these site conditions.

It is important in uneven aged management to consider a prescribing management of any undesirable/invasive plant species. The timing of the low-level forest canopy stand improvements using herbicides will be coordinated to take place after the nesting season of forest dwelling birds. Depending on the observed pressure from deer, and the level of existing

browsing of the regeneration there may be a need to request DMAP permits. Other measures may also be required to ensure the best possible regeneration post-harvest, such as which treatment best suits all the measured variables, even-aged or uneven- aged, need for fencing, or simply requiring uncut tops to remain in the woods.

The Bureau of Forest Resource Management has worked tirelessly to protect the public interest while managing state lands from the date the first reforestation areas were purchased. Since the early days of replanting these properties to the more modern practices, some of the timber management has fallen behind due to staff shortages for one reason or another. These properties have stands in need of management, which is the reason for the specific amount of scheduled forest stand improvements in this UMP.

Opportunities to maintain an area in field or grassland setting will be a priority for the Unit. An example would be the 146.3 acres of field in the Unit. Currently DFW staff schedule and oversee routine mowing of the many fields, specifically where pheasants are released each fall. To protect ground nesting birds and young fauna, mowing will not take place until August at the earliest each season. Cooperative projects are planned between the conservation partners listed earlier and NYS DEC to keep these fields open, as well as apple tree releases in stands adjacent to the fields in scrub/shrub areas. While forested areas are not targeted for conversion to this type of habitat, any scrub/shrub type could be reclaimed as grassland where appropriate.

Early successional habitat (ESH) as listed previously is of great importance within the Unit. Conversations with many local conservation minded groups have all ended with a discussion of maturing forests and not enough young forested habitat to support the populations of some critically important species. Forest inventory will be used to identify likely areas to plan timber harvests as well as scheduled maintenance to maintain a minimum of 10% - 15% of the area within the Unit in ESH. Late successional stands will be maintained along the gorge and other environmentally sensitive areas including recreational trails. See Chapter 2 of the Strategic Plan for more information on Ecosystems Management, specifically the significance of ESH.

Prescribed fire is a very efficient method to maintain grasslands and ESH habitats. Some natural communities are dependent on natural disturbances to perpetuate these conditions, forest management replicates this in the managed forest stands. Prescribed burning is a vegetative management tool to manage habitats using a noncommercial method. This can only be undertaken as a cooperative effort between Department staff including the Divisions of Forest Protection and Fire Management, Operations, Wildlife and Lands and Forests. Forest Rangers will develop and oversee implementation of approved burn plans. See Chapter 6 of the Strategic Plan for more information on Fire Management.

Management Objectives and Actions

Objectives

Ecosystem Management

Table III.A. –Ecosystem Management Objectives and Actions

Objective	Actions
Active Forest Management	

MANAGEMENT OBJECTIVES AND ACTIONS

OBJECTIVES

Table III.A. –Ecosystem Management Objectives and Actions

Objective	Actions
AFM I – Apply sound silvicultural practices	Identify stands in need of treatment using the State Forest Inventory Database (SFID), and Forest Service SILVAH program and other guidelines to select the most effective system and treatment at the stand level. All stands will be managed based on appropriate silviculture in following the Strategic Plan for State Forest Management.
AFM II – Use harvesting plans to enhance diversity of species, habitats & structure	This UMP will serve as the harvest plan for East Otto SF and sections of Zoar MUA (see Table III. F and Table III.G.) Forest health and biologic diversity are the primary gauges determining management. Stand prescriptions will address enhancing diversity through forest management for all species using appropriate silvicultural guidelines.
AFM III – Fill ecoregional gaps to maintain and enhance landscape-level biodiversity	ESH is identified as an area of concern. Plans are in place to elevate current levels by 10-15%. Non-ESH stands will be managed for mid-successional and late successional forest species, age and arrangement based on inventory data. Special Management Zones will be protected, including wetlands, streams and habitats of known listed species. Native conifers are also listed as a priority in the plan, specifically eastern hemlock. Native conifer stands will be retained while planted conifer will be converted to naturalized conifers where appropriate. Staff will continually monitor ecoregional gaps.
AFM IV – Enhance matrix forest blocks and connectivity corridors where applicable	Forest management planning and prescriptions will apply silvicultural treatments to preserve conditions found in these stands to support the benefits of matrix blocks and connectivity corridors. ESH projects in designated areas will be reduced to limit impacts. Land acquisition projects will be evaluated for enhancing blocks and corridors.
AFM V – Practice forest and tree retention on stands managed for timber	L&F Retention Policy (ONR-DLF-2 / Retention on State Forests) will be applied on all forest management and habitat projects within the Unit.
HCVF- Identify and maintain HCVFs	HCVFs will be identified during forest inventory. Forest management will adhere to Department guidelines to maintain. Cooperate with Natural Heritage as needed. Seek field training for staff to identify and manage HCVFs.

Resource Protection

Table III.B. – Resource Protection Objectives and Actions

Objective	Actions
Soil and Water Protection	
SW I – Prevent erosion, compaction and nutrient depletion	Consider erosion and soil condition prior to prescribing management projects. Incorporate New York State Forestry BMPs for Water Quality Field Guide (BMP Field Guide) and stream crossing permit procedures while laying out timber harvests and recreational projects. Implement and enforce BMPs during timber harvests and post-harvest clean-up. Adhere to Rules for Establishment of Special Management Zones on State Forests and Wildlife Management Areas (December 2015)
SW II – Identify and map SMZ's and adapt management for highly-erodible soils	Identify SMZs while conducting forest inventory and manage GIS data for accuracy, update layer files. See SMZ Guidelines.
At-Risk Species and Natural Communities	
ARS I – Protect ARS&C ranked S1, S2, S2-3, G1, G2 or G2-3 where present	Identify areas containing ranked species of concern during forest inventory and management planning. Continue to cooperate with Natural Heritage Program. Develop habitat and management projects according to Department guidelines.
ARS II – Conduct habitat restoration and promote recovery of declining species	Restoration projects may include reforestation using native conifers to maintain or increase native conifers populations on suitable sites. Maintaining grasslands and ESH habitats using commercial and noncommercial treatments including mowing and stand improvements. Work to conserve E. hemlock.
ARS III - Consider protection and management of Species of Greatest Conservation Need	SGCN are of significant concern during the development of this plan. No management actions are to be implemented without first researching GIS data as well as local conditions. Natural Heritage data will be reviewed along with Department policies and procedures to prescribe appropriate management. Use silviculture and appropriate techniques to encourage habitats that benefit SGCN where possible. (e.g., timing of seasonal mowing to protect habitat and nesting birds.) Identify areas in need of protection during forest inventory and maintenance of GIS data. Use SMZs and equipment exclusions zones appropriately
Visual Resources and Aesthetics	

OBJECTIVES

Table III.B. – Resource Protection Objectives and Actions	
Objective	**Actions**
VR I – Maintain or improve overall quality of visual resources	Existing vistas will continue to be managed most importantly for public safety, protection of resources and to promote and enhance natural views of natural environments. Management projects will incorporate SMZs specific to buffering roads and trails. Improvements are scheduled along trails on Zoar Valley MUA to improve public viewing opportunities while also protecting visitors.
VR II – Use natural materials where feasible	Projects to manage visual resources will when appropriate and adequate for public safety utilize native and natural materials to blend into natural surroundings. This may include use of rocks and wood to guide/direct public for safety and other management concerns.
VR III – Lay out any new roads/trails to highlight vistas and unique natural features	New access projects will be located in such a way to be sustainable and incorporate natural features. Adhere to Department guidelines related to road building and recreation in SPSFM.
VR IV – Develop kiosks to provide education and reduce sign pollution	Work with Office of Communication Services to develop panels for existing kiosks. Use Works Projects to replace and install new kiosks to better inform and educate the public.
Historic and Cultural Resources	
HC I – Preserve and protect historic and cultural resources wherever they occur	Cooperate with L&F Agency Historic Preservation Officer, the Office of Environmental Justice, Indian Nations Affairs, and local colleges to inventory and map historic information. No project is scheduled in this plan that would impact a known historic or cultural resource. Adhere to Department guidelines regarding historic and cultural resources when managing projects on the Unit.
HC II – Inventory resources in GIS and with OPRHP	Cooperate with historic and cultural partners in region and Central Office to research historic site locations on state lands. L&F staff will review old maps and GPS evidence found while conducting forest inventory. This data will be managed using GIS for future protection.

Infrastructure and Real Property

Table III.C. – Infrastructure and Real Property Objectives and Actions	
Objective	**Actions**
Boundary Line Maintenance	
BL I – Maintain boundary lines	Boundary lines at Onondaga UA, Zoar Valley MUA/UA and East Otto SF are scheduled for inspection and maintenance. Per NR-95-1 standards boundary lines are maintained on a ten-year interval.

Table III.C. – Infrastructure and Real Property Objectives and Actions	
Objective	**Actions**
BL II – Address encroachments and other real property problems	Lines will be inspected during BLM and forest inventory activities for evidence of encroachment and other illegal activity. Information will be documented in BLM report and reviewed with Real Property. Department law enforcement will be notified and the Office of General consulted where appropriate. Issues will be pursued through the established legal process.
Infrastructure	
INF I – Provide and maintain public forest access roads, access trails, haul roads, parking areas, and associated appurtenances	Access infrastructure is inventoried twice a year and GIS records for condition and maintenance needs are kept. Requests are made annually for funds to maintain access. Division of Operations staff perform maintenance. Use signs, markings and barriers to better define parking spaces when possible. EMS access is a priority of this plan for Zoar Valley MUA/UA. The Valentine Flats project includes upgrades to the existing parking lot and the construction of an emergency access trail. Roads and trails may be closed temporarily or seasonally due to existing conditions. Seasonally provide accessible port-a-johns at Valentine Flats and Forty Road parking areas.
INF II – Upgrade, replace or relocate infrastructure out of riparian areas where feasible	Infrastructure is continually assessed for safety and sustainability. It is desirable to upgrade, replace or relocate existing infrastructure out of SMZs. This will be done to the extent possible pending funding, resources and staff time.
INF III – Resolve issues of uncertain legal status or jurisdiction	Issues will be identified and researched. Work cooperatively with local authorities, including any party that may have jurisdiction in the area of question. Cooperate with the Office of General Counsel and Real Property staff as needed.
INF IV – Prevent over-development	Follow SPSFM, National Parks Service, US Forest Service and the Interagency Visitor Use Management Council guidelines pertaining to infrastructure development. Quantify use with trail registers, vehicle and trail counters, or surveys. Monitor campsites at East Otto SF for overuse and consult Forest Rangers and Division of Operations for relocating sites for better disbursement.

Public/Permitted Use

Table III.D. – Public / Permitted Use Objectives and Actions	
Objective	**Actions**
Universal Access	

OBJECTIVES

Table III.D. – Public / Permitted Use Objectives and Actions	
Objective	**Actions**
UA I – Use minimum tool approach to provide universal access to programs	The DEC Standard Accessible Designs for Outdoor Recreational Facilities (2015) will be incorporated into projects. Staff will work with users to gauge needs to limit development to specific needs. An accessible trail is planned for Valentine Flats at Zoar Valley MUA/UA. Seek funding for an accessible trail at Onondaga Escarpment UA.
Formal and Informal Partnerships and Agreements	
PRT I – Collaborate with local organizations and governments to reach mutual goals	Maintain a list of contacts with local officials, neighboring landowners and organizations. Use VSAs to organize and coordinate efforts to work with local municipalities and conservation partners. Cooperate with local EMS and First Responders to provide training opportunities. Participate in Cattaraugus County Trail Committee meetings.
PRT II – Consider full range of impacts associated with AANRs and recurring TRPs	VSA activities will be inspected and inventoried. Conditions will be evaluated to determine future management decisions. TRPs will be evaluated consistent with regulations and policy. Permits will be issued only when the resource can support the requested activity or use.
Recreation	
REC I – Accommodate public use while preventing illegal activity, reducing impacts and enhancing public safety	Public education is preferred to mitigate recreational impacts. Forest Rangers have the direct responsibility to enforce laws and regulations on the facilities in the Unit. This necessitates regular patrols, especially in areas prone to greater use. Facility inspections will be conducted annually, allowing illegal activities to be identified and reported to Law Enforcement. Roads and trails may be periodically closed for routine maintenance or due to public safety concerns. Issues involving public safety are of utmost importance and will be addressed as they arise with all available resources. Hire seasonal stewards to maintain staff presence during the busy summer months at Zoar Valley MUA/UA and to provide outreach and education to visitors. Update special regulations for Zoar Valley MUA/UA to establish restricted areas to address public safety concerns. Adopt special regulations at Onondaga Escarpment UA to promote public safety and protect resources from overuse. Create a safer, accessible trail at Zoar Valley MUA/UA with overlooks to provide views of the gorge. Upgrade the Valentines Flats trail for public safety and emergency response. Research and implement, if feasible, a self-issuing or local permitting system for campsites at East Otto SF to monitor use and length of stay.

Table III.D. – Public / Permitted Use Objectives and Actions	
Objective	**Actions**
REC II – Provide public recreation information	Webpages, press releases and the DECinfo Locator will be used to display maps, educational information and regulations. Kiosks and signage will be used to inform and direct visitors at managed facilities. Incorporate QR codes into signs and kiosks to provide digital georeferenced maps and information about the properties. Volunteers and staff will provide outreach to visitors and the public as opportunities arise.
REC III – Inventory recreational amenities and schedule recreation management actions	Recreational infrastructure has been inventoried for this plan using GPS and GIS. Recreational facilities will be inspected at least annually. Additional inspections may be made following extreme weather events. Management needs will be addressed in regional Operations Work Plans and through cooperators and volunteers. Grant funds will be sought where appropriate.
REC IV – Enhance fish & game species habitat	Work cooperatively with the Division of Fish and Wildlife on fish and wildlife projects. Previously mentioned under Wildlife-related Recreation, Fishing: committed to improve angling opportunities. This will require assistance from DFW, conservation groups and possibly local environmental colleges. Department Wildlife staff currently cooperate with L&F to manage fields for grassland species. VSAs will be used to permit and coordinate work with partners as needed. Forest management activities will incorporate habitat considerations when prescribing treatments.
Off-Highway and All-Terrain Vehicle Use	
ATV I – Enhance recreational access by people with disabilities under the MAPPWD program	The Ross Access is identified to be improved to accommodate MAPPWD permitting. A gate and large perimeter rock need to be installed prior to listing. New MAPPWD routes will be considered on a case by case basis.
ATV II – Consider requests for ATV connector routes across the unit	Motor vehicle use is not considered to be a recreational program of DEC, but rather a means of access for recreation and other uses. There are no designated ATV trails on the facilities within the Unit. Site limitations and public safety are the major concerns. 6 NYCRR 190.25 (c) prohibits the use on Zoar Valley MUA-UA, 6 NYCRR 190.8 (m) regulates use on State Lands Managed by the Department.
Mineral Resources	

MANAGEMENT OBJECTIVES AND ACTIONS

OBJECTIVES

Table III.D. – Public / Permitted Use Objectives and Actions	
Objective	**Actions**
MR I – Provide for mineral exploration and development while protecting natural resources and recreation	Zoar Valley Unique Area is protected by NYS ECL § 51-0703(4) and the State Nature and Historical Preserve Trust, NYS ECL § 45-0117(3). The Unique Area will be managed according to NYS Law. A request has been made as listed above to mine gravel along a right-of-way. If approved, the Division of Minral Resources in compliance with the SPSFM, will oversee permitting and compliance.
Supporting Local Communities	
LC I – Provide revenue to New York State and economic stimulus for local communities	Local communities benefit from visitors traveling through local villages and town to DEC managed properties. Revenues will be generated from habitat improvement projects both in bid sales and contract work scheduled to be completed. The proposed projects will continue to bring more travel and tourism funds to local communities. Support local governments and school districts through payment of property taxes according to law.
LC II – Improve local economies through forest-based tourism	Local economies receive financial boosts due to public use of Department lands. Visitors are drawn to forests for many reasons, including viewing nature, camping, hiking, hunting and fishing. Many visitors stop in the local communities on the way to and from DEC properties, purchasing supplies, groceries and local mementoes. Well-managed public lands add to the enjoyment of the visitor and increase travel and tourism economies locally.
LC III – Protect rural character and provide ecosystem services to local communities.	This plan serves to protect the ecological and biological systems on the DEC managed properties. This includes the preservation of open/wild places, preserving local watersheds and wildlife habitat both forested and non-forested. In doing this the rural character will be preserved. Public use of properties will be evaluated for possible degradation, which may require closing or limiting use to protect sites. Seek property acquisitions consistent with 2016 Open Space Conservation Plan.

Forest Management and Health

Table III.E. – Forest Management and Health Objectives and Actions	
Objective	**Actions**
Forest Products	

Table III.E. – Forest Management and Health Objectives and Actions	
Objective	**Actions**
FP I – Sustainably manage for forest products	Forest inventory, including gathering evidence of habitat health, will be used in conjunction with silvicultural guidelines. Desirable forest types and structure will be maintained as they are inventoried. Invasive and non-native species will be a priority to identify and manage. Management will include forest stand and habitat projects with ecological/habitat health as the focus. Harvesting will be conducted at a rate which does not exceed annual net growth rates as established by the 2010 SUNY College of Environmental Science and Forestry study of the periodic annual increment on State Forests.
FP II – Educate the public about the benefits of silviculture	Use signage, webpages and social media to inform the public of the forest management activities. Staff participate in Envirothon, Arbor Day events, county fairs and partner with NYFOA to host workshops. Involve local schools and colleges in cooperative projects if possible, led by staff and used as educational opportunities.
Plantation Management	
PM I – Convert plantation stands to natural forest conditions where appropriate	The SPSFM and the DEC Plantation Guidelines will guide conifer plantation management listed in this plan. Conifers are an important component in a diverse forest this plan seeks to encourage the species through management. Plantations tend to be less diverse and have potentially more forest health issues. Local site conditions, position in the landscape, and species will dictate individual stand management approach. Stands displaying advanced regeneration will be managed to preserve the regeneration cohort whichever it may be. Stagnant/unhealthy stands will be the priority for management with a possible conversion to a native species of conifer or hardwoods. Site conditions, including soils, will be the determining factors driving the conversion decision.
PM II – Artificially regenerate plantations where appropriate	Conifers will at times be regenerated by the planting of native species. The planting will be conducted in such a way to promote conifers but will not take on large scale plantation format. Clump or group plantings of conifers will be made to allow for a more natural appearance and to promote growth of native woody and herbaceous plants between the clumps/groups.
Forest Health	

MANAGEMENT OBJECTIVES AND ACTIONS

OBJECTIVES

Table III.E. – Forest Management and Health Objectives and Actions	
Objective	**Actions**
FH I – Use timber sales to improve forest health and the diversity of species	Timber sales will only be conducted on East Otto SF and select portions of Zoar Valley MUA as listed in *Table III. F.* Managing for forest health and ecological diversity are the primary focus of this plan. Timber sales will be used where appropriate and sustainable to accomplish these goals, including the creation of ESH.
FH II – Protect the unit and surrounding lands from introduced diseases and invasive plant and animal species	Monitor managed properties and review with NY iMapInvasives. Work cooperatively with the Bureau of Invasive Species and Ecosystem Health, WNY PRISM, Cornell University, Cooperative Extension and other associated agencies involved in joint efforts to identify, inventory and control perceived environmental threats to ecological health of lands within the Unit. Provide education and outreach to contractors on best management practices to prevent the spread of invasive species during construction and maintenance projects. Continue to manage eastern hemlock at Zoar Valley MUA/UA to prevent further infestation and spread of hemlock wooly adelgid.
Managing Deer Impacts	
DM I – Monitor impacts of deer browsing on forest health and regeneration	Conduct forest inventory to collect deer browse data in relation to population and pressure on forest. In areas where deer damage is identified, efforts will be made to gather specific information to estimate the local deer population based on USFS and USDA data. Use systems such as Assessing Vegetation Impacts from Deer (AVID) and Ten Tallest.
DM II – Address issues of over-browsing	Cooperate with DEC DFW to utilize deer management assistance permits (DMAP) to increase doe harvest in areas of highly degraded forest habitat. Work with local conservation partners to identify concerns. Utilize deer fencing to protect habitats and species of concern, if warranted. Implement silvicultural techniques during management efforts to take into account deer pressure on vegetation.
Fire Management	
FM I – Support Forest Rangers in controlling the ignition and spread of wildfires	Continue to support Forest Rangers in suppression of illegal/unplanned wildfires. This may include staff who have all the required training to be on an active burn. It could also involve map making and other support as requested.

Table III.E. – Forest Management and Health Objectives and Actions	
Objective	**Actions**
FM II – Maintain naturally occurring fire-dependent communities	Prescribing low intensity burning to manage native habitats that depend on disturbance for their perpetuation is the preferred method. Other techniques may include use of large equipment and herbicides. Prescribed burns can only be undertaken as a cooperative effort between conservation partners and Department staff, including the Divisions of Forest Protection and Fire Management, Operations, Wildlife, and Lands and Forests.
Carbon Sequestration	
CS I – Keep forests as forests, where appropriate	There are no scheduled treatments in this plan to convert a forest stand to a non-forested stand. There are plans to maintain stands as young forested or ESH, which will entail more frequent management. These stands will, however, remain forested. Some scrub/shrub stands will be managed as ESH or grasslands depending on proximity to other stands. Use the state's land acquisition program to protect forests and wetlands.
CS II – Enhance carbon storage in existing stands	Active forest management provides the greatest potential to encourage carbon sequestration using silviculture to enhance growth rates in remaining trees. A new adaptive forest management approach is necessary to benefit from the most efficient storage. One technique is a longer growing rotation, managing for late successional stands, which is called for in this plan. Implement forest special management zones to protect water and forest soils. Enforce the use of best management practices during timber harvesting to protect forest soils. Note there is no active forest management in the Zoar Valley Unique Area.
CS III – Keep forests vigorous and improve forest growth rates	Managing poor quality, stagnant stands to improve vitality, stand health and quality. Use marking guides to maximize growth through proper spacing and available light and air circulation to enhance growth on crop trees. Overall, healthy forests are less susceptible to forest pest and disease and are part of a healthy ecosystem as a whole.
CS IV – Sequester carbon in forest products	Manage for healthy ecosystems with healthy forests in appropriate stands, potentially longer rotations and/or less volume removed each time. The remaining trees will be the healthiest, long-lived and best to sequester carbon and store long-term. High valuable forest products will be a result, which if harvested will likely be retained long-term, storing carbon in the finished product.

Ten-Year List of Management Actions

Unit-wide Actions

Action 1
Develop and subsequently adopt this UMP with future amendments as needed and periodic updates at least every ten years.

Action 2
Create/update the web page for each State Forest in this unit, including an electronic, printable map showing the location of recreational amenities.

Onondaga Escarpment Unique Area (Erie 18) Actions

Onondaga Escarpment UA Action 1 – Forest Inventory (2021)

Onondaga Escarpment UA Action 2 – Boundary Line Maintenance (2021)

Onondaga Escarpment UA Action 3 – Update/install property access control

Onondaga Escarpment UA Action 4 – Install informational kiosk at parking area

Onondaga Escarpment UA Action 5 – Maintain pond drainage structure

Onondaga Escarpment UA Action 6 – Inspect signage and trail markers, replace as needed

Onondaga Escarpment UA Action 7 – Inspect hiking trails, regular maintenance

Onondaga Escarpment UA Action 8 – Forest health management/improvement as needed

Onondaga Escarpment UA Action 9 – Improve Parking as funding becomes available

Onondaga Escarpment UA Action 10 – Treat invasive and nuisance species as able

Onondaga Escarpment UA Action 11 – Trail expansion/upgrade as able and as suitable without degrading site

Zoar Valley Multiple Use Area (Cattaraugus-Erie 1) Actions

Zoar Valley MUA Action 1 – Annually cooperate with local municipalities, authorities, landowners and fire rescue and EMS to improve public awareness and safety

Zoar Valley MUA Action 2 – Annually review signage of public areas for safety and efficiency

Zoar Valley MUA Action 3 – Annually monitor and maintain designated trails and signage

Zoar Valley MUA Action 4 – Annually monitor all recreational usage, determine sustainability and remediate as needed, review need for public education as opportunities develop

Zoar Valley MUA Action 5 – Annually cooperate with DFW to mow fields for wildlife habitat

Zoar Valley MUA Action 6 – Annually cooperate with DFW and conservation clubs for pheasant stocking

Zoar Valley MUA Action 7 – Annually cooperate with American Chestnut Foundation to mow chestnut plantation

Zoar Valley MUA Action 8 – Annually monitor forest health

Zoar Valley MUA Action 9 – Annually maintain ponds between Ross and Holcomb Parking Areas

Zoar Valley MUA Action 10 – Public review of the proposal to permit mining along the Vail Road ROW between parcel 357.00-1-9.11 and 357.00-1-11.1 (2021)

Zoar Valley MUA Action 11 – Review request to consolidate ROW between parcels 359.00-1-15.3 and 359.00-2-8 (2021)

Zoar Valley MUA Action 12 – Review options to install seasonal portable toilets at Ross Parking Area (2021)

Zoar Valley MUA Action 13 – Improve Kiosks at Ross and Holcomb Parking Areas (2021)

Zoar Valley MUA Action 14 – Work with Office of Communication Services to develop a map and informative panel for the kiosks (2021)

Zoar Valley MUA Action 15 – Develop and install trail registers at Ross and Holcomb Parking Areas (2021)

Zoar Valley MUA Action 16 – Replace gate at Ross Parking Area install large perimeter rock to prohibit illegal activity (2022)

Zoar Valley MUA Action 17 – Maintain Access Roads from the Ross and Holcomb Parking Areas (2022)

Zoar Valley MUA Action 18 – Develop management access north of Wickham Road (2022)

Zoar Valley MUA Action 19 – Boundary Line Maintenance (2022)

Zoar Valley MUA Action 20 – Maintain duck and bluebird nesting boxes (2023)

Zoar Valley MUA Action 21 – Forest inventory (2023)

Zoar Valley MUA Action 22 – Cooperate with DFW to monitor fishery of inland ponds (2024)

TEN-YEAR LIST OF MANAGEMENT ACTIONS

Zoar Valley MUA Action 23 – Review management plans with conservation partners to coordinate habitat work for species of greatest concern, ongoing

Zoar Valley Unique Area (Cattaraugus-Erie 2) Actions

Zoar Valley UA Action 1 – Annually cooperate with local municipalities, authorities, landowners and fire rescue and EMS to improve public awareness and safety

Zoar Valley UA Action 2 – Maintain close communications with The Nature Conservancy and volunteer efforts to maintain the Cattaraugus Creek gorge as a safe and healthy environment

Zoar Valley UA Action 3 – Annually review signage of public areas for safety and efficiency

Zoar Valley UA Action 4 – Annually monitor and maintain designated trails and signage

Zoar Valley UA Action 5 – Annually monitor all recreational usage, determine sustainability and remediate as needed, review need for public education as opportunities develop

Zoar Valley UA Action 6 – Annually monitor forest health

Zoar Valley UA Action 7 – Annually monitor ADA parking area

Zoar Valley UA Action 8 – Organize/coordinate volunteer group to maintain areas of Cattaraugus Creek and Zoar Valley (2021)

Zoar Valley UA Action 9 – Designate area up stream of old Forty Road Bridge as Restricted Area, develop signage and post restricting public access, review regulations amend as necessary (2021)

Zoar Valley UA Action 10 – Designate the gorge walls as restricted and prohibit climbing of gorge walls, amend regulations, develop and post signage (2021)

Zoar Valley UA Action 11 – Designate 15-foot set back along gorge, amend regulations, maintain signage (2021)

Zoar Valley UA Action 12 – ADA Trail Overlook Point (2021)

Zoar Valley UA Action 13 – Improve Valentine Flats Parking Area, add ADA parking spots (2022)

Zoar Valley UA Action 14 – Improve Kiosks at Valentine Flats and Forty Road Parking Areas (2021)

Zoar Valley UA Action 15 – Work with Office of Communication Services to develop a map and informative panel for the kiosks (2021)

Zoar Valley UA Action 16 – Review options to install seasonal portable toilets at Valentine Flats and Forty Road Parking Areas (2021)

Zoar Valley UA Action 17 – Boundary Line Maintenance (2021)

Zoar Valley UA Action 18 – Develop and install trail registers for Valentine Flats and Forty Road Areas (2021)

Zoar Valley UA Action 19 – Improve EMS access to Valentine Flats, trail improvements (2022)

Zoar Valley UA Action 20 – Develop creekside trail between Forty Road and the "confluence" (2023)

Zoar Valley UA Action 21 – Work with cooperators to map and identify mileage references along Cattaraugus Creek for public safety and EMS response (2023)

Zoar Valley UA Action 22 – Forest Inventory including proper digitizing of stands and update SFID (2024)

East Otto State Forest (CAT 15) Actions

East Otto SF Action 1 – Improve signage, identify camping along Kriedeman PFAR, cooperate with town to sign Kriedeman PFAR

East Otto SF Action 2 – Work with Office of Communication Services to develop a map and informative panel for the kiosk at main parking area

East Otto SF Action 3 – Inspect campsites annually, request maintenance as needed

East Otto SF Action 4 – Maintain Kriedeman PFAR, improve surface with gravel, clean ditches and remove brush from roadsides, extend Kriedeman PFAR to the north with timber sales

East Otto SF Action 5 – Maintain Stickney Pond, review fishery with DFW, request study

East Otto SF Action 6 – Review recreational shooting on property, designate location, cooperate with local municipalities

East Otto SF Action 7 – Maintain wood duck boxes, cooperate with conservation partner

East Otto SF Action 8 – Replace PFAR gates on Kriedeman and Wildlife Access

East Otto SF Action 9 – Upgrade Wildlife Access South of Traffic Street

East Otto SF Action 10 – Inventory/monitor natural resources to conserve diverse habitats

East Otto SF Action 11 – Boundary Line Maintenance (2024)

East Otto SF Action 12 – Forest Inventory (2027)

FOREST TYPE CODES

Forest Type Codes

Natural Forest Types

10 Northern Hardwood
11 Northern Hardwood-Hemlock
13 Northern Hardwood-Spruce-Fir
12 Northern Hardwood-White Pine
14 Pioneer Hardwood
15 Swamp Hardwood
16 Oak
17 Black Locust
18 Oak-Hickory
19 Oak-Hemlock
20 Hemlock
21 White Pine
22 White Pine-Hemlock
23 Spruce-Fir
24 Spruce-Fir-Hemlock-White Pine
25 Cedar
26 Red Pine
27 Pitch Pine
28 Jack Pine
29 Tamarack
30 Oak-Pine
31 Transition Hardwoods (NH-Oak)
32 Other Natural Stands
33 Northern Hardwood-Norway Spruce
97 Seedling-Sapling- Natural
99 Non-Forest
-99 Null

Plantation Types

40 Plantation: Red Pine
41 Plantation: White Pine
42 Plantation: Scotch Pine
43 Plantation: Austrian Pine
44 Plantation: Jack Pine
45 Plantation: Norway Spruce
46 Plantation: White Spruce
47 Plantation: Japanese Larch
48 Plantation: European Larch
49 Plantation: White Cedar
50 Plantation: Douglas Fir
51 Plantation: Balsam Fir
52 Plantation: Black Locust
53 Plantation: Pitch Pine
54 Plantation: Misc. Species (Pure)
60 Plantation: Red Pine-White Pine
61 Plantation: Red Pine-Spruce
62 Plantation: Red Pine-Larch
63 Plantation: White Pine-Spruce
64 Plantation: White Pine-Larch
65 Plantation: Scotch Pine-Spruce
66 Plantation: Scotch Pine-Larch
67 Plantation: Larch-Spruce
68 Plantation: Bucket Mixes
70 Plantation: Pine-Natural Species
72 Plantation: Misc. Hardwood
98 Plantation: Seedling-Sapling

Management Direction

Wildlife (WL)
Experimental (EXP)
Recreation (REC)
Protection (PRO)
Non-Management (NM)
Sugar Bush/Maple Tapping (SB)
Timber Management:
- Even Age (T-EA)
- Un-Even Age (T-UE)
- Non-Silvicultural (T-NS)

Treatment Type

Harvest (HV)
Release (RL)
Salvage (SL)
Sanitation (SN)
Thinning (TH)
Regeneration (RG)
Habitat Management (HM)
Sale Stand (SS)

Size Class

Seedling/Sapling <5” DBH (S-S)
Pole Timber 6”-11” DBH (PT)
Small Saw Timber 12”-17” DBH (SST)
Medium Saw Timber 18”-23” DBH (MST)
Large Saw Timber > 24” DBH (LST)

Land Management Action Schedules

Land Management Action Schedule for the First Five Years

Table III.F. – Land Management Action Schedule for First Five-Year Period

State Land	Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
				Current	Future		
Catt. - Erie 1	1.2	9.9	S-S	98	98	EXP	RG
Catt. - Erie 1	5.1	23.7	SST	10	10	T-EA	TH
Catt. - Erie 1	5.2	53.5	NA	99	99	T-NS	HM
Catt. - Erie 1	6	2.8	SST	72	72	T-EA	TH
Catt. - Erie 1	16	5.5	SST	47	32	T-EA	HV
Catt. - Erie 1	28.1	23.9	NA	99	99	T-NS	HM
Catt. - Erie 1	50.2	11.6	LST	10	10	EXP	HM
Catt. - Erie 1	51	6.4	PT	10	10	EXP	HM
Catt. - Erie 1	52	20.4	PT	10	10	EXP	HM
Catt. - Erie 1	53.2	53.5	SST	10	10	EXP	HM
Catt. - Erie 1	56	35.1	SST	10	10	EXP	HM
Catt. - Erie 1	63	18.6	PT	45	32	T-EA	HV
Catt. - Erie 1	65	2.6	NA	99	99	T-NS	HM
Catt. - Erie 1	66.2	28.7	PT	10	10	T-UE	HM
Catt. - Erie 1	74.2	24.7	SST	10	10	T-UE	TH
Catt. - Erie 1	82	9.1	PT	45	32	T-EA	HV
Catt. - Erie 1	83	2.6	SST	47	32	T-EA	HV
Catt. - Erie 1	87	6.9	PT	45	32	T-EA	HV
Total Catt. - Erie 1		**339.5**					
Catt. 15	2	57.6	SST	11	11	T-UE	TH
Catt. 15	3	78.3	SST	10	10	T-UE	TH
Catt. 15	6	47.1	SST	11	11	T-UE	TH
Catt. 15	29	34.6	SST	11	11	T-UE	TH
Catt. 15	31	35.3	MST	11	11	T-UE	TH
Total Catt. 15		**252.9**					

Land Management Action Schedule for the Second Five Years

Table III.G. – Land Management Action Schedule for Second Five-Year Period

State Land	Stand	Acres	Size Class	Forest Type		Management Direction	Treatment Type
				Current	Future		
Catt. - Erie 1	1.2	9.9	S-S	98	98	EXP	RG
Catt. - Erie 1	3.2	30.2	SST	47	32	T-EA	HV

LAND MANAGEMENT ACTION SCHEDULES

Table III.G. – Land Management Action Schedule for Second Five-Year Period							
State Land	**Stand**	**Acres**	**Size Class**	**Forest Type**		**Management Direction**	**Treatment Type**
				Current	**Future**		
Catt. - Erie 1	5.2	53.5	NA	99	99	T-NS	HM
Catt. - Erie 1	12	11.9	PT	45	32	T-EA	HV
Catt. - Erie 1	19	2.3	SST	45	32	T-EA	HV
Catt. - Erie 1	28.1	23.9	NA	99	99	T-NS	HM
Catt. - Erie 1	28.2	8.4	MST	10	10	T-UE	TH
Catt. - Erie 1	60	18.5	SST	10	10	T-UE	TH
Catt. - Erie 1	65	2.6	NA	99	99	T-NS	HM
Catt. – Erie 1	68.2	29	SST	10	10	T-UE	HM
Catt. - Erie 1	75	7.9	SST	10	10	T-UE	TH
Catt. - Erie 1	76	19	SST	10	10	T-UE	TH
Catt. - Erie 1	77.2	16.8	PT	45	32	T-EA	HV
Total Catt. - Erie 1		**233**					
Catt. 15	1	39.3	MST	11	11	T-UE	TH
Catt. 15	4	86.8	SST	11	11	T-UE	TH
Catt. 15	9	39.4	SST	11	11	T-UE	TH
Catt. 15	30	13.2	SST	11	11	T-UE	TH
Catt. 15	34	46.2	SST	11	11	T-UE	TH
Total Catt. 15		**224.9**					

Stands without Scheduled Maintenance within 10 years

Table III.H. – Stands without Scheduled Management within 10 Years **(by State Land)** **Amendments may be made to stands listed in this table upon further inspection of stands and updates to inventory**						
State Land	**Stand**	**Acres**	**Size Class**	**Forest Type**		**Management Direction**
				Current	**Future**	
Catt. - Erie 1	1.1	6	PT	10	10	NM
Catt. - Erie 1	2	2.7	PT	72	72	NM
Catt. - Erie 1	3.1	4.6	S-S	10	10	NM
Catt. - Erie 1	4	18.2	PT	45	45	NM
Catt. - Erie 1	7.1	4.3	PT	72	72	NM
Catt. - Erie 1	7.2	10.1	PT	72	72	NM
Catt. - Erie 1	8.2	22.5	SST	11	11	NM
Catt. - Erie 1	10	45.9	SST	11	11	NM
Catt. - Erie 1	11	2.1	PT	45	45	NM
Catt. - Erie 1	13	17.2	PT	10	10	NM

Table III.H. – Stands without Scheduled Management within 10 Years **(by State Land)**
Amendments may be made to stands listed in this table upon further inspection of stands and updates to inventory

State Land	Stand	Acres	Size Class	Forest Type		Management Direction
				Current	Future	
Catt. - Erie 1	15	10.2	PT	10	10	NM
Catt. - Erie 1	17	13.7	PT	40	40	NM
Catt. - Erie 1	20.2	5.3	SST	10	10	NM
Catt. - Erie 1	22.1	20.3	LST	11	11	NM
Catt. - Erie 1	23.1	24.4	MST	10	10	NM
Catt. - Erie 1	24	25.7	SST	11	11	NM
Catt. - Erie 1	25	9.3	SST	10	10	NM
Catt. - Erie 1	27	7.6	PT	40	40	NM
Catt. - Erie 1	28.2	4	PT	10	10	NM
Catt. - Erie 1	29	1.6	NA	97	97	NM
Catt. - Erie 1	29.1	5.4	SST	10	10	NM
Catt. - Erie 1	30.1	8.3	SST	10	10	NM
Catt. - Erie 1	40.1	43.3	MST	11	11	NM
Catt. - Erie 1	41	25	SST	10	10	NM
Catt. - Erie 1	42.1	18.8	SST	11	11	NM
Catt. - Erie 1	43	7.2	SST	45	45	NM
Catt. - Erie 1	44.1	20.1	SST	66	66	NM
Catt. - Erie 1	46.1	31	PT	10	10	NM
Catt. - Erie 1	47.2	28.9	SST	10	10	NM
Catt. - Erie 1	48	8.6	SST	10	10	NM
Catt. - Erie 1	49	9.2	SST	10	10	NM
Catt. - Erie 1	54	8	PT	45	45	NM
Catt. - Erie 1	55.2	7.6	SST	31	31	NM
Catt. - Erie 1	57	2.7	MST	10	10	NM
Catt. - Erie 1	58	11.9	PT	45	45	NM
Catt. - Erie 1	59	20.4	SST	10	10	NM
Catt. - Erie 1	61	5.6	PT	45	45	NM
Catt. - Erie 1	62	3.8	SST	10	10	NM
Catt. - Erie 1	64.1	3.6	SST	12	12	NM
Catt. - Erie 1	64.2	17.1	SST	10	10	NM
Catt. - Erie 1	67	10.5	SST	45	45	NM
Catt. - Erie 1	69.1	6.6	LST	10	10	NM
Catt. - Erie 1	70.1	26.7	MST	10	10	NM

LAND MANAGEMENT ACTION SCHEDULES

Table III.H. – Stands without Scheduled Management within 10 Years (by State Land)
Amendments may be made to stands listed in this table upon further inspection of stands and updates to inventory

State Land	Stand	Acres	Size Class	Forest Type		Management Direction
				Current	Future	
Catt. - Erie 1	70.2	14	PT	10	10	NM
Catt. - Erie 1	70.3	0.6	PT	45	45	NM
Catt. - Erie 1	71	9.3	MST	10	10	NM
Catt. - Erie 1	72	11.2	PT	45	45	NM
Catt. - Erie 1	73	37.5	PT	10	10	NM
Catt. - Erie 1	74.1	4.5	SST	10	10	NM
Catt. - Erie 1	77.1	4	S-S	97	97	NM
Catt. - Erie 1	78	17.8	PT	45	45	NM
Catt. - Erie 1	79.1	15.9	SST	10	10	NM
Catt. - Erie 1	80	12.3	SST	72	72	NM
Catt. - Erie 1	81.1	5.2	PT	10	10	NM
Catt. - Erie 1	81.2	13.9	PT	10	10	NM
Catt. - Erie 1	85	4.9	PT	45	45	NM
Catt. - Erie 1	86.1	3.6	NA	72	72	NM
Catt. - Erie 1	86.2	4.7	NA	45	45	NM
Catt. - Erie 1	88	8.6	S-S	45	45	NM
Catt. - Erie 1	89	19.1	S-S	45	45	NM
Catt. - Erie 1	90	40.6	SST	11	11	NM
Catt. - Erie 1	91	13.6	S-S	45	45	NM
Catt. - Erie 1	95	14.1	MST	11	11	NM
Catt. - Erie 1	96	6.7	MST	11	11	NM
Catt. - Erie 1	97	31.2	PT	12	12	NM
Total Catt. - Erie 1		**879.3**				
Catt. 15	5	3.3	PT	45	45	NM
Catt. 15	7	34.8	PT	11	11	NM
Catt. 15	8	32.4	SST	11	11	NM
Catt. 15	10	4.2	PT	12	12	NM
Catt. 15	11	30.2	SST	11	11	NM
Catt. 15	12	10.3	SST	12	12	NM
Catt. 15	13	35.9	SST	11	11	NM
Catt. 15	14	22.7	SST	10	10	NM
Catt. 15	15	48.5	SST	11	11	NM
Catt. 15	16	5.8	SST	11	11	NM

Table III.H. – Stands without Scheduled Management within 10 Years **(by State Land)**
Amendments may be made to stands listed in this table upon further inspection of stands and updates to inventory

State Land	Stand	Acres	Size Class	Forest Type		Management Direction
				Current	Future	
Catt. 15	17	41.3	SST	11	11	NM
Catt. 15	18	22.3	SST	11	11	NM
Catt. 15	19	29.5	SST	60	60	NM
Catt. 15	20	30.3	SST	60	60	NM
Catt. 15	22	21.4	SST	11	11	NM
Catt. 15	23	4.1	SST	60	60	NM
Catt. 15	24	7.5	PT	10	10	NM
Catt. 15	25	15.5	SST	60	60	NM
Catt. 15	26	6.7	SST	60	60	NM
Catt. 15	28	44	PT	45	45	NM
Catt. 15	32	36.1	PT	11	11	NM
Catt. 15	33	84.1	PT	11	11	NM
Catt. 15	35	12.3	PT	10	10	NM
Catt. 15	36	6.5	PT	60	60	NM
Catt. 15	37	9.9	SST	46	46	NM
Catt. 15	38	21.4	PT	45	45	NM
Catt. 15	39	8.7	PT	45	45	NM
Catt. 15	40	11.2	PT	45	45	NM
Catt. 15	41	49.7	PT	42	42	NM
Catt. 15	42	16.8	PT	45	45	NM
Catt. 15	43	5.7	PT	45	45	NM
Catt. 15	44	13.9	PT	40	40	NM
Catt. 15	46	21.8	PT	10	10	NM
Catt. 15	47	43.7	PT	11	11	NM
Catt. 15	48	6.7	PT	45	45	NM
Catt. 15	49	9.2	PT	10	10	NM
Catt. 15	51	10.4	PT	11	11	NM
Catt. 15	54	4.6	PT	10	10	NM
Catt. 15	55	8.3	MST	12	12	NM
Catt. 15	56	4.5	MST	11	11	NM
Catt. 15	57	5.5	SST	10	10	NM
Total Catt. 15		**841.7**				

LAND MANAGEMENT ACTION SCHEDULES

Resource Protection and Natural Areas

Table III.I. – Resource Protection/Natural Areas **(by State Land) Amendments may be made to stands listed in this table upon further inspection of stands and updates to inventory**

State Land	Stand	Acres	Size Class	Forest Type
Erie 18	1	14.5	MST	31
Erie 18	2	24.4	SST	32
Erie 18	3	3.6	PT	32
Erie 18	4	7.1	SST	11
Erie 18	910	1.3	NA	Non-Forest
Total Erie 18		**50.9**		
Catt. - Erie 1	18.2	10.1	NA	Non-Forest
Catt. - Erie 1	66.1	3.7	NA	Non-Forest
Catt. - Erie 1	68.1	11.5	NA	Non-Forest
Catt. - Erie 1	79.2	12.7	NA	Non-Forest
Catt. - Erie 1	84	9.2	SST	Other
Catt. - Erie 1	910	2.4	NA	Non-Forest
Catt. - Erie 1	910	10.2	NA	Non-Forest
Catt. - Erie 1	920	1.8	NA	Non-Forest
Catt. - Erie 1	920	0.9	NA	Non-Forest
Catt. - Erie 1	920	5.4	NA	Non-Forest
Catt. - Erie 1	920	3.1	NA	Non-Forest
Catt. - Erie 1	920	3.1	NA	Non-Forest
Catt. - Erie 1	920	11.2	NA	Non-Forest
Catt. - Erie 1	920	2.7	NA	Non-Forest
Catt. - Erie 1	920	1.6	NA	Non-Forest
Catt. - Erie 1	920	1.3	NA	Non-Forest
Catt. - Erie 1	920	9.4	NA	Non-Forest
Total Catt. - Erie 1		**100.3**		
Catt. - Erie 2	1	1,492.2	NA	Non-Forest
Total Catt. - Erie 2		**1,492.2**		
Cattaraugus 15	27	11.8	NA	Non-Forest
Cattaraugus 15	50	5.3	NA	Non-Forest
Cattaraugus 15	52	12	PT	10
Cattaraugus 15	53	4.1	NA	Non-Forest
Cattaraugus 15	910	1.3	NA	Non-Forest
Cattaraugus 15	910	1.1	NA	Non-Forest
Cattaraugus 15	910	1.9	NA	Non-Forest

Table III.I. – Resource Protection/Natural Areas (by State Land) Amendments may be made to stands listed in this table upon further inspection of stands and updates to inventory				
State Land	**Stand**	**Acres**	**Size Class**	**Forest Type**
Cattaraugus 15	910	.8	NA	Non-Forest
Cattaraugus 15	910	1.3	NA	Non-Forest
Cattaraugus 15	910	.6	NA	Non-Forest
Cattaraugus 15	910	.4	NA	Non-Forest
Cattaraugus 15	910	2.5	NA	Non-Forest
Cattaraugus 15	910	2.6	NA	Non-Forest
Cattaraugus 15	910	.6	NA	Non-Forest
Total Cattaraugus 15		**46.3**		

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Glossary of Acronyms

ADAAG: Americans with Disabilities Act Accessibility Guidelines

AANR: Adopt a Natural Resource program

ADA: Americans with Disabilities Act

ARPA: Archaeological Resources Protection Act

ATV: All-Terrain Vehicle

BA/AC: Basal Area per Acre

BBA: Breeding Bird Atlas

BMP: Best Management Practices

DEC: Department of Environmental Conservation

DLF: Department of Lands and Forests

ECL: Environmental Conservation Law

EIS: Environmental Impact Statement

FCSFU: Fulton County State Forest Unit

FSC: Forestry Stewardship Council

GEIS: Generic Environmental Impact Statement

GIS: Global Information Systems

GPS: Global Positioning System

HCVF: High Conservation Value Forest

IPM: Integrated Pest Management

MAPPWD: Motorized Access Program for People with Disabilities

NYCRR: New York Codes, Rules and Regulations

OPRHP: Office of Parks, Recreation, and Historical Preservation

PFAR: Public Forest Access Road

PFD: Personal Floatation Device

ROW: Right-of-Way

RSA: Representative Sample Area

SEQR: State Environmental Quality Review

GLOSSARY OF ACRONYMS

SEQRA: State Environmental Quality Review Act

SFI: Sustainable Forestry Initiative

SGCN: Species of Greatest Conservation Need

SHPA: State Historic Preservation Act

SLIM: State Lands Interactive Mapper

SMZ: Special Management Zone

TRP: Temporary Revocable Permit

UMP: Unit Management Plan

UTV: Utility Task Vehicle

VSA: Volunteer Stewardship Agreement

WMA: Wildlife Management Unit

Glossary of Terms

Access trails - Temporary, unpaved roads which do not provide all weather access within the unit. They are not designed for long term and repeated use by heavy equipment. These corridors were originally constructed for the seasonal removal of forest products by skidding to landings or other staging areas. Constructed according to best management practices, these trails may be used to support other management objectives such as recreational access corridors. Maintenance is limited to activities which minimally support seasonal access objectives.

Aesthetics - Forest value, rooted in beauty and visual appreciation and providing a distinct visual quality.

Age Class - Trees of a similar size originating from a single natural event or regeneration activity. see cohort.

All-Aged - A condition of a forest or stand that contains trees of all or almost all age classes.

Allowable Cut - The amount of timber considered as available for cutting during a specified planned period of operation.

Basal Area - The cross-sectional area, measured in square feet, of a single stem, including the bark, measured at breast height (4.5 ft above the ground).

Basal Area/Acre - A measure of forest density, the sum total of the basal areas of all trees on one acre.

Best Management Practices - A practice or a combination of practices that are designed for the protection of water bodies and riparian areas, and determined to be the most effective and practicable means of controlling point and non-point source water pollutants.

Biomass - the weight of organic matter in a tree, stand, or forest, in units such as living or dead weight, wet or dry weight, etc.

Biological Diversity (Biodiversity) - The variety of life on earth. The variety of things and the variability found within and among them. Biodiversity also encompasses processes –both ecological and evolutionary that allow organisms to keep adapting and evolving. Includes genetic diversity (unique combinations of genes found within and among organisms), species diversity (numbers of species in an area), ecological diversity (organization of species into natural communities and the interplay of these communities with the physical environment – interactions among organisms and between organisms and their environment is the key here), Landscape diversity (refers to the geography of different ecosystems across large areas and the connections between them.

Blowdown - Tree or trees felled or broken off by wind.

Buffer Zone / Buffer Strip - A vegetation strip or management zone of varying size, shape, and character maintained along a stream, lake, road, recreation site, or different vegetative zone to mitigate the impacts of actions on adjacent lands, to enhance aesthetic values, or as a best management practice.

Cavity Tree / Den Tree - A tree containing an excavation sufficiently large for nesting, dens or shelter; tree may be alive or dead.

Clear Cut - A harvesting and regeneration technique that removes all the trees, regardless of size, on an area in one operation. This practice is done in preparation of the re-establishment of a new forest through reforestation, stump sprouting, or changing habitats, i.e., from forest to brush or grass cover.

Climax Forest - An ecological community that represents the culminating stage of a natural forest succession for its locality/environment.

Coarse Woody Debris (CWD)- Any piece(s) of dead woody material on the ground in forest stands or in streams.

Cohort - A population of trees that originate after some type of disturbance. The disturbance makes growing space available.

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.

Conversion - A change from one silvicultural system to another or from one tree species to another.

Coppice - Stems originating primarily from vegetative reproduction; e.g. the production of new stems from stumps, roots or branches. see low forest.

Corridor - A linear strip of land identified for the present or future location of a designed use within its' boundaries. Examples: recreational trails, transportation or utility rights-of-way.

- When referring to wildlife, a corridor may be a defined tract of land connecting two or more areas of similar management or habitat type through which a species can travel from one area to another to fulfill any variety of life-sustaining needs.

Cover type - The plant species forming a majority of composition across a given area.

Crown - the part of a tree or woody plant bearing live branches and foliage.

Crown Class - A category of tree based on its crown position relative to those of adjacent trees.

- dominant - receives full light from above and partial to full light from the sides.
- co-dominant -a tree whose crown helps to form the general level of the main canopy and receives full light from above and comparatively little from the sides.
- intermediate -a tree whose crown extends into the lower portion of the main canopy and receives little direct light from above and none from the sides.
- suppressed/ -a tree whose crown is completely overtopped by the crowns of one or more overtopped neighboring trees and receives little or no direct sunlight.

Crown Closure - The point at which the vertical projections of crown perimeters within a canopy touch.

Cull - Any item of production, e.g., trees, logs, lumber, or seedlings, rejected because it does not meet certain specifications of usability or grade.

Cultural Resources - Significant historical or archaeological assets on sites as a result of past human activity which are distinguishable from natural resources.

Cutting Interval - The number of years between harvest or regeneration cuts in a stand.

Deciduous - Tree and shrub species that lose their foliage in autumn.

Defoliation -The partial or complete loss of foliage, usually caused by an insect, disease, or drought.

Diameter Breast Height (DBH) -The diameter of the stem of a tree (outside bark) measured at breast height (4.5 ft) from the ground.

Diameter-Limit Cut - A timber harvesting treatment in which all trees over a specified diameter may be cut. Diameter-limit cuts often result in high-grading.

Disturbance - An event that causes significant change from the normal pattern in an ecosystem. A disturbance can be endogenous, or part of the developmental process that weakens, for example, a

tree, making it susceptible to physical or biological forces. Disturbance can also be exogenous, or external to the developmental process, such as intense winds or fires.

Disturbance Regime - Describes a repeating pattern of disturbance in a community or across a landscape, such as seasonal flooding, daily tidal flooding, insect outbreaks, periodic fires, windthrow, erosion, and ice scouring/ice storms.

Ecosystem - A spatially explicit, relatively homogeneous unit of the earth that includes all interacting organisms and components of the abiotic environment within its boundaries. (note: an ecosystem can be of any size, e.g., a log, pond, field, forest or the earth's biosphere.)

Ecosystem Management -The appropriate integration of ecological, economic, and social factors in order to maintain and enhance the quality of the environment to best meet our current and future needs. Means keeping natural communities of plants, animals, and their environments healthy and productive so people can benefit from them year to year.

Edge - The more or less well-defined boundary between two or more elements of the environment, e.g., a field adjacent to a woodland or the boundary of different silvicultural treatments.

Endangered Species - Any species of plant or animal defined through the Endangered Species Act of 1976 as being in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register.

Even-Aged - A class of forest or stand composed of trees of about the same age. The maximum age difference is generally 10-20 years.

Even-Aged System - A program of forest management directed to the establishment and maintenance of stands of trees having relatively little (10-20 yrs) variation in ages. The guidelines to be applied in using this system at all stages of tree development are uniquely different from the uneven-aged system.

Exotic -Any species that is not native to a particular geographic region or ecosystem.

Flood Plain - The level or nearly level land with alluvial soils on either or both sides of a stream or river that is subject to overflow flooding during periods of high water level.

Forest - An assemblage of trees and associate organisms on sites capable of maintaining at least 60% crown closure at maturity.

Forestry - The profession embracing the science, art, and practice of creating, managing, using, and conserving forests and associated resources for human benefit and in a sustainable manner to meet desired goals, needs, and values.

Forest Management - The application of business methods and technical forestry principles to the operation of a forest property.

Forest Succession -The gradual replacement of one community of plants by another. Example: an area of open grass becoming shrub which then becomes shade intolerant trees (pioneer species) and finally climax forest of mostly shade tolerant trees.

Forested Wetland - An area characterized by woody vegetation where soil is periodically saturated with or covered by water.

Fragipan - A dense and brittle layer of soil. Its hardness results mainly from extreme density or compactness rather than from high clay content. The material may be dense enough to restrict root, nutrient, and water penetration.

Fragmentation - A biophysical process of breaking forests into dispersed blocks separated by non-forest, or in some areas, dispersed blocks of mature forest separated by young forest.

Gaps - Communities, habitats, successional stages, or organisms which have been identified as lacking in the landscape.

Geocaching - A high-tech, hide and seek, outdoor activity for utilizing the Global Positioning System (GPS) where an item is "cached" on the landscape.

Grassland -Land on which the vegetation is dominated by grasses, grasslike plants, or forbs.

Green Tree Retention - The practice of retaining live trees after a release cut. This practice creates higher levels of structural diversity providing varied wildlife habitat and future downed wood. The residual overstory trees also moderate the microclimate of the site and provide continuity of habitat for plant and animal species between uncut forest areas. These residual trees are left through the next rotation.

Habitat - The geographically defined area where environmental conditions (e.g., climate, topography, etc.) meet the life needs (e.g., food, shelter, etc.) of an organism, population, or community.

Harvest /Cut/ Logging - Altering a forest by removing trees and other plants so as to control the composition and form of forest stands.

Haul roads - Permanent, unpaved roads which are not designed for all weather travel, but may have hardened or improved surfaces with artificial drainage. They are constructed according to best management practices primarily for the removal of forest products, providing limited access within the unit by log trucks and other heavy equipment. These roads may or may not be open for public motor vehicle use, depending on management priorities and objectives. They may serve as recreational access corridors, but are not maintained according to specific standards or schedules. The design standards for these roads are below those of the Class B access roads as provided in the Unpaved Forest Road Handbook.

Header - See Log Landing.

High Forest - A forest originating mainly from natural reproduction.

High-Grading - The removal of the most commercially valuable trees (high-grade trees), often leaving a residual stand composed of trees of poor condition or species composition.

Improvement Cut - The removal of less desirable trees of any species in a stand of poles or larger trees, primarily to improve composition and quality.

Indicator Species - Species with such specialized ecological needs that they can be used for assessing the quality, condition, or extent of an ecosystem on the basis of their presence and density, or the accumulation and effect of materials in their tissues.

Intermediate Treatment - Any silvicultural treatment designed to enhance growth, quality, vigor,

and composition of the stand after establishment or regeneration and prior to final harvest.

Invasive - Species that, after they have been moved from their native habitat to a new location, or following disturbance in their native habitat, spread on their own, displacing other species, and sometimes causing environmental damage.

Large Poles - Trees 9-11 inches in diameter at breast height.

Large Sawtimber - Trees 18 inches or greater diameter at breast height.

Log Landing / Log Deck - A cleared area in the forest to which logs are skidded and are temporarily stored before being loaded onto trucks for transport.

Low Forest -A forest produced primarily from vegetative regeneration, i.e. coppice.

Mast - All fruits of trees and shrubs used as food for wildlife. Hard mast includes nut-like fruits such as acorns, beechnuts, and chestnuts. Soft mast includes the fleshy fruits of black cherry, dogwood and serviceberry.

Mature Stand - Pertaining to an even-aged stand that has attained most of its potential height growth, or has reached merchantability standards -note within uneven-aged stands, individual trees may become mature but the stand itself consists of trees of diverse ages and stages of development.

Medium Sawtimber - Trees 15-17 inches in diameter at breast height.

Mesic - Of sites or habitats characterized by intermediate moisture conditions, i.e., neither decidedly wet nor dry.

Multiple Use - A strategy of land management fulfilling two or more objectives, e.g. forest products removal and recreation.

Multiple Use Area - Lands acquired pursuant to Article 15, Section 15.01 (b) of the Parks and Recreation Land Acquisition Bond Act. Multiple Use Areas are acquired to provide additional opportunities for outdoor recreation, including public camping, fishing, hunting, boating, winter sports, and, wherever possible, to also serve multiple purposes involving the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry and reforestation.

Native - Species believed to have existed in a particular geographic region or ecosystem of the Northeast prior to European settlement and subsequent large-scale alteration of the landscape. The state reference for native species is Mitchell. 1997 Revised Checklist of New York State Plants.

Natural Area - These areas are not managed for the production of wood products. A physical and biological area left in a natural condition, usually without direct human intervention, to attain and sustain a climax condition, the final stage of succession.

Natural Regeneration - The establishment of a forest stand from natural seeding, sprouting, suckering or layering.

Non-Commercial Forest - Areas of a forest permanently inoperable due to conditions such as inaccessibility, altitude and poor growing conditions. Meyer, Arthur H. and Others. 1961. Forest Management. New York: Ronald Press.

Neo-Tropical Migratory Birds - Bird species which migrate between the Northern and Southern hemispheres. These species represent more than 50% (340 of the 600 species) of North American birds.

Northern Hardwood Forest Type - A forest type usually made up of sugar and red maple, American beech, yellow birch, and to a lesser extent black cherry and white ash. This type represents about 70 percent of all forests in New York State.

Old Growth Forest - The definition of "Old Growth Forest" involves a convergence of many different, yet interrelated criteria. Each of these criteria can occur individually in an area that is not old growth, however, it is the presence of all of these factors that combine to differentiate" Old Growth Forest." from other forested ecosystems. These factors include: 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 (1) canopy gaps formed by natural disturbances creating an uneven canopy, and (2) a conspicuous absence of multiple stemmed trees and coppices. Old growth forest sites typically (1) are characterized by an irregular forest floor containing an abundance of coarse woody materials which are often covered by mosses and lichens; (2) show limited signs of human disturbance since European settlement; and (3) have distinct soil horizons that include definite organic, mineral, illuvial accumulation, and unconsolidated layers. The understory displays well developed and diverse surface herbaceous layers.

Overstory - That portion of the trees in a forest forming the upper or uppermost canopy layer.

Parcelization - The subdivision of land into smaller ownership blocks. This intrudes new features and activities into the forest and changes its character but does not necessarily fragment it in biophysical terms. Richards, N.A., Forest Resources of Central NY, NY Forest Owner 9/93

Pioneer - A plant capable of invading bare sites (newly exposed soil) and persisting there or colonizing them until supplanted by successional species.

Plantation - A stand composed primarily of trees established by planting or artificial seeding - a plantation may have tree or understory components that have resulted from natural regeneration.

Poletimber - Trees that are generally 6-11 inches in diameter at breast height.

Protection Forest - Forest land excluded from most active management including wood product management, oil and gas exploration and development, and some recreational activities to protect sensitive sites. These sites most often include steep slopes, wet woodlands and riparian zones along stream corridors.

Public Forest Access Roads - Permanent, unpaved roads which may be designed for all-weather use depending upon their location, surfacing and drainage. These roads provide primary access for administration and public use within the unit. The design standards for these roads are those of the Class A and Class B access roads as provided in the Unpaved Forest Road Handbook (8/74). As a general guideline, sufficient access is typically achieved when 1 mile of PFAR is developed for each 500 acres of state land, and no position within the unit lies more than 1 half mile from a PFAR or public highway.

Public Roads - Permanent, paved or unpaved roads primarily designed for motor vehicle travel which are maintained by federal, state or local government. These roads may. Or may not provide year-round access.

Pulpwood - Low grade or small diameter logs used to make paper products, wood chips, etc.

Recreational Trail - Unpaved recreational corridors which do not provide all weather access within a unit, and are designed to achieve specific recreational access objectives. Constructed according to best management practices, and following accepted regional standards for design, these trails may be used to support multiple types of seasonal recreation access. Maintenance is limited to activities which minimally support the access objectives and design.

Reforestation - The re-establishment of forest cover by natural or artificial means.

Regeneration - Seedlings or saplings of any origin. The Society of American Foresters. 1958. Forest Terminology, 3rd edition. Washington, DC.

Release - 1.) A treatment designed to free trees from undesirable, usually overtopping, competing vegetation. 2.) A treatment designed to free young trees not past the sapling stage from undesirable competing vegetation that overtops or closely surrounds them.

Residual Stand - A stand composed of trees remaining after any type of intermediate harvest. (H)

Rights-Of-Way - Permanent, paved or unpaved roads which allow the Department access to state Forest properties while crossing private land, or, corridors across state Forests allowing access to

Riparian zone - Areas of transition between terrestrial and aquatic ecological systems. They are characterized as having soils and vegetation analogous to floodplains, or areas transitional to upland zones. These areas help protect the water by removing or buffering the effects of excessive nutrients, sediments, organic matter, pesticides, or pollutants.

Rotation - The period of years between stand establishment and timber harvest as designated by economic or natural decisions.

Salvage Cutting - Recovery of the values represented by damaged trees or stands. Smith, David M. 1962, The Practice of Silviculture. New York: John Wiley & Sons.

Sapling - A small tree, usually defined as being between 1 and 5 inches in diameter at breast height.

Sawtimber - Trees that are generally 12 inches and larger diameter at breast height.

Second Growth - The forests re-established following removal of previously unharvested or old -growth stands. Most northeastern forests are either second or third growth.

Seedling - A young tree originating from seed that is less than 4 feet tall.

Seedling/Sapling - Trees less than 6 inches in diameter at breast height.

Seed Tree Cut/Method - The removal of the mature timber in one cutting, except for a small number of trees left singly, or in small groups, as a source of seed for natural regeneration.

Significant Natural Community - Communities that are either rare in New York State or are determined by New York Natural Heritage Program staff to be outstanding examples of more common natural communities.

Selective Cut - High Grade (Replaces Selective Thinning) -A type of exploitation cutting that removes only certain species (a) above a certain size, (b) of high value; Known silvicultural requirements and/or sustained yields being wholly or largely ignored or found impossible to fulfill. Society of American Foresters. Ford-Robertson, F. C., editor. 1971. Terminology of Forest Science, Technology, Practice and Products. Cambridge: England

Shade Tolerance - The ability of a tree species to germinate and grow at various levels of shade.

- Shade tolerant: having the capacity to compete for survival under shaded conditions.
- Shade intolerant: having the capacity to compete for survival only under direct sunlight conditions; light demanding species.

Shelterwood Cut/Method - A regeneration action designed to stimulate reproduction by implementing a series of cuts over several years that will gradually remove the overstory trees. Gradual reduction of stand density protects understory trees and provides a seed source for the stand.

Shrub (replaces Brush) - Shrubs and stands of scrubby tree species that do not reach a merchantable size. The Society of American Foresters. 1958. Forest Terminology, 3rd edition. Washington, DC.

Silviculture - The application of art, science and practice to influence long term forest development.

Even aged Silviculture - A system for maintaining and regenerating forest stands in which trees are approximately the same age (cohort). This system favors shade intolerant species such as aspen, white ash and black cherry.

Uneven aged Silviculture - A system for maintaining and regenerating forest stands with at least three distinct age classes (cohorts). this system favors shade intolerant species such as sugar maple, hemlock and beech. Uneven aged silviculture creates a stratified stand structure with trees of different heights represented in all levels of the forest canopy.

Site - The area in which a plant or forest stand grows, considered in terms of its environment, particularly as this determines the type and quality of the vegetation the area can support.

Site Index - A species-specific measure of actual or potential forest productivity, expressed in terms of the average height of trees included in a specified stand component at a specified age.

Site Preparation - Hand or mechanized manipulation of a site, designed to enhance the success of regeneration.

Site Quality - The sum of soil and topographic factors of a particular place for growth of a particular species.

Skid Trail - A temporary or permanent trail used to skid or forward felled trees from the stumps to the log landing.

Small Poles - Trees 6-8 inches in diameter at breast height.

Small Sawtimber - Trees 12-14 inches in diameter at breast height.

Snags - Standing, dead trees, with or without cavities; function as perches, foraging sites and/or a source of cavities for dens, roosting and/or nesting for wildlife.

Species Richness - The number of different species present within an area

Stand - A contiguous group of trees sufficiently uniform in species composition, arrangement of age classes, and condition to be a homogeneous and distinguishable unit.

Stand Treatment - Work done in a stand which is directed towards the management of the stand.

State Forest - The collective term applied to lands administered by the Division of Lands and Forests which are located outside the forest preserves. State forests include acreage acquired and classified as Reforestation Areas, Multiple Use Areas and Unique Areas.

State Reforestation Area - Lands acquired by the Department pursuant to Title 3 Article 9-0501 of the Environmental Conservation Law. Reforestation Areas are adapted for reforestation and for the establishment and maintenance thereon of forests for watershed protection, the production of timber and other forest products, and for recreation and kindred purposes.

Stocking - The number of trees per unit area in relation to the desired number for optimum growth and management. Guides and tables have been developed that illustrate the optimum number of trees per acre based on the average diameter.

Succession - The natural series of replacements of one plant community (and the associated fauna) by another over time and in the absence of disturbance.

Sustainable Forest Management - Management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things, while providing environmental, economic, social and cultural opportunities for present and future generations.

Sustained Yield - The achievement and maintenance in perpetuity of a reasonable regular periodic output of the various renewable resources without impairment of the land's productivity.

Temporary Revocable Permit (TRP) - A Department permit which authorizes the use of state land for a specific purpose for a prescribed length of time.

Thinning - Intermediate cuttings that are aimed primarily at controlling the growth of stands through adjustments in stand density.

Threatened Species - A species likely to become endangered in the foreseeable future, throughout all or a significant portion of its range, unless protected.

Timber Stand Improvement (TSI) - Pre-commercial silvicultural treatments, intended to regulate stand density and species composition while improving wood product quality and fostering

Understory - The smaller vegetation (shrubs, seedlings, saplings, small trees) within a forest stand, occupying the vertical zone between the overstory and the herbaceous plants of the forest floor.

Uneven-Aged Group Selection - A type of uneven-aged forest management used to create openings in the forest canopy. Trees are removed and new age classes are established in small groups.

Uneven-Aged System - A planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes.

Uneven-Aged Stand/Forest - A stand with trees of three or more distinct age classes, either intimately mixed or in small groups.

Unique Area - Lands acquired pursuant to Sections 45-0101, 51-0701, 51-0705, 54-0303, 56-0307 & 49-0203 of the Environmental Conservation Law.

Watershed - A region or area defined by a network of stream drainage. A watershed includes all the land from which a particular stream or river is supplied.

Water Quality Classes - A system of classification in ECL Article 17 which presents a ranked listing of the state's surface waters by the letters AA, A, B, C or D according to certain quality standards and specifications. AA is the highest quality rank and has the greatest suitability for human usage.

Wetland - A transitional area between aquatic and terrestrial ecosystems that is inundated or saturated for periods long enough to produce hydric soils and support hydrophytic vegetation.

Wetland Classes - A system of classification set forth in ECL Article 24, section 664.5 which ranks wetland I through IV based upon wetland functions and benefits, I being the highest rank.

Wildlife Management Areas - Lands acquired by the Department pursuant to Title 21 Section 11-2103 of the Environmental Conservation Law. Wildlife Management Areas are managed by the Division of Fish, Wildlife and Marine Resources for the purpose of establishing and maintaining public hunting, trapping and fishing grounds.

Windthrow - Trees that have been broken, uprooted, or felled by strong winds.

Appendices & Figures

Appendix A – Responsiveness Summary to Public Scoping Session

Meeting Held April 12, 2018 in Gowanda, New York

(Numbers in parentheses indicate the sum of similar comments received.)

Land Management

Comment: Interested parties with the Akron Airport would consider land exchange with the DEC at Onondaga Escarpment. (1)

Answer: The Department has no immediate plans to exchange any lands at the Onondaga Escarpment. The Department reviews proposals for land acquisition following the Open Space Plan.

Comment: Recommend participation in Western NY PRISM (Partnership for Regional Invasive Species Management) to identify and manage forest health and invasive species. (3)

Answer: The Division of Lands and Forests, Bureau of Invasive Species and Ecosystem Health work in partnership with local, regional, state and federal agencies, including PRISM to manage and monitor forest health. See information on Forest Health beginning on page 51 of this plan.

Comment: General concern for overall forest health. (1)

Answer: See information on Forest Health beginning on page 51 of this plan.

Comment: Specific concern for the health and monitoring of Eastern hemlock. (4)

Answer: The Department will continue to participate with the NYS Hemlock Initiative and other local and regional partners. See information on Eastern Hemlock and HWA beginning on page 55 of this plan.

Comment: General concerns calling for habitat protection. (5)

Answer: This Plan promotes maintenance of various wildlife habitat using science and proven conservation techniques. The Plan calls for forest stand improvements which lend well with wildlife habitat promotion. The Plan will begin a process to monitor human impacts on the land, record any degradation, and plan for remediation or relocation of recreational infrastructure.

Comment: Monitor public use and habitat degradation, close areas for protection of habitat and barricade trails and or public access. (3)

Answer: See information on Recreation beginning on page 37 of this plan.

Comment: Concerned for at-risk species and species of greatest conservation concern, support forest management and proper planning of timber sales and the maintenance of wildlife openings to improve habitat conditions using proper techniques. (3)

Answer: Much of this is addressed in the Biodiversity section beginning on page 16 and Local Landscape Conditions section beginning on page 58 of this Plan.

Comment: Support timber harvests with multiple benefits improving forest health, wildlife habitat and local economies while at the same time considering wildlife's seasonal requirements. (1)

Answer: Please see section on Forest Products beginning on page 50 and Habitat Related Demands beginning on page 59.

Comment: Support forest management for late-successional forests. (1)

Answer: See section of Habitat Related Demands beginning on page 59.

Comment: Monitor invasive species, propose control as needed. (1)

Answer: See section on Invasive Species beginning on page 52.

Comment: Propose prohibition of oil and gas extraction and storage, propose allowing leases to expire. (2)

Answer: See section on Mineral Resources beginning on page 47.

Comment: Propose prohibition of pipelines on Department lands. (1)

Answer: See section on Pipelines beginning on page 48.

Comment: Oppose logging at Zoar Valley. (1)

Answer: There will be no logging on or within the Zoar Valley Unique Area. Forest Management is proposed at East Otto SF and select portions of Zoar Valley Multiple Use Area as listed in *Table III. F.* Managing for forest health and ecological diversity are the primary focus of this management.

Comment: Maximize carbon sequestration in forest stands. (1)

Answer: Carbon sequestration is an objective of forest management. See page 71.

Comment: Request more land acquisition by the Department. (6)

Answer: See Land Acquisition section beginning on page 28.

Comment: Request bathroom facilities possibly composting toilets and recycling receptacles at area of intense public use. (5)

Answer: See list of actions on page 73 and 75 requesting seasonal install of portable toilets.

Comment: Request to limit expansion of existing facilities or future development. (6)

Answer: This is consistent with the Plan. Safety Improvements would be the only item that may conflict with this idea.

Comment: Maintain property boundary lines and signage. (2)

Answer: See Ten Year List of Management Actions beginning on page 72.

Recreation

Comment: Protect the recreational experience as "*untrampled by man*" at Zoar Valley. (3)

Answer: This is consistent with the Plan.

Comment: Request to relax or amend the Zoar Valley swimming/water access regulation. (1)

Answer: There are no plans at this time to amend the regulations to allow swimming.

Comment: Request simple recreational hiking trails. (2)

Answer: Trail construction projects will consider local land conditions and user ability.

Comment: Limit Zoar trails to foot traffic only. (3)

Answer: This is consistent with the Plan.

Comment: Designate safe hiking trails at Forty Road Parking Lot, to enter the Zoar Valley Gorge. (1)

Answer: Zoar Valley UA Action 20, listed on page 75, proposes a Creekside Trail to the confluence.

Comment: Design and construct professionally built maintained trails. (1)

Answer: This is the preference of all parties involved. Discussions are in the works to review trails with local hiking groups to access proposed trails. A new trail project at Valentine Flats is currently in design stage and will be built by a professional contractor.

Comment: Improve Valentine Flats trail. (1)

Answer: Zoar Valley UA Action 19, listed on page 25, proposes improvement to the Valentine Flats trail.

Comment: Acknowledge positive benefits to local economies as a direct result of the public recreation on lands managed by the Department of Environmental Conservation. (2)

Answer: See Tourism section on page 49.

Comment: Request to designate a safe location at East Otto State Forest to allow recreational shooting in conjunction with a volunteer effort for maintenance. (2)

Answer: See Target Shooting section on page 44. East Otto SF Action 6, listed on page 75, proposes this improvement.

Comment: Request improvements to signage of the Kriedeman Camping Area at East Otto State Forest. (1)

Answer: Signs have been ordered to be installed at the intersection of Kriedeman and Traffic Street. See East Otto SF Action 1, listed on page 75.

Comment: Prohibit ATVs on lands managed by the Department. (2)

Answer: ATVs are prohibited on Department managed lands. See Public Safety Resource Protection by Regulation beginning on page 30 and Off-Highway and All-Terrain Vehicle Use on page 36.

Comment: Prohibit camping at Zoar. (1)

Answer: This is consistent with the Plan. See Public Safety Resource Protection by Regulation beginning on page 30 and Camping on page 40.

Comment: Prohibit horses on trails at Zoar. (1)

Answer: This is consistent with the Plan. See Public Safety Resource Protection by Regulation beginning on page 30 and Equestrian on page 43.

Comment: Numerous concerns were made known at the public scoping meeting, of the heavy use of Zoar Valley during the summer.

Answer: The Department has observed a noticeable increase in usage and intends to have more seasonal staff at Zoar during the busy times of the year. Seasonal staff would educate the public about responsible and safe recreation.

Comment: Concerns were voiced at the public scoping meeting of excess garbage being left at high use areas.

Answer: The Department is working with local officials and groups to manage the garbage left at high traffic areas. Social media posting and seasonal staff will educate users about Carry In, Carry out principals of outdoor recreation.

Comment: Several commenters expressed concern about trespass onto private property at Zoar Valley.

Answer: The Department is looking at regulation changes and seasonal staff to educate and inform users about this issue.

General

Comment: General request for better access to public information, rules, regulations and maps. (6)

Answer: This is being addressed in the action plans by the Department. Improvements have been made to the web pages, maps and kiosks. See Action Plans beginning on page 72.

Comment: Call for improvements to existing kiosks, request more in high use areas. (2)

Answer: The Department will have maps and information available to the public at kiosks and online. See Action Plans beginning on page 72.

Comment: Request for improvements to signage of public information. (2)

APPENDIX A – RESPONSIVENESS SUMMARY TO PUBLIC SCOPING SESSION

Answer: The Department continually reviews and modifies or adds signage to display important information. Recently, in December of 2020, new signage was developed and installed at strategic locations at Zoar. See Action Plans beginning on page 72.

Comment: Request for public education in the use of facilities and Leave No Trace techniques. (6)

Answer: Beginning in the summer of 2021, the Department will have staff available at Zoar to assist the public and teach low impact recreational techniques. See Action Plans beginning on page 72.

Comment: Concern for the safety of volunteers at high use areas at Zoar Valley. (3)

Answer: This is also a concern of the Department. A request has been made to add another Forest Ranger to the area for safety patrol. See Action Plans beginning on page 72.

Comment: Request for volunteer group to monitor the South Branch of the Cattaraugus at the Forty Road Parking Area. (5)

Answer: See Zoar Valley UA Action 1 and 2 on page 74.

Comment: Request Department staff to work popular high use areas at during peak usage times of the years. (7)

Answer: See comment and answer listed previously. Beginning in the summer of 2021, the Department will have staff available at Zoar to assist the public and teach low impact recreational techniques. See Action Plans beginning on page 72.

Comment: Request to limit public access to Zoar. (5)

Answer: This is proposed in the Plan as a tool to protect resources and the public. See REC I, on page 66.

Comment: Request for a public information center at Zoar. (2)

Answer: The Department first plans to work with local officials and groups to implement this Plan and reevaluate during the next revision of this Plan whether this is necessary.

Comment: Request to coordinate Zoar Valley Search and Rescue. (1)

Answer: There is coordination and cooperation between both local, county and state officials in law enforcement, fire and emergency management. This is supported in the Plan, see Public Safety planning section, page 28.

Comment: Develop Search and Rescue staging areas on public property. (4)

Answer: This has been done and will continue with this Plan.

Comment: Reconvene Zoar Valley Taskforce. (1)

Answer: This is supported by this Plan; it may however be beyond the scope of this Plan.

Comment: Concern for safety along Button Road. (1)

Answer: Safety is a prominent fixture of this Plan. Button Road will be evaluated and reviewed with local officials.

Comment: Concern for safety in the town of Otto along Forty Road. (1)

Answer: The Department has made improvements to the signage along the Forty Road in the town of Otto. These signs will continue to be maintained in this area. The Department will cooperate will local officials as plans develop to improve safety in this area.

Comment: Request to reconstruct the Forty Road bridge. (1)

Answer: The Department has neither ownership nor jurisdiction over the Forty Road bridge. The Department is aware of the municipal interest in reconstructing the bridge. The Department will review such proposals with local and county officials. The mater is beyond the scope of this Plan.

Comment: Request to transfer ownership of Zoar Valley to NYS OPRHP. (1)

Answer: The Department has no plans to transfer ownership of Zoar Valley MUA/UA. This would require an act of the legislature.

Comment: Request for permit to mine along the Zoar Valley ROW west end of Vail Road, town of Collins. (1)

Answer: The Department will review all requests and cooperate with appropriate Divisions on all matters officially requested.

Comment: Request to consolidate ROW on the eastern end of Gowanda Zoar Road, town of Collins. (1)

Answer: This request is being reviewed by the Department in the Division of Lands and Forests and the Bureau of Real Property.

Wildlife

Comment: Propose more access to Cattaraugus Creek, year-round for fishing. (6)

Answer: The Department supports access for fishing. There is limited access except by public road. The maintenance of these roads is beyond the scope of this Plan.

Comment: Restrict trapping on Department lands. (3)

Answer: Legal trapping is permitted as local rules and regulations permitted under Environmental Conservation Law. The matter of trapping on Department lands is entirely beyond the scope of this Plan.

Appendix B - Responsiveness Summary to Public Comments

PLACEHOLDER FOR COMMENTS FROM DRAFT RELEASE

Appendix C - State Environmental Quality Review (SEQR)

State Environmental Quality Review (SEQR)

This Plan and the activities it recommends will be in compliance with State Environmental Quality Review (SEQR), 6NYCRR Part 617. The State Environmental Quality Review Act (SEQRA) requires the consideration of environmental factors early in the planning stages of any proposed action(s) that are undertaken, funded or approved by a local, regional or state agency. The Strategic Plan for State Forest Management (SPSFM) serves as the Generic Environmental Impact Statement (GEIS), regarding management activity on State Forests. To address potential impacts, the SPSFM establishes SEQR analysis thresholds for each category of management activity.

Either/Or (1): Management actions in this Plan are within the thresholds established in the SPSFM, therefore these actions do not require additional SEQR. Any future action that does not comply with established thresholds will require additional SEQR prior to conducting the activity.

The following boilerplate can only be used if the plan does not cross any of the thresholds outlined within the text.

STATE ENVIRONMENTAL QUALITY REVIEW ACT

(The following text to be included in individual Unit Management Plans)

This Unit Management Plan (UMP) does not propose pesticide applications of more than 40 acres, any clearcuts of 40 acres or larger, or prescribed burns in excess of 100 acres. Therefore the actions in the plan do not exceed the thresholds set forth in the Strategic Plan/Generic Environmental Impact Statement for State Forest Management**.**

This Unit Management Plan also does not include any of the following:

1. Forest management activities occurring on acreage occupied by protected species ranked S1, S2, G1, G2 or G3

2. Pesticide applications adjacent to plants ranked S1, S2, G1, G2 or G3

3. Aerial pesticide spraying by airplane or helicopter

4. Any development of facilities with potable water supplies, septic system supported restrooms, camping areas with more than 10 sites or development in excess of other limits established in this plan.

5. Well drilling plans

6. Well pad densities of greater than one well pad in 320 acres or which does not comply with the limitations identified through a tract assessment

7. Carbon injection and storage or waste water disposal

APPENDIX C - STATE ENVIRONMENTAL QUALITY REVIEW (SEQR)

Therefore the actions proposed in this UMP will be carried out in conformance with the conditions and thresholds established for such actions in the Strategic Plan/Generic Environmental Impact Statement, and do not require any separate site specific environmental review (see 6 NYCRR 617.10[d]).

Actions not covered by the Strategic Plan/Generic Environmental Impact Statement

Any action taken by the Department on this unit that is not addressed in this Unit Management Plan and is not addressed in the Strategic Plan/Generic Environmental Impact Statement may need a separate site specific environmental review.

Either/Or (2): Certain proposed actions in this Plan do not fall within the thresholds established in the SPSFM. Therefore, this Plan has been submitted for an additional SEQR process. The following proposed actions have triggered additional review: cite proposed actions that triggered additional SEQR. The Division of Lands and Forests has initiated this process by preparing a Long Environmental Assessment Form (LEAF). A LEAF is used to identify and analyze relevant areas of environmental concern based upon the management actions in the draft unit management plan. For this plan, SEQRA review has been initiated with the preparation of the LEAF.

Figure 1 – Water Resources, Special Management Zones and Topography Maps

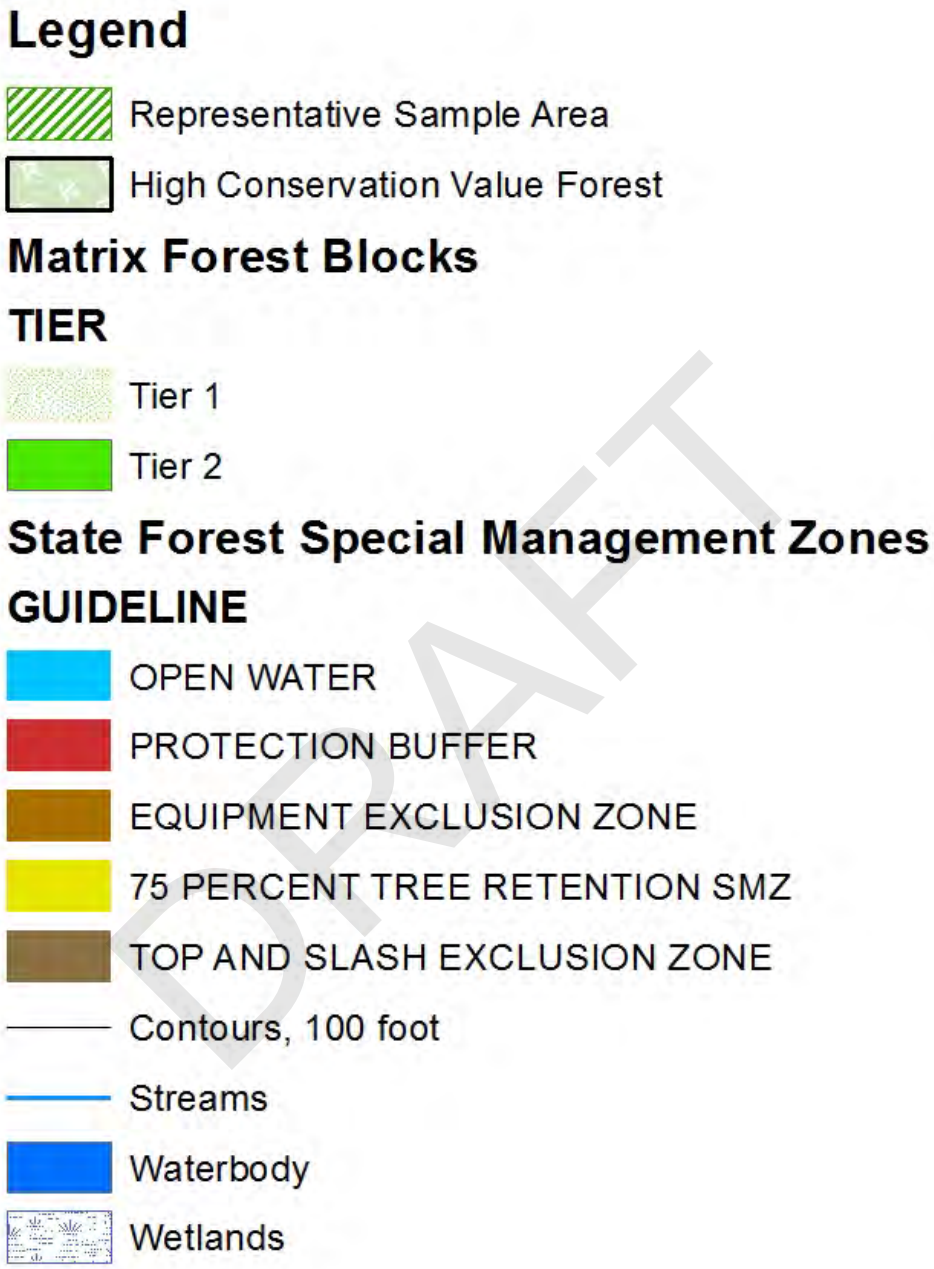


FIGURE 1 – WATER RESOURCES, SPECIAL MANAGEMENT ZONES AND TOPOGRAPHY MAPS

Onondaga Escarpment Unique Area

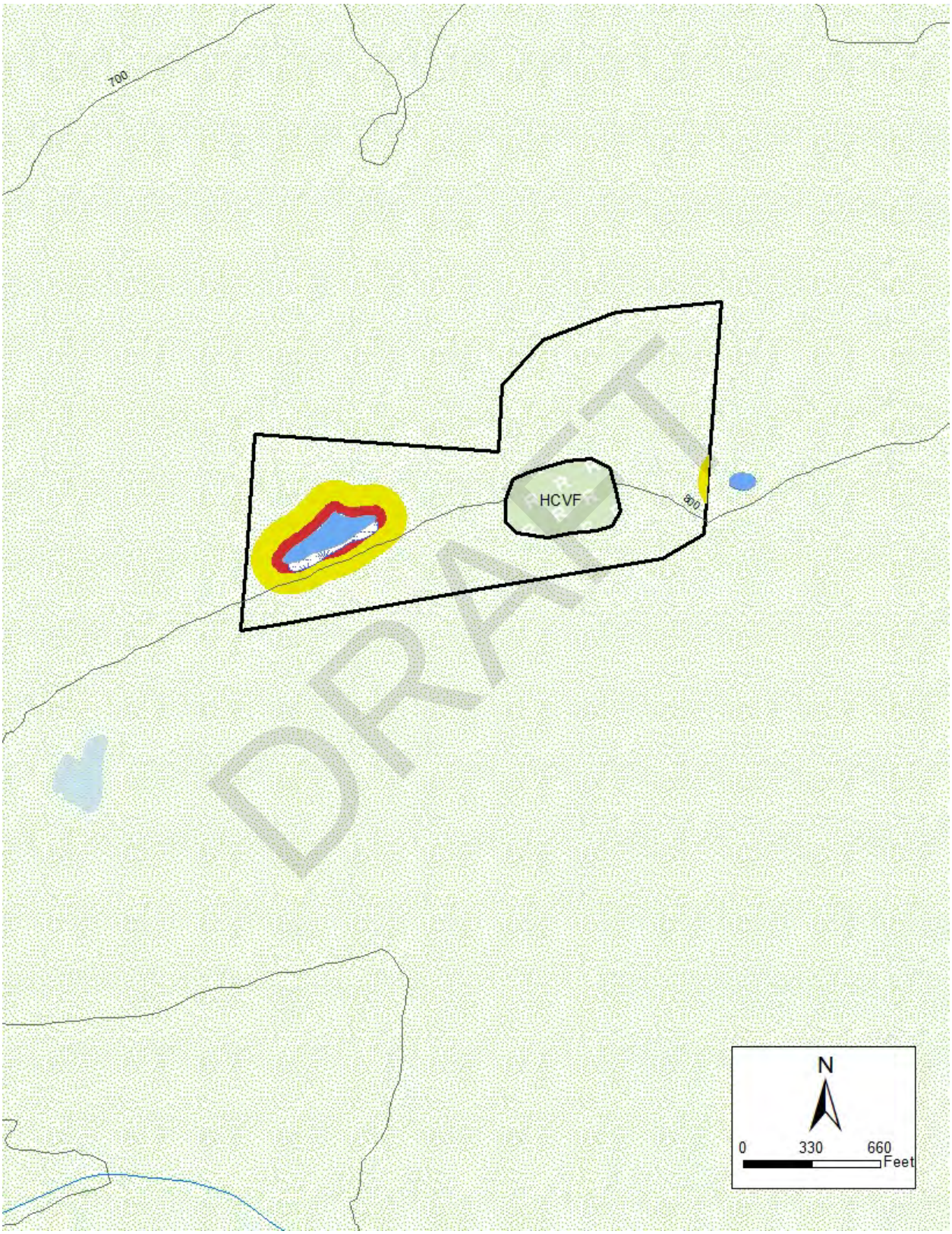


FIGURE 1 – WATER RESOURCES, SPECIAL MANAGEMENT ZONES AND TOPOGRAPHY MAPS

Zoar Valley Multiple Use and Unique Area

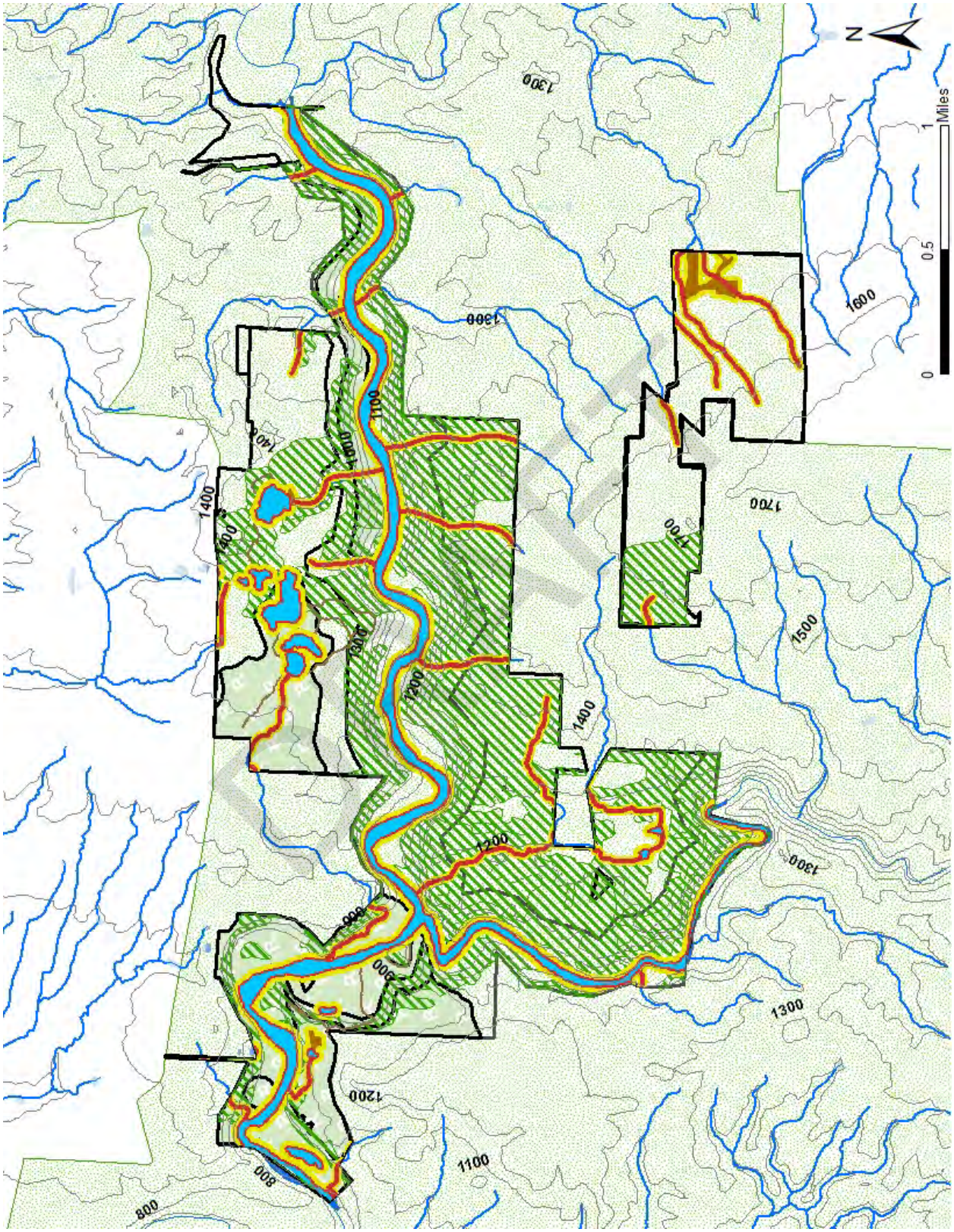


FIGURE 1 – WATER RESOURCES, SPECIAL MANAGEMENT ZONES AND TOPOGRAPHY MAPS

East Otto State Forest

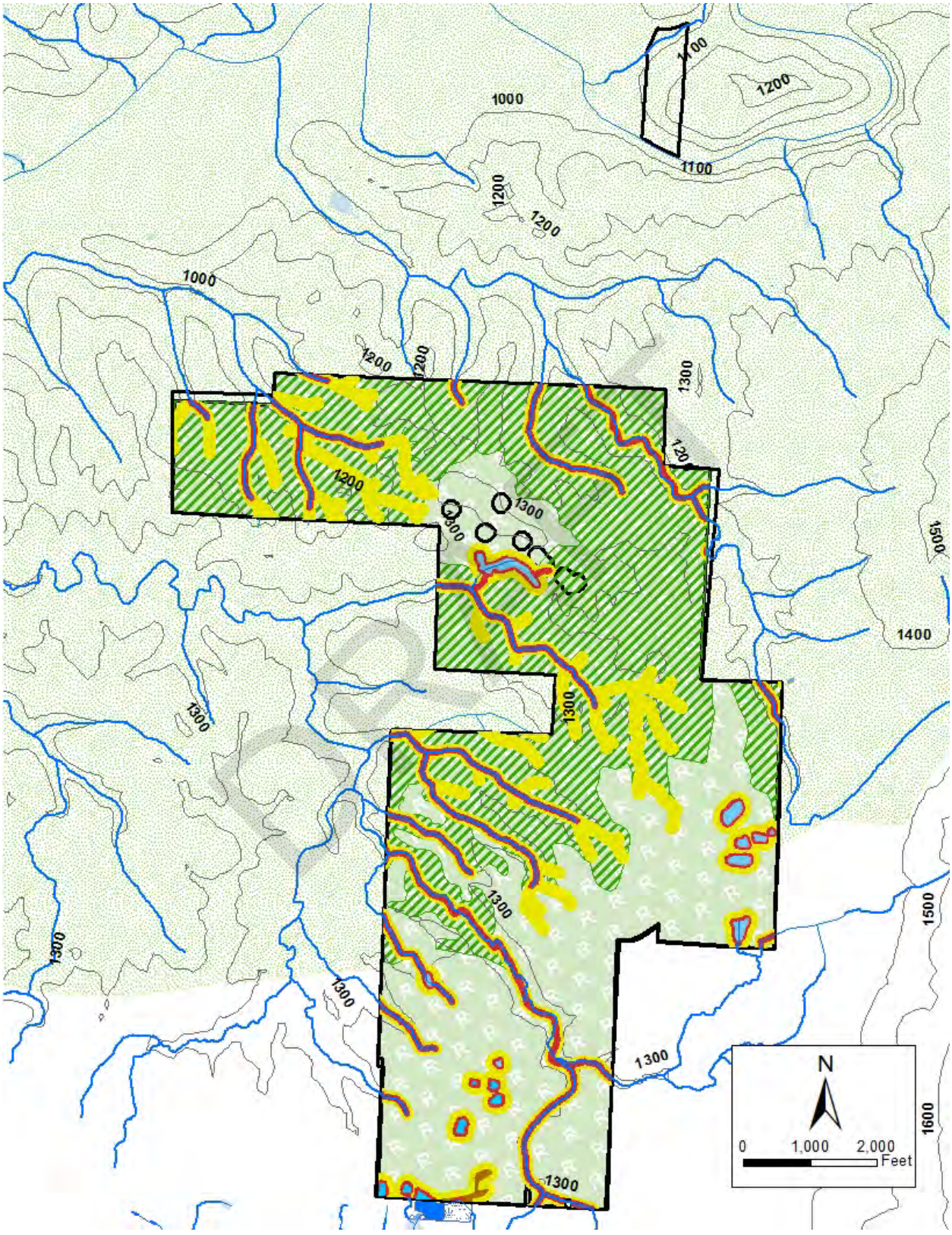


Figure 2. – Infrastructure and Recreation Maps

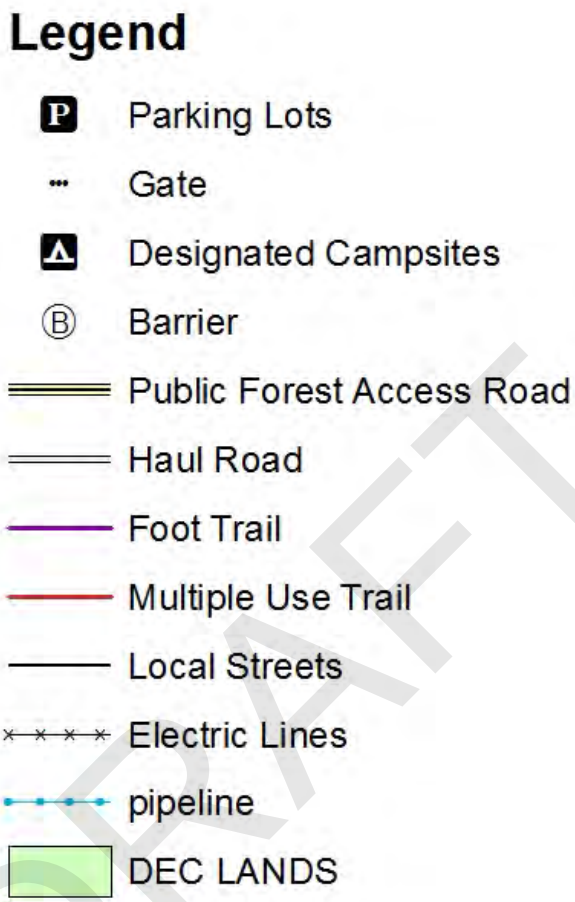
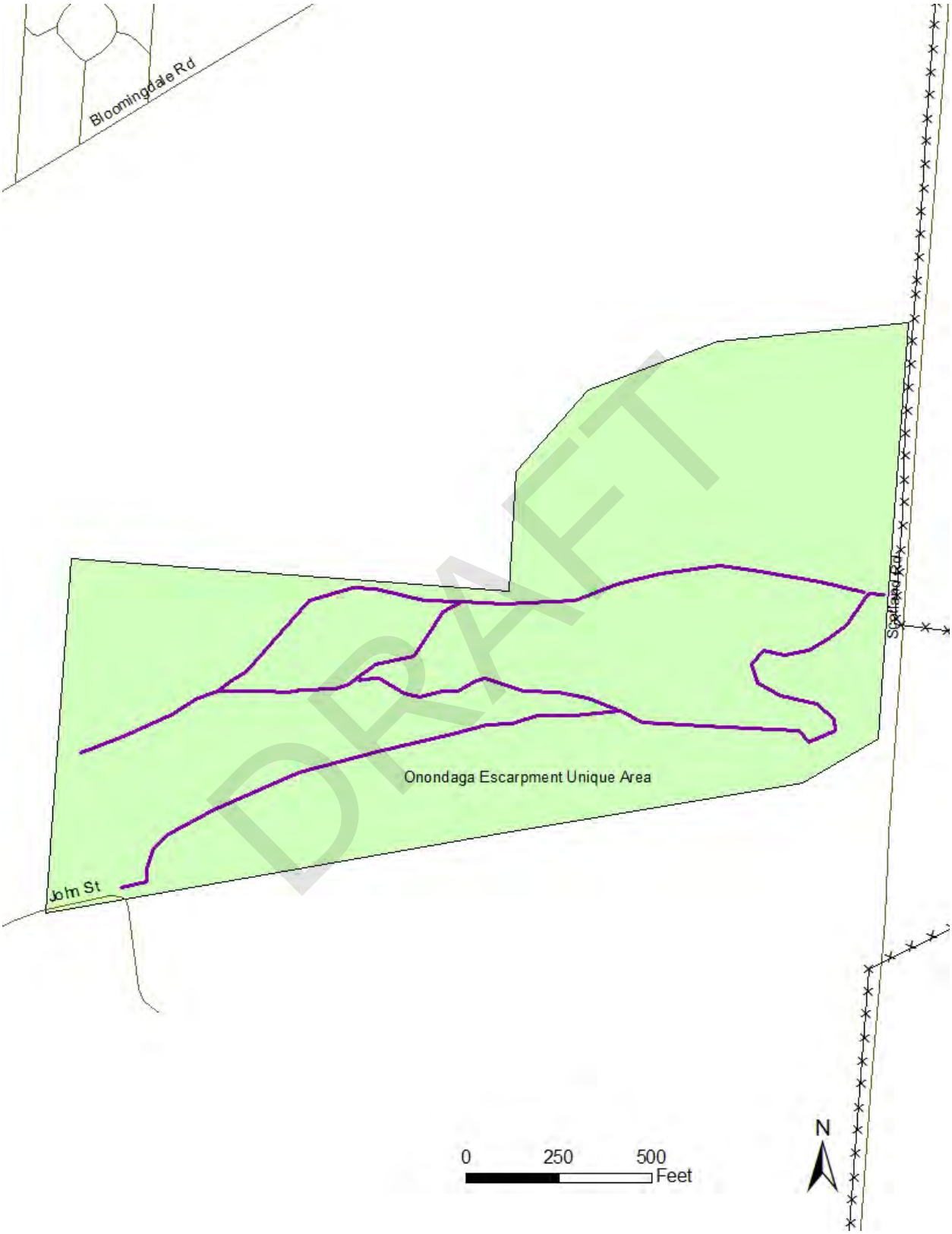


FIGURE 2. – INFRASTRUCTURE AND RECREATION MAPS

Onondaga Escarpment Unique Area



Zoar Valley Multiple Use and Unique Area

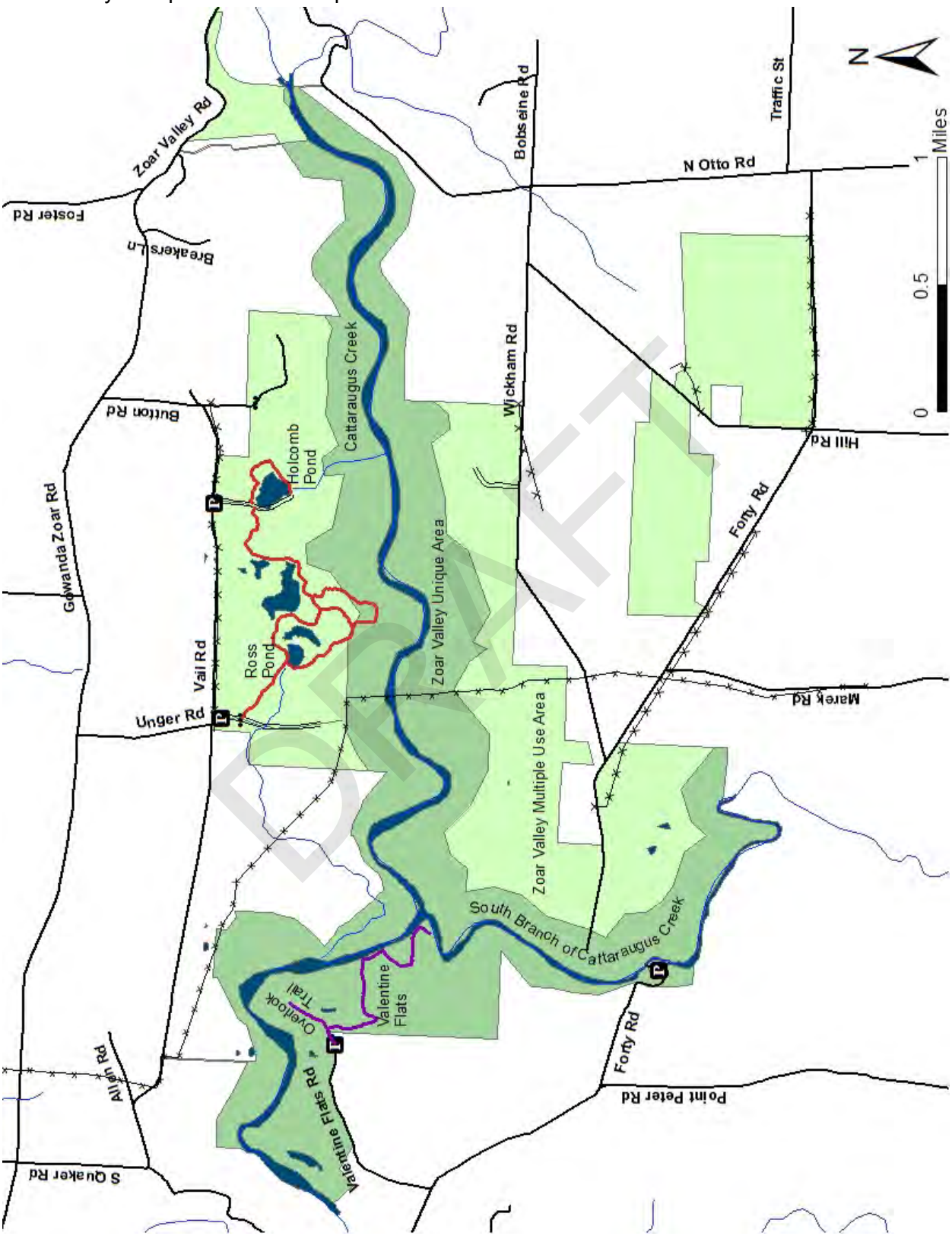


FIGURE 2. – INFRASTRUCTURE AND RECREATION MAPS

East Otto State Reforestation Area

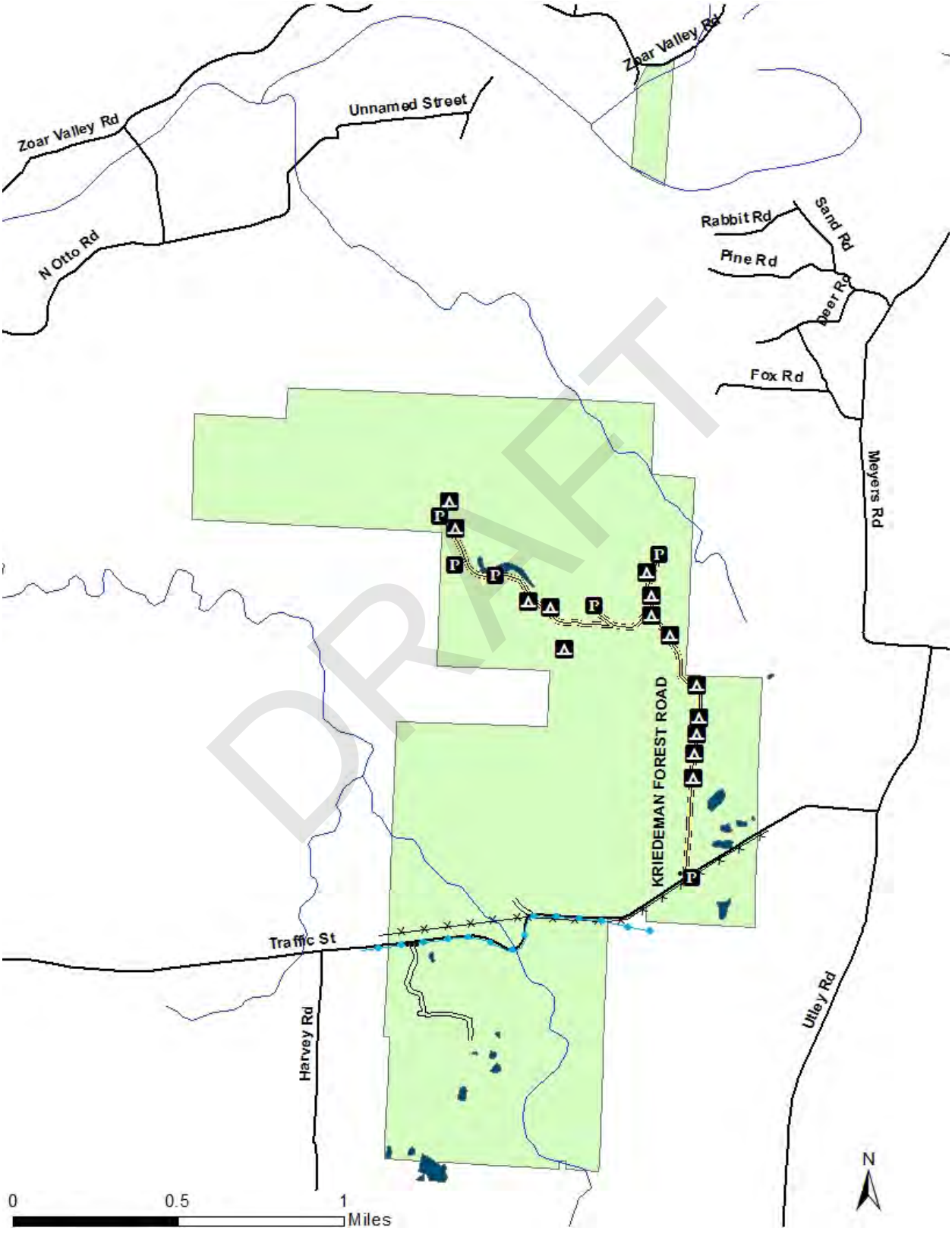


Figure 3. – Current Forest Type and Forest Stand Identification Number Maps

Onondaga Escarpment Unique Area

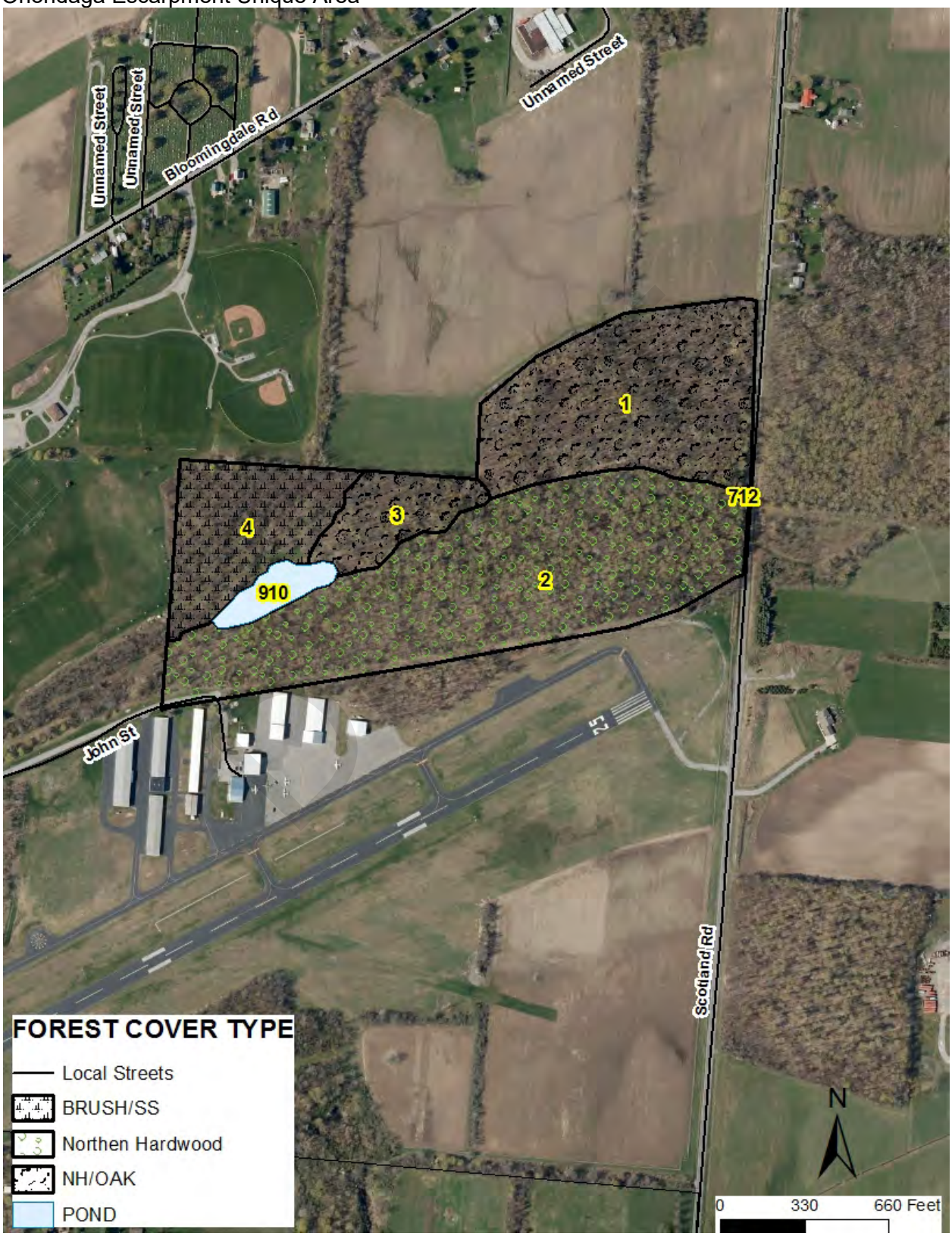


FIGURE 3. – CURRENT FOREST TYPE AND FOREST STAND IDENTIFICATION NUMBER MAPS

Onondaga Escarpment Unique Area

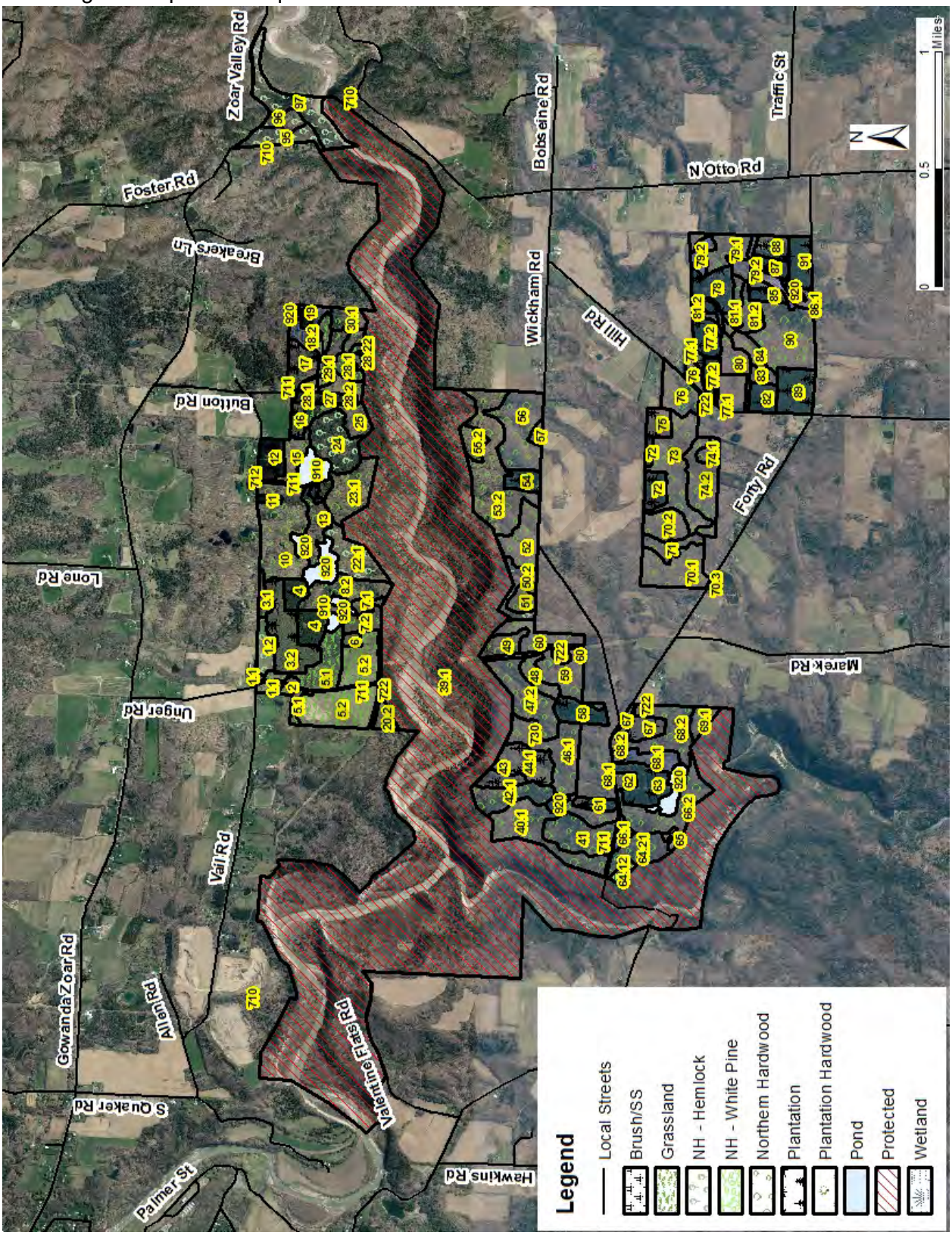


FIGURE 3. – CURRENT FOREST TYPE AND FOREST STAND IDENTIFICATION NUMBER MAPS

East Otto State Forest

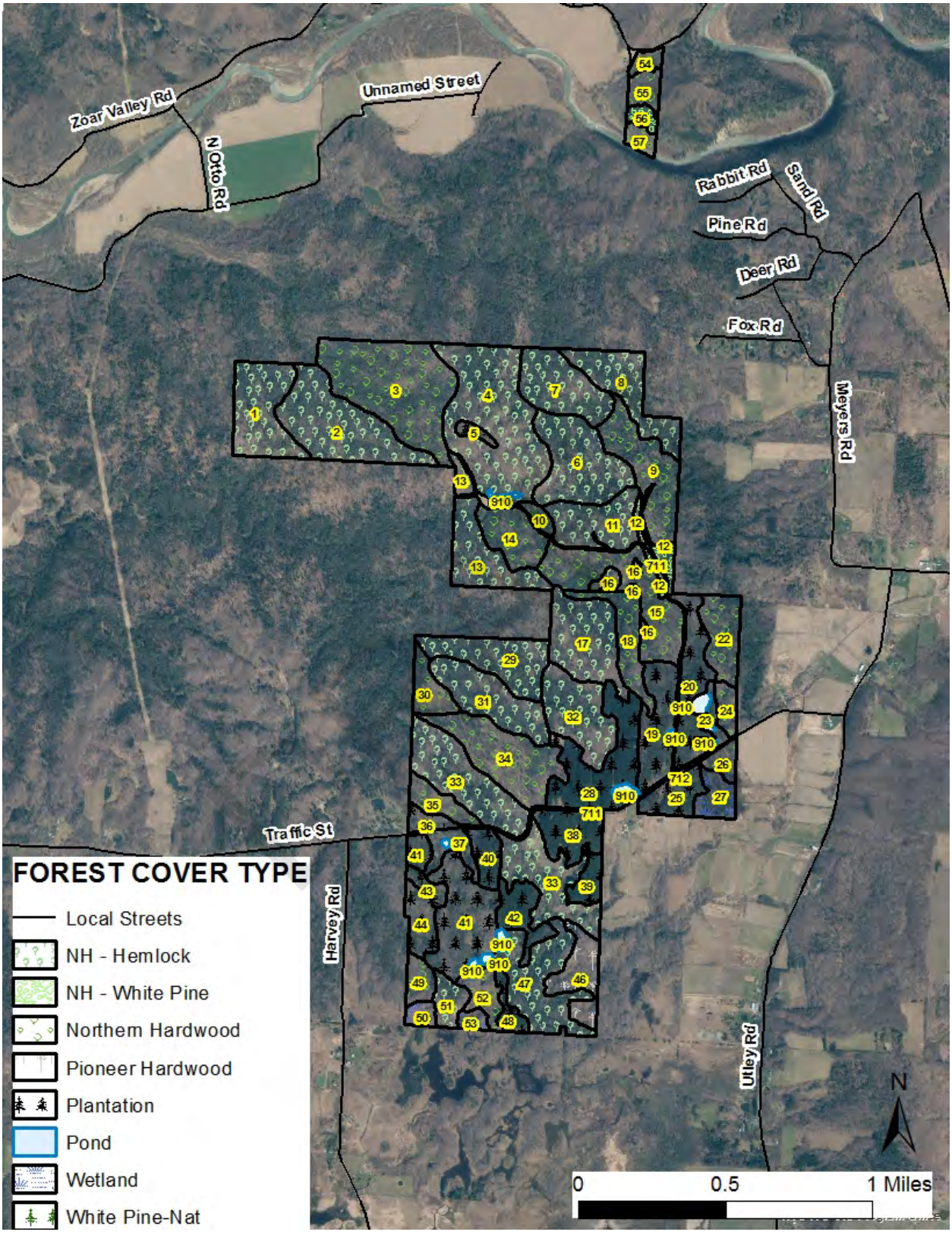


FIGURE 4. – CURRENT MANAGEMENT MAPS

Figure 4. – Current Management Maps

Onondaga Escarpment Unique Area

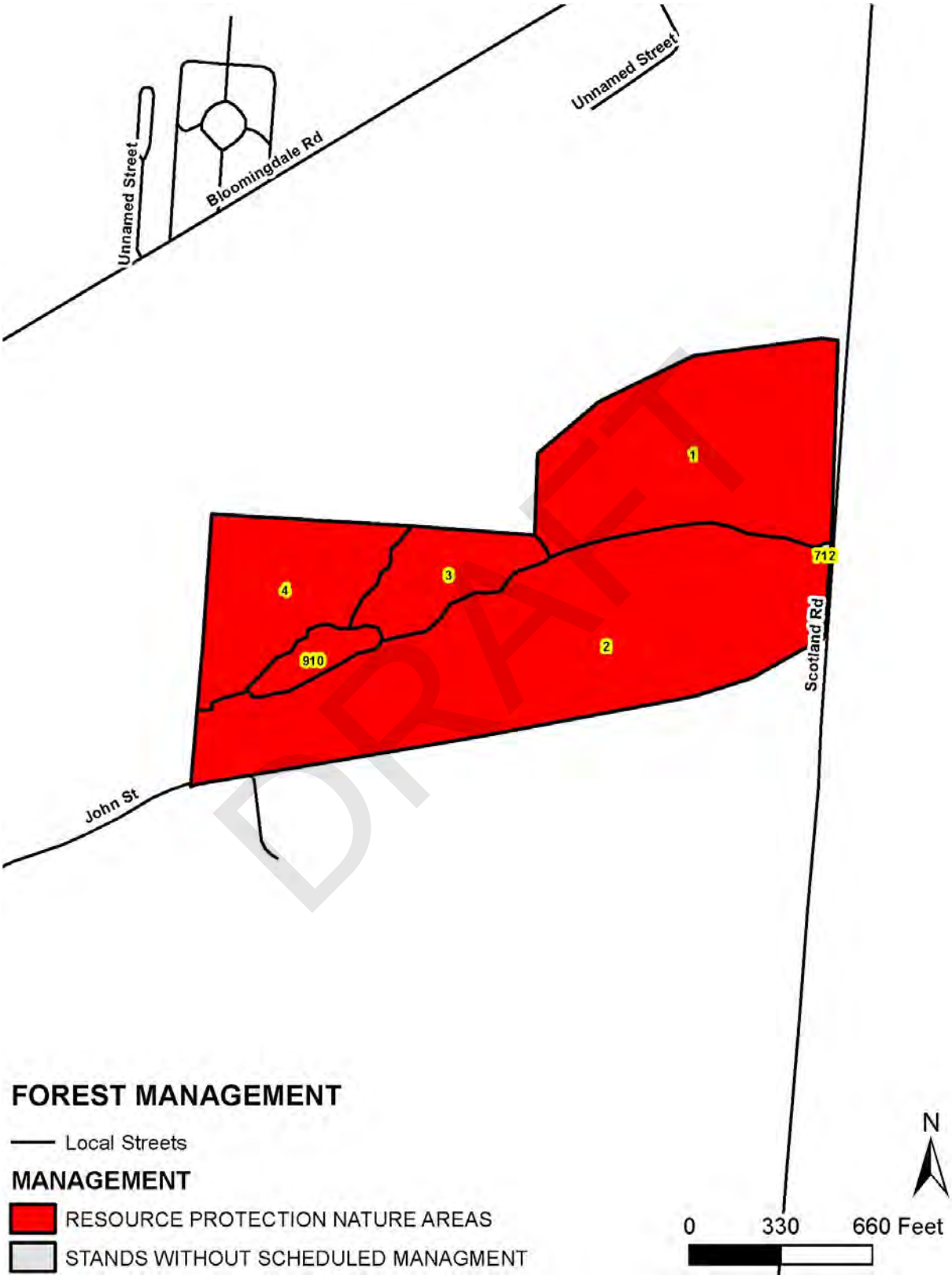


FIGURE 4. – CURRENT MANAGEMENT MAPS

Zoar Valley Multiple Use Area and Unique Area

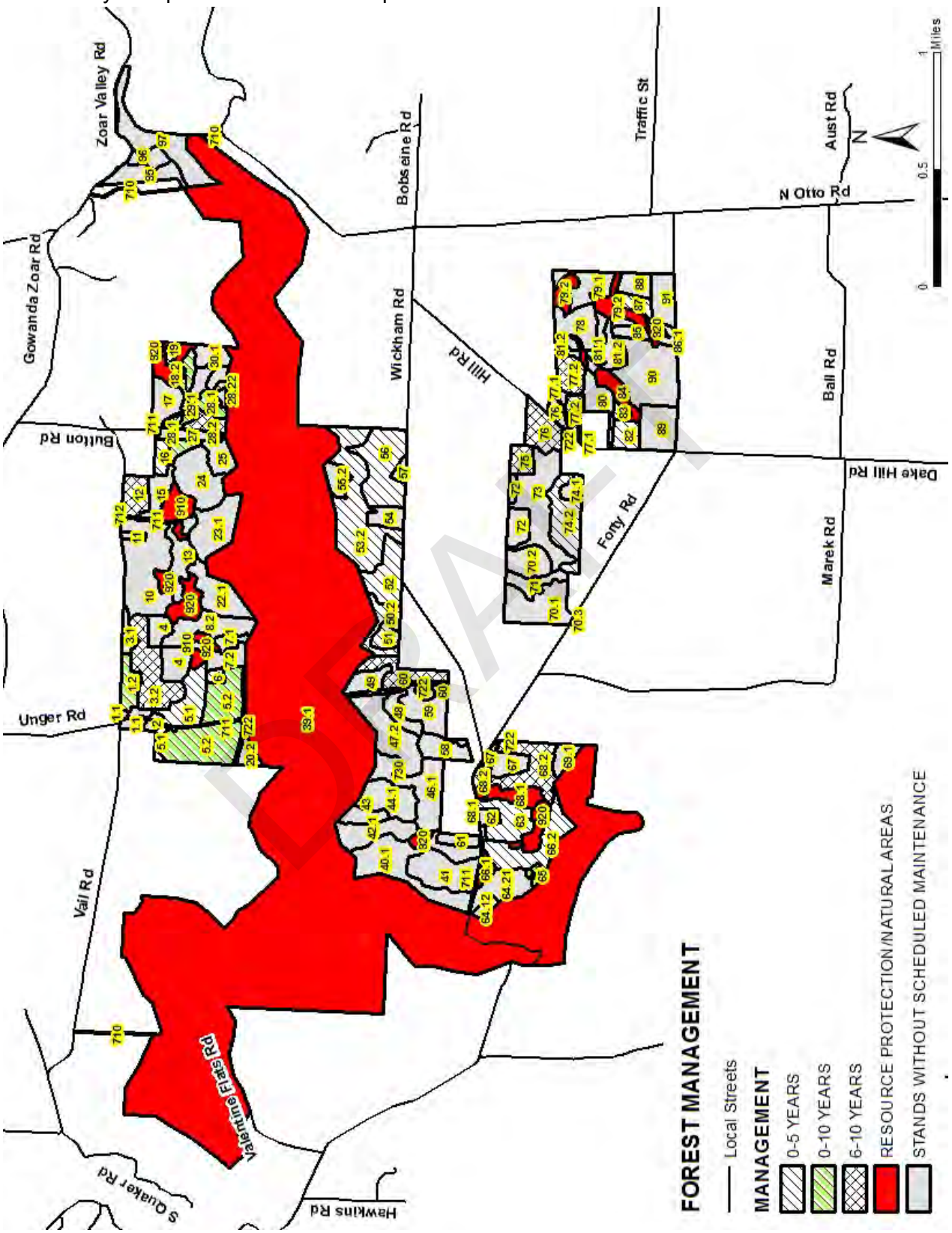


FIGURE 4. – CURRENT MANAGEMENT MAPS

East Otto State Forest

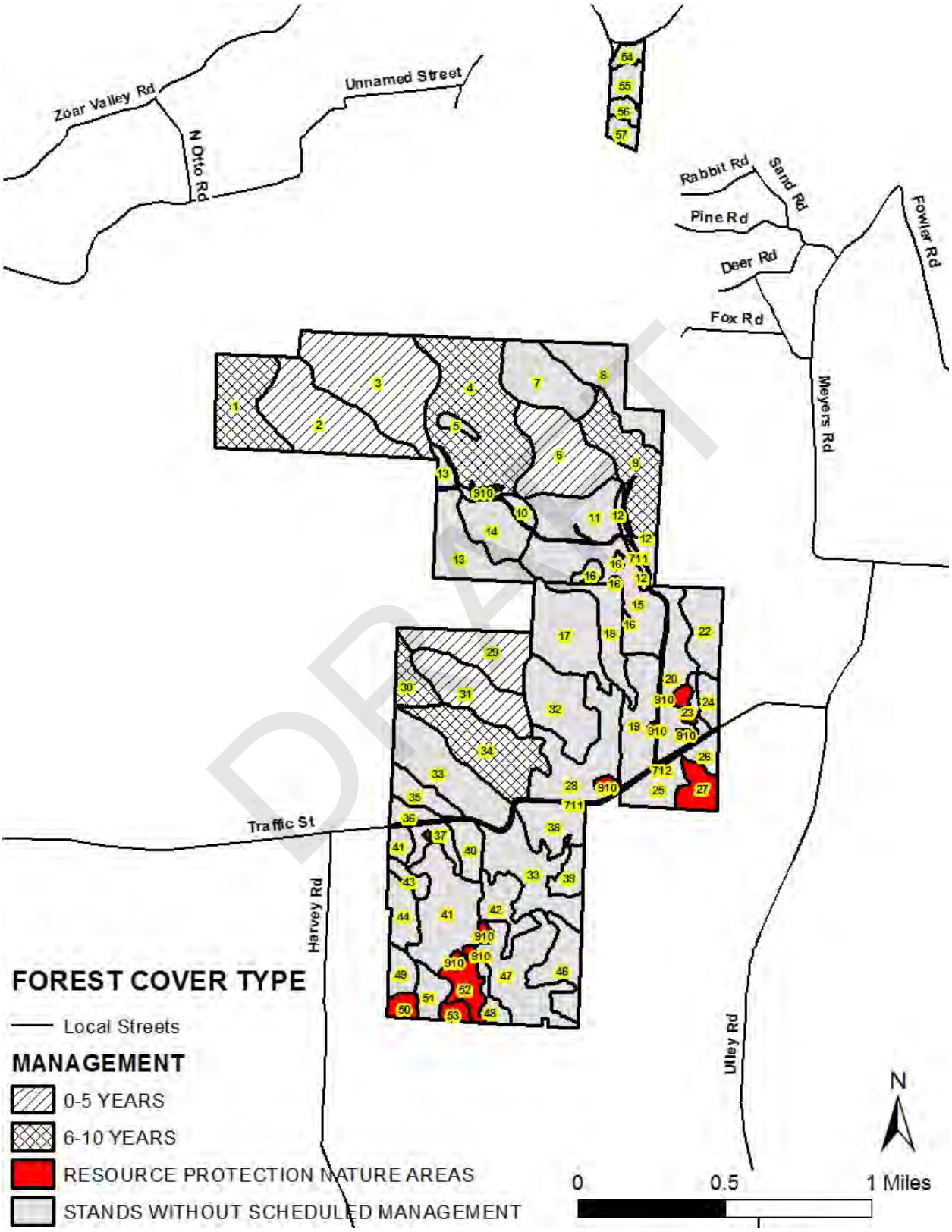


Figure 5. – Management Direction Maps

A separate map is optional if the information has been included on a separate map.

Insert Map- See UMP Map table for required maps and data.

Figure X. – Other/Specialized Maps