Salmon River Falls Unique Area
Unit Management Plan

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Preface

This Unit Management Plan for Salmon River Falls Unique Area has been developed by the New York State Department of Environmental Conservation (DEC) to provide a comprehensive management program for Salmon River Falls Unique Area. This 112-acre parcel is located in Oswego County in the Town of Orwell on the middle reaches of the Salmon River. The Salmon River Falls Unique Area has a breathtaking 110-foot waterfall and a spectacular river gorge making it a popular site for visiting tourists.

The Salmon River Falls Unit Management Plan addresses the management of this area for the next ten years, with a review and update provided in the tenth year. Unforeseen natural events or human impacts in the future may necessitate deviations from the plan. All deviations will require the approval of the DEC's Regional Forester, and may require additional public review and input.

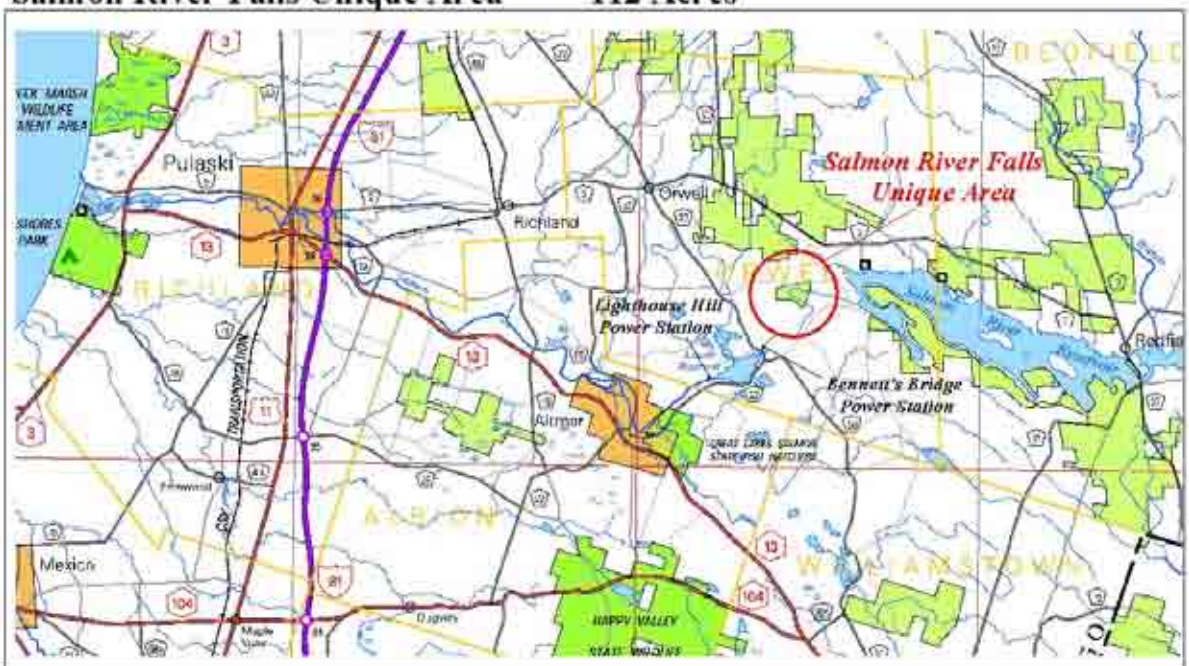
Introduction

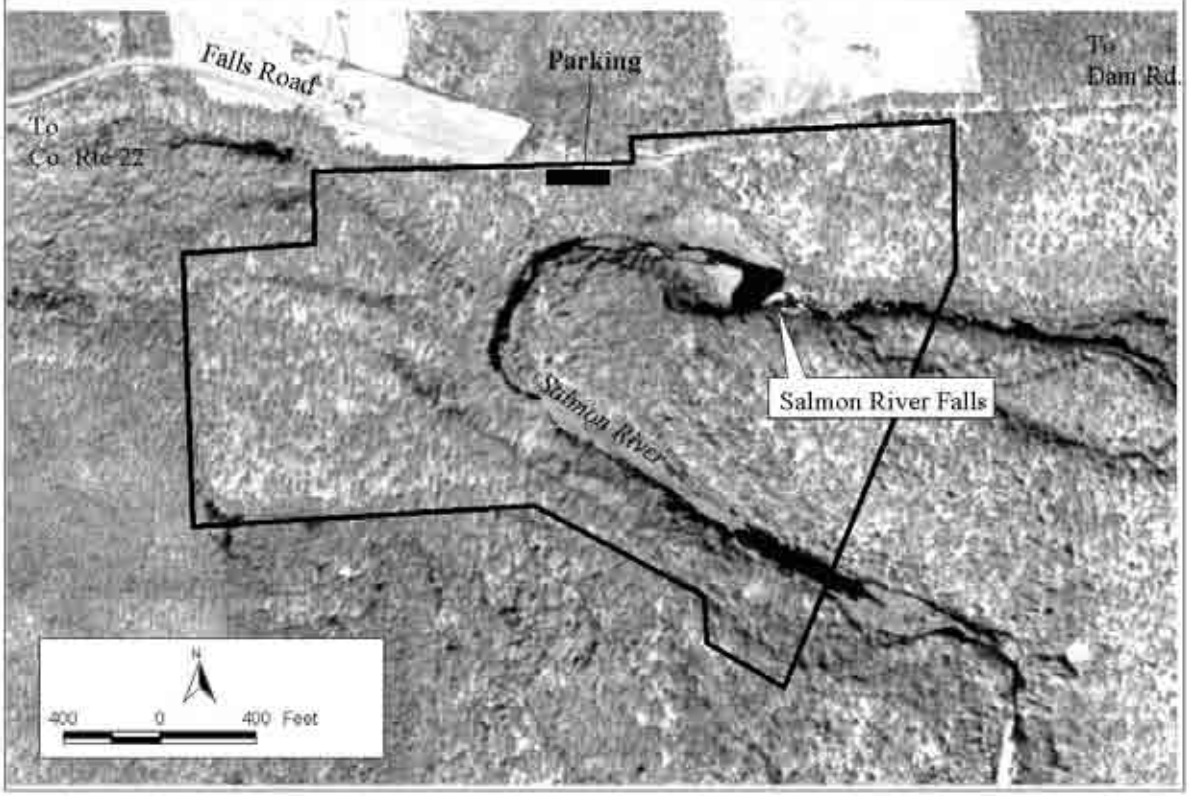
This document has been developed by the Department to guide future management of Salmon River Falls Unique Area. DEC's development of this plan is based on public input and principles of ecosystem management with the goal of providing safe, environmentally sound, and socially acceptable public use.

Public Input:
Public input has guided the development of this plan, beginning with a survey conducted in the Spring of 1995 by the Salmon River Greenway Committee (see Appendix B). This committee, comprised of representatives from local, county and state governments and the Tug Hill Commission, surveyed area residents and other interested parties to determine public sentiment regarding future development activities and land protection efforts in the Salmon River corridor. Over one thousand surveys were completed and returned. Characteristics of the river corridor that residents felt were extremely important were clean streams, pure groundwater and wells, wildlife habitat, open space, and the rural character. Recreation and tourism-related facilities were considered important, especially Salmon River Falls (Salmon River Corridor 1995 Citizen Survey Results, 1996).

Location Map Figure # 1.

Salmon River Falls Unique Area 112 Acres





History of the Salmon River Falls:
Prior to the arrival of Europeans, the Salmon River Falls was part of lands occupied by the Five Nations of Iroquois Indians. Human habitation of the Salmon River area was mostly seasonal for hunting and fishing purposes. The 110-foot-high Salmon River Falls, located nineteen miles upstream from the mouth of the river where it enters Lake Ontario, was the upstream barrier to fish migration, including the native Atlantic salmon. The Onondaga, Oneida, and Cayuga tribes of the Iroquois Nation utilized the falls as fishing grounds where they annually harvested Atlantic salmon. Although not documented it could be assumed that Euro-American settlers utilized the river directly below the falls to also harvest salmon.

Settlement of the Salmon River area started in the early 1800's. As transportation routes developed through what were once untouched forests, the Falls began to be frequented by local sightseers. By the mid 1800's, fishermen, hunters, and sightseers from outside the area began to visit the falls. Sportfishing for brook trout in the Salmon River above the falls was first documented in the 1860's by John Davidson, a Scottish immigrant and lawyer from New York City. Davidson eventually built a family hunting and fishing home/camp, called the "Braes," overlooking the East Branch of the Salmon River, approximately eight miles above the falls. Atlantic salmon runs to the base of the Salmon River Falls had ceased by the 1860's as development of mill dams in the lower Salmon River blocked upstream migration. From 1860 through 1888 the Cataract House, a tourist lodge and dancing establishment, was operated by Isaac N. Gurley near the falls. In 1896 a food and novelty stand was operated by E. E. Cable at the same location. (Martin,1984)

The history and use of the Salmon River and Salmon River Falls from the early to late 1900's was driven by the development of hydroelectric power facilities. The Salmon River Power Company, later to become Niagara Mohawk, harnessed the water power of the Salmon River for generating electricity. Their first step was to create Salmon River Reservoir in 1912 by damming the Salmon River above the falls. A 10,000 foot pipeline was built from the Salmon River Reservoir to the Bennett's Bridge powerhouse, creating a bypass around the falls. Throughout much of the summer, only leakage flows of 3 to 5 cubic feet per second were released to the falls section of the river. With little water flowing over the Salmon River Falls, the aesthetic value of the falls was diminished. Without the large consistent water flow over the falls, the area lost its tourist appeal and the numbers of visitors also diminished.

During the 1960's public use and associated social problems increased during Niagara Mohawk's ownership. These problems included, camping, drinking & drug use, graffiti and cliff diving. This was not attributed to management activities of Niagara Mohawk, but due to irresponsible behavior on the part of some users. Accidents at the Falls increased over the years, resulting in serious injuries and sometimes deaths. (Martin, 1984) The risk of injury was high for those involved in rescue or recovery attempts in the steep and slippery banks of the gorge. Niagara Mohawk allowed public access to the falls area but established restrictions against overnight camping and fires and eventually due to the increase in problems closed the area to the public.

For the past 90 years, Niagara Mohawk Power Company (NiMo) has been the predominant landowner of property along the Salmon River, upstream of Pulaski. In 1993, NiMo was directed by the New York State

Public Service Commission to divest all the land they owned along the Salmon River which was not essential to their core business of hydroelectric generation. As a response to this ruling, NiMo developed a comprehensive land management plan which has been guiding the sale of thousands of acres of property in the area. In 1993, the first phase of this plan was implemented when NiMo sold more than 1,700 acres of land and 13 miles of conservation easements and stream rights along the Salmon River to the DEC. The Salmon River Falls property was part of this purchase by the DEC. This purchase was made possible with funding from the R. K. Mellon Foundation and the Conservation Fund of Arlington, Virginia.

Another major change for Salmon River Falls came in 1996 when the Federal Energy Regulatory Commission renewed Niagara Mohawk's operations license. One highlight of this license renewal was a new requirement which directed NiMo to release specific minimal flow rates from the dam on the Salmon River Reservoir to the stretch of river that includes Salmon River Falls. This provision has enhanced the aesthetic beauty of the falls. (Prior to the establishment of the year round flow, the river bed and the falls were dry throughout much of the year.)

When the DEC began acquiring property along the Salmon River in 1993, one of the main goals was to develop a hiking trail along the river between Salmon River Reservoir and Pulaski. The development of this trail system known as the Salmon River Greenway Trail System has been strongly supported by the public. The trail work on this unit are the first efforts in developing the larger Greenway system on the Salmon River.

Since State ownership in 1993, the Salmon River Falls has become a popular destination spot for local families, fisherman and other individuals or families visiting the area throughout the year. Local businesses along with the county Promotion and Tourism Department have been advertizing the Salmon River Falls as a place to visit while enjoying the many other attractions found in Oswego County. Although no data is

Salmon River Falls Summer Flow

available, the development of the unit for public use has benefitted the local economy through eco-tourism.

To help improve the area the Department of Environmental Conservation has initiated several projects at Salmon River Falls as illustrated in Appendix A on Map #6. A hiking trail known as the *Upper Falls Trail* has been constructed from Salmon River Falls upstream along the bank of the river to its intersection with Dam Road. Oswego County's Youth Conservation Corps played a major role in the construction of this trail. A rustic stone stairway, referred to as the *Gorge Trail*, has been built into the river gorge below the falls. This trail improves access for visitors and rescue personnel. It was constructed by the Adirondack Mountain Club's trail crew in the Summer of 2000 under a contract with the DEC. A partnership has also been developed between the DEC and the Town of Orwell's Fire Department where DEC Forest Rangers have

provided rope rescue training for the volunteers. Much needed rescue gear has been provided to the fire department by the DEC and Brascan Power Corporation. The *Falls Trail,* which leads from the parking lot to the top of the falls, was upgraded to make it accessible for people with disabilities. Funding for this project was provided from several sources including Reliant Power Corporation and a grant under the Federal Highway Administration's recreational trails program, TEA-21.

In 1998 the DEC began the Salmon River Stewards Program. This program consists of seasonal employees, referred to as Salmon River Stewards. They serve as the Departments good will ambassadors on DEC administered properties in the Salmon River Corridor including State Forests, Unique Areas, Fishing Access sites, Conservation and Fishing Easements, and the Salmon River Fish Hatchery. The stewards are to promote environmentally sound recreational use and stewardship of New York's natural resources through public education instead of enforcement. They also help to keep the State areas free of litter, maintain signs and information literature as well as monitor public use. This program continues as funding is made available from the Department.

Information on the Area

Location:
The Salmon River Falls Unique Area is located in Oswego County in the Town of Orwell on Falls Road which runs between County Route 22 and Dam Road. It is located on the Salmon River, approximately halfway between its mouth on Lake Ontario and its headwaters in Lewis County. The center of the Area is at a latitude of 43 degrees 33minutes N and longitude of 75 degrees 56 minutes 24 seconds west. This property is 112 acres in size with its main attraction being a 110-foot waterfall and a spectacular gorge starting at the falls and running down stream approximately 3000 feet before leaving the property. Within the gorge there are sheer cliffs and steep slopes as high as 120 feet. The property is also positioned at the foothills of the Tug Hill Plateau between the Salmon River Reservoir (upstream) and the Lighthouse Hill Reservoir (downstream) (see Figure 1 on Page 2). (See Appendix A on Page 36 for copies of all maps.)

Climate:
The general climate of the Salmon River Fall's and surrounding area is representative of New York State and the northeastern United States, but its variability from other areas of the State can be attributed to its location directly east of Lake Ontario. The prevailing west winds, close proximity of Lake Ontario and being located at the base of the Tug Hill Plateau causes the areas weather to be greatly affected by what is termed as "lake effect". These conditions also have an influence on the precipitation, snow fall and temperatures in the local area.

The precipitation for the Tug Hill and western Adirondacks average annually in excess of 50 inches. The great bulk of the winter precipitation comes as snow. "Lake Effect" storms from Lake Ontario cause a great variation in snow fall even within relatively short distances. Maximum seasonal snowfall in the Tug Hill area averages more than 175 inches. Heavy snow squalls frequently occur, generating from 1 to 2 feet of snow and occasionally 4 feet or more. The temperatures of the area range from a low in January with a average mean of 16 degrees to a high in July with an average mean temperature of 81.7 degrees as reported by the National Climate Center. The average length of the freeze-free season in this area varies from 100 to 120 days per year.

Soils and Geology:
The Salmon River Corridor is characterized by relatively simple bedrock geology, with nearly all of the area being underlain by sedimentary rocks composed of sandstones, siltstones, shales, and limestones. The pattern of unconsolidated surface material deposited over the bedrock is complex due to the glacial history. Soils within the corridor, upstream from Interstate Route 81, are predominantly stony, medium to course textured, highly acid, and on glacial till derived from sandstone origin. The primary soils have been identified as Worth-Empeyville (WSC),(WRE); Colton-Hinckley (CHC, CHD, CHE); Naumburg (NGB), (NDB); Canaan (CAB) series (Soil Survey of Oswego County, 1981). See Appendix A, Map #2.

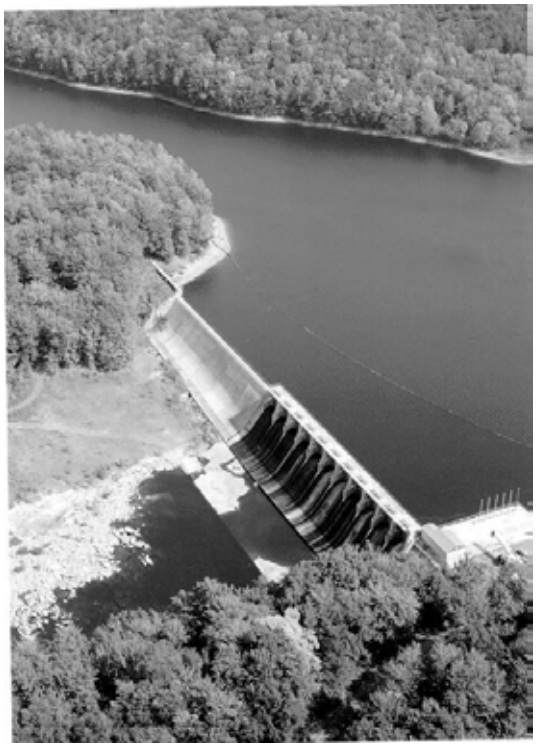
Two types of bedrock can be found on the Salmon River Falls Unique Area. The rock making up the cliff of the falls consists of Oswego sandstone. Sandstones are usually very hard and cannot be easily eroded. The rocks at the bottom of the falls consist of Pulaski shale. Shales are made of mud and silt which are much more prone to erosion. Over time, the soft shale has eroded away leaving the hard sandstone, creating the waterfall.

Water and Wetland Resources:
The headwaters of the Salmon River originate in Lewis County on the southwestern slope of the Tug Hill Plateau at an elevation of 1,800 feet. Flowing westerly over the Falls at an elevation of 850 feet, the river continues over the Erie-Ontario lowlands and enters Lake Ontario at an elevation of 250 feet above sea level. Total drainage of the watershed is 285 square miles, with the main stem of the river being 44 miles long (see Appendix A, Map #3 on Page 39).

The Tug Hill aquifer is one of the largest and most productive aquifers in New York State. This aquifer, stretching from Watertown in the north to Camden in the south, passes through the Salmon River Corridor. Aquifers store large amounts of water and are important sources of quality groundwater.

The Salmon River basin consists of headwater tributaries, two reservoirs, the falls, and the main stem and its tributaries below the reservoirs. The average annual flow of the Salmon River is 560 cubic feet per second (cfs) with June to August flows of about 150 cfs. The tributaries above and below the reservoirs are considered high quality cold-water fisheries and provide both naturally reproducing and stocked populations of trout. Native brook trout are found in the headwater streams above the Salmon River Reservoir along with naturalized and stocked rainbow and brook trout. The main stem of the Salmon River below Lighthouse Hill Reservoir is the largest cold-water tributary entering Lake Ontario and is renowned for its migratory runs of introduced Pacific salmon, steelhead and brown trout, along with reintroduced native Atlantic salmon.

The Salmon River Reservoir was created in 1912 as a hydroelectric project. The reservoir is six miles long with a capacity of 56,000 acre-feet of water. The 171-acre Lighthouse Hill Reservoir (also know as Lower Reservoir) is one mile long. The 110-foot-high scenic Salmon River Falls lies between Salmon River Reservoir and Lighthouse Hill Reservoir.



Salmon River Reservoir Dam

Water flow from the Salmon River Reservoir travels primarily through the pipeline to the Bennett's Bridge power station for the purpose of generating electricity. The Federal Energy Regulatory Commission regulates this flow as well as the minimum flows over the falls by a licensing agreement know as the FERC License. This license requires minimum flow rates allowed downstream. The portion of this license that pertains to the river in the area of the Salmon River Falls is as follows:

- Minimum flow rate over the falls from July 1st to September 30th shall not be less than 20 cubic feet per second (cfs) or 9000 gallons per minute .
- Minimum flow rate over the falls from October 1st to June 31st shall not be less than 7 cfs or 3150 gallons per minute.

The minimum flow rates for this section of the Salmon River are established to provide an adequate flow of water over the falls for aesthetic purposes. Flow rates over the falls can vary from 7 cfs at its minimum to 10,000 cfs during a high water release. During flooding conditions in 1985, the flow rate over the Salmon River Reservoir dam and the falls was estimated at 29,000 cfs. (Murphy, 2002)

High Water Release from

Salmon River Dam

There are no recreational water releases for this section of the river but there are significant releases in the event of high water at the Salmon River Reservoir. When a high water release occurs, flow rates over the falls can increase dramatically in a short period of time. Due to this quick increase in flow, the power company makes every effort to release water after dark to minimize risks associated with people in the river. In emergencies it is not always possible to release at night and releases are then done during daylight hours.

The Salmon River is classified under Title 5 of Article 15 of the NYS Environmental Conservation Law as a "C(t)" stream. This "C(t)" classification referred to as a "protected stream" is subject to the stream protection restrictions of the Protection of Waters regulations. The section of the Salmon River which runs through the unit is approximately 3/4 of a mile in length.

The unit also contains a small portion of a freshwater protected wetland found in the north western corner of the property. The wetland designated as Orwell - 19, classified Class II, is 24 acres in size with only .30ths of an acre being located on the unit. This wetland is regulated under Article 24 of the Freshwater Wetland Act.

Vegetation:
Four distinctly different plant communities are found on Salmon River Falls Unique Area (see Appendix A, Map #4). They are Northern hardwood, hemlock, shale talus slope woodland, and shale cliff and talus slope communities. A description of each community is listed below as detailed in the Natural Heritage publication " Ecological Communities of New York State" (Reschke 1990).

Northern Hardwood Plant Community - 67 acres
The northern hardwood plant community is dominated by deciduous hardwood tree species. Major species include sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), American beech (Fagus grandifolia), yellow birch (*Betula alleghaniensis*), black cherry (Prunus serotina), white ash (*Fraxinus americana*) and red oak (*Quercus rubra*).

The vegetative understory on the forest floor is made up of tree seedlings, shrubs and herbaceous plants. Understory composition varies substantially at different sites; however, witchhobble (*Viburnum alnifolium*), currant (*Ribes glanulosum*), bramble (*Rubus pubescens*), mountain maple (*Acer spicatum*), striped maple (*Acer pennsylvanicum*), dogwood (*Cornus alternifolia*) and yew (*Taxus canadensis*) are present throughout as shrub components. The most common herbaceous species include: evergreen woodfern (*Dryopteris spinulosa*), Christmas fern (*Polystichum acrostichoides*), wood sorrel (*Oxalis montana*), bunchberry (*Cornus canadensis*), club moss (*Lycopodium spp.*), Canada mayflower (*Maianthemum canadense*), goldthread (*Coptis groenlandica*), Indian cucumber root (*Medeola virginiana*), partridge berry (*Mitchella repens*), star flower (*Tiarella cordifolia*), trout lily (*Erythronium americanum*), white trillium (*Trillium grandiflorum*), wild ginger (*Asarum canadense*), leak (*Allium tricoccum*), and mayapple (*Podophyllum peltatum*).

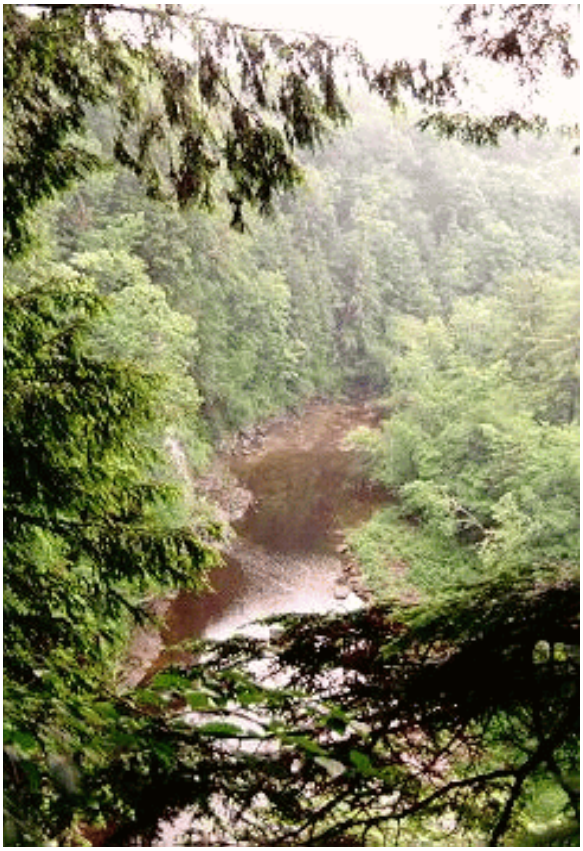
Hemlock Plant Community - 9 acres
The hemlock type is dominated by coniferous tree species with a mix of northern hardwood species. Major tree species include eastern hemlock (*Tsuga canadensis*), eastern white pine (*Pinus strobus*), red maple (*Acer rubrum*), American beech (Fagus grandifolia), and yellow birch (*Betula alleghaniensis*).

The vegetative understory in this plant community contains most of the same species listed in the northern hardwood community, however, the plants are not nearly as dense as they are in the hardwoods. In some of the pure hemlock portions of the community, the forest floor is devoid of any plant life. A small portion (0.3 ac) of this community type is designated as a Class II freshwater wetland. This area of the hemlock type surrounds the wetland as it drains to the river.

Shale Talus Slope Woodland Community - 19 acres
The shale talus slope woodland community, found on the banks of the gorge, can be described as a steep slope of various sized rocks and soil with small patches of woodland adjacent to cliffs. The overstory cover consists of mainly hemlock and northern hardwood species with 60% cover

of trees over 20 feet tall, approximately 40% cover of stunted trees and shrubs under 20 feet tall. In the understory 30 to 40% is populated by herbs and approximately 5 to 10% with bryophytes. This community has been ranked by the Natural Heritage Program having a Global Rank of G4 (apparently secure globally but might be rare
in parts of its range) and a State Rank of S3 (typically 21-100 occurrences, limited acreage, or miles of stream in New York State). This community is unprotected in New York State.

View of the Gorge Below the Falls



Shale Cliff and Talus Community - 6 acres

The shale cliff and talus community is located in the steepest portions of the gorge. It can be described as sheer cliffs with loose or falling rocks, with a sloping bottom of rock debris. On the cliff face are ledges that may have some soil and plant growth. The area is wet, sparsely vegetated with approximately 50% total cover of vegetation. Herbs have a total cover of approximately 40%. The most abundant herbs are flat-top aster (*Aster umbellatus*), American grass of parnassia (*Parnassia glauca*), and Bladder ferns (*Cystopteris*). Some other common plants found in the community are the bigelows sedge (*Carex bigelowii*) and clear-weed (*Pilea fontana*). This community has been ranked by the Natural Heritage Program having a Global Rank of G4 (secure globally but might be rare in parts of its range) and a State Rank of S3 (typically 21-100 occurrences, limited acreage, or miles of stream in New York State). This community is unprotected in New York State.

Birds-eye primrose (*Primula mistassinica*) and yellow mountain saxifrage (*Saxifraga aizoides*) are two uncommon plants located within the Shale Cliff and Talus Slope Community. These plants can be described as small ferns which grow on the small ledges and steep banks of the gorge. These plants have been ranked by the Natural Heritage Program (see Appendix C), having a Global Rank of G5 (demonstrably secure globally but might be quite rare in parts of its range) and a State Rank of S2 (typically 6-20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrable making it very vulnerable in New York State). These plants are considered threatened under State law but are not considered threatened under the more well-known Federal Endangered Species Act. Because these plants grow on such limited sites, there is little that can be done to increase their populations, however,

protection is needed to limit human impact. The current population and its habitats are threatened by disturbances related to rock climbing.

The remaining 11 acres of the property include 10 acres of the river bed and 1 acre of the parking area. The river bed of the Salmon River contains no sustainable amount of vegetation due to the scouring from high water releases from the hydro facility.

Wildlife:
Given the rural setting of this property, there are many opportunities for visitors to view wildlife. It is not unusual to see wild turkeys, osprey, bald eagles and deer while visiting the falls. A more comprehensive listing of the birds, mammals, reptiles and amphibians associated with this property can be found in Appendixes D & E. A bald eagle monitoring program in 1996 found that the eagle used the gorge area of the unit for roosting during the night. They then would spend their days hunting for food in the lower reaches of the Salmon River and Oswego River where there was open water.

Fisheries:
Historically, the 110-foot-high Salmon River Falls was the natural barrier to Atlantic salmon migrating upstream from Lake Ontario. Today, the two-mile section of the river below the falls is not accessible to any migratory fish species from Lake Ontario, having been blocked by the dam at Lighthouse Hill Reservoir. This section of the river is now referred to as the bypass reach. There are no fish stocked in the bypass reach, nor is it managed to provide a fishery by the NYSDEC. The Lighthouse Hill Reservoir downstream of the falls, which the bypass empties into, is stocked annually with rainbow trout.

A stream fish assemblage and habitat study was conducted in the bypassed reach of the Salmon River below Salmon River Falls in July 2001 by the United States Geological Survey's Tunison Laboratory of Aquatic Science in cooperation with NYSDEC. Of the five sites surveyed, three sites were located directly below the plunge pool at the falls downstream to the first major bend in the river. The other two sites were located in the river above County Route 22 at Bennett's Bridge and Lighthouse Hill Reservoir. For a map of the survey sites, see Appendix A, Map #5. The streambed consists of large cobble and boulders interspersed with extensive bedrock below the falls. The Bennett's Bridge site is composed of expansive cracked bedrock and large boulders. High gradient and high flushing volume of water during spring runoff most likely contributes to the scoured bedrock sections in this part of the river. Gradient and flow were considered good when the sites were sampled. Water temperatures at the three sites below the falls ranged from 64 to 68 degrees Fahrenheit and 68 to 73 degrees Fahrenheit at the Bennett's Bridge sites. Oxygen levels at all sites were good. Diversity was relatively high with 19 species present. Small minnows of demersal species dominated the assemblage. No game species accounted for more than 2% of the total sample collected. Only one young rainbow trout was observed in the sampled sites. Crayfish were abundant which generally seems to be associated with poor salmonid abundance. (McKenna, 2001) A more comprehensive listing of the USGS Tunison Laboratory's study conducted by Jim McKenna can be found in Appendix F.

Fishing potential of the river below Salmon River Falls to Bennett's Bridge is extremely limited. The scouring effect on the

streambed has created a habitat that is not conducive to a trout fishery. This is supported by the fact that trout stocked in the Lighthouse Hill Reservoir have not migrated or naturally established populations in this bypass reach, even though they are not limited by water temperature. Public use surveys conducted by the DEC Salmon River Stewards from 1998 through 2001 showed very low to zero use of this section of the river by anglers. Dangerous terrain in the gorge, including steep slippery slopes and the potential for falling rocks from the ledges, along with very poor quality fishing for game fish because of habitat deficiencies make this area unattractive to fishery management.

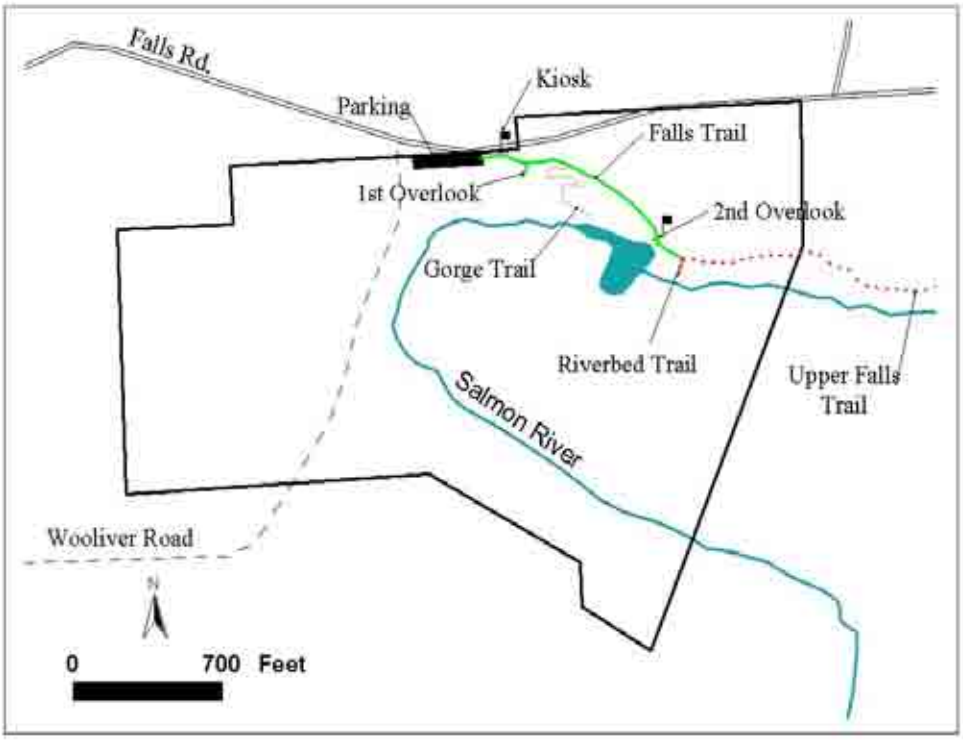
Trails:
Trails on this property will serve as the initial components of the Salmon River Greenway Trail system. This trail system will be developed over the next ten years to connect DEC administered lands and easements within the river corridor from Pulaski to Redfield. The trail segments located on this property can be seen in Figure 2 on Page 12 and are listed below.

- **The Falls Trail** leads from the parking area to the scenic Salmon River Falls. This trail is 1,100 feet in length and follows the gorge edge as it guides people to two platforms which overlook the falls. In the summer of 2003 trail improvements were completed which allow individuals with disabilities to use the trail and have access to the overlook above the Falls. At the beginning of the trail is a trail head sign which tells users the trails length, the average trail grade of 2%, the average cross slope of 1%, tread width of 72 inches, and the surface is firm crushed stone. Two kiosks are also found along this trail as well as a sign describing the restrictions on the area. There are also three other trail head signs along this trail for trails which join to this one.

- **The Gorge Trail** leads from the Falls Trails to the bottom of the gorge below the falls. This is a steep, demanding trail recommended for the physically fit with proper hiking footwear. The trail drops in elevation more than 100 feet and features two rustic stone stairways which descends a 20 foot cliff and the steep gorge banks. Stair height and tread width varies from step to step. The stone stairways are joined by a narrow trail, which includes one switchback carved into the bank. The trail head sign describes the trail as only suitable for hiking. It is 600 feet in length with an average grade of 30%, average cross slope of 15%, average tread width of 32 inches and surface is made up of soil or limestone. The trail was constructed in 2000 by the Adirondack Mountain Club (ADK) trail crew under a contract with DEC. ADK's crew used the same time proven techniques that they've employed in the steep mountainous terrain of the Adirondacks and Catskills. The rustic nature of the trail blends well into the surroundings. Majority of the funding for the project was provided by the Clean Water/Clean Air Bond Act, with additional funding from Brascan Energy Corporation along with the donation of rock for the stair treads from Oswego County Highway

Figure # 2.

Present Assets Map



Map Legend

Trails

- Falls Trail
- Gorge Trail
- Upper Falls Trail
- Riverbed Trail
- Kiosk
- State Boundary
- Parking Area
- Abandoned Road
- Roads

- Mobility Impaired Access
- Hiking Access

Falls Trail	Runs from the parking area to the Upper Falls Trail with a length of 1100 feet.
Gorge Trail	Leads from the Falls Trail to the bottom of the gorge with a length of 600 feet, and a drop in elevation of over 100 feet.
Upper Falls Trail	Runs from the end of the Falls Trail, along the north side of the river, to the Dam Road at the base of the Salmon River Reservoir dam.
Riverbed Trail	Leads down a steep slope to the riverbed from the intersection of the Falls and Upper Falls trails.
Boundary Lines	Total length of 1.9 miles
Parking Area	25 - car lot.
Signs	Kiosk for displaying information on history, maps, rules and regulations and education.
Wooliver Road	Abandoned town road which passes through the property.

Department. The stairs have reduced the dangers encountered by rescue personnel during rescue operations. Due to the steep terrain it was not possible to make this trail accessible for people with mobility impairments.

- **The Riverbed Trail** begins at the intersection of the Falls Trail and the Upper Falls Trail down to the river bed just upstream of the Salmon River Falls. This is a very steep unimproved trail which was informally developed many years ago by visitors wishing to go to the riverbed and the top of the falls. The trail has a loose stone and dirt surface with irregular natural stone ledges. The trail head sign is located on Falls Trail just past the last overlook and describes the trail as hiking trail only. The trail is 66 feet in length, has a grade of 42%, average cross slope is 15%, average tread width is 32 inches and the surface is loose soil and stone.

- **The Upper Falls Trail** runs from the falls overlook east onto easement lands leading to Dam Road. This path extends approximately 1 mile alongside the river through dense forest and over the sometimes dry riverbed to the base of the Salmon River Reservoir Dam. This trail was built with the help of the Oswego County Youth Bureau in 1995. Due to easement boundary limitations, most of this trail is located close to the river which is impacted by high water releases from the dam upstream. These releases can cause dramatic changes to this trail by depositing debris or eroding the existing trail away. The trail head sign describes this trail as hiking only, trail length of 1 mile, average trail grade is 10%, average cross slope of 5%, average tread width is 32 inches and a surface consisting of soil and limestone. There is one trail head sign for this trail and three other trail head signs for trails which join to this trail.

Property Boundaries:
There are 1.9 miles of boundary lines on the property. The lines were surveyed and painted and the corners monumented soon after the State acquired the property.

Parking:
There is a parking lot for 25 cars along the Falls Road. Two accessible parking spots are designated and available for permit holders.

Signs:
Trail signs:
- Two wooden kiosk are located along the Falls Trail, one at the beginning and one at the end of the trail. They each have three panels to display maps, educational and administrative information.
- At the beginning of each trail is a trail head or identification sign. These signs give information on the trail name, a brief description of the surroundings, trail length, accessibility information, and conditions on the trail such as the slope, cross-slope, surface, width and obstructions.

Administrative signs:
- Salmon River Falls Unique Area sign is located along the road and parking area to identify the area.
- Area Restriction signs are located at the beginning and end of the Falls Trail. These signs list the activities

which are prohibited on the unit.

- Restricted Area signs designate the area off limits to the public.
- Hazardous Gorge warning signs are placed along the rim of the gorge to make visitors aware of the dangerous cliffs and steep slopes.
- Area Closed from Sunset to Sunrise signs located at the entrance to the Falls Trail.
- No Alcoholic Beverages sign located at the entrance to the Falls Trail.
- Trail closed signs are placed at the beginning of the Gorge Trail, Riverbed Trail and the Upper Falls Trail during seasonal closures or during high water events or dangerous conditions.
- There are a number of area identification signs placed on the boundary of the property.

Other Access:
Wooliver Road, a former town road, passes through the property. This end of the road has not been maintained by the town for many years and is legally abandoned. At present this road is used for administrative purposes only.

Adjacent State Properties:
The State has purchased conservation easements along the river on lands now or formerly owned by Niagara Mohawk Power Corporation (see Appendix A, Map #7). The easement is a 200-foot-wide buffer on each side of the river, providing protection from development and provides limited public access. This conservation easement was granted to DEC in 1993 and it extends from the unit 1 mile up stream and 1.5 miles down stream to the Bennett's Bridge power facility. There is a break in the easement around the Bennett's Bridge and Lighthouse Hill power facilities and it then continues 9 miles down the Salmon River to the vicinity of the Scholler paper factory. The Salmon River Greenway Trail system will utilize much of this easement for its development.

Archaeological Significance:
Salmon River Falls has a long history of human activity. The area was a traditional Indian fishing ground before it was occupied by European settlers. There are no known remnants of old structures located on the property. The only known evidence of the past which may have historical significance are initials and dates carved in the shale riverbed. These etchings are located near the face of the falls. The oldest visible carvings have a date of 1892.

Resource Demands on the Unique Area

Timber and Wood Products:
The demand for various wood products in this region of the state is constant. Demand trends over the last five years for these products within this region are as follows:

Product	Trend
Sawtimber	Increased
Veneer	Increased
Pulpwood	Stable
Fuelwood	Decreased
Poles	Stable
Chipwood	Decreased

It is expected that the demands for these products will continue for the foreseeable future. Although timber production is not a management objective for the Salmon River Falls property the removal of forest products may occur while pursuing non-timber management objectives.

Public Use:
This Unique Area is open for public use with no fees and restrictions relating to public safety and environmental protection concerns. With the renowned trout and salmon fishery found on the lower river, the promotion of the area by the County and local businesses, along with the intrinsic beauty of the unit, the demand for recreational use by the public is great.

Public use demands on the unit that have been identified include:

- Nature observation and aesthetic appreciation opportunities.
- Hiking
- Hunting, fishing and trapping
- Ice climbing
- Eco-Tourism opportunities
- Preservation of the areas scenic beauty
- Access for people with disabilities

Ecosystem Protection:
The importance of maintaining the health of the state's plant, animal and water resources is by and large well accepted. This is reinforced by the legislative requirement 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.

The following are some specific demands:

- Protect the natural visual attributes of the area.
- Protect all native plants and animals as well as their habitats.
- Protect water quality to enhance habitat for all aquatic organisms.
- Protect the threatened plant species and their habitat from disturbance.
- Promote public awareness and appreciation for the Unique Area's biological attributes.
- Provide support for biological monitoring and research.

Conserving Open Space:
It can be argued that the breaking up of large blocks of forested or undeveloped land for the purpose of development is one of the biggest threats to our natural resources. The Orwell Town Board and local residents have expressed support for the need to maintain large blocks of forested areas along the Salmon River. Insofar as this can be accomplished, the State's ability to provide for compatible public use and ecosystem protection will be advanced.

Natural Gas and Oil Exploration
With the increase in the demand for low-cost energy there is a equal demand for locally found energy sources such as oil or natural gas. The search for natural gas in New York has increased across the state in recent years. As exploration extends into Oswego County for oil and gas formations this unit could be effected by these activities.

Management Issues

Physical Issues:

- The same rugged terrain that makes this property so spectacular also presents management challenges. There are many cliffs and steep slopes on the property which present safety hazards and limitations to recreational development and public use.
  - Some of the cliffs and steep slopes are hidden by vegetation making them more hazardous.
  - Rocks on some of the cliff faces are unstable and regularly fall into the gorge.
  - Access to the base of the Falls and river is difficult due to very steep terrain.
- Limited property size and limited accessibility concentrates public use impact on a relatively small area.

Administrative Issues:

- Spending limitations depending on funding source.
- Need for additional staff.
- The area is in a remote location making it difficult to control vandalism and nighttime drinking parties.
- The area is not regularly patrolled at night.

Societal Issues:

- There is some public resistance to State ownership and management. Prior to DEC ownership, this property was available for public use without significant restrictions or regulations. DEC's responsibilities toward resource protection and public safety have necessitated the development of new regulations.

Department Rules, Regulations and Laws:

- All activities on the area must comply with Local, State and Federal regulations, such as the Americans With Disabilities Act and Environmental Conservation Law. See Appendix H for a more complete listing.
- This plan and the activities it recommends will be in compliance with, State Environmental Quality Review (SEQR), 6NYCRR part 617. See Appendix K for all related SEQR documentation.

Archaeological Site Protection:

- Archaeological sites located within this unit are protected by the provisions of the New York State Historic Preservation Act (SHPA - Article 14 PRHPL), Article 9 of Enviromental Conservation Law and Section 233 of Education Law. No actions that would impact these resources are proposed in this unit Management Plan. Should any such actions be proposed in the future they will be reviewed in accordance with SHPA. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of the Environmental Conservation Law and Section 233 of Education Law.

Management Goal

Vision Statement

Salmon River Falls is an area possessing significant natural resource attributes found in few other areas of New York State. The property is also highly valued by the public for its scenic beauty and potential contribution to the local economy as an important tourism destination.

The vision of this plan is to protect the resource through wise stewardship which maintains the beauty and character of the area, while optimizing the many benefits to the public that this unique area provides.

Salmon River Falls can be referred to as one of the jewels of Oswego County because of its intrinsic natural beauty. Its contribution to eco-tourism and the local economy is equally as significant. The long- term goal of management is to maintain and protect this property while providing high quality scenic and educational opportunities for visitors of all ages. The challenge is to meet increasing demand in a way that reduces its impact on the property and provides for public safety without diminishing its natural beauty. It must be further recognized that this property can offer equal opportunities to people with disabilities. The Department's goal is to enhance opportunities while protecting the aesthetics and biological health of the area. To help achieve this vision for the area four

specific goals are presented with objectives and actions.

B. **Public Use & Safety**

Goal *- Provide the pubic with safe access to the unit which allows them to enjoy the area while limiting injuries or deaths. Control activities which pose a hazard to the public visiting the area. Provide rescue personnel the support needed to safely access the Falls unit during emergency rescues.*

C. **Recreation**

Goal *- Provide and maintain recreational opportunities that are compatible with maintenance and protection of the natural resources of the unit. Encourage the public to visit and view the beauty and uniqueness of the area without negatively impacting the resource. Improve access for all people as well as informing them of the types of challenges found on the area and trails.*

D. **Land Stewardship**

Goal *- Protect, manage and enhance the natural resources and aesthetics of the area while providing opportunities for public use. Protect and maintain the unique plant communities and geological features found on the property.*

E. **Education**

Goal *- Provide a public educational program which develops an understanding and appreciation of the units natural resources, the Department's management of those resources, and the variety of uses. This program will encourage a sense of stewardship and promote responsible use of the natural resources.*

Management Objectives and Actions

A. **Public Use & Safety**

Goal *- Provide the pubic with safe access to the Falls and Gorge which allows them to enjoy the area while limiting injuries or deaths. Control activities which pose a hazard to the public visiting the area. Provide rescue personnel the support needed to safely access this unit during emergency rescues.*

Objectives and Actions

(1) Minimize the potential dangers to visitors wading in the riverbed, swimming in the plunge pool or walking in the gorge immediately below the falls.

Back ground information:
High Water Releases - Due to the fact that the Salmon River Falls is located in what is referred to as the bypass reach of the hydroelectric generation facilities water flow may fluctuate dependent upon weather patterns and precipitation rates. During high water releases the flow rate of the river can rise dramatically with very little warning. If given the option the power company releases water in the bypass at night so as to minimize the risk to the public since no other safety plan is in place. Many of the above referenced conditions are due to natural phenomena and may require water to be released into the bypass during the daylight hours.

Falling Rocks - Years of freezing and thawing cycles along with water action have loosened many rocks on the exposed cliff-like faces of Salmon River Falls and the banks of the gorge. There have been instances where falling rocks have injured visitors in the gorge. In 1975 two girls were seriously injured by falling rocks while swimming in the plunge pool at the base of the falls. (Martin) In 2001 a tourist was hit by falling rocks while fishing at the base of

the falls. The risk of injuries from falling rocks has increased as a result of significant increases in the use of the gorge, following construction of the Gorge Trail.

Debris Being Thrown Into the Gorge - Visitors have often been observed casually throwing stones into the gorge from the Falls Trail and off the falls without thinking about people walking or swimming below.

Scaling the Falls - Swimmers often attempt to scale the face of the falls and jump into the plunge pool. This is very dangerous for the person attempting to climb the slippery face and to swimmers below. In 1974 a youth slipped and fell into the gorge while attempting to scale the face of the falls. He suffered numerous fractures, bruises, cuts and contusions. (Martin) In 1996 an individual fell to his death while trying to climb down the face of the falls.

Broken Glass - Swimmers risk being cut on broken glass in the plunge pool and the surrounding area. Decades of unrestricted use and vandalism have included the practice of throwing empty beer bottles into the gorge and plunge pool. It is not feasible to clean up the immense amount of broken glass underwater in the pool or on its banks. There have been numerous incidents of swimmers receiving severe cuts from this glass.

Risk of Drowning - When there is a heavy water flow, an undercurrent forms in the plunge pool at the base of the falls. Unsuspecting or weak swimmers could drown if they get too close. The DEC does not provide lifeguards on any State Forest properties.

Exposure to Poison Ivy - The base of the gorge in the vicinity of the Gorge Trail and the plunge pool is heavily covered with poison ivy. Unsuspecting bathers, or those who leave the trail, come in contact with these plants on a regular basis.

The risks to visitors to the top of the falls and in the riverbed and gorge are too great to be ignored. The only viable solution is to prohibit access to those areas which pose the greatest threat and provide adequate warnings of the dangers found on the area. To protect the public the following actions will be implemented:

Actions:

(1) A restricted area will be established which includes the cliff face, falling rock zone and the plunge pool. All public access, including swimming and wading, will be prohibited within the restricted area (see Appendix A, Map # 9)

(2) Access on top of the falls will be prohibited beyond posted restricted area signs or within 15 feet of the cliff's edge.

(3) The throwing or causing of any items to fall into the gorge will also be prohibited in order to protect visitors using the Gorge Trail or sightseers in the gorge from being hit with falling debris.

(4) Salmon River Stewards will promote public safety and compliance with rules and posted restrictions.

(2) Provide a safe environment for the public using the Falls trail by keeping users away from the dangerous cliffs. Inform and warn users of the steep banks and cliffs associated with the gorge and falls.

Background information:

The Falls Trail is a gently sloping trail leading from the parking lot to an area above Salmon River Falls. It is, by far, the most popular trail on the property. The trail along the edge or "rim" of the gorge leads to an

overlook near the falls. In many places the trail is within 20 to 25 feet of the steep, cliff-like banks of the gorge. The drop-off along the trail is partly obscured by vegetation which provides visitors with a false sense of security. To protect the public the following actions will be implemented:

Actions:

(1) Post warnings on trail head signs and along the trail of the steep hidden cliffs along the Falls Trail.
(2) Maintain the suspended cable and kick plate along the gorge side of the Falls Trail.
(3) Restrict the area beyond the cable railing from public access and place restricted area signs.
(4) Provide information of restricted areas by displaying the areas on a property map posted at the two kiosks and maintaining them annually.

(3) Minimize the potential of people falling or jumping from the top of the falls.

Background information:

The concern in this area is the open bedrock of the riverbed on the top of the Falls. This is a popular spot for people to walk and stand on the edge of the Falls to look down and get a better view of the gorge. There is also the concern of high water releases when the flow rate of the river can rise dramatically without very little warning. There have been a number of injuries and deaths associated with people jumping or falling from the top of the falls.
Another activity that goes on is "cliff diving." This involves either scaling the cliff or jumping off the top of the 110-foot-high waterfall into the plunge pool below. This activity has resulted in two deaths and two serious injuries (one involving permanent paralysis) since the State has taken ownership in 1993. To protect the public the following actions will be implemented:

Actions:

(1) The Riverbed Trail will be closed during high water events and from November 15th to May 1st. This closure will be posted by signs.
(2) Hazardous cliff signs will continue to be posted in the area.
(3) On the top of the falls, access will be prohibited beyond the posted restricted area signs and within 15 feet of the cliff edge. These restricted areas will be delineated by signs and shown on maps located at the kiosks.
(4) Restrict swimming in the plunge pool below the falls to discourage divers.
(5) Close the area at night.

(4) Provide rescue personnel the support needed to safely access the Falls during emergency rescues and allow for a quick response time to incidents in the gorge.

Background information:

The DEC does not have the resources to provide timely response to emergency rescue needs on this property. Orwell's Volunteer Fire Department has risen to the challenge of this critical need. Since the State took ownership of this property in 1993, there have been four fatalities, one paralysis, and numerous injuries which have required the assistance of rescue personnel. Emergency extractions from the base of the gorge are dangerous to perform because of the steep terrain and require rope rescue techniques. Because the fire department is comprised of volunteers, adequate training is needed for them to safely and efficiently rescue anyone injured at the falls.

Actions:

(1) The Department of Environmental

Conservation will support the volunteers' efforts as resources permit. The Department will lend support by offering training from the Forest Rangers in rope rescue techniques as staffing permits.

(2) The Orwell Fire Department will be allowed to train in selected sites on the area which minimize the threat rope rappelling has on the resource. One training site will be located in the area of the gorge trail which will serve as the main extraction area in the event of an emergency rescue. The other training site will be located down the gorge in an area that is less visible to the public, with more stable slopes. The training opportunities will be limited to a total of five times per year with no more than one training being conducted in the area of the Gorge Trail.

(5) Provide safe use of the newly constructed Gorge Trail by recreational users.

Background information:
The Gorge Trail was constructed in very rugged terrain with an emphasis of having it blend in with the natural area. As a result, it is a rustic and challenging trail. The skill level needed to use this trail is much less than that required to use the path it replaced, but it is also significantly more challenging than the Falls Trail. There is also a large population of poison ivy found along the trail and in the gorge which encroaches on the path each year. The Gorge Trail was also designed and intended for seasonal use only. In winter the trail quickly ices from the mist of the falls and from spring seeps originating from rock fissures in the hillside. The trail is very unsafe in these conditions and unsuitable for public use without proper ice climbing safety equipment. To protect the public the following actions will be implemented:

Actions:

(1) The Gorge Trail accessing the bottom of the falls will be open for hiking from May 1st to November 15th.

(2) The Gorge Trail will be closed during high water events and posted with a "Trail Closed" sign. The Salmon River Stewards or other available department staff will post the trails upon notification of a water release from the power company.

(3) The Gorge Trail will be open to registered ice climbers from November 15th to May 1st .

(4) Maintain a gate that has been installed at the top of the Gorge Trail. It will be unlocked but latched in a closed position at all times. A sign will be placed on the gate when the trail is open to explain the challenges this trail presents. When the trail is closed, a sign will be posted on the gate to that effect.

(5) Inspect and maintain the short railing that has been placed adjacent to the uppermost flight of stairs. The railing will be inspected to make sure the posts and cable are securely fastened. Inspection and minor maintenance will be done by the Salmon River Stewards on a weekly basis. Major maintenance will be done by the department's Operations Division.

(6) Determine the feasibility of constructing a viewing area at the end of the trail near the base of the falls by 2006. If found feasible, construct and maintain by 2009.

(7) To minimize contact with poison ivy, signs will be placed along the trail warning users of its presence. Periodic removal may take place either by mechanical means or herbicide. If herbicides are needed a

site specific environmental review will be completed by the Department and appropriate measures followed.

(6) Reduce illegal activities and injuries associated with nighttime public use and facilitate law enforcement officers in their enforcement duties.

Background information
During the summer, there are "after hours" parties organized by local teenagers at the falls. Many of these parties feature excessive amounts of alcohol and in some cases, underage drinking. Vandalism, littering, painting trees and rocks with graffiti, breaking glass bottles and building open fires are activities commonly associated with these parties. These activities must be stopped in order to limit degradation to the area. Alcoholic beverages and the steep terrain are a bad combination on this unit. Alcohol was a factor in at least two deaths and one serious injury on the property since the State took ownership in 1993.

There has also been evidence of parties and illegal dumping on Wooliver Road. Portions of this abandoned road are also located in close proximity to sheer cliffs along the gorge.

Actions:
(1) The following restrictions will be enacted to stop unacceptable uses and facilitate law enforcement officers in their duties:
   A. Salmon River Falls Unique Area will be closed to the public between sunset and sunrise.
   B. It will be illegal to possess alcoholic beverages, glass containers, or paint while on this property.
   C. Open camp fires will be prohibited.
   D. Swimming or wading in the plunge pool below the Falls will be prohibited.
   E. Throwing rocks or causing any objects to fall into the gorge will be prohibited.
   F. Entering restricted areas on the property will be prohibited.

(2) Placement of two gates on Wooliver Road located at the property boundaries by 2005 (see Appendix A, Map #10).

(3) Salmon River Stewards will help monitor illegal use and vandalism by visiting the unit daily during the months of June, July, August and September.

(7) Provide a system to alert people in the area of the Falls in the event of a high water release.

Background information:
The water flow of the section of the Salmon River which runs through the unit is controlled by a hydroelectric power dam one mile upstream. The majority of the water flow from the Salmon River Reservoir travels primarily through the pipeline to the Bennett's Bridge power station which bypasses the falls. The section of river from the Salmon river dam and the Lighthouse Hill reservoir is considered the bypass reach. During times of heavy rain and spring runoff it is common to have controlled releases through this bypass. There are also times when problems occur in the hydroelectric facilities and a emergency release through the bypass is necessary. Though these events are infrequent it is not uncommon for a few controlled releases to occur each year. When a high water release occurs, flow rates in the bypass can increase dramatically in a short amount of time. The flow rates can change

from 20 cfs to 1500 or even higher within an hours time. Due to this quick increase in flow, the power company tries to release water slowly or after dark to minimize risks associated with people in the river. In some instances water needs to be released quickly during the daytime which allows little warning to the quick increase in flow rates in the river.

Actions:

(1) The Department will place information along the trails and at the Kiosk warning users of the possibility of high water.

(2) The Gorge Trail, Riverbed Trail and Upper Falls Trail will be closed during high water events. This will be done by placing a "Trail Closed" sign at the beginning of the trails.

(3) During emergency high water releases Salmon River Stewards or other Department staff will be present, if possible, at the beginning of the release to place trail closed signs and inform users the river will be rising.

(4) The Department will work towards installing an automatic warning system by 2006, with help from the power company, which alerts users of fast rising water.

Recreation

Goal *- Provide and maintain recreational opportunities that are compatible with maintenance and protection of the natural resources of the unit. Encourage the public to visit and view the beauty and uniqueness of the area without negatively impacting the resource. Improve access for all people as well as informing them of the types of challenges found on the area and trails.*

(1) Provide recreational opportunities for people with disabilities on the unit.

Background information:

The Americans With Disabilities Act (ADA) requires that facilities such as Salmon River Falls are made accessible, wherever feasible, for people with disabilities. These requirements apply to trail construction and parking lot design as well as signage and brochures. In designing facilities and programs to meet the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Department will also employ principles of universal design. These principles will guide the design of new projects to insure that the facilities and programs accommodate a wider range of abilities and users. A more comprehensive explanation of universal design and ADA guidelines can be found in Appendix H.

The Falls Trail which runs from the parking area to a overlook near the top of the Falls has recently been improved to meet ADAAG requirements. These improvements included improving the trail surface and installing appropriate signage. As current trails are improved or maintained and new trails developed the following actions will bring the unit into compliance with ADA.

Actions:

(1) Universal Trail Assessment signs will be maintained at the beginning of the trail which describe the trail characteristics, such as length, elevation change, trail obstructions, etc.

(2) By 2007 upgrade the Upper Falls Trail to ADAAG standards where applicable.

(3) All brochures produced for this area will be printed with a typeface size no smaller than 12 point. Only easily read typeface styles will be used.

(4) All trail head signs and kiosks will be maintained to ADA specifications.

(5) Monitor and correct any deterioration

of the Falls Trail which impedes people with disabilities from using it.

(6) All new trail development will comply with ADAAG Guidelines and meet the requirements of universal design where applicable.

(2) Develop the trails within the unit to serve as an important component of the broader Salmon River Greenway Trail system.

Background information:
The Salmon River Greenway Trail System is a proposed trail system which would run from Pulaski to Redfield along the Salmon River within State lands and Conservation Easement Lands. The trails on Salmon River Falls Unique Area will serve as an important component of the future Greenway Trail System as well as providing an intermediate trailhead and one of the most significant features of the trail. Much of this trail system is dependent upon future land acquisition due to the limitations posed by the steep topography along the Salmon River (see Appendix A, Maps #10 & 11).

Actions:

(1) The present Falls Trail and Upper Falls Trail will be improved and maintained as part of the Salmon River Greenway Trail System as the system is developed.

(2) A trail will be proposed in 2010 from the parking area to the Bennett's Bridge power station located on County Route 22. The portion of this trail located on the Salmon River Falls property will travel along Wooliver Road, then continue along the upper rim of the gorge following an old logging road until the trail goes off the property. The approximate length of this trail is 3000 feet located on the property with the remaining 8000 feet being on Conservation Easement Lands. This trail is subject to gaining approval from the power company due to a small section the power company owning where the trail would cross near the Bennett's Bridge power house.

(3) Place new maps and signs explaining the Greenway Trail System as the trail is developed.

(3) Provide additional hiking experiences for families on the unit apart from the gorge and river.

Background information
The Salmon River Falls attracts large numbers of people looking to hike and enjoy the outdoors. The trails presently developed on the unit are terminus trails that either dead end or lead off the unit without returning on the same trail. A loop trail would give hikers additional hiking opportunities away from the gorge and Falls.

Action:

(1) Develop a loop trail by 2011 which begins on Wooliver road and leads back to the main parking area. This trail would be developed as a foot path and be approximately 2500 feet in length. (see Appendix A, Map #10).

(4) Adopt, implement and enforce the following restrictions to minimize conflicts between pedestrian users and other types of recreational activities.

Background information:
The main emphasis of this property is providing opportunities for the public to view the Salmon River Falls and gorge. The best way this is done is through pedestrian use. Other types of uses such as horse back riding, mountain biking, and snowmobiling would create conflicts with the pedestrian users as well as users with disabilities. In addition

these types of activities would pose a hazard to users and others due to the close proximity of the trails and the cliffs found on the unit.

Actions:

(1) All motorized vehicles, snowmobiles, horse back riding or mountain bikes, will be prohibited on the unit.

(2) Install by 2005 a removable vehicle barrier at the beginning of the Falls Trail to restrict vehicle access while meeting requirements for accessibility.

(5) Provide opportunities for ice climbers while protecting the threatened plants and habitat found along the steep slopes and cliffs in the gorge.

Background information:

Since State ownership the Falls and gorge has become a desired location for ice climbing. These areas form an impressive amount of ice during the winter months and create climbing opportunities which hadn't been opened to the public prior to the State's acquisition.

The ice climbing community has emphasized the importance of this recreational resource and would like to see the area remained open to this activity. Ice Climbers of Central New York have listed the following reasons this area is especially unique for ice climbing in Central New York.

A. Close proximity to large population centers: The Gorge is within a 1-2 hour drive from several large population centers. The ice climbers that live in these areas have few other local options to practice climbing. The alternatives include the Adirondacks (approximately 3.5 hours from Syracuse), Vermont (5 hours from Syracuse), and New Hampshire (6.5 hours from Syracuse). Syracuse is only 45 minutes from the Salmon River Falls unit.

B. Volume of Ice: There are multiple significant ice flows in the Gorge that span a range of difficulty levels. This sets it apart even from many areas in the Adirondacks.

C. Quality Climbing Routes: Within the ice climbing community, the Gorge has become known for several important and unique routes that challenge ice climbers of a variety of abilities. Visiting ice climbers from far away - throughout the Northeast and as far away as the west coast and the U.K. - have sampled these routes and confirmed their quality.

D. Alpine Feel: Ice climbing is traditionally an activity central to mountainous areas; the Gorge definitely has a "big mountain" feel to it. The gorge sits on the Tug Hill and has unusually deep snow. The Gorge has steep walls, no vehicular traffic, and little visible signs of civilization. These characteristics are absolutely unique for Central New York.

Ice climbing should be differentiated from rock climbing. Ice climbing is done primarily on ice built up from streams or ground water seeps coming from the higher parts of cliff faces or very steep slopes. This build up of ice allows climbers to climb using ice creepers, ice axe's, and climbing ropes with anchors (screws). Most ice climbing is on ice formations a few feet thick or thicker. Rock climbing and rappelling is done primarily on rock faces using small ledges and cracks in the cliffs to get a foot hold or place anchors and use ropes. Due to the instability of the soft shale found throughout the gorge, conventional rock climbing is more difficult than ice climbing.

Areas where ice formations are found are also areas that the two threatened plants,

Birds-eye primrose and the Yellow mountain saxifrage, have been found to live and grow. A plant survey was done of the gorge in 1993 by the NY Natural Heritage Program to assess the types of plants found and their populations. The survey found the threatened plant species in areas along the steep shaded cliffs where climbable ice forms. It is unknown if ice climbing disturbs these plants. It is logical to assume that there is little disturbance to the plants or their habitat since it is buried under a few feet of ice when ice climbing. Monitoring of the plants would be necessary to determine if ice climbing has any impact on the plants survival.

The Orwell Volunteer Fire Department has raised concerns over the safety of their volunteers during rescues within the gorge in very icy conditions. The volunteers have not been trained for rescues involving winter or icy conditions along cliffs or steep areas which require rope rescues.
Another concern or potential danger to ice climbers is the threat of high water due to a emergency release from the Salmon River Reservoir dam. A change in river flow whether constant or short term could alter the stability of ice formations on the face of the falls. During a emergency high water release, the raising of the river level could trap climbers on the other side of the river or on the ice itself.

Actions:

(1) Maintain the restricted area surrounding the falls (see Appendix A, Map #9) throughout the year.

(2) Require mandatory registration for all ice climbing. This includes filling out and signing a registration form that states the following (see Appendix I):
- No climbing is allowed without registering. To register, fill out the attached form and place in registration box prior to each day's entry into the gorge.
- No climbing is allowed within the designated restricted area or on the face of the Falls.
- Climbers are to use conventional ice climbing gear such as helmet, ice axe, crampons, etc.
- Climbing in areas without ice and or conventional rock climbing is prohibited.
- Ice climbing on this property is at your own risk
- No open fires
- No possession of glass containers or alcoholic beverages
- No motorized vehicles including snowmobiles, on the property.
- The area is closed from sunset to sunrise.

(3) Monitor the threatened plants in the gorge every 5 years for possible population fluctuations and adjust management priorities to maintain the plants habitat and populations.

(4) Monitor the ice climbing usage through the registration forms and visual observation by the area Forest Ranger or Salmon River Stewards to gain information which could help in making future decisions concerning limiting or expanding the climbing opportunities.

(5) The Department will work towards installing a automatic warning system by 2006, with help from power company, which alerts users of fast rising water.

(6) The Department of Environmental Conservation will support the volunteers' efforts as resources permit. The Department will lend support by offering training from the

Forest Rangers in rope rescue techniques as staffing permits.

(6) Continue to provide the traditional outdoor recreational opportunities of hunting, fishing and trapping.

Background information:
Due to the ruralness of the property the likelihood of hunting, fishing or trapping to occur is very possible. There have not been any known occurrences of these activities happening on the Falls Trail or in close proximity to the Falls. There have been occurrences of hunting on the property above the gorge and south of the Falls. Fishing has been observed with poor success in the plunge pool at the base of the falls. In the summer of 2002 a stream survey was conducted which found the area unproductive for fish due to the lack of fish habitat and available food.

Actions:
(1) Hunting, fishing or trapping will continue to be permitted on the unit, with the exception of the restricted area surrounding the falls.

(7) Promote the area as a natural attraction and a destination to visit, adding to the eco-tourism attraction of the area.

Background information:
The Salmon River and its tributaries are recognized world wide as a high quality salmon and trout fishery. Large numbers of fishermen and families visit the area to fish and sightsee. The State Salmon River Fish Hatchery is one attraction which has a large number of visitors during the spawning seasons. Many of these visitors don't know the Salmon River Falls Unique Area exists or how to get there. Local businesses, Towns and County agencies are also looking to promote the area to attract visitors and boost the eco-tourism appeal and the dollars generated by it. To encourage these visitors to tour the Falls the following actions will be initiated.

Actions:
(1) By 2005 the Department will place a DEC area ID sign at the intersection of Falls road and County Route 22 directing people to the falls.
(2) Continue to work with Towns and County government to promote the area in their tourism brochures and advertisements by providing information on the unit and any upcoming events.
(3) By 2006 develop a display to be placed in the Salmon River Hatchery showing the Falls location and the opportunities it provides to the public.
(4) Develop a brochure by 2005 for the area with a location map to be disbursed on site, at the hatchery, and at area municipalities and chambers of commerce.

(8) Provide additional access to the Upper Falls and Riverbed trails for administrative purposes to limit damage to the existing ADA Falls Trail by maintenance equipment.

Background information:
The Falls Trail is presently the only access to the Upper Falls and the Riverbed Trails. Since the Falls Trail was improved to ADAAG standards the trail has become restrictive in its width and also to certain types of equipment which will be needed in the future to develop the Upper Falls trail and the Riverbed trail. In order to improve these trails an additional access is needed to keep the present Falls trail from being damaged.

Actions:
(1) By 2006 construct a forest access

road from the Falls road plow turn around to the Upper Falls trail. This access road will be approximately 900 feet in length and the road surface will be no wider than 12 feet in width.

(2) At completion of road construction a gate will be placed at the Falls road entrance to restrict unauthorized vehicle access.

Land Stewardship

Goal *- Protect, manage and enhance the natural resources and aesthetics of the area while providing opportunities for public use. Protect and maintain the unique plant communities and geological features found on the property.*

(1) Pursue acquiring additional acreage from willing sellers to combine the property with the adjoining Chateaugay State Forest property. This will conserve open space, protecting the banks of the Salmon River and a buffer for this unit from development. **New acquisitions will be pursued in a manner consistent with policies defined in "Conserving Open Space in New York, State Open Space Conservation Plan." This document guides DEC's acquisition and open space efforts. The State will only pursue acquisitions from willing sellers.**

Background information:
In 1995 a Citizen Survey (Appendix B) was conducted to assess what landowners in the Salmon River Corridor thought about the future for the corridor. Survey results show strong support for maintaining the environmental quality of the river corridor along with maintaining the open space character (large blocks of undeveloped land) of the river and surrounding area. There was also a strong emphasis to protect the Salmon River Falls area and improve it for recreational opportunities. The Town of Orwell has emphasized this concern by sending a letter (Appendix G) to the NYSDEC Commissioner Erin Crotty requesting the State acquire lands from Niagara Mohawk which adjoin the Salmon river Falls property.

Actions:

(1) Look into securing adequate funding for purchases from willing sellers.

(2) Work with Real Property Bureau to identify willing sellers.

(2) Protect the threatened plants and communities found on the property from degradation by the public.

Background information
Salmon River Falls Unique Area contains some unique habitats and physical features. The Shale Cliff and Talus Slope and Shale Talus Woodland Communities, including the natural beauty of the waterfalls and gorge, differentiate this area from the surrounding forests and ecosystem. It is a challenge to preserve these habitats while providing for tourism and recreational opportunities. It has been estimated from random counts that over 20,000 people visit Salmon River Falls each year. The habitat for threatened plants and vegetation located on this property is very vulnerable to disturbance and erosion. Increased numbers of visitors walking or sliding off the trail creates risks to these plants as does rock climbing and rappelling.

Actions:

(1) Delineate a restricted area around the Falls and the Shale Cliff and Talus Slope communities to restrict use which could damage the threatened plants and their habitat.

(2) Restrict rock climbing and rappelling.

(3) Monitor the locations and status of the birds-eye primrose and the yellow mountain saxifrage yearly.

(3) Manage the current forest cover types to develop old growth characteristics.

Actions:

(1) This property will not be utilized for timber production and there will be no silvicultural treatments for this planning period.

(2) Trees will only be cut or removed for trail safety, aesthetics and recreational development as outlined in this plan, or if necessary, to enhance existing populations of threatened plant species.

(3) Conduct a forest inventory of the property on a 20 year cycle.

(4) By 2006 conduct an inventory of the flora and fauna of the unit, focusing on the areas within the gorge.

Actions:

(1) Identify and map occurrences of rare, threatened or endangered species and communities

(2) Promote participation by outside groups, especially in areas requiring special expertise.

(3) Maintain database and maps on the Geographical Information System.

(5) Prevent erosion on the Riverbed Trail by stabilizing the trail surface.

Background information:

The majority of visitors eventually make their way to the top of the Falls to walk along the riverbed and to get a bird's-eye view of the gorge. No access has ever been formally developed from the rim of the gorge to the top of the falls, but there are informal trails which have been created by visitors over the years. Increased use of these informal trails has caused significant problems with soil erosion. There were three trails leading down to the top which traversed cliff-like ledges, steep eroding soil and gravel paths. Two of these trails have been blocked by the construction of the falls overlook. The remaining trail, designated as the Riverbed Trail, is actually an eroded pathway with a 48" bedrock drop exposed in the middle of the slope. Due to erosion problems, the Riverbed Trail needs to be stabilized to prevent erosion and improve the safety of the trail.

Based upon experience with developing the Gorge Trail, which is similar in topography, one option to reduce the soil erosion is to build a stone stairway. Given the steep terrain, the aesthetic sensitivity of the site, varying flow rates of the river and the difficulty of working with the exposed bedrock, it is not practical (or required) to improve this trail to ADAAG standards.

Actions:

(1) Design and obtain a cost estimate to improve the Riverbed Trail by placing a stone stairway in 2006.

(2) Secure appropriate funding and build stairway by 2008.

(6) Restrict surface disturbance associated with natural gas exploration, production and development on all 112 acres of the unit.

Background information:

Title 11 Section 23-1101 of the Environmental Conservation Law authorizes the Department of Environmental Conservation to make leases on behalf of the State for exploration, production and development of oil and gas on State lands. Since this type of exploration and development results in surface disturbance, a number of factors are considered when determining if the type of disturbance would be allowed or not. The process by which these factors are compiled and looked at is know as a tract assessment. Factors such as the presence of regulated wetlands, riparian

areas, steep slopes, significant recreation areas, presence of rare, threatened or endangered species or unique ecological communities, are all areas which may be excluded from surface disturbance. Certain land management strategies, such as reserves, where timber harvesting is precluded, which may be incompatible with oil and gas well development, may result in exclusion from surface disturbance. Upon completing an assessment for this unit determinations deciding which areas would be excluded from surface disturbance have been made based upon the following findings.

A. 95 acres or 85% of the unit are found to contain or be in close proximity to regulated wetlands, riparian areas, steep slopes, significant recreation areas, presence of threatened plant species or unique ecological communities.

B. 112 acres or 100% of the unit has an objective to manage the current forest cover types to develop old growth characteristics and remain aesthetically pleasing to the public. This objective limits the cutting of timber or removal of trees moved for trail safety, aesthetics and recreational development as outlined in this plan, or if necessary, to enhance existing populations of threatened plant species.

Actions:

(1) The Department will not permit the exploration, production and development of oil and gas on this unit due to ecological sensitivity of the area, the high public use of the area for recreation, and the timber management objective which is designed to enhance the previous mentioned concerns.

Education

Goal *- Provide a public educational program which develops an understanding and appreciation of the unit's natural resources, the Department's management of those resources, and the variety of uses. This program will encourage a sense of stewardship and promote responsible use of the natural resources.*

(1) Maintain educational and administrative signs along the trails and at the kiosks.

Background information:

The property is visited by many people throughout the year to view the Falls and gorge. Many of the visitors are interested in the local history, geology of the area and in general why the area is considered unique. Some of these visitors are also unaware of the safety concerns on the unit as well as the regulations or restrictions put in place by the Department. With the current trail head signs and the two kiosks located on the Falls Trail there are sufficient opportunities to provide various information about the unit. Information about the geology, natural resources, trails, safety concerns and area restrictions can be found on signs throughout the unit. The following actions will help maintain, improve and add to the existing information signage.

Actions:

(1) Salmon River Stewards will routinely check all educational and administrative signs for damage or vandalism and replace as necessary.

(2) Enlist the help from the Division of Public Affairs and Education in developing an information / registration sign explaining the guidelines for climbers and the need to protect areas with threatened plant species.

(3) Place a seasonal ice climbing information sign in 1st kiosk during

winter months.

(4) In 2013 update all kiosk and informational materials if needed.

(2) Utilize at least four meetings or local events annually along with four interpretive walks on the property to promote the benefits of public stewardship of the unit, and the recreational opportunities it provides.

Background information:
The Department along with other local county, town or village agencies have annual events where information about the unit can be displayed. Some of these events include the Departments open house at the Salmon River Fish Hatchery, The County's "Conservation Field Days", The Oswego County Fair, the "Salmon River Festival" in Pulaski and the "Fragile Wilderness" in Watertown. These events are also good opportunities for the Salmon River Stewards to educate people about the other opportunities the State has to offer within the Salmon River Cooridor.
The Salmon River Stewards will also be present on the unit regularly so it would be practical for them to conduct planned and advertized interpretive walks explaining in more detail the history, geological, and ecological resources of the unit.

Actions:

(1) Provide informative displays at public events such as the Oswego County Fair, Pulaski's Salmon River Festival, Conservation Field Days and the Salmon River Hatchery Open House.

(2) Provide presentations to various organizations as requested.

(3) Salmon River Stewards will conduct at least four interpretive walks along the trails on the unit. Walks will be advertized in the local paper and posted at the Salmon River Fish Hatchery and in the kiosk near the parking area.

(3) Use the popularity of this unit to reach large numbers of people with the Departments educational mandate.

Actions:

(1) By January 2005, develop an informative brochure which describes the history, natural resources, trail locations and area restrictions of the unit.

(2) By January 2006, develop a display to be placed at the Salmon River Fish Hatchery which shows the unit's location within the Salmon River Greenway, describes the history of the property, explains the unique environmental and geological features found on the unit, and what recreational opportunities are developed.

(3) By 2008, make information available through the departments web site which provides educational and administrative information of the property and the recreational opportunities offered.

(4) Provide personnel to help answer users questions about the unit and the Salmon River area during the peak usage times of the year.

Actions:

(1) Have the Salmon River Stewards program maintain a daily presence at the property during the summer, and salmon spawning season.

(2) Conduct spot checks daily throughout the spring , summer and fall, to determine times of expected highest use and also talk with visitors.

(3) Produce by June 2006 a frequently asked question and answer sheet to assist the stewards when encountering

the public.

Summary of Restrictions for Property

These restrictions will be posted by signs at selected locations on the property to inform visitors. The posting of restrictions by signs is the first effort in controlling the uses on the property. Formal regulations will be promulgated if these restrictions fail to adequately provide for public safety and resource protection.

- The area is closed between sunset and sunrise.
- The possession of alcoholic beverages and glass containers is prohibited.
- The possession of paint of any kind is prohibited.
- Open campfires are prohibited.
- Throwing rocks or causing any objects to fall into the gorge is prohibited.
- All visitors are prohibited within 15 feet of the cliff edge and from entering the designated restricted areas on the property.
- All motorized vehicles, including snowmobiles, are prohibited.
- Swimming or wading is prohibited in the plunge pool below the falls.
- Rock climbing and rappelling is prohibited
- Ice climbing is allowed by mandatory registration only.
- The Riverbed and Gorge Trails will be closed from November 15 to May 1 and during high water events.
- The Gorge Trail is open to registered ice climbers during the winter months.

The Department also reserves the right to restrict activities or access further if safety or resource abuse concerns require it.

Budget Summary

ANNUAL TASKS	Unit	Cost ($)	Man Days	Year
Maintenance				
Litter pickup		1,000	5	Annual
Kiosk signs, trail signs and administrative signs		1,000	3	Annual
Cable railings, kick plates, overlook railings and stairs		1,000	3	Annual
Trails ADA trails to comply with all ADAAG standards			3	Annual
Public Use and Safety				
Posting of trail closure signs			1	Annual
VFD training in rope rescue with support from the Forest Rangers			1	Annual
Seasonal Salmon River Steward position to monitor uses daily during the months of June, July, August and September	1 position	12,000	120	Annual
Recreation				
Distribute area brochures		300	1	Annual
Seasonally place ice climbing registration box and information signs in first kiosk			1	Annual
Land Stewardship				
Land Acquisition			3	Annual
Monitor restricted areas for disturbances			1	Annual
Monitor threatened plant species populations			1	Annual
Education				
Conduct 4 interpretive walks		100	4	Annual
Attend 4 public events to promote area		100	5	Annual
Area orientation with new Stewards			1	Annual
TOTAL FOR ANNUAL TASKS		**15,500**	**153**	

PERIODIC TASKS	Unit	Cost ($)	Man Days	Year
Maintenance				
Boundary lines	1.9 miles	500	2	2007
Development/Construction				
Install vehicle barrier at beginning of Falls Trail	1	1,000	3	2005
Place Unit ID sign at intersection of County Route 22 and Falls Road	1	1,000	2	2005
Install two gates on Wooliver Road	2 gates	3,000	4	2005
Conduct feasibility study of developing viewing platform at base of Gorge Trail	1		3	2006
Do cost estimate for trail improvements on Riverbed Trail	1		3	2006
Improve Upper Falls Trail following ADAAG standards	1 mile	10,000	10	2007
Rebuild Riverbed Trail	100 feet	10,000	10	2008
Construct viewing area at base of Gorge Trail	150 sq. ft.	10,000	10	2009
Develop trail from parking area to Bennett's Bridge	2 miles	20,000	20	2010
Develop loop trail off Wooliver Road	.5 mile	2,000	5	2011
Public Safety				
Install high water alarm system	1	5,000	3	2006
Land Stewardship				
Natural Heritage survey	1	5,000	5	2006
Forest inventory	112 acres	500	2	2012
Education				
Develop brochure for Unit	1	500	3	2005
Develop display of Unit for Hatchery	1	500	3	2006
Develop information web page for Unit	1		3	2008
Update brochure and kiosk information	1	2,000	5	2013
Total		**71,000**	**96**	

Glossary

ASSEMBLAGE: A collection [of fish].

BRYOPHYTES: A division of nonflowering plants characterized by rhizoids rather than true roots and having little or no vascular tissue.

COMMUNITY: A group of ecologically related populations of various species of organisms occurring in a particular place and time. ("Technologies To Maintain Biological Diversity" U. S. Congress, Office of Technology Assessment, 1987, p.313)

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

DECIDUOUS: Trees whose leaves fall off or are shed seasonally or at a certain stage of the development in the life cycle. (Webster's Ninth Collegiate Dictionary, 1991)

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)

FERC: Federal Regulatory Energy Commission - is a federal agency which oversees all energy producing industries.

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)

HARDWOOD: Broadleafed trees, deciduous. Also refers to the wood produced by these trees.

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

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

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)

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)

SOFTWOOD: Needle bearing trees. See conifer. Also refers to the lumber derived from these trees.

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)

TEA-21 PROGRAM: A grant program that disperses money for trail development projects administered through the New York State Office of Parks, Recreation and Historic Preservation.

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)

UNDERSTORY: Generally, those trees and woody species growing under an overstory. ("Silvicultural Systems for the Major Forest Types of the United States," USDA Ag. Hdbk. #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 use.