

Hartland, Connecticut
August 1993

King's Mark
Environmental
Review Team
Report

King's Mark Resource Conservation and Development Area, Inc.

Camp Alice Merritt Land Use Study



August 1993

Environmental Review Team Report

Prepared by the King's Mark Environmental Review Team of the King's Mark Resource Conservation and Development Area, Inc.

Haddam and Wallingford, Connecticut

for the

Hartland Selectman's Office and the Camp Alice Merritt Advisory Committee

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the Commissions and the Town. The results of the Team action are oriented toward the development of a better environmental quality and long-term economics of the land use. The opinions contained herein are those of the individual Team members and do not necessarily represent the views of any regulatory agency with which they may be employed.

The King's Mark Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

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I would also like to thank William Hodge, the First Selectman, Mandana Nurge and other members of the Camp Alice Merritt Advisory Committee, for their cooperation and assistance during this environmental review.

Introduction

n environmental review was requested by the Hartland Board of Selectmen for the town owned Camp Alice Merritt property. The approximately 48 acre parcel has several large buildings, two camping units with structures, a ± 1.25 acre pond and a trail network. An advisory committee has been established to develop a long range plan for the property. Potential uses include cemetery space, senior center and housing, passive recreation, organized camping and using the existing buildings for meetings and a caretaker residence.

The purpose of this review is to inventory and assess existing natural resources with regard to the potential uses.

The review process consisted of 4 phases: 1) inventory of the natural resources; 2) assessment of these natural resources; 3) identification of problem areas; and 4) presentation of planning, management and land use guidelines.

Geology

The surficial geologic material found on site is till, which is at least 10 feet thick and may be as much as 40 feet thick in areas.

There is an erosion problem in the road as it nears the pond, this should be fixed and the slope stabilized.

The bedrock does not break ground surface on the site, but it is shown as Ordovician Straits Schist on the New Hartford Quadrangle Bedrock Geology Map.

The site seems suitable for the proposed uses from a geologic standpoint.

Soils

According to the Soil Survey of Hartford County, CT there are six soil units mapped on this parcel. The Charlton, CaB and ChB soils would be well suited for a senior citizen's center and housing, and these soils would also be suited for cemetery use. Soil limitations for recreational uses includes wetness in some areas and stoniness. None of the soils mapped on the site are hydric, but some do have wetland inclusions and a state certified soil scientist is necessary to map these areas.

It is recommended that the dam at the southwest edge of the pond be evaluated before the town uses the area for recreation. (1991 DEP Dam Inspection Reports are included in the Appendix).

The access road to the pond is eroding due to steep slopes. Cars should not be allowed on this steep section of road. It is recommended

that cars remain at least 150 ft. away from the pond/beach area. A parking area should be established on the southeast side of the access road and a footpath created to the beach area. All these areas should be stabilized with proper grading, water bars and vegetation.

All future development should have erosion control planning and monitoring. The pond and its tributaries should be protected by buffer areas.

Health District Review

Without doing any soil testing oil conditions in the majority of the site appear to be good. There should be little problem with developing the northern portion for a cemetery. The only limitation for a cemetery may be large rocks.

Any proposed development should stay way from the watercourses and wet areas since these drain to the pond. The access road to the pond should be regraded to prevent erosion from entering the pond and to enable emergency vehicles access to the beach area.

Large community septic systems should be avoided in planning the senior housing. Smaller systems to serve individual dwellings should be utilized. A community water system would have to approved by the state health department.

Existing buildings appear to be in good condition. The existing septic systems should be evaluated for their condition and capabilities before being used on a regular basis. Some improvements may be necessary. A water analysis should be done for the existing water supply well.

Natural Diversity Data Base

According to our current information there are no known extant populations of Federal or State Endangered, Threatened or State Concern species occurring at this site. This is a preliminary review and not a final determination. New information is incorporated into the Data Base as it becomes available.

Vegetation and Management Concerns

The site has 43 acres of forested land and 5 acres of non-forested land. The site can be divided into three broad vegetative cover types: mixed hardwoods, mixed softwoods, and old field.

In the early 1980's the property was enrolled in a cost share program administered by the federal government. A forest management plan was developed with a goal to improve health and quality of the forest by removing trees of less vigor, quality and economic value. Firewood was the by-product created by removals of timber. A plan was developed but never implemented. At present the economic value of the forested land is low to moderate because of the trees' size and quality. The Town objectives for the site put a greater value on aesthetics, watershed capabilities, wildlife habitat, and passive recreation. With these objectives in mind forest management activities are developing a

property boundary line marking program, the removal of hazard trees threatening structures and trails, and cleaning around specimen trees such as the "Great Oak" located at the Great Oak campsite.

Fisheries Resources

Surface waters on the site are an unnamed ± 1.25 acre pond, an unnamed perennial stream commencing from the pond outlet, and two unnamed intermittent streams. The pond was created by impounding spring seeps and stream flow with an earthen dam. Aquatic plant growth and fallen trees were the only visible in-water fisheries habitat. The pond serves as the headwater source for an unnamed tributary to West Branch Salmon Brook.

The pond and outlet stream have never been formally investigated by the DEP Fisheries Division. Given the ponds visible physical characteristics, it is anticipated to be classified as warmwater. Fish associated with warmwater ponds in Connecticut include: largemouth bass, bluegill sunfish, common sunfish, black crappie, chain pickerel, golden shiner, and brown bullhead. The unnamed perennial stream is classified as coldwater. Naturally occurring fish species associated with such streams in Connecticut are: brook trout, blacknose dace, longnose dace, tessellated darter, and white sucker.

The site's aquatic resources will benefit most if offered complete protection from development. Increased opportunity for adverse impacts will occur in response to the degree of land change. Land use change may impact the pond and these impacts are anticipated to result from: nutrient enrichment from sediment deposition or other runoff, sediment deposition that will fill in the pond, and contaminant introduction such as oils and salts. Impacts to the stream are anticipated due to: removal of riparian vegetation, sediment deposition, stormwater drainage that could release pollutants, and nutrient enrichment form fertilizer runoff and septic system failure.

The following recommendations should be incorporated into the development plans in an effort to protect aquatic resources: 1) maintain a 100 foot open space buffer along the development's encroachment to the perennial streamcourse and a 50 foot buffer to the intermittent stream courses. Buffer widths should be increased in areas of steeper terrain; 2) establish a comprehensive erosion and sediment control plan; 3) design and implement an effective stormwater management plan; and 4) limit liming, fertilizing and the introduction of chemicals to land susceptible to runoff into watercourses.

Site Planning Considerations

The proposed use of the property for recreation, community hall and a caretaker residence is compatible with surrounding land uses. Route 20 in this area is lightly travelled and has no high hazard accident locations. The long term plans for the site including senior citizen housing and center and a cemetery also seem compatible with the surrounding uses. The plans for this property are consistent with the 1992 Hartland Plan of Development.

Several suggestions are made for consideration in developing the long term plans

for the site: 1) to actively seek to link Camp Alice Merritt with the other municipal property directly to the west on Rengerman Hill Road through an easement or acquisition; 2) develop a program for maintaining the existing trail network and to encourage the development of new trails where needed; 3) improve the roadway to the pond; 4) construct a small parking lot near the pathway to "Birch Hollow" camping area; 5) Kip House appears to be good location for the senior center with senior housing in the southeast portion and the cemetery in the northern area near Route 20; 6) a caretaker residence at the Wint-Sum is a good idea so that access can be monitored and controlled; 7) the camping units at "Great Oak" and "Birch Hollow" should be maintained; 8) Dilapidated structures and concrete piers should be removed, and these areas encouraged for the use of tent camping; and 9) a written list of guidelines should be developed and posted at the property and made available to user groups.

State Park Planner Comments

Comments are based upon in-office analysis.

The bulk of the property should be used for passive open space utilizing the existing trail network with possibilities for environmental education. It is suggested that the trails be for pedestrian use only and that use policies should be developed and posted. The logical area for the cemetery is in the northern section near Route 20. The structural integrity of the existing buildings should be investigated, perhaps a local carpenter or engineer would volunteer their expertise for this. If the buildings are not structurally sound or meet the needs of the community than they should be removed as the best long term cost effective approach.

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An environmental review was requested by the Hartland Board of Selectmen for the town owned Camp Alice Merritt property. The former Girl Scout Camp is 47.89 acres in size located on Hartland Boulevard (Route 20) in East Hartland. The town has owned the property for approximately one year. Located on the parcel are three large buildings, Kip House, Wint-Sum House and Nellie B. West House, which all appear to be in good condition judging from outside appearances. Two camping units exist with cabins and pavilions, the other original camping areas are dismantled or partially dismantled. A 1.25 acre pond exists which is currently being used for swimming lessons. The wetlands and watercourses are estimated to encompass 6.5 acres of the site. There is a dirt road leading down to the pond, and foot trails connect all the camping areas.

An advisory committee has been formed to develop a long range plan for the site. Potential uses expressed to Team members include: future cemetery space, future senior citizen's housing and center, passive recreation such as hiking and nature study, continued use of the pond for swimming and fishing, camping by organized groups, and use of existing buildings for meetings, assemblies and a caretaker.

The purpose of this review is to inventory and assess existing natural resources and to discuss the proposed uses.

The Environmental Review Team Process

Through the efforts of the Town of Hartland and the King's Mark ERT, this environmental review and report was prepared for the Town. This report primarily provides a description of on-site natural resources and presents planning, management and land use guidelines. The review process consisted of 4 phases:

- 1) Inventory of the site's natural resources (collection of data);
- 2) Assessment of these resources (analysis of data);

- 3) Identification of resource problem areas; and
- 4) Presentation of planning, management and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on July 22, 1993. Mapped data or technical reports were also perused, and specific information concerning the property was collected. Being on-site allowed Team members to check and confirm mapped information and identify other resources.

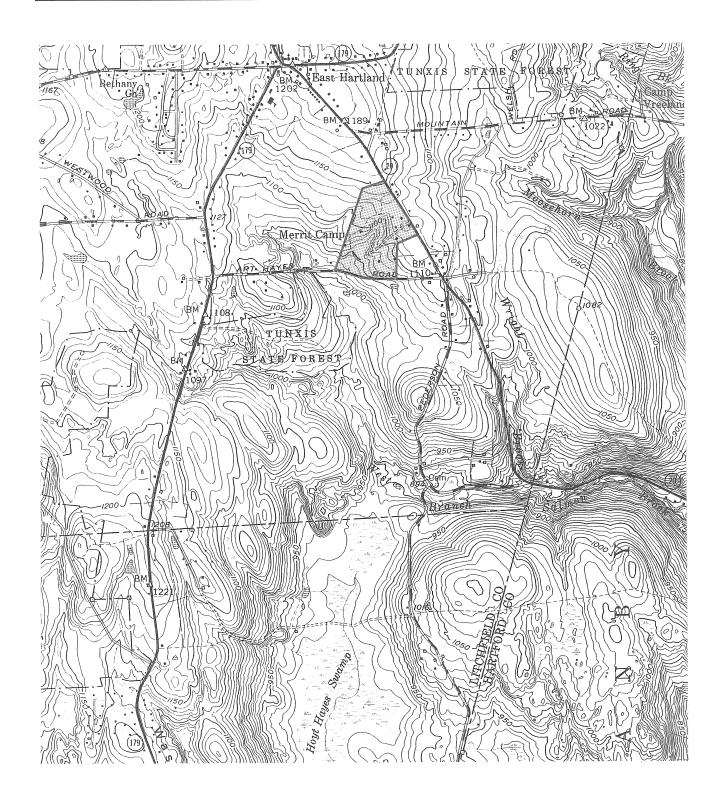
Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Results of this analysis enabled Team members to arrive at an informed assessment of the property's natural resource opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into the final ERT report.

LOCATION MAP

Scale 1" = 2000'

N

Approximate Site Boundary



Surficial Geology

The area under consideration is in the north central portion of the New Hartford Quadrangle. The material on the land surface is till at least 10 feet thick, according to the map of the Surficial Geology of Connecticut (Stone et. al., 1992). Judging by depth to bedrock as determined by wells dug in the general area, the till may be as much as 40 feet thick in the eastern portion of the study area, but probably somewhat thinner, as shown by those wells drilled to the east, and the till apparently thins to the west. During the field review, the Team Geologist observed some of the till in outcrop. The grain size is highly variable, as one might expect, with cobbles mixed with sand and silt. No evidence of stratification was observed, but the cobbles were rounded, indicating water processing at some point in their history. Judging by the generally excellent drainage in the area, the till was probably not highly compacted as it was emplaced. There are some erosion problems in the roadbed near the pond that should be given attention. Increasing vegetation and stabilizing the slope will both improve the situation.

Bedrock geology

The bedrock in the area cannot be directly observed, but is indicated as Ordovician Straits Schist on the New Hartford Quadrangle Bedrock Geology map (Schnabel, 1975). The Straits Schist is described as a medium-grained, medium brownish-gray schist containing quartz, plagioclase, muscovite, biotite, garnet, and graphite with nonessential kyanite, sillimanite, tourmaline and apatite. The study area is near the northern nose of the South Granby Dome, a doubly plunging anticline. If the nose of the anticline is placed correctly on the map, it is expected that the foliation in the schist would be dipping at least 45° to 50° NE and trending NW to SE. This has a bearing on possible deep groundwater movement, since fractures in the rock tend to occur in sets parallel to the foliation, and perpendicular to it.

Hydrology

The surface slope is flat near Route 20, and sloping 12% toward the lake. There are several small ephemeral streams running down the slope and into the lake, or into a wetland area downstream from the lake. At the time of the site visit, there had been little rainfall for several weeks, so the streambeds and some of the wetlands were dry. The lake is an impounded lake, which means that it probably acts as a local recharge area for the groundwater. The flat area near the highway is a potential site for future housing, so septic systems and wells may be installed. Since the lake is at least 500 feet from the nearest potential housing sites, pollution of the lake by sewage will probably not be a problem if the septic systems are designed properly and in accordance with state and local health department regulations.

Development Potential

The study area is suitable for the proposed uses from a geological point of view. The soils at the top of the hill near Route 20 are suitable for development (see **Soils** section for specifics). Since only minimal development of the property is planned, increased runoff should not be a problem. If extensive areas of pavement are put in for parking and roads, runoff can be expected to increase, but should not be a problem if the ratio of paved to unpaved areas remains low. Apart from a few ephemeral stream beds, which were dry when viewed, the drainage in the upper part of the study area and along the hill slope appears to be excellent. Old Girl Scout camping platforms were still standing after years of disuse, showing no signs of mildew or rot. The town of Hartland is fortunate to have such an asset for their community.

References

Schnabel, Robert W., 1975, (Bedrock) Geologic Map of the New Hartford Quadrangle, CT U.S. Geological Survey, Quadrangle Map GQ-1257.

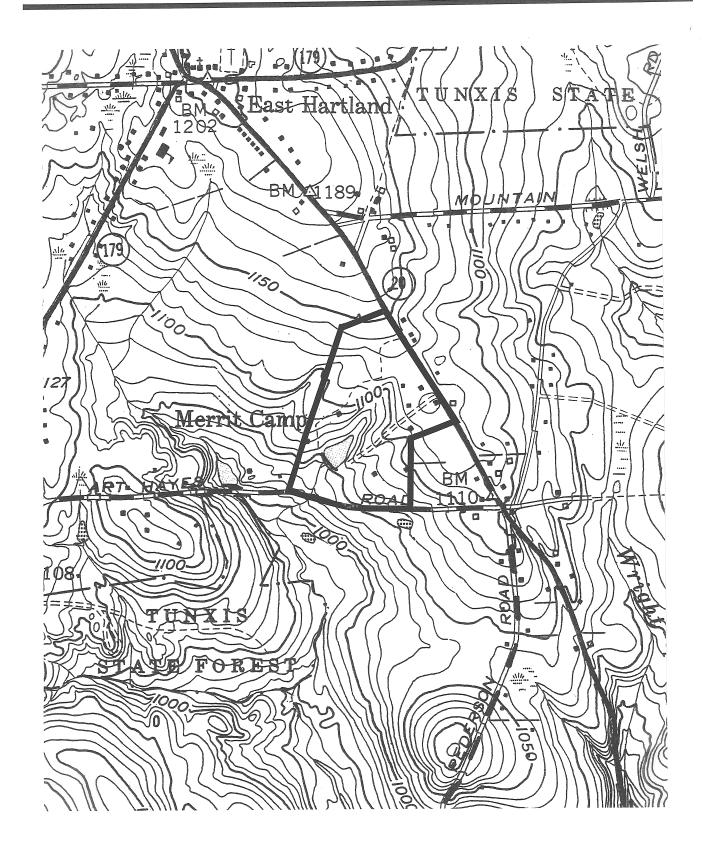
Stone, Janet R. et. al., 1992, Surficial Materials Map of Connecticut, U.S. Geological Survey and the Geological and Natural History Survey of the State of Connecticut Department of Environmental Protection.

TOPOGRAPHIC MAP

Scale 1" = 1000'

N

Approximate Site Boundary



According to the Soil Survey of Hartford County, Connecticut, there are 6 soil units mapped on this 47.89 acre parcel. These soils are outlined on **Table 1**. **Table 2** shows the soil map unit name, acreage of each soil on the property and the percent of area that each soil occupies on the site.

According to the Advisory Committee, potential uses for the site include future cemetery space, hiking, nature study, future senior citizen's center and use of existing buildings for meetings and assemblies.

Table 3a lists the limitations that each soil has to a particular land use. The Charlton, CaB and Chb soils, have slight limitations for the installation of septic tank absorption fields. This means that this area would be well suited for a future senior citizen's center and for housing. The Charlton soil also has a slight limitation for shallow excavations, which means that this soil would be suited for a potential cemetery site. The remaining soils are severely limited to the land uses mentioned above. Table 3b lists the soil limitations for various recreational activities. The largest limiting factors for most of these recreational activities include the wetness of some areas of this parcel and the very stony areas of the site. The pond site would provide an excellent recreational area with proper planning.

Tables 4a, 4b, 4c lists the physical and chemical properties as well as the engineering index properties of each soil unit.

Tables 5a lists some of the soil features including depth to bedrock. **Table 5b** lists the water features including the average high water table of each soil.

Wetlands

While none of soils mapped on this parcel are hydric, some of these soils do have wetland inclusions. A state certified soil scientist is necessary in order to map out areas of wetland inclusions. The current surface area of pond is 1.39 acres (1.25 acres from The Land Concern Study, 1987), as measured from aerial photography. This ponded area was created artificially by a dam that runs along the south west edge of the pond. The structural integrity of this dam should be evaluated by a professional engineer or by an inspector from the dam safety section of the Connecticut Department of Environmental Protection. This should be performed before this area is used as a town recreational facility. (Please see the Appendix for the 1991 DEP Dam Inspection Report).

Erosion and Sediment Control

Presently the access road going to the pond area is eroding, due to the 15% to 25% grades on sections of this road. Cars should not be allowed to enter on these steep sections of road. It is recommended that vehicle traffic remain at least 150 ft. from the pond/beach area. Parking should be established on the south east side of the access road. Foot paths to the beach area should be constructed to minimize erosion. All these areas should be stabilized with proper grading, water bars and vegetation.

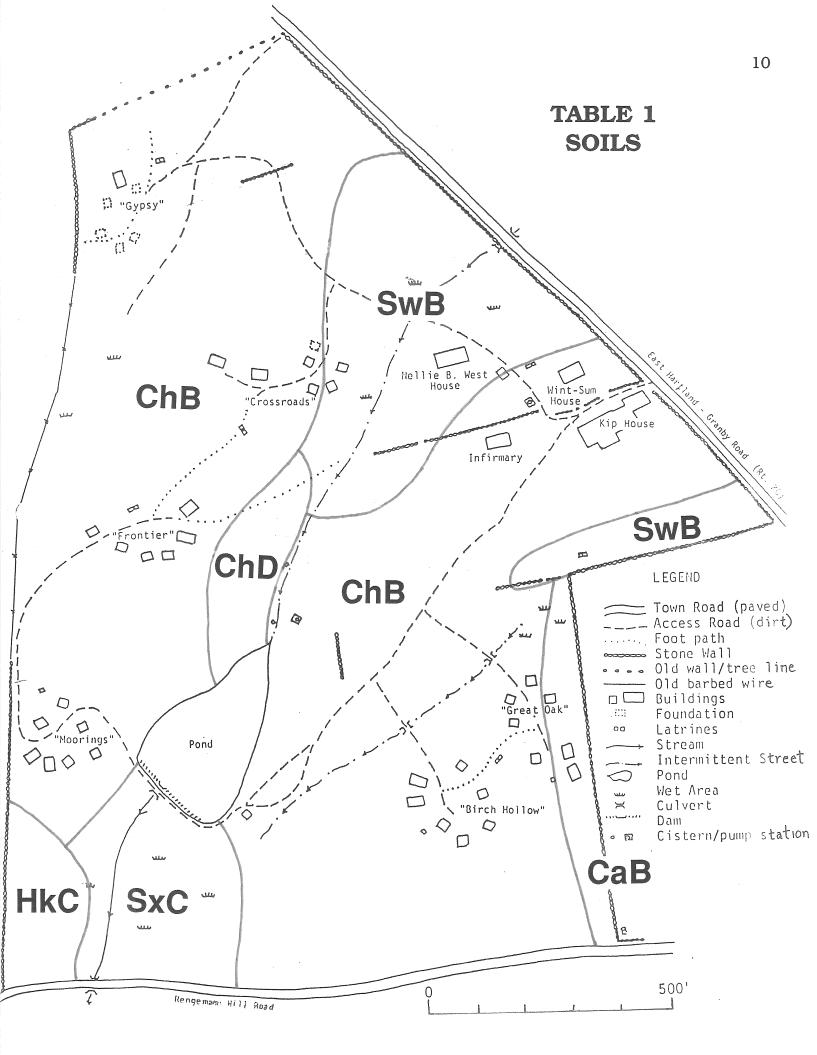
All future activities should have erosion control planning and erosion control monitoring. The pond and intermittent tributaries should be protected from siltation which may cause algae blooms and eventually eutrophication. Buffer areas around wetlands and watercourses can filter sediment out of stormwater before it reaches streams and the pond.

SOILS MAP

N

Scale 1" = 1667'





ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Survey Area- Camp Alice Merritt

Map Symbol	Soil Map Unit Name	Acres	Percent	
CaB ChB ChD HkC SWB SXC	CHARLTON FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES CHARLTON STONY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES CHARLTON STONY FINE SANDY LOAM, 15 TO 25 PERCENT SLOPES HINCKLEY GRAVELLY SANDY LOAM, 3 TO 15 PERCENT SLOPES SUTTON STONY LOAM, 3 TO 8 PERCENT SLOPES SUTTON AND ACTON VERY STONY LOAMS, 3 TO 15 PERCENT SLOPES Area of Pond	1.0 33.7 1.3 1.2 6.4 2.9 1.39	2.1 70.3 2.7 2.5 13.4 6.1 2.9	
	Total Acreage	47.89	100.0	

TABLE 3a

SOIL INTERPRETATION REPORT

	Symbol, Name	Septic Tank Absorption Fields	Sewage Lagoons	Shallow Excavations	Dwellings Without Basements	Dwellings With Basements
СаВ	CHARLTON	SLIGHT	SEVERE Seepage	SLIGHT	SLIGHT	SLIGHT
ChB	CHARLTON	SLIGHT	SEVERE Seepage	SLIGHT	SLIGHT	SLIGHT
ChD	CHARLTON	SEVERE Slope	SEVERE Seepage Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope
HkC	HINCKLEY	SEVERE Poor Filter	SEVERE Seepage Slope	SEVERE Cutbanks Cave	MODERATE Slope	MODERATE Slope
SwB	SUTTON	SEVERE Wetness	SEVERE Seepage Wetness	SEVERE Wetness	MODERATE Wetness	SEVERE Wetness
SXC	SUTTON	SEVERE Wetness	SEVERE Seepage Slope Wetness	SEVERE Wetness	MODERATE Wetness Slope	SEVERE Wetness

TABLE 3b

SOIL INTERPRETATION REPORT

Map	Symbol,	Camp Areas	Picnic Areas	Playgrounds	Paths and
	Name			, 3	Trails
CaB	CHARLTON	SLIGHT	SLIGHT	MODERATE	SLIGHT
				Slope Small Stones	
ChB	CHARLTON	MODERATE	MODERATE	SEVERE	SLIGHT
		Large Stones	Large Stones	Large Stones	
ChD	CHARLTON	SEVERE	SEVERE	SEVERE	MODERATE
GIID	CHARLION	Slope	Slope	Large Stones	Slope
		•	•	Slope	·
HkC	HINCKLEY	MODERATE	MODERATE	SEVERE	SLIGHT
		Slope	Slope	Slope	
		Small Stones	Small Stones	Small Stones	
SwB	SUTTON	MODERATE	MODERATE	SEVERE	MODERATE
		Large Stones	Wetness	Large Stones	Wetness
		Wetness	Large Stones		
SxC	SUTTON	SEVERE	SEVERE	SEVERE	MODERATE
		Large Stones	Large Stones	Large Stones	Wetness
				Slope	

PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

 Map c				Moist Blk	Permeab-	Available	Soil	Salin-	Shrink	Erosion	Wind	Organi
	ol Soil Name	Depth	Clay	Density	ility	water cap	React	ity	Swell	Factor	Erod.	Matter
		(In)	(pct)	(g/cm3)	(In/hr)	(In/in)	(ph)	(mmhos/cm)	Pot.	K T	Group	(pct)
CaB	CHARLTON	0-8	3- 8	1.00-1.25	0.6- 6.0	0.08-0.23	4.5-6.0	-	LOW	.24 3	2	5.
		8-24	3-8	1.40-1.65	0.6- 6.0	0.07-0.20	4.5-6.0	-	LOW	.24	-	
		24-65	1-8	1.45-1.70	0.6- 6.0	0.05-0.16	4.5-6.0	-	LOW	.24	-	
ChB	CHARLTON	0- 4	3-8	1.00-1.25	0.6- 6.0	0.08-0.23	4.5-6.0	-	LOW	.20 3	0	
		4-24	3-8	1.40-1.65	0.6- 6.0	0.07-0.20	4.5-6.0	-	LOW	.24	-	
		24-65	1- 8	1.45-1.70	0.6- 6.0	0.05-0.16	4.5-6.0	-	LOW	.24	-	
ChD	CHARLTON	0-4	3-8	1.00-1.25	0.6- 6.0	0.08-0.23	4.5-6.0	-	LOW	.20 3	0	
		4-24	3- 8	1.40-1.65	0.6- 6.0	0.07-0.20	4.5-6.0	-	LOW	.24	-	
		24-65	1- 8	1.45-1.70	0.6- 6.0	0.05-0.16	4.5-6.0	-	LOW	.24	-	
HkC	HINCKLEY	0- 6	4- 8	0.90-1.10	6.0- 20	0.08-0.14	3.6-6.0	-	LOW	.20 3	2	7.
		6-12	1- 5	1.20-1.40	6.0- 20	0.01-0.10	3.6-6.0	-	LOW	.17	-	
		12-60	0-3	1.30-1.50	20- 20.0	0.01-0.06	3.6-6.0	-	LOW	.10	-	
SwB	SUTTON	0- 3	3-10	1.00-1.25	0.6- 6.0	0.09-0.18	4.5-6.0	-	LOM	.20 3	7	15.
		3-24	3-10	1.35-1.60	0.6- 6.0	0.08-0.18	4.5-6.0	-	LOW	.28	-	
		24-65	2- 6	1.45-1.70	0.6- 6.0	0.06-0.16	4.5-6.0	-	LOW	.24	-	
SxC	SUTTON	0- 3	3-10	1.00-1.25	0.6- 6.0	0.09-0.18	4.5-6.0	-	LOW	.20 3	7	15.
		3-24	3-10	1.35-1.60	0.6- 6.0	0.08-0.18	4.5-6.0	-	LOW	.28	-	
		24-65	2- 6	1.45-1.70	0.6- 6.0	0.06-0.16	4.5-6.0	-	LOW	.24	-	

TABLE 4b

ENGINEERING INDEX PROPERTIES

		1	Fragments	Perce	nt passing	- sieve n	umber		
Map			>3	-				Liquid	Plasticity
Symbol	Soil Name	Depth	Inches	4	10	40	200	limit	Index
		(In)	(pct)					(pct)	
CaB	CHARLTON	0- 8	0- 5	85- 95	75- 90	50- 85	25- 65	15-25	0- 5
		8-24	0-15	65- 90	60- 90	40- 80	20- 65	15-25	0- 3
		24-65	5-25	60- 90	55- 85	40- 75	20- 45	-	0- 0
ChB	CHARLTON	0- 4	10-20	75- 95	70- 90	60- 85	30- 70	15-25	0- 5
		4-24	0-15	65- 90	60- 90	50- 80	20- 65	15-25	0- 3
		24-65	5-25	60- 90	55- 85	40- 75	20- 45	-	0- 0
ChD	CHARLTON	0- 4	10-20	75- 95	70- 90	60- 85	30- 70	15-25	0- 5
		4-24	0-15	65- 90	60- 90	50- 80	20- 65	15-25	0- 3
		24-65	5-25	60- 90	55- 85	40- 75	20- 45	-	0- 0
HkC	HINCKLEY	0- 6	0-10	60- 85	50- 75	30- 65	15- 40	15-20	0- 0
		6-12	0-20	50- 95	30- 85	15- 70	2- 30	15-20	0- 0
		12-60	5-25	50- 65	30- 50	10- 40	0- 20	15-10	0- 0
SwB	SUTTON	0- 3	10-20	65- 95	60- 90	40- 80	25- 65	15-30	0- 5
		3-24	0-15	65- 95	60- 90	40- 80	25- 65	15-25	0- 3
		24-65	5-25	60- 90	55- 85	40- 75	20- 60	-	0- 0
SxC	SUTTON	0- 3	15-25	85- 95	65- 95	60- 90	40- 80	15-30	0- 5
		3-24	0-15	65- 95	60- 90	40- 80	25 - 65	15-25	0- 3
		24-65	5-25	60- 90	55- 85	40- 75	20- 60	-	0- 0

TABLE 4c

ENGINEERING INDEX PROPERTIES

Survey Area- HARTFORD COUNTY, CONNECTICUT

Map				Classi	fication
Symbol	Soil Name	Depth	USDA Texture	Unified	AASHTO
		(In)			
CaB	CHARLTON	0- 8	FSL	SM ML	A-2 A-4
		8-24	FSL GR-FSL GR-L	SM ML	A-2 A-4
		24-65	GR-SL GR-FSL L	SM GM	A-2 A-4
ChB	CHARLTON	0- 4	STV-FSL	SM ML	A-2 A-4
		4-24	FSL GR-FSL GR-L	SM ML	A-2 A-4
		24-65	FSL GR-FSL GR-SL	SM GM	A-2 A-4
ChD	CHARLTON	0- 4	STV-FSL	SM ML	A-2 A-4
		4-24	FSL GR-FSL GR-L	SM ML	A-2 A-4
		24-65	FSL GR-FSL GR-SL	SM GM	A-2 A-4
HkC	HINCKLEY	0- 6	GR-SL	SM GM	A-1 A-2 A-4
		6-12	GR-LS LFS GRV-LCOS	SM GM GP-GM SP-SM	A-1 A-2 A-3
		12-60	SR- GRV-LFS CB-COS	SP SP-SM GP GP-GM	A-1
SwB	SUTTON	0- 3	STV-FSL	SM ML GM	A-2 A-4
		3-24	FSL L GR-FSL	SM ML GM	A-2 A-4
		24-65	GR-FSL GR-SL SL	SM ML GM	A-1 A-2 A-4
SxC	SUTTON	0- 3	STX-FSL	SM ML GM	A-2 A-4
		3-24	FSL L GR-FSL	SM ML GM	A-2 A-4
		24-65	GR-FSL GR-SL SL	SM ML GM	A-1 A-2 A-4

SOIL FEATURES

Map sy	mbol and name	 Bedrock Depth Hardness	•	nented pan Hardness		ence	1	Risk of Uncoated steel	corrosion
		In 	In		In 	In			
CaB	CHARLTON	60- 60	_		-	-	LOW	LOW	HIGH
ChB	CHARLTON	60- 60	-		-	-	LOW	LOW	HIGH
ChD	CHARLTON	60- 60	-		-	-	LOW	LOW	HIGH
HkC	HINCKLEY	60- 60	-		-		LOW	LOW	HIGH
SwB	SUTTON	60- 60	-		-	-	HIGH	MODERATE	HIGH
SxC	SUTTON	60- 60	-		•	-	HIGH	MODERATE	HIGH

WATER FEATURES

Map symbol and		Hydrologic	Flood	High water table			
soil n	ame	group	Freq Duration	Months	Depth	Kind	Months
					(Ft)		
CaB	CHARLTON	В	NONE	-	6.0- 6.0		-
ChB	CHARLTON	В	NONE	-	6.0- 6.0		-
ChD	CHARLTON	В	NONE	•	6.0- 6.0		-
HkC	HINCKLEY	Α	NONE	-	6.0- 6.0		•
SwB	SUTTON	В	NONE	-	1.5- 2.5	APPAR	NOV-APR
SxC	SUTTON	В	NONE	-	1.5- 2.5	APPAR	NOV-APR

- 1) Cemetery space Without conducting soil testing, vegetation and surficial deposits indicate reasonably good soil conditions especially on the higher ground of the property. There should be little if any problem with developing the northern portion of the property for a cemetery. The only limitation may be large rocks.
- 2) Passive recreation The area is ideally suited for passive recreation. Camping cabins and trails exist throughout the site. The bathing area access road should be better developed to allow emergency vehicle access and regraded to prevent road runoff from entering the pond.
- **3) Proposed development** As mentioned above, soil conditions in the majority of the site appear good. Wet areas are concentrated mainly along the watercourses associated with the pond. Any proposed development should stay away from these lower wet areas since most of this site is the watershed of the pond.

Even though the site appears to have reasonably good soil conditions, large community septic systems for a senior center/housing complex should be avoided. These systems often become a liability for the community because ownership and maintenance issues never seem to be adequately addressed. Smaller systems to serve individual dwellings should be utilized. Any community water system would have to be approved by the State Health Department.

4) Existing buildings - The existing buildings appear to be in reasonably good condition and seem to represent a real asset to the community. The existing septic systems should be evaluated for their condition and capabilities before being used on a regular basis. Some improvements will likely be necessary. Furthermore, a water analysis should be taken of the existing water supply well to insure potability.

The Natural Diversity Data Base maps and files have been reviewed regarding the Camp Alice Merritt property. According to our information, there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species occurring at the site in question.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site specific field investigations. Consultation with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact the Natural Diversity Data Base if you have any questions regarding this information (566-3540). Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Camp Alice Merritt is a 48 acre former Girl Scout camp with 43 acres forested and 5 acres of non-forested lands.

The vegetative description for the site can be divided into three broad vegetative cover types. These are mixed hardwoods, mixed softwoods, and old field. The cover types are described in greater detail under the heading **Vegetative Type Description**.

In 1982, while owned by the Girl Scouts, the property was enrolled in a cost-share program administered by the U.S. Department of Agriculture, Agricultural Conservation and Stabilization Service. This program, Forest Tree Stand Improvement Including Fuelwood Utilization, helped pay for the development of a forest management plan with a goal to improve the health and quality of the forest by removing trees of lesser vigor, quality and economic value. Firewood was the by-product created from these removals. A plan was written for the property, but was not implemented. At present the economic value of the forested land is low to moderate because of the trees' size and quality. Considering the objectives of the present landowner, which puts greater value on the aesthetics, watershed capacities, diversified wildlife habitat, active and passive recreation potentials of the site's forest cover. Forest management activities presently are limited to developing a property boundary line marking program and the removal of hazard trees threatening structures and trails.

Vegetative Type Description

The following is a broad breakdown of the vegetation cover types found on the property. The types are directly influenced by either soil conditions, historical use, past management, or a combination of these factors. Soil types often dictates the moisture availability which can limit or restrict certain vegetation's growth. Historical use and the past management of the land also influences the occurrence of the types of vegetation present.

Type 1 - Mixed Hardwoods

Approximately 33 acres of the site is comprised of this type. The hardwood species present are alder, ash, aspen, beech, black birch, grey birch, white birch, yellow birch, butternut, black cherry, pin cherry, American chestnut, elm, black gum, hickory, red maple, sugar maple, black oak, chestnut oak, red oak, scarlet oak, white oak, yellow poplar. The softwood species present are red cedar, hemlock, red pine, white pine. Species usually found in the understory are barberry, highbush blueberry, mountain laurel, striped maple, juniper, spicebush, staghorn sumac, winterberry, witch-hazel. The present tree size ranges from pole (6 to 10 inches in diameter at breast height) to small sawtimber (12 to 16 inches dbh) with scattered large sawtimber (18 inches dbh and larger). The large sawtimber is of old field origin with short boles and large wide crowns.

On drier growing sites there is a tendency to find a larger percentage of gray birch, white birch, black oak, chestnut oak, red cedar, white pine. Understory species present are barberry, mountain laurel and juniper.

On more moist growing sites there is a predominance of ash, aspen, beech, black birch, yellow birch, butternut, black cherry, American chestnut, black gum, hickory, red maple, sugar maple, black oak, red oak, scarlet oak, white oak, yellow poplar, hemlock, red pine and white pine. Understory species present are barberry, mountain laurel, striped maple, spicebush, and witchhazel.

On growing sites where the soils are poorly drained or have seasonally high water tables, trees present are alder, ash, elm, black gum, red maple, scarlet oak, and hemlock. Understory species present are highbush blueberry, spicebush, and winterberry.

Type 2 - Mixed softwoods

Approximately seven acres of the site, north and south of the pond, are occupied by this type. These are areas where hemlock and white pine make up the majority of the tree cover. Some of the hardwood species found in TYPE 1 may occur within this type. Other softwood species associated with hemlock and white pine are red cedar, juniper, and red pine. The red pine is a non-native species usually planted in old fields. As in TYPE 1, the soils moisture availability influences the occurrence and growth of the softwood species. Hemlocks tend to favor more moist soils, while on drier sites white pine and the other softwoods are more abundant. Barberry and mountain laurel are usually found under white pine cover.

In both types the quality of the trees' stems for lumber production relates to the soil type and the past land use. The deeper, well drained soils tend to produce better quality tree growth. The extent and intensity of past land use effects the tree's form and quality.

Type 3 - Old Field

A three acre opening is reverting to forestland. The trees species present in the sapling stage (2 to 4 inches dbh) are aspen, birch, cherry, red maple, oak, red cedar, and white pine. Shrub species include barberry, blackberry, blueberry, multiflora rose, and juniper.

Limiting Conditions and Potential Hazards

This section address the factors which could limit or modify forest management activities on the site.

The natural factors that may affect management on the property are those soils with poor drainage, seasonally high water tables, or are excessively shallow to bedrock in depth, and insects and diseases of the forest. Openings made in the forest canopy growing on these soils can predispose the remaining trees to windthrow. There would be a higher incidence of rutting and root damage from equipment operating on theses soils. Insects and disease are always a threat to the health of a forest. Diseases visible on the site are Nectria canker on birch, beech bark disease on beech, and chestnut blight on American chestnut. A commonly occurring insect is the white pine weevil which has deformed some of the white pine trees. The area has had episodes of gypsy moth defoliation. Two hemlock pests have been reported in the area, the hemlock looper and the hemlock wooly adelgid. The adelgid, a introduced pest, is a sap sucking insect while the looper feeds on the needles, both insects can defoliate hemlocks.

Management Considerations

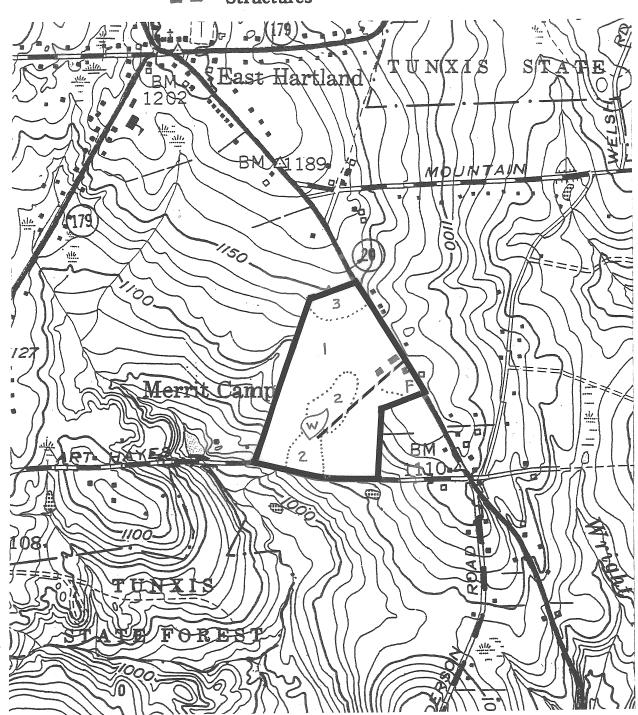
The landowner's objective to manage the property for passive recreation focuses the management activities to reducing the tree hazards in the developed areas and along the trail system, and to clear around specimen trees such as the Great Oak located in the southeast campsite. A property line marking program should be developed to inform the public as to where the town owned land is and to reduce the instances of trespassing on abutting private properties. Information on tree hazards in recreation sites and boundary line marking may be found in the Appendix.

VEGETATION MAP

Scale 1" = 1000'

ř

- Approximate Site Boundary
 - 1 Mixed Hardwoods
 - 2- Mixed Softwoods
 - 3 Old Field
 - F Open Field
 - W Water
- --- Access Road
- **Structures**



Fisheries Resonrees

Site Description

Presently, the Camp Alice Merritt site is primarily wooded with the exception of outbuildings and trails. Surface waters on the site are an unnamed 1.25 acre pond, an unnamed perennial stream commencing from the pond outlet, and two unnamed intermittent streams. Of these surface waters, viable aquatic systems are limited to those found within the pond and outlet stream.

The unnamed pond is artificial in nature created by impounding spring seeps and stream flow with an earthen dam. Information concerning maximum and average pond depth are unavailable. Being relatively steep sided, aquatic plant growth is limited to a narrow band around nearly the entire pond perimeter, the exception being the area maintained for swimming. Aquatic plant growth and fallen trees were the only visible in-water fisheries habitat.

The unnamed pond functionally serves as the headwater source for an unnamed tributary to West Branch Salmon Brook. While on the Camp Alice Merritt site, this stream is approximately 6 feet in width with an average bank-full depth of 8 inches. Moderate gradient produces surface flows predominated by shallow riffle. Stream substrate is of small boulder, cobble, gravel, coarse sand, and sand-silt fines. Dense vegetative growth abounds along the stream. Small boulders, undercut banks, and fallen vegetation comprise in-stream fisheries habitat.

Fisheries Resources

The fisheries resources of the unnamed pond and unnamed outlet stream have never been formally investigated by the DEP Fisheries Division. Given the pond's visible physical characteristics, it is anticipated to be classified as warmwater. Fish species

associated with warmwater ponds in Connecticut are: largemouth bass, bluegill sunfish, common sunfish, black crappie, chain pickerel, golden shiner, and brown bullhead.

Although originating from a warmwater pond environment, the unnamed stream is most aptly classified as being coldwater. Naturally occurring fish species associated with such streams in Connecticut are: brook trout, blacknose dace, longnose dace, tessellated darter, and white sucker.

Impacts

Several proposals for use of the 47.89 acre Camp Alice Merritt site have been developed ranging from cemetery creation to maintaining existing conditions for hiking and nature study. The site's aquatic resources will benefit most if offered complete protection from development, as in the scenario whereby the site is maintained for hiking and nature study. Increased opportunity for adverse impacts will occur in response to the degree of land use change.

Land use change may impact the unnamed pond; impacts anticipated to result from:

- 1. Nutrient enrichment, from either sediment deposition or other runoff, will can lessen water quality, however, in most instances will result in an overabundance of aquatic plants. An overabundance of aquatic plants can cause "stunting" (overabundance of small fish with extremely slow growth rates) due to the inability of large predatory fish to find and consume small fish in heavy plant cover. Overabundant plants may also cause winter or summer kills of fish by consuming large amounts of oxygen during the night, during prolonged periods of cloudiness, or under the cover of ice and snow.
- 2. Sediment deposition will fill in-lake areas within the immediate vicinity of the point of entry, thereby eliminating certain amounts of habitat.
- **3.** Contaminant introduction, such as oils or salts, can cause kills of fish and other aquatic life.

The following impacts to the unnamed stream are anticipated due to:

- 1. Removal of riparian vegetation resulting in:
 - **a.** the elimination of a natural "filter" effect; vegetation has the ability to prevent sediment, nutrients, fertilizers, and other non-point source pollutants from upland sources from entry into streams; such non-point pollutants can degrade water and habitat quality;
 - **b.** an increase of stream water temperature during the summer months (thermal loading) while decreasing winter water temperatures to levels where there may be a complete cover of ice;
 - **c.** a decrease streambank stability thereby increasing in-stream siltation and aquatic habitat degradation;
 - **d.** an elimination, or drastic decrease of large woody debris to the stream; such material provides critical in-stream habitat features for numerous species of aquatic organisms;
 - **e.** a reduction of a substantial proportion of food for aquatic insects which in turn constitutes a reduction in a significant proportion of food available for resident stream fish;
 - **f.** a stimulation of excessive aquatic plant growth;
 - **g.** a decrease of the riparian corridor's ability to serve as a "reservoir" storing surplus runoff for gradual release back into streams during summer and early fall base or low flow periods.
- **2.** Sediment deposition from developed areas cleared of vegetation. Excessive erosion and sedimentation can degrade water quality and in-stream habitats in turn impacting the resident fishery population. Specifically, excessive siltation has the potential to:
 - a. cause a depletion of oxygen within the water column;
 - **b.** disrupt fish respiration and gill function;
 - **c.** reduce water depth resulting in a reduction of habitats used by fish for feeding, cover, and spawning;
 - d. reduce fish egg survival;
 - e. reduce aquatic insect production;
 - **f.** promote growths of aquatic plants.

- **3.** Influx of stormwater drainage may cause aquatic habitat degradation due to the release of "pollutants" from developed areas. Such pollutants include gasoline, oil, heavy metals, road salt, fine silts, and coarse sediments.
- **4.** Nutrient enrichment from fertilizer runoff and septic system failure will stimulate aquatic plant growth. Herbicide runoff may result in fish kills and water quality degradation.

Recommendations

The following measures should be incorporated into development plans for the Camp Alice Merritt site in effort to offer aquatic resource protection:

- 1. Maintain, at a minimum, a 100 foot open space buffer zone along development's closest encroachment to perennial surface waters and a minimum 50 foot buffer along intermittent streams. Neither construction nor other alteration of riparian habitat should be allowed within these zones. Buffer widths should be increased in areas of steeper terrain.
- **2.** Establish a comprehensive erosion and sediment control plan with mitigative measures (hay bales, silt fence, etc.) to be installed prior to and maintained through all development phases.
- **3.** Design and implement an effective stormwater management plan with storm water runoff being detained rather than allowed direct discharge to surface waters.
- **4.** Limit liming, fertilizing, and the introduction of chemicals to developed land susceptible to runoff into watercourses. On-site septic systems likewise should not be located on land susceptible to leaching into surface waters.

The Merritt Camp Property is bordered primarily by undeveloped woodland with low density residential development located to the east of the site along Route 20. The principal access to the property is located off Route 20 and the sightlines are good for both entering and exiting the property at this point. The average daily traffic along this segment of Route 20 is light (1700 trips in 1991), and there are no high hazard accident locations. The proposed use of the property for recreation, a small community hall, and caretaker residence is compatible with the surrounding land uses. The long term vision for the property, which includes additional use of the property for senior housing, a senior community center, and possibly a cemetery, also appears to be compatible with surrounding land uses.

A fundamental goal of the 1992 Hartland Plan of Development is to "Preserve the natural resources which contribute to the rural character of Hartland". Another goal established by the Town Plan is to "Provide necessary community facilities to meet the needs of Hartland residents". A related objective to this goal as presented in the Town plan is "Manage and maintain existing facilities to serve as many diverse needs as possible". In the further development and refinement of the plans for the Merritt Camp property, these laudable goals and objectives should form the basis for municipal decision making.

The following suggestions are offered for consideration in developing plans for site design and use.

a) Actively seek to link the Merritt Camp property with the municipal property located just to the west of the site through an easement or property acquisition. This will enable the establishment of a larger trail network and provide an important connection between the Merritt Camp site, the other municipal swimming area located off Rengerman Hill Road, and the town center. Develop a program for maintaining the existing recreational trail network at the site and encourage the development of new trails where needed.

- b) To facilitate access to the pond on the site, improve the principle roadway from the Kip House to where the pathway leading to the "Birch Hollow" camping area. At this intersection, it appears feasible to construct a small parking area which can accommodate 10-15 cars. The pathway to the pond from this proposed parking area is in need of improvement and consideration should be given to closing off the steep and severely eroding segment just before the pond and redirecting traffic to the existing path to the southeast of this eroded area.
- c) The Kip House appears to be a good location for the development of a Senior Center and the area to the southeast appears satisfactory for the development of a Senior Housing project of 10-20 units. The northern portion of the property along Route 20 appears satisfactory for use as a cemetery should the need for this use arise in the future.
- **d)** Upgrading of the Wint-Sum House for use as a caretakers residence is advisable to enable monitoring and control of the use of the Merritt Camp.
- **e)** Maintenance of the structures and grounds at the "Great Oak" and "Birch Hollow" campgrounds should be pursued to keep these areas attractive for continued use by scout groups and others.
- f) Maintenance of the beach is found to be necessary to accommodate the users of the pond, then expansion of the beach to the south appears to offer the most potential.
- **g)** Consider removing the piers and dilapidated structures at the "Moorings" and "Frontier" campgrounds and maintaining, and encouraging the use of these areas for tent camping.
- **h)** Consider developing a written list of guidelines for use of the property that can be distributed to groups or individuals seeking a permit from the town to use the property. Copies of guidelines should also be available at the Merritt Camp for consideration by interested parties.

This section of summary comments is based upon in-office analysis. Fortunately the study done by the Land Concern Ltd. in 1987 does provide an excellent basis for proposing future reuse of the tract.

- 1. Utilize the bulk of the property as passive open space involving a loop hiking/nature trail probably utilizing existing trails, Also its possibilities for environmental education on the Hartland school system should be explored. The pond could be a good children's fishing pond, perhaps with occasional fishing derbies. Other recommendations would be to remove the remnants of campsites as management problems (cost of upkeep, attractive nuisances, etc.), perhaps leaving one or two shelters in relatively remote location for local youth group use. (It is recommended that the trails be for pedestrian use only, and that any policies concerning trail use be implemented early on to avoid potential future conflicts of use.*)
- 2. If use of part of the property for cemetery use is deemed necessary, the most appropriate location would be the northernmost section fronting on Route 20 in an area of well drained, relatively level Charlton soils. Although stoniness is a limitation, its ready road access and other positive attributes make this a logical location.
- **3.** Some civic use or uses may be housed in the existing structures at the property entrance on Route 20, if said structures are structurally sound and suitable for such uses as senior citizens' center, senior or other affordable housing, meeting location site, etc. If one or more of the structures do not meet these two criteria, their removal may be the best long term cost-effective approach for the Town of Hartland to take. (It is suggested that to investigate the integrity of the existing buildings that a local builder or carpenter be asked to volunteer their services, or that an engineer be hired to evaluate the structures.*)

*From a telephone conversation with J. Hickey after the field review.

Connecticut Division of Forestry Forest Practice Description Boundary Lines

Knowing Your Boundaries UCONN Cooperative Extension System

How to Recognize and Reduce Tree Hazards in Recreation Sites

DEP Dam Report

"Mountain Bikes - Friend or Foe?"

The Land Concern - Natural Resource Inventory

Appendix

For Appendix Information please contact the ERT Office at 860-345-3977

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, soil scientists, foresters, climatologists, landscape architects, recreational specialists, engineers and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - an 83 town area serving western Connecticut.

As a public service activity, the Team is available to serve towns and/or developers within the King's Mark RC&D Area - free of charge.

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns and/or developers in the review of sites proposed for major land use activities. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreational/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District and through the King's Mark ERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the land owner/developer allowing the Team to enter the property for the purposes of review and a statement identifying the specific areas of concern the Team members should investigate. When this request is reviewed by the local Soil and Water Conservation District and approved by the King's Mark RC&D Executive Committee, the Team will undertake the review. At present, the ERT can undertake approximately two reviews per month depending on scheduling and Team members.

For additional information regarding the Environmental Review Team, please contact the King's Mark ERT Coordinator, King's Mark RC&D Area, Inc., P.O. Box 70, Haddam, CT 06438. The ERT telephone number is 203-345-3977.