

BOUTWELL HILL UNIT MANAGEMENT PLAN

A Management Unit
Consisting of Two State Forests and One Wildlife Management
Area
in Northeast Chautauqua County

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PREFACE

It is the policy of the Department to manage State lands for multiple benefits to serve the People of New York State. The Boutwell Hill Management Unit comprises two *State Reforestation Areas* and one *Wildlife Management Area*. This plan is the basis for supporting a *multiple-use** goal through implementation of specific objectives and management strategies. Management will be *sustainable*, carried out for *biological diversity* and protection of the Unit’s *ecosystems* and to optimize the many benefits to the public.

The plan has been developed to address management activities on this unit for the next 20-year period, with a review and update due in 10 years. Some management recommendations may extend beyond the 10-year period.

Factors such as budget constraints, wood product markets, and forest health problems may necessitate deviation from the scheduled management activities.

The DEC Region 9 staff members who serve on the Boutwell Hill Unit Management Plan are assigned primarily to the Falconer and Olean Offices. Following is a listing of the DEC Offices which may be contacted regarding your questions and/or interest within the Region:

- i Regional Headquarters
270 Michigan Avenue
Buffalo, NY 14203
716-851-7000

- C 215 South Work Street
Falconer, NY 14733
716-665-6111

- C 128 South Street
Olean, NY 14760
716-372-0645

- C 5425 County Route 48
Belmont, NY 14813
716-268-5392

**Words in bold throughout the plan are defined in the glossary.*

LOCATION MAP

(Not on Computer)

INFORMATION ON THE UNIT

HISTORY

State Forest

The *forest* lands outside the Adirondack and Catskill regions owe their present character, in large part, to the impact of pioneer settlement. Following the close of the Revolutionary War, increased pressure for land encouraged westward expansion. Up to 91% of woodlands were cleared for cultivation and pasture.

Early farming efforts met with limited success. As the less fertile soil proved unproductive, farms were abandoned and settlement was attempted elsewhere. The stage was set for *succession* and new forests of young saplings reoccupied the ground once cleared.

The state Reforestation Law of 1929 and the Hewitt Amendment of 1931 set forth the legislation that authorized the Conservation Department to acquire land by gift or purchase for reforestation areas. These State Forests, consisting of not less than 500 acres of contiguous land, were to be forever devoted to "reforestation and the establishment and maintenance thereon of forests for *watershed* protection, the production of timber, and for recreation and kindred purposes." This broad program is presently authorized under Article 9, Title 5 of the Environmental Conservation Law.

In 1930 Forest Districts were established and the tasks of land acquisition and reforestation were started. In 1933 the Civilian Conservation Corps

(CCC) was begun. Thousands of young men were assigned to plant millions of trees on the newly acquired State Forests. In addition to tree planting, these men were engaged in road and trail building, erosion control, watershed restoration, forest protection and other projects.

During the war years of 1941-1945, very little was accomplished on the reforestation areas. Plans for further planting, construction, facility maintenance and similar tasks had to be curtailed. However, through postwar funding, conservation projects again received needed attention. The Park and Recreation Land Acquisition Bond Act of 1960, and the Environmental Quality Bond Acts of 1972 and 1986 contained provisions for the acquisition of State Forest lands. These lands would serve multiple purposes involving the conservation and development of natural resources, including the preservation of scenic areas, watershed protection, forestry and recreation.

Today there are nearly 700,000 acres of State Forest land throughout the State. The use of these lands for a wide variety of purposes such as timber production, hiking, skiing, fishing, trapping and hunting is of tremendous importance economically and to the health and well-being of the people of the State.

Purchase of land that now comprises Chautauqua Reforestation Areas #1 and #7 began in 1930 with the acquisition of approximately 543 acres from four owners. Acquisition continued over the years with nine acres in 1978 being the last. See the

table on page 8.

The first management activities on areas #1 and #7 were the planting of the open fields with *conifer* seedlings and the protection of the new plantings from fire. Approximately thirty-five percent of the area was suitable for planting. The *hardwood* forests were left to grow until the immature stands had reached full stocking when non-commercial *thinnings* were performed by the State labor crew.

During the following time periods these major activities took place:

1930-1960 - Land acquisition, reforestation and fire protection.

1960-1970 - Non-commercial thinnings in immature stands and cull removal in mature stands, public access development (forest access roads).

1970-1990 - Forest products sales as a management tool (i.e., pulpwood and sawtimber in conifer stands; fuelwood, posts and sawtimber in hardwoods), oil and gas exploration with production activities and recreational trail development.

1990-present - Timber sales, oil and gas development, recreational trail development, unit management planning process commenced and boundary line survey.

Wildlife Management Area

Under the Bankhead-Jones Farm Tenant Act, the U.S. Department of Agriculture acquired approximately 2,000 acres of the Canadaway Creek watershed in the late 1930s. The land remained under federal government control until 1961 when title to this property was deeded to the State of New York and designated as a wildlife management area.

In 1964 an additional 165 acres were acquired under the Park and Recreation Land Acquisition Bond Act. Since that time the total acreage of the Canadaway Creek Wildlife Management Area (WMA) has remained at 2,180 acres.

The major activities on the wildlife management area since acquisition has been wildlife habitat management, reforestation and public access improvements carried out during the time periods as follows:

1960-1970 - Reforestation, Wildlife Habitat Improvements, Public Access Development.

1970-1980 - Wildlife Habitat Improvements, Minor Sales.

1980-1990 - Forest Product Sales as a Tool for Habitat Management.

1990-present - Unit Management Planning, Boundary Line Survey and continued habitat management through forest product sales.

REFORESTATION ACQUISITION PROPOSALS

REFORESTATION AREA CHAUTAUQUA #1			
YEAR PURCHASED	PROPOSAL	GRANTOR	ACREAGE
1930	A	Hess	293.03
1930	B	Colvin	69.00
1930	C	Birmley	130.00
1930	D	Childs	51.45
1931	E	VanScooter	64.32
1931	F	Hodges	26.25
1932	G	Main	51.50
1932	H	Hodges	.29
1932	I	Kent	276.94
1932	J	Bonnett	124.96
1933	L	Birmley	25.29
1935	N	Main	74.33
1936	O	White	55.00
1946	P	Birmley	70.75
1951	R	VanScooter	161.72
1978	S	Ellington Hardwood	9.35
TOTAL REFORESTATION ACREAGE			1,484.18

REFORESTATION AREA CHAUTAUQUA #7			
YEAR PURCHASED	PROPOSAL	GRANTOR	ACREAGE
1932	A	Chase	204.84
1932	B	Terry	316.84
1933	C	Lewis	30.00
1936	D	Hess	533.33
1934	E	Black	73.56
1941	F	Steward	175.00

1939	G	Frost	126.50
TOTAL REFORESTATION ACREAGE			1,460.07

DESCRIPTION

Geography

The Boutwell Hill Management Unit is located in the northeastern area of Chautauqua County in the Towns of Arkwright, Charlotte and Cherry Creek. The Unit is located east of Route 60 and south of Route 83, between the Villages of Cherry Creek on the east, Sinclairville on the south and Cassadaga on the west.

Two state forests and one wildlife management area have been included in the plan:

Chautauqua #1 - Boutwell Hill State Forest
1,484 Acres

Chautauqua #7 - Boutwell Hill State Forest
1,460 Acres

Canadaway Creek Wildlife Management Area
2,180 Acres

TOTAL 5,124 Acres

Geology and Soils

The Unit is in the northwest area of the Allegheny Plateau province. Approximately 14,000 years ago the Wisconsin Glacier cut and etched the landscape. The plateau is characterized by steep valley walls, wide ridgetops, and flat-topped hills between drainage ways. The bedrock is composed of shale, siltstone and sandstone formed in the Devonian period.

Soil associations found in the Unit are the Busti-

Chautauqua-Chadakoin group and the Fremont-Schuyler group. These soils are dominated by very deep soils that do not have a *fragipan* and formed in glacial till. They are on uplands and valley sides.

The Busti-Chautauqua-Chadakoin group is a loamy glacial till of broad, smooth areas on hilltops and hillsides. This group covers 80% of the Unit and one-third of the county. The Busti soils are somewhat poorly drained and of medium texture. The Chautauqua soils are moderately well drained and of medium texture. The Chadakoin soils are well drained and of medium texture.

The Fremont-Schuyler group formed in acid glacial till on broad summits and saddles and dissected side slopes on plateaus. This group covers 15% of the Unit and 20% of the county. The Fremont soils are somewhat poorly drained on broad upland flats and saddles. The Schuyler soils are moderately well drained in convex areas on the summits and side slopes.

Detailed soils information is located in the U.S.D.A. publication Soil Survey of Chautauqua County, New York.

Oil and Gas Development

The elevations in the Unit range from 1,200 feet to 2,100 feet above sea level. **Basement rock** begins at approximately 5,900 feet below sea level giving the sedimentary rock a thickness of 7,100 to 8,000 feet and contains deposits of oil and gas. Current gas production in the Unit is from the Medina Sandstone Formation which is found approximately 3,000 to 3,900 feet below the surface.

Of the 5,124 acres in the Unit, 3,852 acres are currently under lease to oil and gas companies for

the purpose of drilling for oil and natural gas. The 1,272 acres that are not currently under lease are identified as Parcel 3 and Parcel 4 of Canadaway Creek WMA (see Appendix - Map #5).

There are 14 active wells in the Unit, shown on the maps in the Appendix. This meets the "*reasonable development*" clause in the lease documents which details well spacing for commercial production. Therefore, the leases will remain in effect as long as the wells are producing.

The total gas sales from wells in the Unit amounted to approximately \$2,475,000 as of January 1, 1997. The State has received a total of \$301,173 in royalties and rental payments. Currently, the State is receiving about \$660 per month in royalties.

The current leases allow for the drilling of additional wells. The potential targets for future wells can be broken down into three categories:

1. Additional Medina Reserves - All wells drilled to date in the Unit targeted the Medina Sandstone Formation, found at a depth of approximately 3,000 to 3,900 feet below the surface. If economics improve, an additional 25 Medina wells could be drilled.
2. Bass Island Reserves - Although no wells in the Unit have been completed in the Bass Island Limestone/Dolomite Formation, it is produced in adjacent areas. It is found at a depth of approximately 2,100 to 3,000 feet below the surface. Due to the geologic nature of the Bass Island, potential structures have to be pinpointed by seismograph before drilling. Since this is an expensive process very few Bass Island wells are likely to be drilled in the Unit.
3. Reserves below the Medina - No well in the Unit, or adjacent areas, has been drilled deeper than 3,300 to 4,200 feet below the surface. As

mentioned earlier, sedimentary rock continues to a depth of 7,100 to 8,000 feet below the surface. Therefore, most of the rocks that potentially hold oil and gas have not yet been tested. Any predictions for future drilling into these deeper formations would be highly speculative.

The land manager reviews the location of every well prior to any drilling activity. At that time, issues regarding the site are reviewed and addressed.

Vegetation Cover Types

The various vegetation cover types as obtained from existing inventory are shown on the charts on pages 11 and 12. Since the State Forest and the Wildlife Management Areas are in different watersheds, physically separated and have had slightly different treatment histories, the relevant data is shown separately and then combined. Analysis of data indicates that there is no significant difference between the areas; hence, all further discussion will relate to the combined area. *Natural stands* are native hardwood stands that have developed in accordance with the immutable laws of nature. They are generally described as *northern hardwoods* with some *Allegheny hardwoods* mixture. Species composition varies dependent upon site conditions and past management practices. Sugar maple, beech, white ash and black cherry are predominate with some aspen and oak in the transition stages.

Plantations are stands of red pine, white and Norway spruce, larch and some minor hardwoods. Plantations exist on abandoned agricultural land and were planted in the 1930-1960 era. These stands are generally considered a transitional stage of which most will eventually be converted to

natural hardwoods or mixed hardwood softwoods.

Grass and shrubs are early successional stages that are usually not separately inventoried. With the exception of designated areas, the grass and shrub complex will be managed incidental to other activities, i.e., mowed strips along access roads.

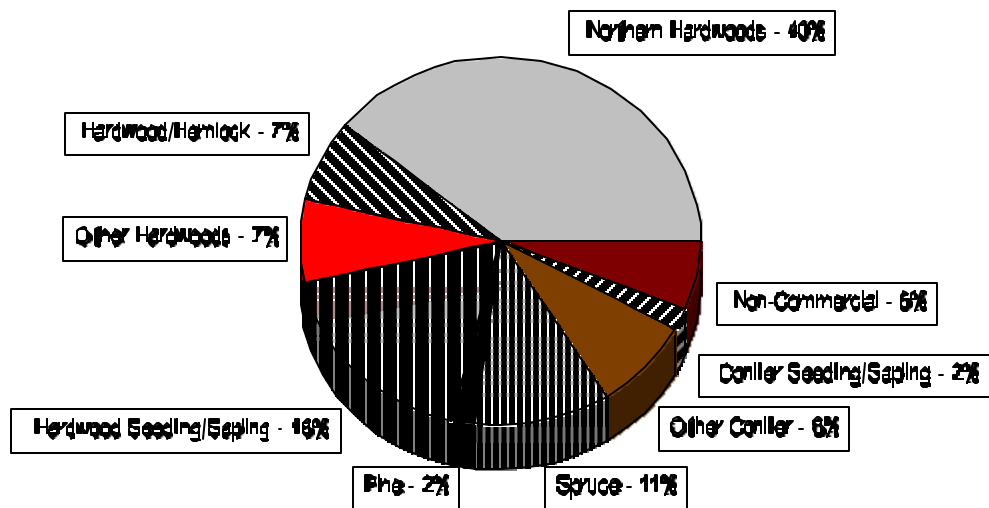
**BOUTWELL HILL MANAGEMENT UNIT
VEGETATION COVER TYPES
PERCENT OF TOTAL AREA**

	CHAUT. 1 & 7		CANADAWAY		BHMU	
	Acres	%	Acres	%	Acres	%
COMMERCIAL FOREST						
<u>Natural Hardwood</u>						
Northern Hardwood	1176	40	878	40	2054	40
Northern Hardwood/Hemlock	66	2	299	14	365	7
Other Hardwoods	308	11	75	3	383	7
Northern Hardwoods S/S	388	13	522	24	910	18
Sub-Totals	1938	66	1774	81	3712	72
<u>Plantation-Conifers</u>						
Pine	46	1	33	2	79	2
Spruce	483	16	61	3	544	10
Other Conifer	316	11	86	3	402	8
Conifer S/S	54	2	33	2	87	2
Sub-Totals	899	30	213	10	1112	22
TOTAL COMMERCIAL	2837	96	1987	91	4824	94
NON-COMMERCIAL						
Wetlands & Ponds	41	2	12	1	53	1
Road & Trails	66	2	4	0	70	1

Grass & Shrub	0	0	177	8	177	4
TOTAL NON-COMMERCIAL	107	4	193	9	300	6
GRAND TOTAL	2944	100	2180	100	5124	100

Boutwell Hill Unit Management Plan

Vegetation Cover Types



WATER RESOURCES LOCATED WITHIN THE BOUTWELL HILL UMA

Stream/Pond	Class Number	Classification	Location
Canadaway Creek	E-37	B,B,(TS)	WMA
Canadaway Creek-Trib	E-37-12	C(T)	WMA
Canadaway Creek-Trib	E-37-13	C(T)	WMA
Canadaway Creek-Trib	E-37-13A	C(T)	WMA
Canadaway Creek-Trib	E-37-14	C(T)	WMA
Canadaway Creek-Trib	E-37-15	C(T)	WMA
Clear Creek-Trib	Pa63-30-10	C(T)	State Forest

Wildlife Resources

The Boutwell Hill Management Unit lies within the Cattaraugus Highlands ecological subzone. This subzone is characterized by relatively flat-topped uplands with deep intervening valleys. The subzone contains a mixture of active dairy farms, abandoned farmland in old fields, shrub land and woodland. Northern hardwoods, hemlock-northern hardwoods, and shrubs are the dominant plant communities within this ecological subzone.

This subzone supports a wide variety of mammals, birds, reptiles and amphibians as residents. Those species that are residents of the ecological subzone

are listed with pertinent occurrence and protective status information in the Appendix. Several species are listed as *threatened* or of *special concern*; however, a review of the Natural Heritage Program files indicates that no *endangered* wildlife species are known to exist on the Unit. The Region 9 Wildlife Unit has identified and mapped four potential beaver sites. Two sites are located on the Canadaway Creek Wildlife Management Area and two sites on the Chautauqua #7 State Forest.

Various hunter and trapper harvest records are available for the three towns and Wildlife Management Unit 35 covering the Boutwell Hill Management Unit. This information illustrates the relative abundance of these wildlife species and the

public interest in trapping and hunting activities in the local area. Data provided in the Appendix include the legal harvest of deer, beaver and coyote in the three towns, as well as small game and trapper survey results for Wildlife Management Unit 35.

Water Resources

The Boutwell Hill Management Unit drains into two systems, the Great Lakes System to the west and the Allegheny River System to the south. The Canadaway Creek WMA portion of the Unit drains primarily to the Great Lakes System (Lake Erie) through the Canadaway Creek Drainage. The state forest portion of the Unit drains primarily to the south into the Allegheny River System by way of the Clear Creek drainage or the Cassadaga Creek drainage.

Within the unit several tributaries to Canadaway Creek are classified as C(T), referring to the potential to support trout. Canadaway Creek is classified as B(TS), referring to the use of this section--both are for recreational uses as well as to support natural propagation of trout. There is also a tributary of Clear Creek in the Unit classified as C(T). Angling opportunities within the Unit are provided at the small ponds and Canadaway Creek or nearby Clear Creek. Anglers utilizing these opportunities are provided with a relatively isolated and aesthetically pleasing experience.

No information is available regarding the biological diversity of the aquatic resources beyond historical listings of three species: black nose dace (*Rhynchithys atratulus*); creek chub (*Semotilus atromaculatus*); and mottled sculpin (*Cottus bairdi*). Following the compilation of baseline data on species composition and abundance, acceptable levels of diversity will be established.

Significant Plant and Animal Resources

There are no known identifiable unique natural plant communities within this management unit.

A great blue heron (*Ardea herodias*) nesting colony, consisting of approximately 60 nests, is located on and adjacent to the Canadaway Creek WMA.

Nesting red-shouldered hawks (*Buteo lineatus*) have been located on Canadaway Creek WMA.

Cultural Resources

Resources that are culturally important because of their historic significance are protected under the New York State Archeological Historic Preservation Act. The New York State archeological site inventory maps do not identify any sites closer than 1½ miles of the Unit.

Roads

The State Forest Public Access Road System provides for both public and administrative access to the Unit. The roads are constructed to standards that will provide reasonably safe travel and keep maintenance costs at a minimum. These roads are not normally plowed or sanded. There are three types of roads - **public forest access roads, haul roads, and access trails** - and they provide different levels of access depending on the standards to which they are constructed.

The speed limit on public forest access roads is 25 miles per hour.

The following roads and trails are located within the Unit:

Public Forest Access Roads

Chautauqua #1	
Arab Hill	0.8 miles
Chautauqua #7	
Arab Hill	2.1 miles
Canadaway Creek WMA	
Dibble Hill	2.2 miles
Park	1.2 miles

Haul Roads

Chautauqua #1	
6 roads	1.6 miles
Chautauqua #7	
4 roads	0.4 miles
Canadaway Creek WMA	
3 roads	1.3 miles

Access Trails

Chautauqua #1	
3 trails	6.5 miles
Chautauqua #7	
3 trails	3.1 miles
Canadaway Creek WMA	
4 trails	4.1 miles

ID Signs

Boutwell Hill State Forests	4
Canadaway Creek WMA	4
Arab Hill Forest Road	4

Access Roads

Boutwell Hill State Forests	10
Canadaway Creek WMA	6

Parking Areas

Boutwell State Forests	3
Canadaway Creek WMA	8

Recreation

Varied recreational opportunities exist throughout the Unit including: hunting, trapping, fishing, hiking, horseback riding, nature observation, cross-country skiing, camping, snowmobiling, dog sledding, dog field trials, and mountain biking.

The Eastside Overland Trail traverses the Unit north to south from County Route 72 to County Route 85. There are 8.7 miles of the trail on the Unit, which are maintained by Chautauqua County DPW, Parks Division. The trail corridor navigates the State's various aesthetically and pleasing woodlots, marsh dikes and access trails. When the trail leaves public lands it only follows roads and highways.

Impoundments

Boutwell State Forests	4
Canadaway Creek WMA	4

There is a four-mile horse trail from County Route 85 to Swanson Road, which is limited by wet soils and adjacent private land inhibiting expansion now.

Snowmobile Trails

Boutwell State Forests	6.5 miles
Canadaway Creek WMA	5.4 miles

The local snowmobile club maintains approximately 11.9 miles of trail on the Unit. Most of this is being approved and designated.

Horse Trails

Boutwell Hill State Forests	4.0 miles
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Other Facilities and Improvements

The Eastside Overland Trail

Boutwell Hill State Forests	6.4 miles
Canadaway Creek WMA	2.3 miles

Boundary Lines

Boutwell Hill State Forest	25.85 miles
Canadaway Creek WMA	15.53 miles

Reclaimed Gravel Pit

Canadaway Creek WMA	
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Small Field Headquarter
Canadaway Creek WMA

Oil and Gas Sites
Boutwell Hill State Forests 12
Canadaway Creek WMA 2

RESOURCE DEMANDS AND MANAGEMENT CONSTRAINTS

The Boutwell Hill Management Unit offers a diversity of natural resources and the demand on these resources is diverse as well. The goals of this plan are based on existing uses and growing demands on the Unit. These demands shall be fulfilled within the flexibility provided for under the constraints dictated by New York State's laws, regulations and policies.

RESOURCE DEMANDS

Public Use and Recreation

State lands have been and are expected to remain open long term for the use of the public with no fees and few restrictions. As subdivision, development and posting of surrounding private land continue, the recreational value of state lands increases. Identifiable demands on the Unit are:

Access to public land
Additional trails for hiking, Nordic skiing, bicycling, horseback riding, off-highway vehicles, snowmobiling
Nature observation and hunting, fishing and

trapping opportunities
Camping.

Protection Needs

There is a basic need for protection of soil and water resources. Water quality is important for the welfare of all users. Soils are a fundamental component of biological productivity on the Unit. Any activities which cause erosion or reduce fertility should be avoided.

Artifacts of historic or prehistoric origin may be present on the area. If discovered, because of their cultural significance, disturbance will be avoided.

Timber Resources

The demand for forest products from state lands has been reflected in a steady increase in prices paid in recent years. Hardwood sawtimber has an increasing demand. Conifer sawtimber demand

fluctuates, but is steady. The demand for hardwood fuelwood has decreased.

Plant and Wildlife Habitats

The value of maintaining healthy populations of both plants and animals is generally well accepted. There is precedent to provide for biodiversity on all state lands. The state also has a mandate to protect and manage species that are endangered, threatened or of special concern.

Water Resources

Any alterations/uses of the surrounding watershed should take into account potential alterations of habitat and the associated impacts to biological diversity of the aquatic ecosystem. Biological diversity of native species should be maintained or enhanced by any watershed disturbances.

Oil and Gas Leases

Seventy-five percent of the Unit has been leased to various developers since 1974. Only part of the Unit under lease has been developed with intermittent exploratory activity continuing.

Education and Research

More information and a greater understanding is needed in the science of ecosystem management. The Department will cooperate with colleges and research groups to assist in research through the outdoor laboratory setting for such study. There is an opportunity to use Boutwell Hill Management Unit as an example.

MANAGEMENT CONSTRAINTS

The following factors pose limitations on the management of the Unit:

Physical Constraints

Steep slopes
Geologic properties
Soil characteristics
Access
Fluctuations in wood markets
Potential insect and disease infestations
Placement of recreational trails
Presence of county, town and state roads
Gas collection and transmission lines
Electrical transmission and telephone lines
Introduced conifer species planted on incompatible soils

Administrative Constraints

Staffing shortages
Inadequate budgets
Availability of inmate work crews
Availability of volunteers

Societal Constraints

Public opinion regarding forest product sales, clearcutting, forever wild, public ownership, hunting, trapping, pesticides, recreational demands and conflicting uses.

Department Rules, Regulations and Laws

Department rules, regulations and laws governing the management activities on the Unit (listed in the

Appendix).

MANAGEMENT GOAL

The legal mandate enabling the Department of Environmental Conservation to manage state forests for multiple use is located in Article 9, Title 5, of the Environmental Conservation Law. Under this law, state forest lands shall be forever devoted to “reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber, and for recreation and kindred purposes.”

It will be the goal of the Department to manage state lands for multiple benefits to serve the needs of the People of New York State. This management will be considered on a landscape level, not only to ensure the biological diversity and protection of the ecosystem, but also to optimize the many benefits to the public that these lands provide. The wildlife management goal on Canadaway Creek WMA is to maintain and enhance the wildlife resource and associated habitat.

MANAGEMENT OBJECTIVES

The objectives which are listed below are derived from the previously identified resource demands and the management goal statement. They form the basis for the management actions which follow.

PROTECTION MANAGEMENT

State land management should ensure that the basic environmental integrity of the land is not damaged. These objectives will assure that cultural and biological resources present on the Unit will be protected from detrimental activities.

1. Protect 53 acres of wetlands and ponds.
2. Protect all streams on the Unit. Perform streambank stabilization along various reaches of Canadaway Creek.
3. Protect against damaging fires, insects and diseases.
4. As resources permit, surveys continue to be made for threatened, special concern or endangered plants and animals. Public input on the existence of these species is welcome. If these species are found, they will be protected.
5. The Department has followed procedures established in concert with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) in determining the presence of cultural resources on this Unit. This involved completion of the Structural-Archaeological Assessment Form (SAAF) and reviewing the New York State Archaeological Site Locations Map. OPRHP and the New York State Museum have been consulted in any instance where the Site Locations Map indicated an archaeological or historical site may occur on the unit management lands. The SAAF will be updated at the time this plan is updated. The

results of the SAAF evaluation indicate that no further cultural resources review is required. Old house sites and water holes will be provided for when planning timber harvests and other projects.

6. Protect state lands from trespass by maintaining well-marked boundary lines.
7. Patrol for control of vandalism, dumping, and other illegal activities.
8. Prevent soil erosion.

PUBLIC USE AND RECREATION MANAGEMENT

The average citizen recognizes public use and recreation as the one direct benefit these lands provide. These objectives provide for a number of opportunities which are basically compatible and consistent with the natural characteristics of the land.

1. Maintain and/or rehabilitate the forest roads on the Unit consisting of approximately 6.3 miles.
2. Maintain 11 parking areas. Create informal parking areas through the forest management sales program by reclaiming log landings with two or three-car capacity.
3. Continue to provide and update the current informational brochure maps.
4. Identify state lands through identification signs and boundary line signs.
5. Continue the present recreational opportunities. These values are, but not limited to, trails for hiking, biking, Nordic skiing, horseback riding, snowmobiling, and "open space" enjoyment. One may camp, hunt, fish, trap, and observe nature through bird watching, photography or nature

study.

6. A Nordic ski trail has been suggested on the Unit. Though cross-country skiing is permitted on the Unit, a designated ski trail is not planned because of the widespread snowmobile use on the Unit and the incompatibility between the two activities.

7. Limit or relocate access and recreational opportunities when and where degradation of the resources occurs due to years of wear and tear or poor siting. Recommendations for rehabilitation, maintenance or relocation will be under continual review.

8. Present law does not permit all-terrain vehicle (ATV) use on state forests unless trails are specifically dedicated and signed for this use. Trails for ATV use are not planned for the Unit. Soils on the Unit are the major deterrent as they are somewhat poorly drained. Using the existing Eastside Overland Trail and the horse trail would lead to frequent conflicts and create a safety hazard. Adjacent private property make it impossible to stay off roads and highways.

9. Provide for trash pickup.

10. Utilize temporary revocable permits to allow Chautauqua County DPW, Parks Division, to maintain the Eastside Overland Trail.

11. Utilize annual temporary revocable permits to allow the local snowmobile club volunteers to maintain the snowmobile trail system.

12. Utilize temporary revocable permits to allow other uses of the Unit.

FISHERIES MANAGEMENT

Although no regionally important recreational fisheries exist within the boundaries of the Boutwell Hill Management Unit, disturbances

within these watersheds may have deleterious impacts on aquatic systems within the immediate area as well as downstream. Important recreational trout waters downstream of the Management Unit include Canadaway Creek and Clear Creek (Ellington). Both of these streams receive annual trout stockings, sustain natural reproduction for trout and support regionally important trout fisheries.

1. Maintain or enhance angling opportunities at the ponds on the Unit through these actions:

a. Maintain a foot path to the ponds from the main road.

b. Promote use of the ponds by noting them in signs.

c. If appropriate, initiate a balanced aquatic community.

2. Maintain or enhance the physicochemical characteristics of the aquatic ecosystems within the Boutwell Hill Management Unit.

When timber harvesting occurs on the Unit, then NYS DEC guidelines will be followed to minimize or eliminate detrimental impacts to the aquatic environment. These impacts include, but are not limited to siltation, bank erosion and reduced shading resulting in increased water temperatures.

3. Do a complete biological inventory of the ponds, streams and associated tributaries.

a. Utilize electro-fishing gear and seines to collect a sub-sample of fish to determine species composition and abundance.

b. Collect aquatic insects in fine-meshed nets to determine species composition and abundance.

c. Measure physical and chemical parameters.

WILDLIFE MANAGEMENT

These objectives will address an interspersed diversity of plant communities by managing for an interspersion of forest structure with conifers, forest openings in herbaceous cover and maintaining existing wetlands for a favorable diversity of wildlife habitat.

1. Maintain an average annual ruffed grouse population density of one drumming male per forty acres of forest habitat. Conduct annual spring drumming grouse surveys.
2. Protect all freshwater wetlands habitat on the Unit including NYS regulated wetland HA-7 and six smaller man-made marshes.
 - a. Maintain 53 acres of wetland habitat and ponds.
 - b. Utilize the Adopt-A-Natural Resource Program to assist with habitat maintenance and monitoring. The present agreement is to maintain 15 wood duck nest boxes and 1,000 feet of marsh dike on approximately 13 acres.
3. Prepare an inventory of areas to be maintained in herbaceous grassland cover on the Unit. Maintain 75 acres by mowing every third year, periodic reseeding, or other techniques.
4. Monitor the great blue heron nesting colony and limit activities which disturb nesting or destroy the site.
5. Monitor the red-shouldered hawk nest sites and limit activities which disturb nesting or destroy the site.
6. Utilize the expertise and funding from the Ruffed Grouse Society and National Wildlife Turkey Federation to maintain wildlife habitat diversity.

7. Strive to have a minimum average density of five *snags* per acre in sawtimber stands.

8. Perform wildlife habitat improvements, i.e., aspen culture, apple tree releasing, grassland reseeding, etc. as part of the forest management sales program, especially on Canadaway Creek WMA.

FOREST MANAGEMENT

These objectives will be addressed using various *silviculture* techniques to provide for biological diversity, *sustained yield*, a continuous conifer presence and old-growth characteristics.

The two basic silvicultural systems utilized to achieve sustained yield and some of the diversity are:

1. *Uneven-aged* Management - In this system, trees of all ages or sizes are maintained throughout the stand at all times. Here larger trees may be maintained for aesthetics and the forest stand structure shows a minimum of three age classes.
2. *Even-aged* Management - In this system, all the trees in a stand are maintained at approximately the same age. Even-aged management is applied where it is not essential to maintain large trees at all times and where an even-age stand already exists. This technique works well where deer browsing creates a *regeneration* problem.

As shown in the table on page 22, 64% of the Units's commercial forest is even-aged. Hence, even-aged silviculture will be the predominate management system applied.

Biological diversity will be achieved by attempting to balance the age/diameter classes of the forest stands. The conifer component of the Unit will be encouraged through natural regeneration in both hardwood stands and plantations which self seed.

Thus the conifer regeneration will mostly be either hemlock where it naturally occurs or Norway spruce which will sometimes reseed in a plantation. The planting of conifers will be limited mostly to small acreages where plantations are clearcut to create an interspersed forest-age classes and diversity mainly on Canadaway Creek WMA.

**BOUTWELL HILL MANAGEMENT UNIT
COMMERCIAL FOREST LAND
ACRES BY STAND STRUCTURE**

	NATURAL HARDWOODS		CONIFER		TOTAL	
	Acres	%	Acres	%	Acres	%
Even-Aged	1991	41	1112	23	3103	64
Uneven-Aged	1721	36	-	-	1721	36
TOTAL ACRES	3712	77	1112	23	4824	100

Old growth characteristics can be achieved by lengthening the rotation of natural forests or by simply setting some acres aside. By the same token the maintenance of grass/brush lands along with wetlands gives us the short rotation and open areas. The ultimate result of various management strategies is a diverse, better balanced ecosystem.

Management Recommendation 1.0

Four hundred eighty-three (483) acres of hardwood forest have been identified as having soil or site conditions that limit growth or management activities. Stands in this category

may have steep slopes or water saturated soil which should be protected. With special modifications, i.e. limitation on season of cutting, skidding length, type of equipment allowed, harvesting could be allowed. If these stands are managed for timber production they will be managed via the *selection method*.

Management Recommendation 1.1

One thousand three hundred forty (1,340) acres of uneven-aged natural hardwoods will be managed using the selection method. With this method, the mature timber is removed either as single scattered trees or in small groups at relatively short intervals; such cuttings are repeated indefinitely with the deliberate purpose and effect of creating or maintaining an uneven-aged stand. Intermediate cuttings must be made

among the younger trees at the same time that the older or larger trees are removed. Forest stands under this system will have three or more distinctly different age classes intermingled on the same area. The only essential requirement is that there be at least three successful reproduction cuttings during the equivalent of one *rotation*. It should not be inferred that either the cuttings or the resulting age classes need be equally spaced in time. Cutting will be scheduled when individual stands reach 80% of *relative density*.

Management Recommendation 1.2

Four hundred fifty-five (455) acres of even-aged natural hardwoods will be managed on a 120-year rotation with thinnings at age 60, 80 and 100 years. The **shelterwood method** of reproduction will be used at the end of the rotation. In the shelterwood method, as its name implies, reproduction is secured under the shelter of a portion of the old stand. The first reproduction cutting, at about age 120 years, creates vacancies in the growing space of the stand in which the new crop can become established. Besides furnishing seed, the old stand affords protection to the young seedlings. A time finally arrives when this shelter becomes a hindrance rather than a benefit to the growth of the seedlings. It is then necessary to remove the remainder of the old stand, giving the new stand possession of the area and opportunity to develop in even-aged form.

Management Recommendation 1.3

Three hundred seven (307) acres of even-aged natural hardwoods will be managed on a 100-year rotation with thinnings at age 60 and 80. The shelterwood method of reproduction will be used in these stands.

Management Recommendation 1.4

One thousand seventy two (1,072) acres of even-aged hardwoods will be managed on a 80-year rotation with one thinning at age 60. Most of the stands in this category are on Canadaway Creek Wildlife Management Area. The cuts will usually be small, less than five acres, irregularly shaped, and located to preserve forest species, maintain or create diversity and to provide wildlife openings. The **clearcut** method with natural regeneration will be used at the end of the rotation with trees left as **green tree retention** for other values.

Management Recommendation 1.5

Fifty-five (55) acres of even-aged **pioneer** hardwoods will be managed on a 40-year rotation using the **coppice method**. These are primarily aspen and some black locust stands. Cutting will be limited to late fall or winter only to encourage sprouting. All of these stands are on Canadaway Creek Wildlife Management Area.

Management Recommendation 1.6

Four hundred eighty-two (482) acres of spruce plantations will be managed on a 100-year rotation with thinnings at 40, 60 and 80 years. Attempts will be made to time the thinnings to take advantage of available markets. Natural spruce regeneration will be encouraged with this silvicultural work, lacking that the stands may be converted to hardwoods as they encroach upon the stand.

Management Recommendation 1.7

Six hundred thirty (630) acres of plantations will be managed on a 60 to 80-year rotation and converted to natural hardwoods with the final harvest. A modified shelterwood method will be used to establish the hardwood regeneration. Some stands will be treated in five-to-fifteen acre blocks to create diversity. Most of the hardwoods will be retained as a seed source.

Management Recommendation 1.8

One hundred twenty-two (122) acres of brush types will be allowed to grow successionaly into natural hardwoods.

Management Recommendation 1.9

Seventy-five (75) acres of fields will be maintained in grasslands by mowing every third year and with periodic reseeding.

Management Recommendation 1.10

Fifty (50) acres will be managed as freshwater wetland. Stand 1-17 is part of a regulated wetland listing. Most of the stands are shallow water impoundments created using federal monies for habitat diversity. The dikes will be mowed at least every third year. The control boxes will be cleaned as needed until funding is approved to rehabilitate the dike and replace the control structure.

Management Recommendation 1.11

Three (3) acres of deep water ponds will be maintained.

Management Recommendation 1.12

Four (4) acres will be maintained as a recreational area with a parking lot adjacent to Canadaway Creek.

Inventory Recommendation

A forest inventory will be conducted on a 20-year cycle. Canadaway Creek WMA should be done in 2000. Chautauqua #1 should be done in 2010 and Chautauqua #7 should be done in 2012.

Summary of Forest Management Actions

In developing this plan, the intent was to describe a general frame of reference to guide the manager in implementing annual treatments.

Individual stand prescriptions made at this stage of the management cycle would be inappropriate since there are too many unknown factors. The availability of markets and personnel required to initiate sales will determine what and how much will be treated in any particular year. Insect and disease problems, weather cycles and stand growth over time will determine the priority for stand treatment at any future date.

A summary of treatment schedules is provided in the table on page 25. On the average, ninety-two (92) acres should be harvested every year and eighty-four (84) acres should be thinned. These totals are at least twice the average acreage treated over the last ten years and may well be an unattainable goal.

RESEARCH AND EDUCATION

These objectives provide for opportunities to learn about natural resource management.

1. Encourage research and educational endeavors where appropriate.
2. Provide the general public with information regarding the unit through signs, brochures, press releases and walking tours.

**BOUTWELL HILL MANAGEMENT UNIT
FOREST MANAGEMENT RECOMMENDATIONS BY
SILVICULTURAL SYSTEM & METHOD**

Mgt Rec	Rotation	Acres	Silvicultural		Next 20 Years Treatment Per Year (Ave.)	
			System	Method	Thinning	Harvest
1.0		381	Un-Even	Selection		
		102	Even-Aged	Selection		
Sub-Total		483				
Natural Hardwoods						
1.1		1340	Un-Even	Selection		67
1.2	120	455	Even-Aged	Shelterwood	18	
1.3	100	307	Even-Aged	Shelterwood	3	
1.4	80	1072	Even-Aged	Clearcut	24	11
1.5	40	55	Even-Aged	Coppice		1
Sub-Total		3229			45	79
Conifer Plantation						
1.6	100	482	Even-Aged	Shelterwood	20	2
1.7	60-80	630	Even-Aged	Shelterwood	19	11
Sub-Total		1112			39	13
Grand Total		4824			84	92

APPENDIX

BUDGET NEEDS

Annual

Public Forest Road-6.3 miles	\$3,200
Trail Maintenance	\$1,500
Gates and Barriers-10	\$ 500
Parking Areas-11	\$ 500
Trash Pickup	\$ 500
Sign Maintenance	\$ 300
Buildings	\$ 500
Mowing-5 Acres	\$ 250
Dikes and Water Controls	<u>\$1,000</u>
Total	\$8,250

Periodic

Boundary Lines	
CCWMA-7.5 Miles	\$3,000 -1998
Update Map Brochures-2	\$2,000 -2000
Boundary Lines 1 & 7- 25.85 Miles	\$1,000-2002
Boundary Lines	
CCWMA-8.0 Miles	\$3,000-2003

Development and Construction

Install Replacement Gates (1&7)-4	\$1,500-1998
Marsh Dike Rehabilitation (CCWMA)-1	\$3,500-1998
Streambank Stabilization (CCWMA)	\$25,000-1998/99
Acquisition of Inholdings- 344 Acres	\$299,912-1999
Marsh Dike	
Rehabilitation (1)-1	\$3,500-1999
Rehabilitation Arab Hill Forest Road-2.4 Miles	\$15,000-1999
Streambank Stabilization (CCWMA)	\$10,000-2001
Marsh Dike	
Rehabilitation (7)-1	\$3,500-2001
Rehabilitate Dibble Hill	

Forest Road-2.0 Miles	\$5,000-2002
Rehabilitate Parking Lots (1&7)-4	\$4,000-2002
Rehabilitate Park Forest Road-1.4 Miles	\$10,000-2004
Marsh Dike	
Rehabilitation (7)-1	\$3,500-2004

PUBLIC PARTICIPATION

Throughout the development of this management plan, an effort was made to obtain maximum public input into the development of the specific management goals and objectives. A notice was inserted in the Environmental News Bulletin, newspaper articles were published in local papers and individual letters were sent to known interested parties. Responses received are on file and a summary of the comments is included in the appendix.

Two types of responses were received, those from individuals expressing a generalized opinion and those from special-use groups who were interested in a specific activity or use. The generalized responses were either for regulated management and its associated harvesting or were opposed to harvesting and favored a preservation type management. None of these responses identified a stand that was unique or required special protection. The special-use responses were primarily related to recreational use of the area and the need for hiking or other recreational trails.

The draft plan will be reviewed by appropriate DEC staff and the general public. All interested parties will be notified of the completion of the draft plan and an informational meeting will be held to review said plan. After review, the final

plan will be completed and made available to all who request it.

The implementation of the plan and the status of the Boutwell Hill Management Unit will be reviewed in ten years. At that time any required adjustments will be made and comments solicited from the public.

PRE-PLAN PUBLIC COMMENTS

1. No clearcutting; no cutting beech, need "Forever Wild" status.

2. Maintain maximum diversity of all successional stages. Clearcutting has an important role in wise forest management. Foresters must change their mind set and consider trees as part of a complex system.

3. State reforestation areas should be managed for the production of forest products.

4. Consider the establishment of OHV trails exclusively for ATV and dirt bike use.

5. Manage land resources wisely; timber is a desirable long-term crop; practice multiple-use not "Forever Wild."

6. Consider needs of all users including hikers, campers. Don't listen just to voice of logging industry. Set aside a "Forever Wild" area.

7. Goal of plan should be to provide opportunity to interact/commune with nature. Provide a network of trails; increase the land devoted to recreation; stop the diminution of the forest (i.e., cutting).

8. Stop clearcutting; do not destroy any more of the forest.

9. Stop clearcutting.

10. Provide a horseback riding trail, an ATV trail and if possible a bicycling trail.

11. "Anything that you plan to do . . . would be great."

12. Recognize needs of all users not just joggers. Stop clearcutting or removal of overstory. Set aside a "Forever Wild" area.

13. State forests were established to be managed for the production of wood fiber. Multiple-use management is acceptable but single-use management and wilderness type recreation is contrary to the enabling legislation. It is absurd to consider any part of the area as "Forever Wild."

14. Stop clearcutting; allow selective harvesting by smaller firms; enhance recreational use.

15. Consider the general public's needs, i.e., hiking and enjoying the natural beauty of the area. We do not want clearcutting.

16. I am a hiker, hunter and an all-around lover of the forest. I am against clearcutting.

17. Set aside a "Forever Wild" area.

18. We do not want to see clearcutting. Consider setting aside a "Forever Wild" area.

19. Re-establish the old fire lanes, use all-purpose recreation trails.

20. A "Forever Wild" concept may make sense.

21. Develop trails for hiking, skiing, camping. Cleanup following logging.

22. Provide briefing and a walk over the property prior to asking for public input.

23. Commend DEC for withstanding the fire from single-use adherents. Clearcutting is sound management and good for wildlife and songbirds. Public is misinformed by media. Cutting should be

viewed as beginning of a new forest not the end.

24. No quarrel with multiple-use management but definitely against clearcutting. Trails and gouged and rutted, branches and brush are left in unsightly piles instead of being moved. Manage for recreation, do logging somewhere else.

4-12-7 (2/87)-9c

SEQR

**617.21
State Environmental Quality Review
NEGATIVE DECLARATION
Notice of Determination of Non-Significance**

Identifying # 98-PL/SF-9-50

Project Number _____

Date February 26, 1998

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The NYS Department of Environmental Conservation as lead agency, has determined that the proposed action described below will not have a significant effect on the environment and a Draft Environmental Impact Statement will not be prepared.

Name of Action: Boutwell Hill Unit Management Plan

SEOR Status: Type 1 X
Unlisted _____

Conditioned Negative Declaration: _____ Yes
 X No

Description of Action:

The Boutwell Hill Unit Management Plan sets forth the proposed goals, management objectives and associated costs for a 5,124-acre unit of State Forest and Wildlife Management lands in northeastern Chautauqua County. The plan will detail proposed management activities for a 20-year period, dating from the time of approval and adoption. A review and update process will take place at the end of the tenth year. Public input will be sought via a public meeting.

Management activities planned for the Unit include: boundary line maintenance, forest inventory, flora and fauna surveys, wood products harvesting, creation of informal parking areas, maintenance of

grasslands by mowing, maintenance and rehabilitation of facilities, acquisition of inholdings, wildlife habitat maintenance, recreation trail maintenance, and law enforcement, fire detection and suppression. There will be 12 informal parking areas constructed through forest product sales, each about one-tenth of an acre of reclaimed log landings with a two or three-car capacity. Monitor the red-shouldered hawk nesting sites located on Canadaway Creek WMA.

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.)

The two state forests and one wildlife management area in the management unit are located in the Towns of Arkwright, Charlotte and Cherry Creek in Chautauqua County (see attached map).

SEQR Negative Declaration

Page 2

Reasons Supporting This Determination:

(See 617.6(g) for requirements of this determination; see 617.6(h) for Conditioned Negative Declaration)

Activities planned for the Unit will be covered by the following generic impact statements:

State Forest Commercial Product Sales Program, Red Pine Plantation Clearcut Program, Wildlife Management Program, Fish Species Management Activities, State Forest Recreation Management Program, Acquisition of Lands by DEC, and Conserving Open Space in NYS.

If after the public review process, activities are added to the plan to provide better management of the Unit and are not covered by this Negative Declaration or cited Generic Environmental Impact Statements, DEC will undertake a site-specific Environmental review for such activities.

Activities in the plan will be performed in accordance with the standards and policies and procedures set forth in the following DEC documents: *Continuous Forest Inventory Handbook*, *State Forest Multiple Use Management Plan Handbook*, *Unpaved Forest Road Handbook*, and *the Timber Management Handbook*.

In addition, activities in the plan will be guided by the Environmental Conservation Law, best management practices, the expertise of foresters and biologists and the views expressed by the participating public.

Rehabilitation of existing facilities shall involve improving existing forest roads, gates, parking lots, and marsh pond dikes. This entails spreading of gravel, grading, ditching, installation of water drainage or control devices, etc. When degradation of the resources occurs due to years of wear and tear or because of poor siting, recommendations shall be made for rehabilitation, maintenance or relocation as is most appropriate.

The aesthetic resources will be protected by law enforcement activities, minimizing impacts of harvesting activities and with the establishment of regeneration prior to harvesting mature forests, minimizing impacts of gas and oil activities and limiting disturbances in sensitive areas along wet areas.

There are 762 acres of natural hardwood which is under even-aged management to approximately 100 to 200 years of age. The shelterwood method of harvest will be used to secure reproduction under a partial canopy prior to removal of the mature forest overstory. Non-threatened or non-endangered species slightly impacted due to the change in the canopy level.

Red-shouldered hawks are listed as a threatened species; therefore, the nest sites will be monitored to limit disturbances during critical times.

SEQR Negative Declaration

Page 3

If Conditioned Negative Declaration, provide on attachment the specific mitigation measures imposed.

For Further Information:

Contact Person: Stephen A. Smith
Principal Forestry Technician

Address: NYS DEC
215 South Work Street,
Falconer, NY 14733

Telephone Number: 716-665-6111

For Type I Actions and Conditioned Negative Declarations, a Copy of this Notice Sent to:

Commissioner, Department of Environmental Conservation, 50 Wolf Road, Albany, New York
12233-0001

Appropriate Regional Office of the Department of Environmental Conservation Office of the Chief Executive Officer of the political subdivision in which the action will be principally located.

Applicant (if any)

Other involved agencies (if any)

FULL ENVIRONMENTAL ASSESSMENT FORM
(Not on Computer - 11 pages)

FOREST MANAGEMENT

Management Recommendations by Cover Types

(Not on Computer - 19 Pages)

BOUTWELL HILL MANAGEMENT AREA MANAGEMENT RECOMMENDATION BY COVER TYPES

	MANAGEMENT RECOMMENDATION														TOTAL
	0.0	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	1.11	1.12	
Northern Hardwoods (10)															
Even		59	69	311	33	530									
Uneven		31	1021												
															1002
															1052
Hardwood-Hemlock (11)															
Even		5													
Uneven		301	59												
															5
															360
Other Hardwoods* (12,14,15,16,21,31,32,52)															
Even		7	16	39	22	55	20		2						
Uneven		49	175												
*Includes White Pine															
															161
															224
Hardwood S/S (97)		31		105	252	487	35								
															910
SUBTOTAL		483	1340	455	307	1072	55		2						3714
Pine (40,41,42,43,44,60)									79						
															79
Spruce (45,46)															
Even								433	111						
Uneven															
															544
Other Conifer (47,48,54,61,67,68,70,71)															
Even									400						
															400
Conifer-S/S (98)								49	38						
															87
SUBTOTAL								482	620						1110

<i>Non-Forest (99)</i>	<i>66</i>									<i>122</i>	<i>55</i>	<i>50</i>
TOTAL	66	483	1340	455	307	1072	55	482	630	122	55	50

Analysis of Stand Size

All Stands

Number of Stands 301
Average Size 17 Acres
Range 1 to 132 Acres

Stand Size

Percentage of Stands

1 to 10 Acres 53.5%
11 to 25 Acres 27.2%
26 to 50 Acres 12.3%
51 to 75 Acres 4.7%
76+ Acres 2.3%

Conifer Stands

Number of Stands 72
Average Size 15 Acres
Range 2 to 109 Acres

Stand Size

Percentage of Stands

1 to 10 Acres 61.1%
11 to 25 Acres 19.4%
26 to 50 Acres 16.7%
51 to 75 Acres 0
76+ Acres 2.8%

Natural Hardwoods

Number of Stands 188
Average Size 20 Acres
Range 1 to 132 Acres

Stand Size

Percentage of Stands

1 to 10 Acres 46.3%
11 to 25 Acres 30.3%
26 to 50 Acres 13.3%

51 to 75 Acres	7.4%
76+ Acres	2.7%

Analysis of Stand Size shows the present distribution of the various sizes of stands. It will, therefore, take considerable time to consolidate/divide stands to conform to the plan's objectives.

Forest Inventory Data Code Sheet

CLASS CODES

- 1-Reforestation
- 2-Multiple Use
- 3-Wildlife Management
- 4-Other

STATUS CODES

- 01-Natural Forest
- 02-Natural Forest-Seedling/Sapling
- 03-Plantation
- 04-Plantation-Seedling/Sapling
- 05-Field 90% + Plantable
- 06-Field 75-90% Plantable
- 07-Field 50-75% Plantable
- 08-Brushy Field
- 09-Ponds
- 10-Wetland-Open
- 11-Wetland-Alder
- 12-Other

FOREST TYPE CODES

Natural

- 10-Northern Hardwood
- 11-Northern Hardwood-Hemlock
- 12-Northern Hardwood-White Pine
- 13-Northern Hardwood-Spruce Fir
- 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

FOREST TYPE CODES

- Plantation
- 40-Red Pine
- 41-White Pine
- 42-Scotch Pine
- 43-Austrian Pine
- 44-Jack Pine
- 45-Norway Spruce
- 46-White Spruce
- 47-Japanese Larch
- 48-European Larch
- 49-White Cedar
- 50-Douglas Fir
- 51-Balsam Fir
- 52-Black Locust
- 53-Pitch Pine
- 54-Misc. Pure Species
- 60-Red Pine-White Pine
- 61-Red Pine-Spruce
- 62-Red Pine-Larch
- 63-White Pine-Spruce
- 64-White Pine-Larch
- 65-Scotch Pine-Spruce
- 66-Scotch Pine-Larch
- 67-Larch-Spruce
- 68-Bucket Mixes
- 70-Pine--Natural Species
- 71-Spruce--Natural Species
- Miscellaneous**
- 97-Hardwoods/Seedling/Sapling
- 98-Conifer/Seedling/Sapling
- 99-Non-Forest

MANAGEMENT CLASS CODES

- 1-Timber
- 2-Wildlife
- 3-Experimental
- 4-Recreation
- 5-Protection

- 28-Jack Pine
- 29-Tamarack
- 30-Oak-Pine
- 31-Transition Hardwoods (NH-Oak)
- 32-Other

Inventory Stand Data

(Not on Computer - 18 Pages)

WILDLIFE MANAGEMENT

*New York State DEC
1995-96 Small Game Hunter Survey
WMU 35 Estimated Harvest*

SPECIES	TAKE SAMPLE	STANDARD ERROR	ESTIMATED HARVEST	UPPER & LOWER CONFIDENCE LIMIT		½ 80% C.I.	PERCENT ERROR	DIRECTION FROM 6-YEAR AVERAGE
RABBIT	951	0.0143	54,745	64,046	45,443	9,301	16.99	DOWN
SQUIRREL	1,632	0.0225	93,947	108,582	79,312	14,635	15.58	DOWN
HARE	12	0.0008	691	1,211	170	520	75.33	DOWN
RACCOON	207	0.0079	11,916	17,055	6,777	5,139	43.12	DOWN
RED FOX	7	0.0005	403	728	78	325	80.71	DOWN
GRAY FOX	3	0.0002	173	303	43	130	75.33	DOWN
GROUSE	507	0.0069	29,186	33,674	24,698	4,488	15.38	DOWN
PHEASANT	203	0.0051	11,686	15,003	8,368	3,317	28.39	UP
WOODCOCK	38	0.0017	2,187	3,293	1,082	1,106	50.55	DOWN
DUCKS	117	0.0045	6,735	9,662	3,808	2,927	43.46	DOWN
GEESE	25	0.0014	1,439	2,350	529	911	63.28	DOWN
FROGS	17	0.0017	979	2,084	(127)	1,106	112.99	

Estimated Harvest

SPECIES	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96
RABBIT	143,602	80,092	98,837	62,186	60,078	54,745
SQUIRREL	145,678	118,821	109,054	106,213	121,268	93,947
HARE	2,404	1,569	1,366	431	101	691
RACCOON	21,202	19,673	16,773	22,310	7,889	11,916
RED FOX	546	1,009	765	1,132	708	403
GRAY FOX	219	56	328	862	101	173
GROUSE	51,364	28,136	32,017	26,405	26,600	29,186
PHEASANT	11,912	10,257	7,594	5,928	3,944	11,686
WOODCOCK	7,798	2,578	3,442	6,089	2,225	2,187

SPECIES	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96
DUCKS	16,065	7,791	6,939	5,604	8,698	6,735
GEESE	11,694	5,044	3,825	5,658	5,057	1,439
CROW			13,113			
FROGS	32,239					979
WOODCHUCK		130,815				
COYOTE					101	

*New York State DEC
1992-93 Small Game Hunter Survey
WMU 35 Estimated Harvest**

SPECIES	SAMPLE TAKE	STANDARD ERROR	ESTIMATED HARVEST	UPPER & LOWER CONFIDENCE LIMIT		½ 80% C.I.	% ERROR	DIR. FROM 2-YR. AVERAGE
RABBIT	1,809	0.0195	98,837	111,866	85,807	13,029	13.18	DOWN
SQUIRREL	1,996	0.0172	109,054	120,546	97,561	11,492	10.54	DOWN
HARE	25	0.001	1,366	2,034	698	668	48.92	DOWN
RACCOON	307	0.016	16,773	27,464	6,083	10,691	63.74	DOWN
RED FOX	14	0.0006	765	1,166	364	401	52.41	DOWN
GRAY FOX	6	0.0003	328	528	127	200	61.15	UP
GROUSE	586	0.0087	32,017	37,830	26,204	5,813	18.16	DOWN
PHEASANT	139	0.0026	7,594	9,332	5,857	1,737	22.88	DOWN
WOODCHUCK	63	0.0018	3,442	4,645	2,239	1,203	34.94	DOWN
DUCKS	127	0.0034	6,939	9,211	4,667	2,272	32.74	DOWN
GEESE	70	0.0023	3,825	5,361	2,288	1,537	40.18	DOWN
CROW	240	0.012	13,113	21,131	5,095	8,018	61.15	

Estimated Harvest

SPECIES	1990-91	1991-92	1992-93
RABBIT	143,602	80,092	98,837
SQUIRREL	145,678	118,821	109,054

SPECIES	1990-91	1991-92	1992-93
HARE	2,404	1,569	1,366
RACCOON	21,202	19,673	16,773
RED FOX	546	1,009	765
GRAY FOX	219	56	328
GROUSE	51,364	28,136	32,017
PHEASANT	11,912	10,257	7,594
WOODCOCK	7,798	2,578	3,442
DUCKS	16,065	7,791	6,939
GEESE	11,694	5,044	3,825
CROW			13,113
FROGS	32,239		
WOODCHUCK		130,815	

*WMU (Wildlife Management Unit) 35 includes all of Allegany, Chautauqua and Cattaraugus and Wyoming Counties and parts of Erie, Genesee, and Livingston.

*New York State DEC
1995-96 Trapper Survey
WMU 35* Estimated Harvest*

SPECIES	SAMPLE TAKE	STANDARD ERROR	ESTIMATED HARVEST	UPPER & LOWER CONFIDENCE LIMIT		½ 80% C.I.	% ERROR	ESTIMATED INCIDENTAL HARVEST
MINK	268	0.0297	867	1,102	632	235	27.14	94
RACCOON	650	0.0608	2,102	2,584	1,621	482	22.90	204
SKUNK	130	0.0173	420	558	283	137	32.59	362
OPOSSUM	339	0.0313	1,097	1,344	849	248	22.61	718
MUSKRAT	3,134	0.2746	10,137	12,312	7,962	2,175	21.45	181
RED FOX	304	0.0307	983	1,226	740	243	24.73	10

SPECIES	SAMPLE TAKE	STANDARD ERROR	ESTIMATED HARVEST	UPPER & LOWER CONFIDENCE LIMIT		½ 80% C.I.	% ERROR	ESTIMATED INCIDENTAL HARVEST
GRAY FOX	110	0.0137	356	464	247	109	30.50	6
BEAVER	462	0.046	1,494	1,859	1,130	364	24.38	0

Estimated Harvest

SPECIES	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	VS. 5-YR AVE.
MINK	1,179	1,509	1,148	757	2,221	867	DOWN
RACCOON	2,781	3,122	3,342	2,176	2,978	2,102	DOWN
SKUNK	405	626	194	236	580	420	UP
OPOSSUM	2,489	2,581	1,068	917	1,057	1,097	DOWN
MUSKRAT	13,166	16,387	11,327	13,624	17,151	10,137	DOWN
RED FOX	1,393	1,201	535	785	1,820	983	DOWN
GRAY FOX	929	494	256	247	464	356	DOWN

*WMU (Wildlife Management Area) 35 includes all of Chautauqua County.

*Deer Harvest For 10-Year Period
Towns of Arkwright, Charlotte and Cherry Creek
Which Includes the Boutwell Hill Management Unit*

YEAR	TOWN OF ARKWRIGHT	TOWN OF CHARLOTTE	TOWN OF CHERRY CREEK
1987	326	278	422
1988	253	226	368
1989	325	224	339
1990	329	233	379
1991	263	248	306
1992	231	231	292
1993	206	191	289
1994	105	87	146
1995	121	102	127
1996	213	183	216

*Beaver and Coyote Take By Town
Which Includes the Boutwell Hill Management Unit*

YEAR	ARKWRIGHT		CHARLOTTE		CHERRY CREEK	
	BEAVER	COYOTE	BEAVER	COYOTE	BEAVER	COYOTE
1993	2	0	1	0	8	0
1994	10	0	0	0	26	0
1995	0	0	1	0	22	0

MAPS

- #1 *Boutwell Hill State Forests with Trails*
- #2 *Chautauqua State Forests #1 & #7
Uneven-aged Forest*
- #3 *Canadaway Creek WMA
Uneven-aged Forest*
- #4 *Canadaway Creek WMA with Trails*
- #5 *Canadaway Creek WMA
Oil & Gas Leasing*
- #6 *Chautauqua State Forest #1 Inventory Mosaic*
- #7 *Chautauqua State Forest #7 Inventory Mosaic*
- #8 *Canadaway Creek WMA Inventory Mosaic*

GLOSSARY OF TERMS

ACCESS TRAILS - may be permanent, unpaved and do not provide all-weather access within the Unit. These trails are originally designed for the removal of forest products and may be used to meet other management objectives such as recreational trails. These trails are constructed according to Best Management Practices.

ALLEGHENY HARDWOODS - Second and third-growth forests that originated following extensive commercial clearcutting during the railroad logging era of 1890 to 1930. They are generally considered to be even-aged stands composed primarily of black cherry, red maple, sugar maple and white ash.

ALLOWABLE CUT - The amount of wood fiber that may be harvested annually or periodically from a specified area over a stated period in accordance with the objectives of management (Hudson Highlands UMP).

BASAL AREA - The cross sectional area of a tree at breast height, measured in square feet (Forestry Handbook, 2nd Edition, 1984, p.287). For a stand: the total basal area per unit of area, usually expressed as square feet per acre ("Silvicultural Systems For The Major Forest Types of The United States", USDA Ag. Hndbk. #445, 1973, p.103).

BASEMENT ROCK - Igneous or metamorphic rock lying below the sedimentary formations in the earth's crust. Basement rock does not contain petroleum deposits.

BIOMASS - The total quantity, at a given time, of living organisms of one or more species usually expressed in weight per unit area ("Silvics of North America," USDA Ag. Hndbk. #654, 1990, vol. 1, p.635).

BIOLOGICAL DIVERSITY - 1. The diversity of life in all its forms and levels of organization (Hunter, Malcolm, "Wildlife, Forests and Forestry", 1990, p.28). 2. The variety and variability among living organisms and the ecological complexes in which they occur ("Technologies To Maintain Biological Diversity", U.S. Congress, Office of Technology Assessment 1987, p.313) .

BOARD FOOT - A piece of lumber 1 inch thick, 12 inches wide, and 1 foot long, or its equivalent (Forestry Handbook, 2nd edition, 1984, p.254).

BUFFER ZONE - Areas on the edge of protected areas that have land-use controls and allow only activities compatible with protection of the core area ("Technologies To Maintain Biological Diversity", U.S. Congress Office of Technology Assessment, 1987, p.313). Can be uncut strips along streams or bodies of water, screens along travel corridors, etc.

CANOPY - The more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees ("Silvics of North America", USDA Ag. Hndbk. #654 Vol. 1 p.636).

CAVITY TREES - Trees containing an excavation sufficiently large for nesting, denning or shelter; tree may be alive or dead (Chambers).

CLEARCUT - 1. A method of regenerating an even-aged stand in which a new age class develops in a fully exposed microclimate after removal, in a single cutting, of all trees in the previous stand. Regeneration is from natural seeding, planted seedlings, and/or advance regeneration. Harvesting may be done in groups, patches or strips (SAF Silviculture Working Group, Silviculture Terminology 1993). 2. The cutting method in which the entire stand is removed in one cutting, reproduction obtained artificially, or by natural seeding (Forestry Handbook, 2nd Edition, 1984 p.418). 3. The harvesting in one cut of all trees on an area for the purpose of creating a new, even aged stand ("Silvicultural Systems for the Major Forest Types of the United States", USDA Ag. Hndbk. #445, 1973, p.2). 4. The cutting method in which all the trees in the stand are removed in one cutting, reproduction obtained artificially or by natural seeding, resulting in a new, even aged stand (combination of 2 & #3).

CLIMAX FOREST - 1. A plant community that represents for its locality and its environment the culminating stage of natural succession ("Silvicultural Systems for the Major Forest types of the United States", USDA Ag. Hndbk. #445, p.103). 2. The culminating stage in forest succession, where the vegetation has reached a highly stable condition. It is self perpetuating and in equilibrium with the environment. A climax forest will persist until a disturbance upsets the equilibrium (Brookfield Draft UMP).

COARSE WOODY DEBRIS - Large decaying tree trunks and stumps on the forest floor.

CONIFER- A cone bearing evergreen tree or shrub (Random House Dictionary).

COPPICE METHOD - Refers specifically to a stand originating primarily from sprouts; the means of regenerating such forests is called the coppice or sprout method (Smith, David, "The Practice of Silviculture" 1962, p. 515).

CULTURAL RESOURCES - Any building, structure, district, area, site or object including underground and underwater sites, that is of significance in the history, architecture, archaeology or culture of the state, its communities or the nation (New York Code Rules and Regulations title 9 part 426.2).

CUTTING INTERVAL - The number of years between harvest/regeneration cuts in a stands using the uneven-aged system.

DECIDUOUS - Falling off or shed seasonally or at a certain stage of the development in the life cycle (Webster's Ninth Collegiate Dictionary, 1991).

DEN TREE - A tree in which a cavity has formed from internal decay and which may be used for nesting, rest and/or protection by various wildlife species (Hunter, Malcolm "Wildlife Forests, and Forestry", 1990, p.161-162).

DIAMETER AT BREAST HEIGHT (DBH) - The diameter of a tree measured at 4.5' above ground level ("Forestry Handbook" 4th Edition, p.281).

ECOSYSTEM - 1. An ecological community together with its physical environment, considered as a unit ("Technologies To Maintain Biological Diversity", U.S. Congress, Office of Technology Assessment, etc. p.314). 2. All the interacting populations of plants, animals and microorganisms occupying an area, plus their

physical environment (Hunter, Malcolm, "Wildlife Forests, and Forestry", 1990, p.15).

ECOSYSTEM MANAGEMENT - 1. Management decisions that are ecologically responsible, economically viable and socially acceptable (Comanor, Joan, "Ecosystem Based Management at the Public-Private Land Interface", 11/93, USDA FS). 2. 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. (Gelburd, Diane "Implementing Ecosystem-Based Assistance for The Management of Natural Resources in the Soil Conservation Service", USDA SCS). 3. Focuses on the condition of the forest, with goals of maintaining soil productivity, gene conservation, biological diversity, landscape patterns, and the array of ecological processes. Ecosystem management recognizes that natural disturbance regimes and ecosystem processes provide the basic blueprint for a sustaining pattern and process across the landscape. Management practices are sought that reflect (not duplicate) these landscape patterns and ecosystem processes (SAF Task Force Report on Sustaining Long Term Forest Health and Productivity, 1992).

ENDANGERED - Native plants (and animals) in danger of extinction throughout all or a significant portion of their ranges within the state and requiring remedial action to prevent such extinction (NYCRR Title 9 part 193.3).

EVEN-AGED - A class of forest or stand composed of trees of about the same age. The maximum age difference admissible is generally 10-20 years ("Silvicultural Systems for the Major Forest Types of the United States", USDA Ag. Hndbk. #445, p.103).

EVEN-AGED STAND - A stand of trees containing a single age class in which the range of tree ages is usually less than 20 percent of rotation (SAF Silviculture Working Group, Silviculture Terminology, 1993).

EXOTIC - An organism that exists in the free state in an area but is not native to the area ("Technologies to Maintain Biological Diversity", U.S. Congress Office of Technology Assessment 1987 p.314).

FOREST - 1. Communities formed by trees with a canopy cover of at least 61 percent or more at maturity, with tree crowns usually interlocked ("Ecological Communities of New York State" N.Y. Natural Heritage Program, 1990, p.81). 2. A collection of stands administered as an integrated unit (Smith, David "The Practice of Silviculture", 1962, p.18).

FOREST SUCCESSIONAL STAGES - The various stages of forest stand growth and development ranging from seedling sapling to mature trees (Between Fords UMP).

FRAGIPAN - A loamy, brittle subsurface soil low in porosity and organic matter, appears cemented and restricts roots. When dry, it is hard or very hard; when moist, it tends to rupture suddenly under pressure (soil survey of Chautauqua County).

FRAGMENTATION - The act or process of breaking into fragments. Forest fragmentation refers to a forested area being modified to have a great variation of stand sizes, structures and composition. Forest fragmentation can result from management actions and be impacted by natural occurrences or manmade features (Between Fords UMP).

GREEN TREE RETENTION - Retention of living trees on cut over areas for goals other than regeneration. These residual trees create higher levels of stand diversity, moderate the microclimate of the site and provide continuity of habitat for plant and animal species between uncut forest areas. Differs from a shelterwood because these residual trees are not cut after regeneration is established, but during the next rotation.

HARDWOOD - Broad-leafed trees, deciduous. Also refers to the wood produced by these trees.

HAUL ROADS - Permanent, unpaved roads but not designed for all-weather travel. They are constructed primarily for the removal of forest products and provide only limited access within the Unit. As such, these roads may or may not be open for public use. The standards for these roads are those of Class C roads as provided for in the Forest Road Handbook.

LOG LANDING - A place where logs are assembled for transportation.

MULTIPLE USE - A strategy of deliberate land management for two or more purposes which utilizes, without impairment, the capabilities of the land to meet different demands simultaneously (SAF).

NATURAL STAND - A stand established and recreated by the germination of seeds from natural sources or other natural vegetative methods (i.e. sprouting from root systems).

NATURALIZED - Describes species that were introduced into New York State by human activities, and are successfully established and reproducing naturally without cultivating ("Ecological Communities of New York", New York Natural Heritage Program, 1990, p.83).

NORTHERN HARDWOODS - Largely composed of sugar maple, American beech, yellow birch and other climax species with subclimax species in associations. These hardwoods are generally shallow rooted, long-lived and adapt well to uneven-aged management.

OLD GROWTH FOREST - No universally accepted definition exists, however, old growth stands would have these characteristics: large trees; dead snags; downed logs; broken, multiple-layered canopy; and community would be in an advanced or "climax" successional stage.

OVERSTORY - That portion of the trees in a forest of more than one story forming the upper or uppermost canopy layer. ("Silvics of North America", USDA Ag. Hndbk. #654, p.641).

PIONEER - A plant species capable of invading bare sites (newly exposed soil surface) and persisting there until supplanted by successor species ("Silvicultural Systems for the Major Forest Types of the United States", Ag. Hndbk. #445, p.104).

PLANTATION - A forest established by planting of seeds or seedling trees.

POLETIMBER - Generally, trees 6-11" in DBH.

PRESCRIBED FIRE - The intentional setting of forest land on fire under carefully controlled conditions to achieve a vegetative or wildlife management goal adhering to a written and approved prescribed fire burn

plan (NYCRR 194).

PUBLIC FOREST ACCESS ROADS - Permanent, unpaved roads marked as motor vehicle trails. They may be designed for all-weather use depending on their location and surfacing. These roads provide primary access within the Unit. The stands for these roads are those of the Class A and Class B access roads as provided for in the Forest Road Handbook.

RARE - Native plants that have from 20 to 35 extant sites or 3,000 to 5,000 individuals statewide (NYCRR Title 9 Part 193.3).

REASONABLE DEVELOPMENT - The drilling of at least one gas well for every 320 acres of the lease that is available and expected to be productive.

REGENERATION/REPRODUCTION - The act of replacing old trees, either naturally or artificially. Also refers to the new growth that develops (Smith, David "The Practice of Silviculture", 1962, p.10).

RELATIVE DENSITY - An index of crowding for forest stands. It is expressed as the ratio of absolute density (number of trees or basal area per acre) to the density of a stand the same size and species composition at maximum density (i.e. an undisturbed stand).

RELEASE - Freeing a tree or group of trees from more immediate competition by cutting or otherwise eliminating growth that is overtopping or closely surrounding them ("Silvicultural Systems for the Major Forest Types of the United States", Ag. Hndbk. #445, p.104).

RIPARIAN - Related to, living, or located on the bank of a natural watercourse, usually a river or stream, sometimes a lake or tidewater ("Technologies to Maintain Biological Diversity", U.S. Congress Office of Technology and Assessment, 1987, p.315).

ROTATION - The period of years required to grow a crop of timber to the optimum size or age (economic or natural maturity) (Smith, David, "The Practice of Silviculture", 1962, p.5).

SALVAGE CUTTING - The harvest of dead, dying, damaged, or deteriorating trees primarily to put the wood to use before it loses its economic value.

SAPLING - Generally, trees 1" to 5" in DBH.

SAWTIMBER - Generally, trees 12" and larger in DBH.

SEEDLING - A tree grown from seed, generally describes a young tree before it reaches the sapling stage. Also, in nursery practice, a tree that has not been transplanted in the nursery (Forest Terminology, SAF).

SEED TREE CUT - 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 (Smith, David "The Practice of Silviculture", 1962 p.354,421).

SELECTION CUT - 1. The removal of the mature timber, usually the oldest or largest trees, either as single

scattered individuals or in small groups at relatively short intervals, repeated indefinitely, by means of which the continuous establishment of reproduction is encouraged and an uneven-aged stand is maintained (Smith, David "The Practice of Silviculture, 1962" p.355).

2. The removal of trees over the entire range of size classes either singly or in groups at relatively short intervals, resulting in continuous establishment of reproduction, and the perpetuation of an uneven aged stand. Individual trees are chosen for removal due to their maturity, because they are of poor quality or thinning is needed to improve the growth rate of the remaining trees.

SELECTION METHOD - An uneven aged management method which removes the mature and immature trees either singly or in groups at intervals. Regeneration is established almost continuously.

SHELTERWOOD METHOD - An even-aged management method which removes the mature stand in a series of cuts. Regeneration of the new stand occurs under the cover of a partial forest canopy.

SHELTERWOOD CUT - The removal of the mature timber in a series of cuts which extend over a relatively short portion of the rotation, by means of which the establishment of essentially even-aged reproduction under the partial shelter of seed trees is encouraged (Smith, David "The Practice of Silviculture", 1962 p.354).

SILVICS - The life history and general characteristics of forest trees and stands, with particular reference to environmental factors (SAF Forest Terminology, 1958 p.77).

SILVICULTURE - The art of producing and tending a forest; the application of knowledge of silvics in the treatment of a forest; the theory and practice of controlling forest establishment, composition and growth (Smith, David "The Practice of Silviculture," 1962, p.1).

SITE PREPARATION - The reduction of competing vegetation, the removal of physical obstacles and the drainage of water toward or away from the planted trees, prior to replanting (Smith, David "The Practice of Silviculture", 1962, p.269).

SKID TRAIL - The trail used to drag, or skid, trees from the stump to the log landing.

SNAGS - Dead trees with or without cavities: functions as perches, foraging sites and/or a source of cavities for denning, roosting and/or nesting (Between Fords UMP).

SOFTWOOD - Needle bearing trees (see conifer). Also refers to the lumber derived from these trees.

SPECIAL CONCERN - Native plants and animals which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. These species could become threatened or endangered in the future and should be closely monitored.

STAND - A contiguous group of trees sufficiently uniform in species composition, arrangement of age classes, and condition to be a homogenous and distinguishable unit (Smith, David, "The Practice of Silviculture", 1962, p.18).

STATE FOREST - STATE REFORESTATION AREA - Lands owned by the State of New York,

administered by the Department of Environmental Conservation and authorized by Environmental Conservation Law to be devoted to the establishment and maintenance of forests for watershed protection, the production of timber and other forest products, and for recreation and kindred purposes. These forests shall be forever devoted to the planting, growth and harvesting of such trees (Title 3, Article 9-0303 ECL).

STRUCTURE - The spatial arrangement of vegetation layers within a community (Ecological Communities of New York", New York Natural Heritage Program, 1990, p.85).

SUCCESSION - The gradual supplanting of one community of plants and animals by another ("Silvicultural Systems for the Major Forest Types of the United States", USDA Ag. Hndbk. #445, 1973, p. 105).

SUSTAINABLE - Meeting of the needs of the present without compromising the ability of future generations to meet their own needs (Minnesota Forest Resources Council, Chapter 89A).

SUSTAINED YIELD - 1. The achievement and maintenance in perpetuity of a reasonable regular periodic output of the various renewable resources without impairment of the land's productivity (Chambers, Robert "Integrating Timber and Wildlife Management Handbook", chapter 1, p 1-2). 2. The continuous production with the aim of achieving, at the earliest practicable time, an approximate balance between net growth and harvest, either by annual or somewhat longer periods (SAF Forest Terminology, 1958, p.96).

THINNING - A cutting made to reduce stand density of trees primarily to improve growth, enhance forest health or to recover potential mortality (SAF Silviculture Working Group -Silvicultural Terminology 1993).

THREATENED - Native plants (and animals) that are likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges in the state (NYCRR Title 9 part 193.3).

TIMBERSTAND IMPROVEMENT (TSI) - Precommercial thinning of forest stands, intended to control stand density and species composition while improving stand quality and fostering individual tree health and vigor.

TOP LOPPING - The cutting of limbs from the tops of felled trees to a specified height above the ground to reduce fire danger, speed up the decaying process of the logging debris, and/or to improve the appearance of the stand.

UNDERSTORY - Generally, those trees and woody species growing under an overstory ("Silvicultural Systems for the Major Forest Types of the United States", USDA Ag. Hndbk. #445, 1973, p. 105).

UNEVEN-AGED STAND - A stand which contains at least three age classes intermingled intimately on the same area (Smith, David, "The Practice of Silviculture", 1962,. p.13).

UNEVEN-AGED - A class of forest or stand composed of intermingled trees or groups of trees that differ markedly in age ("Silvicultural Systems for the Major Forest Types of the United States", USDA Ag. Hndbk. #445, 1973, p.105).

WATERSHED - Drainage basins or catchments which possess physical, chemical and biological properties

that give it a unique set of hydrologic characteristics (Forestry Handbook, 4th Edition, p.638) .

WATER QUALITY CLASSES - A system of classification set forth in ECL Articles 15 and 17 which presents a ranking 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 mans' usage (Between Fords UMP).

WETLANDS CLASSES - A system of classification set forth in ECL Article 24, section 664.5 which ranks wetlands I through IV based upon wetland function and benefits, I being the highest rank (DEC publication WM-P11, 6/80 & Between Fords UMP).

WILDLIFE MANAGEMENT AREA - Lands owned by the State of New York, administered by the Department of Environmental Conservation and managed by the Division of Fish and Wildlife for the purpose of wildlife habitat improvement and public recreation.

PUBLIC COMMENTS TO THE DRAFT PLAN

The Draft Boutwell Hill Unit Management Plan (UMP) was published in February 1998 and open to public comment until May 11, 1998. Copies of the draft UMP were available for public review at public libraries in Jamestown, Cassadaga, Stockton, Sinclairville, Ellington and Fredonia; and DEC Offices in Falconer, Olean and Buffalo. One hundred twenty (120) copies of the highlights of the Draft UMP were distributed to interested organizations, governmental agencies and individuals who had shown interest in the plan. A public meeting was held April 1, 1998 to receive verbal comments at the Cassadaga Valley Central School. All written and verbal comments were reviewed by DEC's Boutwell Hill UMP team members. The following list is a compilation of the comments and the staff's response in order of importance by category as determined by those in attendance at the public meeting using hot dots. The number of hot dots will follow each verbal comment. Written comments were included in this listing and are noted as such in each category. The [final] Boutwell Hill Unit Management Plan reflects DEC's review and consideration of the comments received.

**Hot
Dots**

PARKING AREAS

Comment: **The Meadows Road area needs more parking and access--it is presently insufficient.** 10

Response: Generally the money for improvement work comes from sales as a condition of each individual sale; otherwise, DEC lacks the money up front to deal with each case. Expansion of the parking lot will be considered along with cooperation with the Town of Arkwright to plow the snow for winter access.

Comment: **More parking areas are needed.** 2

Response: Informal parking areas are created as stated in the plan through the use of log landings--they could be graveled to a larger size.

Comment : Use log landings for hard surface parking areas. 1

Response: Informal parking lots are created through the forest management sales program as stated in the plan. Surfaces will be grass-covered gravel. Again, consideration will be given to creating larger areas.

FORESTRY MANAGEMENT

Comment : Commercial users must leave the area in a useable condition for recreational users. 9

Response: Every attempt is made to smooth and waterbar main skid trails following logging. Haul roads for harvest activities or gas and oil activities are graded, ditched and seeded as soon as possible. While conditions are not the same as before, it takes some time for disturbed ground conditions to normalize. Best management practices are followed, but not all evidence of disturbance can or will be erased.

Comment: Must leave recreational trails in a useable condition in logged areas, i.e., Armageddon section (Chautauqua 1). 5

Response: Sawtimber notices of sales generally state that recreational trails will only be crossed at designated places and that use of the trail will not be permitted. Occasionally a buyer does use a trail and damage is done between inspections to the sale area and before we can stop the practice. In this particular case, there were many trees dying due to insect and disease problems and there is a surface water problem associated with the poor internal soil drainage that seemed to be compounded by the disturbance and removal of trees.

Comment : Keep clear cuts small. 4

Response: The plan provides for doing less than five-acre cuts on Canadaway Creek WMA for diversity. Many game and non-game species need openings and an early successional habitat, i.e., warblers, other song birds and varying hare. In fact, some openings have the largest number and most diverse species composition.

Comment : Establish a experimental chestnut plantation. 4

Response: We have a regional plantation established and maintained by volunteers on Zoar Valley Multiple Use Area. The soils on the Boutwell Hill Management Unit are not conducive for growing chestnut trees and the open areas are being utilized for grassland management.

Comment :	Establish a buffer zone between cutting areas and private property.	2
Response:	Extra care is taken adjacent to private property. Harvesting contracts require that “no harvesting equipment or debris will be allowed on adjacent private property.”	
Comment :	Retain dead and dying trees for wildlife.	1
Response:	The plan reads that we will “strive to retain a minimum of five (5) snags per acre in sawtimber stands.”	
Comment :	Seed log landing areas.	0
Response:	Notice of sales require the log landings to be seeded and mulched upon completion.	
Comment :	Restrict the length of skidded logs.	0
Response:	This is done when necessary along with a width restriction to prevent more damage. Good skid trail lay out (BMPs) usually minimizes damage.	
Comment :	Managing for biological diversity may create too “small islands” for self-sustaining populations.	Written Comment
Response:	The seedling sapling-size class is being created in larger quantities than is being created by private landowners and in sufficient size and quantity to maintain self-sustaining populations. Some species respond well to this mosaic of habitat types and species such as ruffed grouse, woodcock, chestnut-sided warblers, towhees and varying hare need an early successional forest habitat.	t
Comment :	You are protecting against fires, insect and disease; they can, however, increase biodiversity by increasing habitat types.	Written Comment
Response:	It is part of the Department’s rules and regulations to protect against and attempt to prevent catastrophic destruction forces while acknowledging the possibilities of occurrences and making forestry salvage harvests where best.	t
Comment :	Only eastern hemlock and Norway spruce will be permitted to be re-established. I recommend leaving some small larch stands for board-winged and red-shouldered hawk nesting.	Written Comment
Response:	Conifer regeneration as addressed in the draft UMP will be through natural regeneration. Thus, hemlock and Norway spruce will be the predominate species. Others may regenerate and are welcome.	t

Comment : **Clearcutting should be done where judicious and necessary to regenerate a particular habitat or cover type.** Written Comment

Response: The plan calls for doing just that.

Comment : **It is important to educate the public that cutting of various types is necessary and economically prudent in order to affect total and comprehensive habitat management.** Written Comment

Response: This is an area that needs more time devoted to it. This UMP and other brochures that are distributed attempt to address this issue. The plan calls for more brochures as needed, press releases, walking tours, etc.

RECREATION MANAGEMENT

Comment : **Manage the whole area for recreation.** 5

Response: State Forests and Wildlife Management Areas are open to the public for most forms of recreation. However, every acre will not be developed and there is not a sufficient resource to satisfy every demand. Vehicular traffic is restricted to designated travelways. Informal camping is permitted throughout state forests and by permit on Canadaway Creek WMA.

Comment : **Create ATV and multipurpose trails.** 4

Response: An ATV trail was considered but deemed not appropriate for the management unit due to the number of conditions which preclude development, i.e., imperfectly drained soils, ownership patterns and highways. Much of the existing trail system is designated multipurpose.

Comment : **Use volunteers to establish and maintain trails.** 3

Response: DEC encourages volunteers and does use volunteers always under the direction of DEC staff, i.e., snowmobile and horse trails. Chautauqua County DPW, Parks Division, maintains the Eastside Overland Trail system.

Comment : **Create buffer zones between trails and private property.** 2

Response: When practical, trails are not located right adjacent to boundary lines, but from time to time they are best located there for short stretches as this is the best location. The public is not encouraged to trespass or encroach on private property.

WILDLIFE MANAGEMENT

Comment :	Set up blue bird boxes.	2
Response:	This is a great volunteer project under Adopt-A-Natural Resource as DEC lacks the human resources and funding to do all projects.	
Comment :	Establish a switch grass site.	0
Response:	There are 75 acres of grassland management on the unit. Switch grass is difficult and expensive to establish and maintain.	
Comment :	Timber cutting has contributed to the reduced densities of raptors, in particular, red-shouldered hawks.	Written Comment t
Response:	<p>The UMP takes into account the entire unit not just Canadaway Creek WMA where a high-quality habitat for ruffed grouse is the primary objective. The recommendations in the biodiversity report prepared for Canadaway Creek WMA in January 1998 will be applied to the entire unit which states:</p> <p>“Ideally, timber harvest and other potential disturbance-causing management activities would occur outside the critical portion of the breeding season, March through June. Where it is necessary to conduct management activities during the breeding season, application of guidelines that are in place at Allegany National Forest may be beneficial to red-shouldered hawk breeding success:</p> <p>C Prohibit disturbances within approximately 95m of each nest, except those necessary to protect the nest.</p> <p>C Prohibit significant changes in the landscape within approximately 190m of each nest.</p> <p>C Restrict management activities that result in adverse disturbance to nesting birds within 402m of each nest.”</p>	
Comment :	Consideration should be given to all wildlife species, game and non-game, in a complete wildlife/forestry plan for the unit.	Written Comment t
Response:	This is one of the goals of the plan through the various management styles, but it is difficult to manage for each and everyone.	

OTHER ISSUES

Comment	Canadaway Creek WMA needs to pay property taxes.	4
:		
Response:	This issue needs to be addressed for all wildlife management areas on a state wide basis as it is not just a Canadaway Creek WMA issue.	
Comment	Keep gates closed more .	2
:		
Response:	Gates on state forests are utilized to limit traffic during bad road conditions-- to close them would preclude public access and possibly incur vandalism. Wildlife Management Areas' gates are kept closed to protect habitats and are opened during the sporting seasons.	
Comment	Establish ginseng plantations .	2
:		
Response:	DEC neither has the means to do such nor could effectively control the potential vandalism. Also, ginseng occurs naturally on the area.	
Comment	Enhance public access to communicate with DEC.	1
:		
Response:	DEC personnel are available at the offices listed on the preface page of the UMP.	
Comment:	Build more ponds.	0
Response:	The best sites have been used. All the rest are marginal.	
Comment	Are bond act monies available for various projects?	Written Commen t
:		
Response:	Generally these monies are used for specific projects or land acquisition as predetermined.	