



FOREST STEWARDSHIP PLAN

Property Owner: Long Lake Township

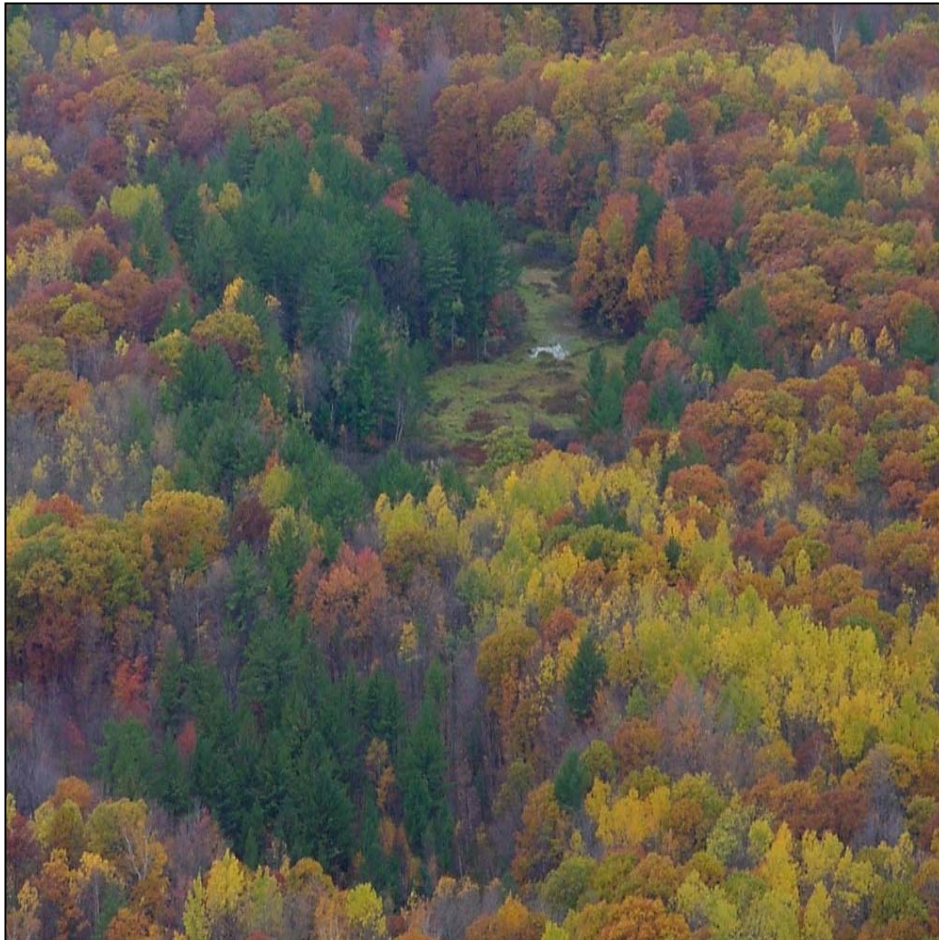
Address: 8870 North Long Lake Road
Traverse City, Michigan 49684
231-946-2249

Parcel Size: 120 Acres

Parcel Location: S 3/4 x W 1/2 x E 1/2, Section 35, T.27N. -R.12W., Long Lake Township, Grand Traverse County.

Plan Prepared by: Richard Deuell, AICP
Resource Planning Consultant
3545 Camp Sherwood Road
Boyne City, MI 49712

Assisted by: Rick Moore, Forester
Grand Traverse Conservation District



SUMMARY OF PROPERTY CONDITIONS AND RECOMMENDATIONS

FOREST HEALTH and MANAGEMENT:

The predominant forest types are northern red oak and aspen. Records show aspen on part of the property was removed in 1963, creating a two-aged stand of pole sized younger aspen and scattered large red oak, red pine and white pine. In the un-harvested areas, the older aspen and white birch are declining and dying. The red oak, red and white pine and younger aspen trees are healthy and there were no major insect or disease problems. Although, with the oak/aspen forest types, there is potential for gypsy moth infestations and oak wilt. This plan recommends limited timber management in stands predominated by aspen. The large pine trees located along the lower wetland and much of the oak forests will be left as old growth pine forests. The oak forests could receive treatment to salvage trees if there is a high level of mortality from wildfires, insect or disease problems.



SIGNIFICANT WILDLIFE FEATURES:

The protected property forms an anchor point for the inter-lake ecological corridor, that extends from Green Township northward into Long Lake Township, eventually diminishing into a fragmented, narrow landscape feature. Several wetlands provide important yet limited wildlife habitat. Ridgelines, traversing the property, connect wetlands and water features. Red oak provides mast crops of acorns for deer and squirrels. The declining aspen and white birch are good homes for cavity nesting animals and birds. The small stand of large pine trees provides summer and winter cover. Good supplies of food, water and shelter are abundant to wildlife. There are no natural upland openings on the property.

RESOURCE PROTECTION:

There are two small depressions that form open marshes on the property. Three forested wetlands encroach on the property. All of these wetlands are unique and limited resources in the predominately dry, sandy upland habitat. As opportunities arise, Long Lake Township should facilitate the expansion of protected lands in this inter-lake ecological corridor. Either fee simple purchase or establishing conservation easements on adjacent properties can accomplish this.



Logging trucks and large 4-wheel drive "mud" trucks are damaging the access road. During wet periods, these large-tired trucks tear up wet, muddy areas, making the depressions deeper and leaving ruts; that in turn make it difficult for people driving cars and small trucks to use the road. ATV's are causing erosion on trails and hillsides. Another threat to the natural area is the dumping of garbage, construction debris and yard waste. This trash problem extends beyond the 120-acre parcel.



IMPORTANT RECREATIONAL FEATURES:

There are several segments of trails on the property. These segments are part of a larger network of paths and trails that extend beyond the parcel through private property. Two of the trails are unimproved roads. Other trails were created by people repeatedly walking through the woods along the same route and eventually wearing a pathway. Key to improving recreation is to link these segments on the property and create a connected network of trails on the 120 acres.



AESTHETIC FEATURES:

Natural views abound on this property. Oak and aspen forests cover level areas and ridgelines. A stand of large red and white pine, reminiscent of pre-settlement old growth pine forests, can be found on the property. Several small wetlands, located on the property, include sparsely forested bogs, forested wetlands, and emergent open wetlands. White pine forests border the emergent pothole wetlands. The terrain is rolling in the northern half, becoming relatively level in the southern portions. Two ridgelines run in a northeasterly direction across the northern part of the property, creating vantage points of the woodlands and wetlands.

RECOMMENDATIONS:

Based on field visits, subsequent analysis of field data and community input, the following recommendations have been developed:

Trail System

- 🌲 Improve existing trails by clearing brush and branches, and installing trail markers.
- 🌲 Develop a connected network of hiking trails by creating cross-connectors.
 - North-South Connector
 - Pond Connector (elevated walkway to bridge wet area)

- 🌲 Suggestions for trail names – Luhrs Marsh Trail, Pine Marsh Trail, Ridgeline Trail, Oak Run Trail
- 🌲 Develop an outdoor educational component to the hiking trails by developing a interpretative brochure, erecting nature information signs, and building benches and wildlife viewing platforms.
- 🌲 All hiking trails should be designated non-motorized, excluding the access road.
- 🌲 Correct erosion problems caused by Off Road Vehicles.
- 🌲 Monitor trails for erosion problems and correct problems as needed.

Access Road and Parking Lot

- 🌲 Improve access road to provide access for recreational use and accomplish management activities.
- 🌲 Improve access road to the proposed parking lot. Improvements should be minimal such as by filling low areas, providing two turnouts, and road should be kept as a single lane road.
- 🌲 Develop a small gravel parking lot to accommodate several cars (around four vehicles).
- 🌲 Address concerns of adjacent landowners on the location and use of the access road.

Signage

- 🌲 Mark the property boundary with small signs to identify park boundaries and minimize trespassing incidences on adjacent properties.
- 🌲 Erect trail markers along the hiking trails to identify their location. At junctions of trails, place location maps with the trail system.
- 🌲 Develop and erect park usage/rules signs at key locations within the park. Suggested locations are at trailheads and where existing trails cross the park.
- 🌲 Nature information signs should be erected explaining plant communities, flora and fauna.

Trash Issues

- 🌲 Stop the dumping of trash, construction debris and yard waste.
- 🌲 Establish a Friends of the Park group of concerned citizens to monitor the park and to help clean trash.
- 🌲 Install and maintain a trash receptacle at the parking lot.

Timber Management

- 🌲 Manage designated areas for pulpwood and sawlog production. Harvest mature aspen, red maple, and white birch in these designated areas.

Wildlife Management

- 🌲 Improve wildlife habitat by leaving dead standing trees and leaving healthy northern red oak trees for mast production. Snags immediately adjacent to trails should be removed for safety reasons.
- 🌲 Work with community organizations to build and maintain wildlife nesting boxes.

Old Growth Forests

- 🌲 Allow the pine forests along south side of the marsh and most of the oak forests to mature towards an old growth state.

Young Growth Forests

- 🌲 Maintain younger growth areas by harvesting aspen and red maple trees in designated areas. Timber harvests will occur every 40-50 years.

Recommended Recreational Uses

- 🌲 The overall approach is to provide an area for quiet, wildlands recreation. Within this context hiking, cross-country skiing, nature walks, hunting, outdoor education and mushroom hunting are all compatible recreational uses. The use of ORV's, snowmobiles and mountain bikes are not compatible with quiet wildlands recreation and should not be allowed on hiking trails and throughout the property. Since the access road is considered a county road, ORV's, snowmobiles and bikes can use the road.

Resource Protection

- 🌲 Work with agencies and organizations to either purchase adjacent lands or establish conservation easements.
- 🌲 Protect wetlands by setting aside 100' no-harvest buffers and correcting erosion sites.
- 🌲 Designate all hiking trails as non-motorized to reduce the potential for erosion on the sandy hillsides.

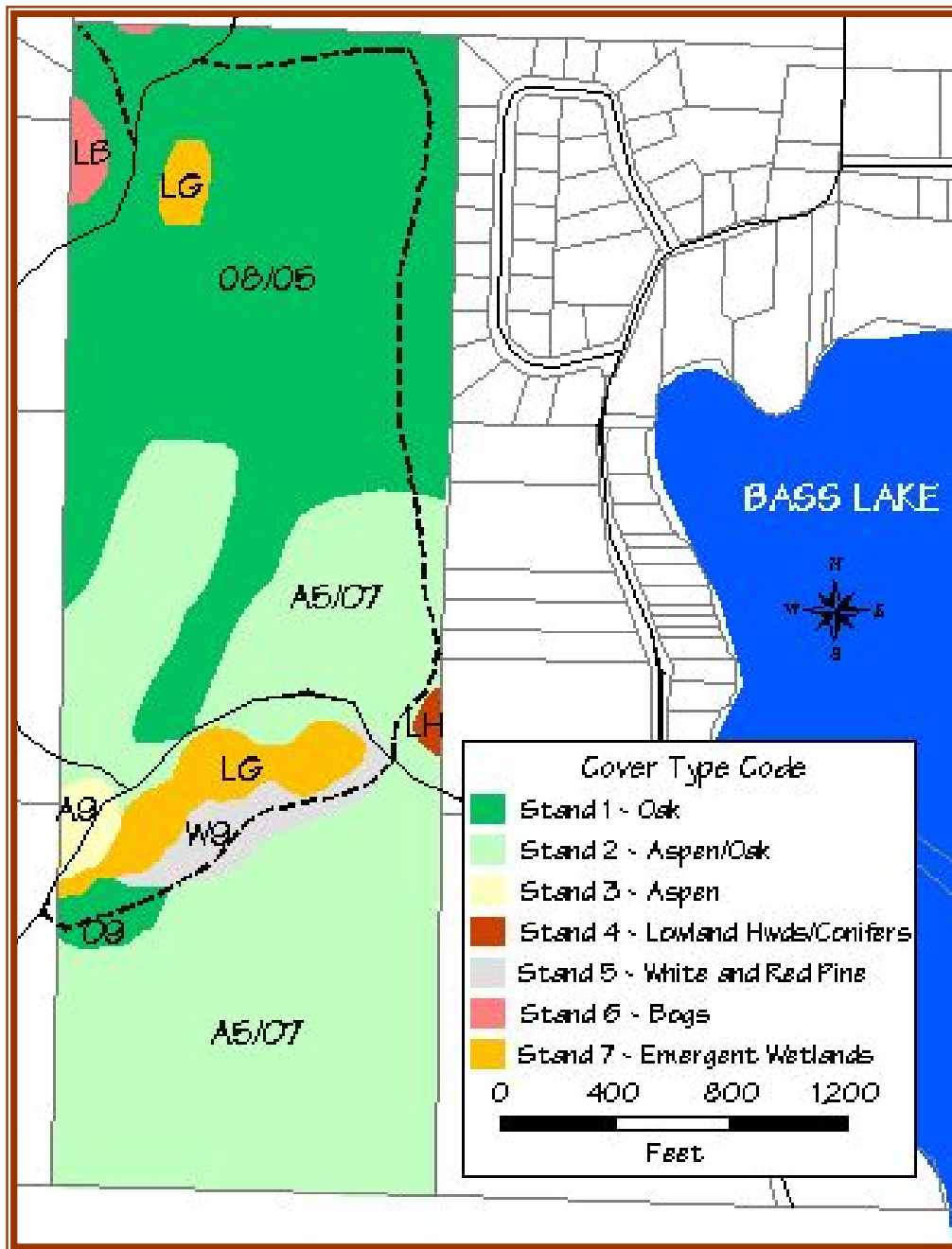
Outdoor Education

- 🌲 Work with the Grand Traverse Conservation District to develop the outdoor education potential of the park.
- 🌲 Develop an interpretative brochure with information on flora and fauna.

Partnerships and Grants

- 🌲 Continue to build partnerships with organizations such as the Grand Traverse Land Conservancy, Grand Traverse Conservation District, Michigan Department of Natural Resources and Michigan Department of Environmental Quality.
- 🌲 Seek grant funding from foundations and agencies to share in the costs of developing the Township Park.

COVER TYPE MAP



➤ Stand 1 – Northern Red Oak

Species Present – Northern red oak, aspen, white birch, red maple, red pine and white pine.

Size Class -Sawtimber

Average tree diameter - 10 to 12 inches dbh

Stand Density – Fully stocked with a basal area of 120 sq. ft./ac.

Stand Quality – Very good quality

Site Quality - Good

Soils - RwB – Rubicon sand, 2 to 6 percent slopes

RwD – Rubicon sand, 12 to 18 percent slopes

RwE - Rubicon sand, 18 to 25 percent slopes

Acreage – 52 acres

Unit Description – This is a small diameter, sawtimber sized red oak stand. Mature and declining quaking aspen and white birch trees are present. White pine, red pine and red maple sawtimber sized trees are scattered throughout the stand. Most of



the trees are approximately 95 years old, with occasional older, larger trees. The understory consists of white pine, red maple and beech seedlings and saplings. Witch hazel, gooseberry and blueberry shrubs, bracken fern, trailing arbutus, wintergreen and starflowers can be found. The aspen and birch trees are mature. As these trees decline and die, they create snags or dead standing trees. These snags are important to cavity nesting birds and mammals.

The presence of aspen, white birch and red oak indicates this forest was created by a significant disturbance. Turn of the century large scale logging operations and subsequent fires removed the presettlement forests of white pine, red pine and oak. Pioneer forest species such as aspen and white birch took their place. The charred pine stumps are evidence of this scenario. In turn, the pioneer forest created favorable conditions for the reestablishment of the presettlement forest cover of white pine. White pine seedlings and saplings can be found growing in the understory. Partial shade, provided by the forest cover, actually protects the white pine seedlings from white pine weevil damage. If left alone this, "forest in transition" will convert to a white pine and red oak forest as the mature aspen, and white birch trees decline and the white pine saplings recruit into the overstory.

➤ Size Class: seedling - less than 1" dbh | sapling - trees 1" to 4.9" dbh
poletimber - trees 5" to 9.9" dbh | sawtimber - 10" and larger dbh
DBH - diameter of tree at 4.5' above ground, (dbh-diameter at breast height)

Stand 2 – Aspen and Oak

Species Present – Quaking Aspen, Red Oak, Red Pine and White Pine

Size Class – Poletimber and sawtimber

Average tree diameter - 8 inches dbh

Stand Density – Fully stocked with a basal area of 110 sq. ft./ac.

Stand Quality – very good

Site Quality - Good

Stand 2 – continued

Soils – Rubicon sand 2 to 25 percent slope and Crosswell loamy sand, 0 to 2 percent slopes

Acreage - 57 acres

Unit Description - This stand is a mixture of aspen, red oak, red pine, white pine and red maple. Removal of aspen trees in 1963 created a two aged stand with younger aspen and scattered larger red oak, red pine and white pine. . The understory consists of white pine, red maple and beech seedlings and saplings. Witch hazel, stripped maple, gooseberry and blueberry shrubs can be found throughout the stand. Bracken fern, wintergreen, sedges, native grasses, Indian pipe, trailing arbutus, and maple leaf viburnum are the predominate ground cover.



Stand 3 – Aspen

Species Present – Quaking Aspen, White Birch and Red Oak

Size Class - Sawtimber

Average tree diameter - 12 inches dbh

Stand Density – Fully stocked with a basal area of 120 sq. ft./ac.

Stand Quality - good

Site Quality - good

Soils – Rubicon Sand

Acreage - 1.5 acres

Unit Description – Mature stand of quaking aspen sawtimber. The area will eventually convert to white pine and red oak, as the aspen trees mature and die.



Stand 4 – Forested Wetlands

Species Present – Red Maple, Black Ash, Quaking Aspen and Northern Cedar.

Size Class – small sawtimber

Average tree diameter - 10 inches dbh

Stand Density - Basal area of 60 sq. ft./ac.

Stand Quality - Fair

Site Quality – Excellent quality wetland

Soils – Greenwood peat

Acreage - 0.5 acres

Unit Description – Standing water can be found in this small forested wetlands during the spring. Ephemeral floodings provide critical frog and salamander breeding habitat. Grasses and ferns cover the understory during the summer and fall. Equipment and logging operations should not infringe on this stand. As well, hiking trails should not be constructed in these forested wetlands.



Stand 5 - White and Red Pine

Species Present - White Pine, Red Pine and Northern Red Oak.

Size Class - Sawtimber

Average tree diameter - 15 inches dbh

Stand Density – 180 sq. ft. per acre

Stand Quality – Very good

Site Quality – Very good

Soils – Rubicon Sand

Acreage - 3 acres

Unit Description - Stand was regenerated naturally after disturbances around 70 years ago. Predominate species are white pine and red pine, although northern white cedar and eastern hemlock can be found adjacent to the marsh wetland. This stand of native pine offers a glimpse of the old growth pine forests that once covered extensive areas in Northern Michigan. A foot trail meanders through the stand in an east-west direction, offering a pleasant hike in the towering pines. Equipment and logging operations should not infringe on this stand.



Stand 6 – Open Bogs

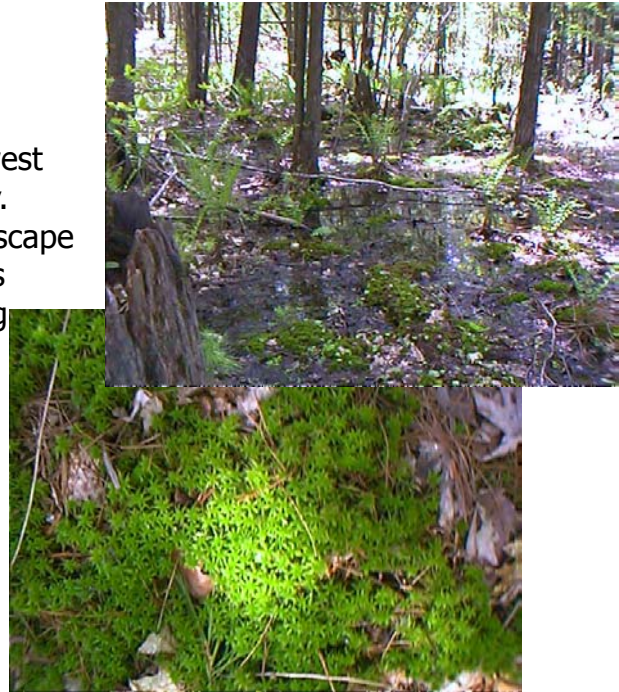
Species Present – White pine, bog birch, speckled alder, sedges and sphagnum moss.

Site Quality - Excellent wetland quality

Soils – Greenwood Peat

Acreage - 1 acre

Unit Description – These bogs extends west and north beyond the property boundary. There are several bogs that dot the landscape west and north of the property. Wetlands provide critical wildlife habitat by fulfilling three key habitat components: water, food and cover. This area should be left as is, logging equipment should not be allowed in the wetlands, nor should tops and other logging debris be placed the wetlands. To further protect the wetlands, do not harvest trees or use timber harvesting equipment within a 100 feet wide buffer.



Stand 7 - Emergent Wetlands

Species Present – Cattails, rushes and grasses

Site Quality - Excellent quality wetland

Soils – Greenwood Peat

Acreage - 5 acres

Unit Description – There are two small depression wetlands, surrounded by pine and oak forests. These marshes typically have standing water year round. They are truly gems in a landscape of Rubicon sand and dry oak forests. Hiking trails should connect the marshes; benches and wildlife viewing stations would provide opportunities for people to relax, absorb the beauty of the marshes and view the multitude of wildlife that visit and use the wetlands.



RECOMMENDED MANAGEMENT ACTIVITIES

TIMBER MANAGEMENT

Stand 1 – Northern Red Oak

Manage for old growth forests. This management approach does not require scheduled timber harvesting. Timber harvesting may be acceptable to salvage trees lost from major wildfires, insect or disease outbreaks.

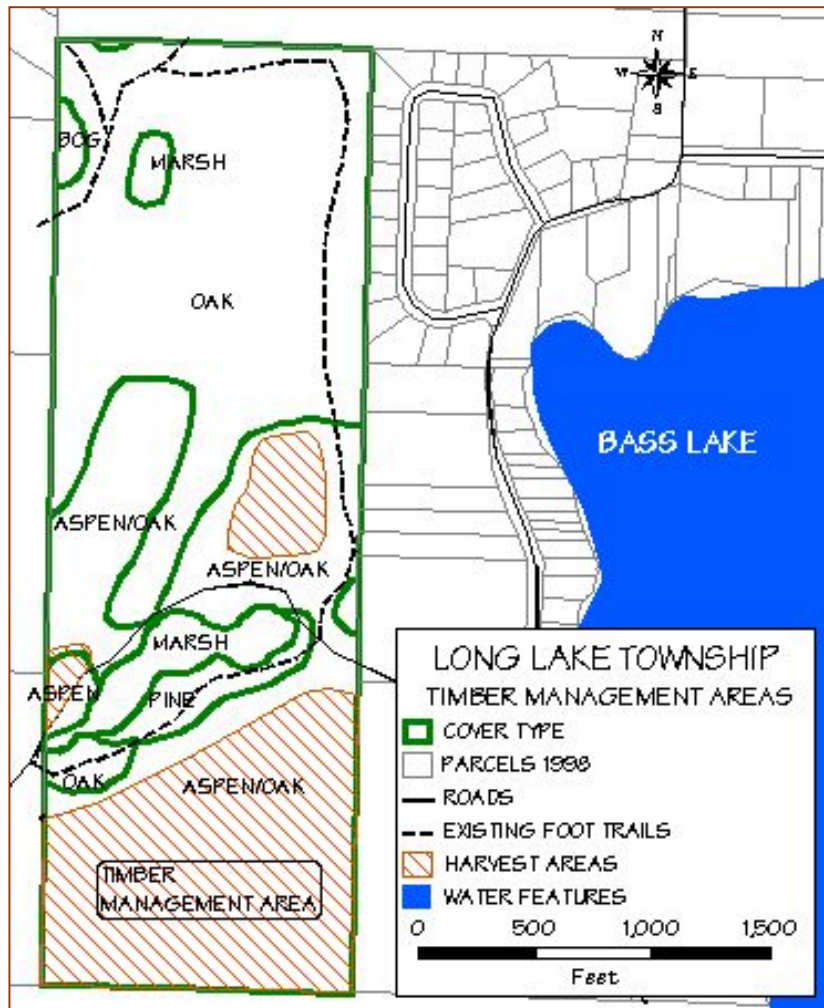
Stand 2 – Aspen and Oak

Schedule a timber harvest in ten years. The thinning will remove aspen and red maple trees. Oak, red pine and white pine should be left. Since this is a park, timber sale specifications should address the importance of protecting residual forests, aesthetics and leaving a clean looking harvest. Whole tree chipping is recommended to reduce the amount of tops left in the harvest. Skid trails and log landings should be cleaned of logging debris, smoothed and revegetated. The log landing should be maintained as a small grassy opening. Be sure to retain the services of a professional forester at the Grand Traverse County Conservation District: to market the timber, draw up a timber sale contract and manage the timber harvesting operation. An information program should precede the timber harvesting. After the harvest, a sign describing the harvesting operation and the purpose of the harvest (regenerate aspen and create wildlife cover) should be erected at the harvest site.

Stand 3 – Aspen

This stand of aspen is mature and timber harvesting is recommended on one acre. Remove all of the aspen, which will essentially result in a small clearcut. However, due to its proximity to the access road and proposed trails, care should be taken to leave a clean harvest. Be sure to leave a buffer along the wetlands. The harvest should be scheduled to coincide with Stand #2. Creating a small, transitional opening will encourage aspen to regenerate, resulting in a temporary (15-20 years), one acre patch of thick young aspen and shrubs. Certain song birds like the ovenbird prefer this type of habitat.

Aspen is very shade intolerant and requires full, open sunlight to naturally regenerate. Unlike the other species groups, aspen regenerates new crop trees by growing root sprouts or root suckers from the root systems of harvested trees. Mature trees are not needed as a seed source and, in fact, shade from large trees actually inhibits aspen seedling growth. Aspen stands are harvested and naturally regenerated under the clearcutting method. When mature (40 to 60 years), harvest all trees 2" and larger in diameter. This will encourage natural aspen regeneration by root suckering which occurs during the year following the harvest. Retain the services of a professional forester to assist in marketing and harvesting the timber.



Stand 4 – Lowland Hardwoods and Conifers

No recommended timber management activities. This area should be left as is, logging equipment should not be allowed in the forested wetlands. To further protect the wetlands, do not harvest trees or use timber-harvesting equipment within 100 feet of the wetland boundaries.

Stand 5 – White and Red Pine

Manage for old growth forests. This management approach does not require scheduled timber harvesting.

Stand 6 – Bogs

No recommended timber management activities. To further protect the wetlands, do not harvest trees or use timber-harvesting equipment within 100 feet of the wetland boundaries. Logging equipment should not use these areas for skidding trees from adjacent stands. Tree tops and logging debris should not be piled in these areas.

Stand 7 – Emergent Wetlands

No recommended timber management activities. To further protect the wetlands, do not harvest trees or use timber-harvesting equipment within 100 feet of the wetland boundaries. Logging equipment should not use these areas for skidding trees from adjacent stands. Tree tops and logging debris should not be piled in these areas.

WILDLIFE HABITAT MANAGEMENT

There are few recommended activities for wildlife management. The primary goal is to maintain current forest cover types such as oak, aspen and pine; to protect open and forested wetlands; to allow 2/3 of the forests to mature into an old growth state and to maintain an area of mixed younger growth forests. Leaving dead standing trees will benefit cavity nesting birds and animals. Having a "Friends of the Park" citizens group build, erect and maintain nesting boxes would improve wildlife habitat, while enabling residents to become involved in the maintenance and protection of the parklands.

Aspen Forests

It is important to maintain an aspen component on the property. This would be beneficial to wildlife. Furthermore, the diverse cover types offer changing vistas and improved opportunities for viewing wildlife.

Many woodland creatures use the aspen forest for nesting and feeding. Species such as the least flycatcher, red-eyed Vireo, rose-breasted grosbeak, black-billed cuckoo and American redstart nest in the tree canopy. Ground nesting species such as the ruffed grouse, veery, snowshoe hare, and white tailed deer use aspen forest types. A few species of wildlife that nest under ground or in debris include the eastern chipmunk, long-tailed weasel, marbled salamander, ringneck snake, milk snake and smooth green snake. Birds and mammals nest in cavities of trees. Species found in aspen stands may include black-capped chickadee, yellow-bellied sapsucker and northern flying squirrel. Natural nesting cavities can be supplemented by creating den trees and placing nesting boxes on poles or trees.

Along with a diversity of cover types, certain wildlife prefer a diversity of age classes, such sapling, poletimber and mature sawtimber of a particular forest type. Ruffed grouse need aspen stands of different age classes for mating cover, brooding cover and food sources. Due to the small acreage, staggered block harvesting is not feasible on this property. All of the aspen will be harvested at one time. The harvest areas should have an irregular shape. A meandering harvest line results in a greater linear distance of edge than a straight line. This edge or transition zone between mature and immature forest stands creates very desirable wildlife habitat.

To benefit ruffed grouse, two logs a minimum of twelve inches in diameter and eight feet in length, should be left per acre in the harvest areas. These "drumming logs" are used by male ruffed grouse.

- After the timber harvest, create around forty "drumming log" for ruffed grouse.
- Create ten brush piles, scattered throughout the harvested areas.

Pine Forests

Conifers provide important winter (thermal) cover for wildlife, particularly, when located next to winter food sources. Squirrels, black-backed woodpeckers, fox, and numerous species of song birds utilize pine forests for cover and food sources. The gray jay, pine grosbeak, evening grosbeak, red crossbill, purple finch, boreal chickadee, and pine siskin frequent upland conifer stands during the winter months. Many species of wildlife also use the upland conifer forest for nesting and feeding. The black-backed woodpecker nest in hollowed out tree trunks. The long-eared owl, solitary vireo, red crossbill, black-throated green warbler and evening grosbeak nest in the canopy, while the porcupine, long-tailed shrew, deer mouse, woodland jumping mouse and lynx nest beneath the ground or debris. This cover type also offers opportunities for viewing migratory birds in the spring and fall. These species include the golden-crowned kinglet, ruby-crowned kinglet, Swainson's thrush, blackburnian warbler, magnolia warbler, bay-breasted warbler, Canada warbler, hermit thrush and winter wren.

Oak Forests

This mixed hardwoods forest provides food in the form of acorns and buds along with limited browse. Cover is provided by smaller white pine seedlings and saplings and snags or dead standing trees. Whip-poor-will, , gray jay, red-eyed vireo, scarlet tanager, downy wood pecker, pileated woodpecker, blue jay, white-breasted nuthatch are a few birds that inhabit oak forests. Wild turkeys, gray squirrels, fox squirrels, black bear and white-tailed deer are typical game species found in the northern pin oak forests.

Open Bogs

These naturally occurring openings provide needed habitat components for certain wildlife species. The red-shouldered hawk and the great gray, northern saw-whet, snowy, and short-eared owls use these openings for hunting prey. Ground nesting species such as the short-eared owl, common snipe and ring-necked duck use this area. The northern waterthrush, arctic shrew, meadow vole, and southern bog lemming nest beneath the ground or debris. This cover type also offers opportunities for viewing migratory birds in the spring and fall. These species include the olive-sided flycatcher, golden-crowned kinglet, ruby-crowned kinglet, Swainson's thrush, Tennessee warbler, winter wren, palm warbler, Connecticut warbler, Lincoln's sparrow and white-tailed sparrow.

Marshes and Open Water

Marshes have an overall positive benefit for many species of wildlife, crustaceans, insects, amphibians, and reptiles. The great blue heron and green backed heron stand like statues in the shallow water along the pond edges waiting for food swim within reach of their long beaks. Raccoons, deer, black ducks, mallards, water shrew and mink

all come to the pond to feed. These animals along with many other species drink the water. The northern cricket frog, spring peeper, bullfrog & leopard frog, water snake, snapping turtle, painted turtle, mudpuppy, central newt, red-spotted newt, and greater siren are examples of reptiles and amphibians that use marshes.

Snags or dead standing trees

Snags or dead standing trees provide cavity nesting sites, perches and food (insects) for wildlife. Pileated woodpeckers chop huge rectangular holes in the trunks; these holes



are further excavated by other wildlife species and used for nesting cavities. Two to four snags should be left per acre. Since these trees are dead they do not compete with the healthy, growing trees in the forest. If none exist, snags can be created by girdling or removing two 4" wide strips of bark around the trunk of the tree. A chainsaw works best, but care should be used when operating such power equipment. To assure all of the bark is removed, cut one inch deep into the wood. This will cause the tree to die but remain standing. Both soft and hard snags should be present in the forest. Soft snags are created from aspen, basswood and conifer trees, while hard snags would be maple, beech and ash. It will not be necessary to create snags as there will be an adequate supply for the declining aspen and birch trees.

Leave dead standing trees for cavity nesting birds and mammals. Windfalls should be left for wildlife cover and browse. The small branches in the tops fall off and the tree trunks will come in contact with the ground, starting the long process of decomposition. As logs rot, insects, salamanders and fungi inhabit the logs, which in turn, provide food for other woodland creatures. Eventually, the woody materials are returned as decomposed organic matter to the forest for use by woodland plants. Tree trunks, a minimum of twelve inches in diameter, eight feet in length and lying on the ground, can benefit ruffed grouse. These "drumming logs" are used as perches by male ruffed grouse during their mating display rituals.

Building Brush Piles for Wildlife

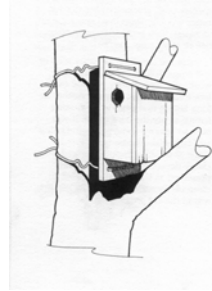
Cover for many species of wildlife can easily be created by constructing brush piles. Brush piles are best located next to wooded edges and food sources. Brush piles can be constructed from the logging debris. The size of the materials should be coarse next to the ground and get finer toward the top of the pile.



First, loosely pile four layers of 8"+ diameter poles in criss-crossing layers. Next, pile coarse branches, topping the pile with fine boughs. Piles should be 5 to 6 feet tall and 8 feet in diameter. The pile can be enhanced by placing 6" - 8" diameter clay tiles or wooden boxes under the base of the pile. Each year more branches and bows can be added to the pile.

Nesting Boxes for Wildlife

Sometimes, it may be necessary to emulate snags or den trees by placing nesting boxes around the forested areas. The red-headed woodpecker boxes should be placed along mature forest edges adjacent to old fields. Within the mature forest, put up nesting boxes for the following wildlife: downy woodpecker, hairy woodpecker, tifted titmouse, nuthatches, chickadee, gray squirrel, northern flying squirrel and barred owl. Along the edges of forests, place nesting boxes for the northern flicker, great crested flycatcher, and screech owl. It is important to note, with the placement of any artificial nesting box comes the long term commitment to maintain the box. For example, some of the boxes need to be emptied each year.



Erect 20 nesting boxes on small pole sized trees.

RESOURCE PROTECTION

The Township views this property as a great opportunity to preserve critical resources and open space, educate landowners on the importance of forest and wildlife management, establish old growth forest types and provide recreational opportunities. This parcel will function as the foundation of an effort to enhance and expand ecological corridors across the eastern part of Long Lake Township. The plan recommends the Township works with agencies and organizations to either purchase fee simple or establish conservation easements adjacent lands.



Logging trails and log landing/loading sites should be seeded to permanent ground cover plants.

These areas should be smoothed after a logging operation. It will be necessary to create water diversions or water bars on roadways located in hilly terrain to reduce soil erosion from stormwater run-off. Apply 100 lbs. of 10-20-20 fertilizer and 1000 lbs. of lime per acre of open area or 3.5 lbs. of fertilizer and 35 lbs. of lime per 100 feet of 16 feet wide roadways. Mix this with the soil by raking or dragging the area. Next, a seed mixture of perennial plants should be spread on the area. For sunny sites use a mixture of 10 parts perennial rye grass, 3 parts inoculated birdsfoot trefoil or clover and 1 part timothy.

For shaded areas use a mixture of 3 parts creeping red fescue and one part perennial rye grass and one-half part ladino or white Dutch clover. Both of these mixtures can be applied at a rate of 20 lbs. per acre or 1.5 lbs. per 100 feet of a 16 -foot-wide roadway. Planting in the spring or fall will improve success as will using a straw mulch. If the log landing/loading sites are one acre or larger, the planting of food bearing native shrubs will also enhance wildlife habitat.

To protect the quality of the wetlands on the property, 100 feet wide no harvest buffers should be left around all wetlands. In addition, logging equipment should not use or traverse the buffer areas.

There are several erosion sites, caused by Off Road Vehicles. One problem site is located on an existing trail in the northern part of the park. Wood chips and water diversion bars should be installed. Another erosion site is a spur trail that climbs a steep ridge from the access road. This short trail is heavily eroded due to use of 4-wheel drive vehicles. The site on the top of the ridge appears to be a party spot. The trail should be blocked prior to installation of erosion control.



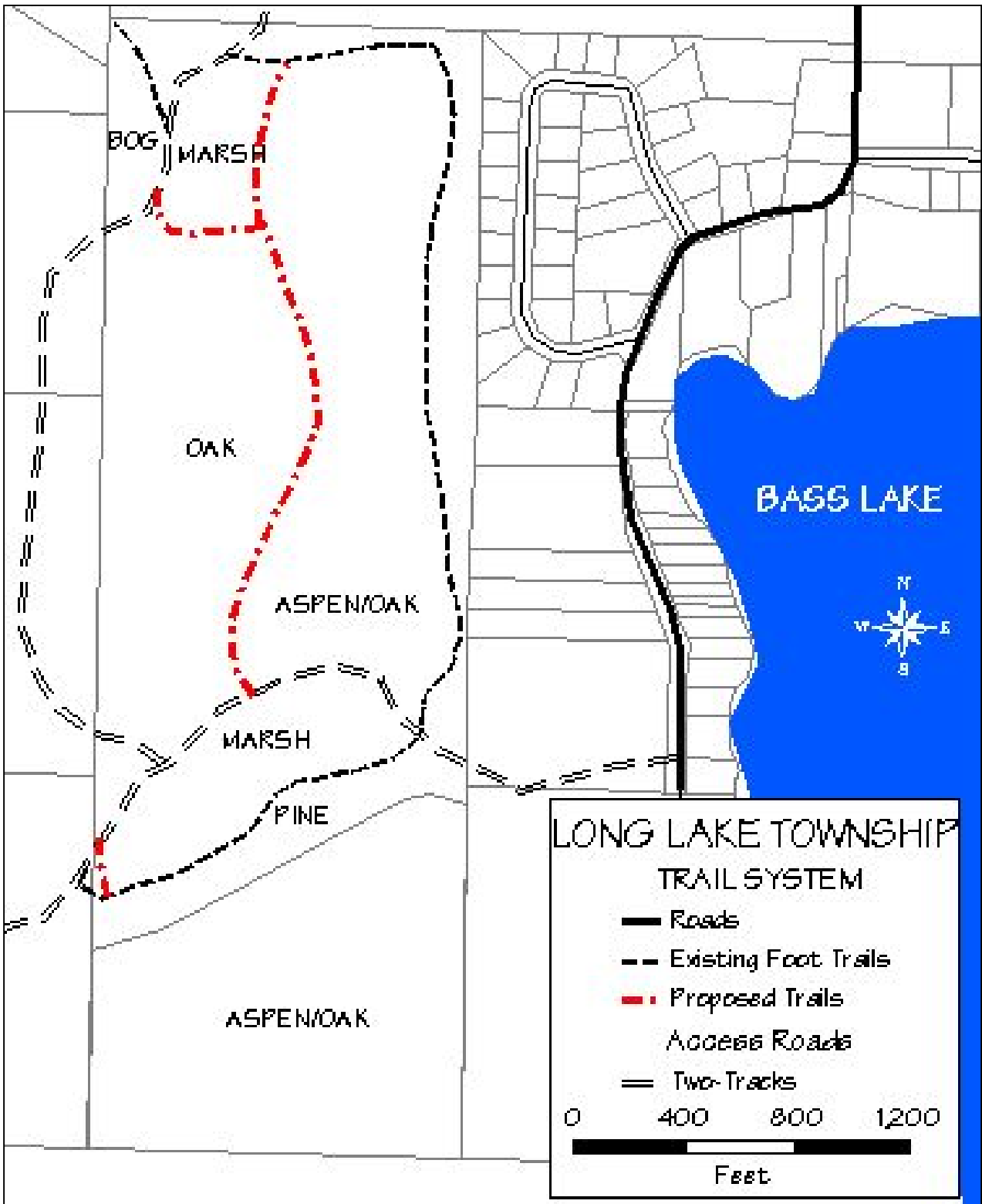
RECREATION MANAGEMENT

The overall approach is to provide an area for quiet, wildlands recreation. Within this context hiking, cross-country skiing, nature walks, hunting, outdoor education and mushroom hunting are all compatible recreational uses. The use of ORV's, snowmobiles and mountain bikes are not compatible with quiet wildlands recreation and should not be allowed on hiking trails and throughout the property. Since the access road is considered a county road, ORV's, snowmobiles and bikes can use the road. Trail markers should be used to identify trail locations. Trail signs should be erected at all trail intersections.



The current fragmented trails should be connected to create a network of trails on the property. The maintenance of existing trails and creation of new trails should be accomplished with minimal tree removal. The trails should be narrow and winding since wider trails may in fact would encourage ORV's. Trail markers

Trail System



should be erected along the hiking trails to identify their location. At junctions of trails and at the trail heads, post location maps with the trail system and park rules.

It will be necessary to improve the access road by constructing a one lane gravel road to the proposed parking facility. The issue of the location of the easement as the road first leaves Bass Lake Road should be resolved with Long Lake Township, Grand County Road Commission and adjacent landowners. The intention is to keep the roadway narrow and winding, following its current alignment through the park. A couple of turn-outs should be placed to allow opposing traffic to pass. It is not recommended for the road upgrades to extend beyond the proposed parking facility. The parking facility should be relatively small and accommodate around four cars. It will be necessary to use cedar post and rail fencing to define the extent of the parking lot and cedar posts to define the roadway boundaries.



NATURE EDUCATION



The Grand Traverse Conservation District is responsible for managing the Grand Traverse Natural Education Reserve, a 420-acre preserve located along the Boardman River. The District offers a variety of summer hikes for kids and adults. Guided hikes include topics such as "Wetlands at Work, Amphibian & Reptile Hunt, Bird Search, Tree Identification, Basic Insect Collection, Aquatic Insects, Michigan Wildflowers, and Native Plants."

With the construction of the proposed nature center/office at the Grand Traverse Nature Education Preserve, the Conservation District is planning to expand its outdoor education program. One goal is to establish satellite areas around Grand Traverse County, for nature hikes and demonstrations. This park could function as one of those satellites. There is a good chance the Center at the Nature Education Reserve will be built next year. Nature hikes at the satellite facilities will become more visible once the nature center is complete.



In 2003, the District would like to do one youth hike and one adult hike (possibly more depending on response) on the Long Lake property. They would be advertised through the LLT newsletter, a brochure put out by the District about the hikes (with theme, time, leader, where to call info), newspaper, and radio. We would then build on this in the future adding winter snowshoe hikes, and additional summer hikes. It may be possible for local schools to use this park for hikes.

The main hindrances to developing such nature education programs at the park are the poor access road and the lack of a parking facility.

After construction of the trails and parking facility, and improvements to the access road, Long Lake Township should develop an interpretative brochure. The brochure should have a trail map; information on flora, fauna and plant communities; and park rules. Several benches or wildlife viewing stations should be placed along trails and near wetlands. This plan also recommends construction of a kiosk next to the proposed parking facility. The Township should partner with the Grand Traverse Conservation District and seek grant funding to implement the educational and recreational components of this plan.



AESTHETICS MANAGEMENT

Since the property is a park, care must be taken when timber harvests are conducted. Log landings should be cleaned of logging debris, leveled and seeded with grasses. Whole tree chipping is recommend for the aspen harvests as this approach greatly reduces the amount of tops and logging debris in the woodlands. Wherever possible, buffer should be left along main trails in the park.

Sources of Information

Photographs by Richard Deuell and Rick Moore. Illustrations by Carlton Ryan and Tom Parker from the guidebook entitled, "Wildlife and Timber for Private Lands: A Landowner's Guide to Planning." Books: Wildlife Watcher, Wildlife in Northeast, Field Guide for Birds, Landscaping for Wildlife, Woodworking for Wildlife and USDA Soil Survey of Grand Traverse County



Soils Map

