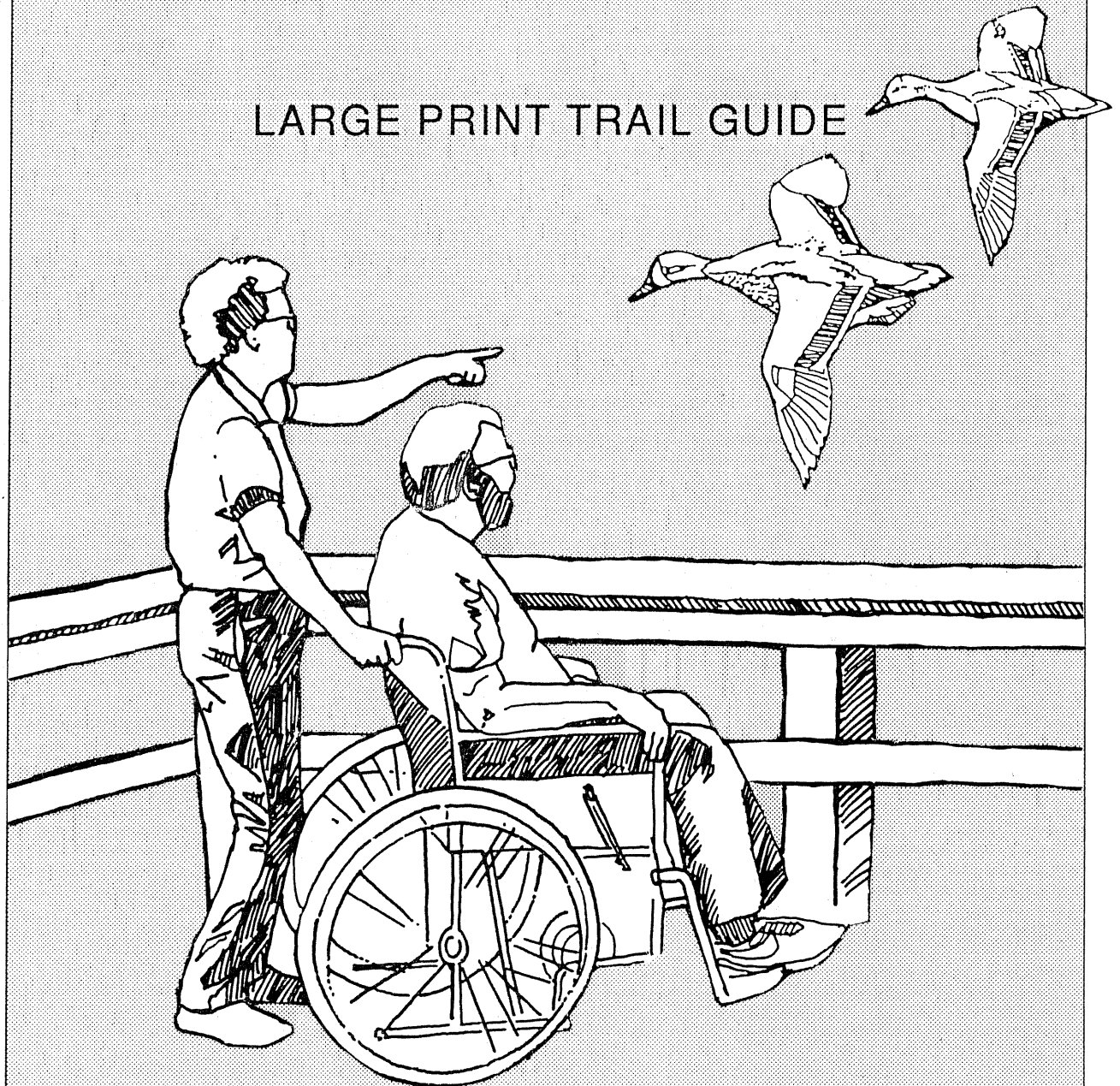


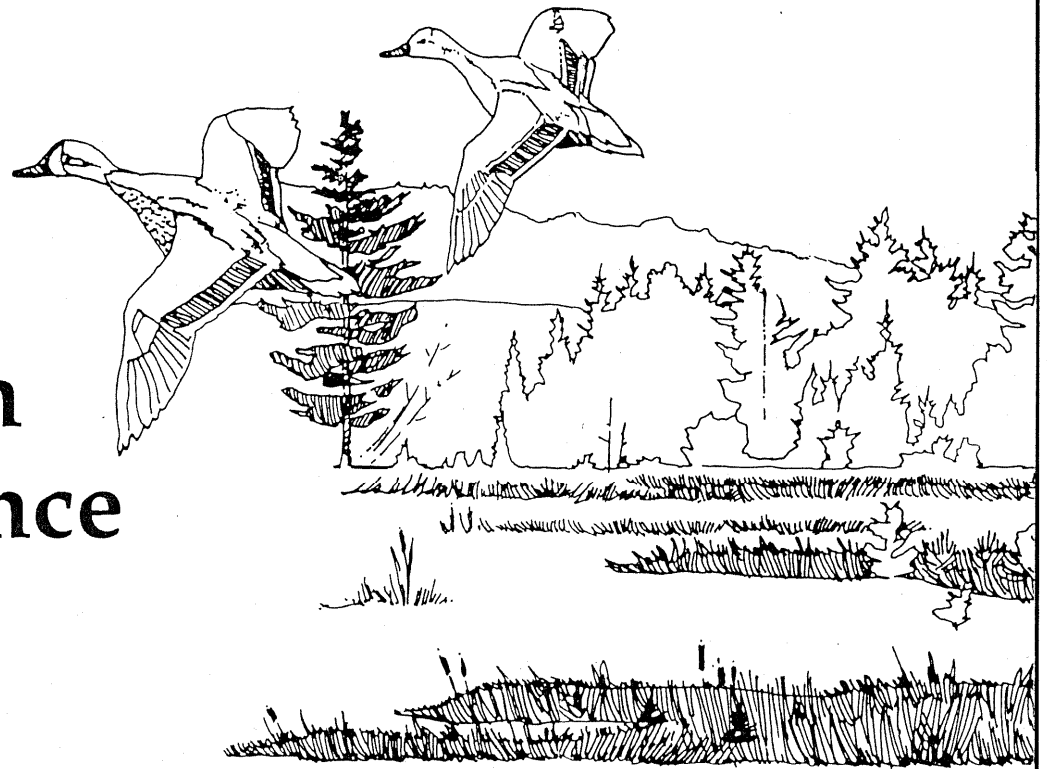
Sand Point Marsh Trail

LARGE PRINT TRAIL GUIDE



PICTURED ROCKS NATIONAL LAKESHORE
MUNISING, MICHIGAN

A Marsh Experience

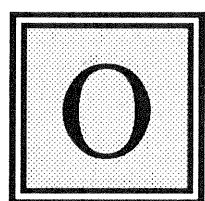


WELCOME to the Sand Point Marsh Trail, an elevated, 0.5 mile, fully accessible boardwalk. This large print brochure corresponds to the 16 wayside exhibits found along the trail.

The trail leads you through a landform mosaic which changes from relatively low and dry forested "ridges" to wet swales occupied by a variety of wetland plant associations. This assemblage reflects a rich biological diversity.

The trail takes approximately 45 minutes to explore leisurely. You may wish to pause frequently on one of the trailside benches to absorb the sights, sounds and scents of the marsh. Along the way, think about how this place makes you feel.

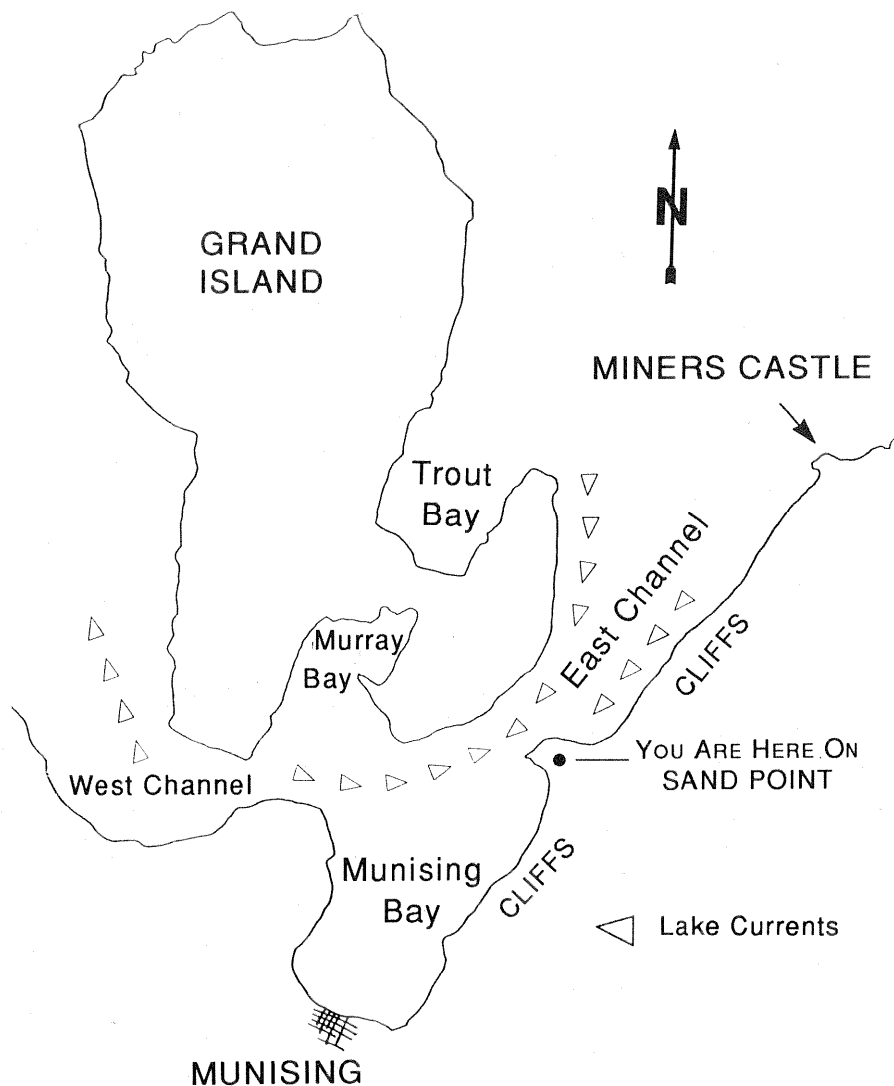
What's Going On Here?



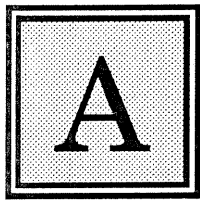
Over the centuries, glaciers have come and gone, Great Lake levels have fluctuated greatly, and large amounts of sediment have eroded from nearby cliffs and highlands.

Local lake currents are caused by prevailing northwest winds blowing around Grand Island. In the island's east and west channels the currents meet. Over long periods of time the currents have deposited the sand which today forms Sand Point.

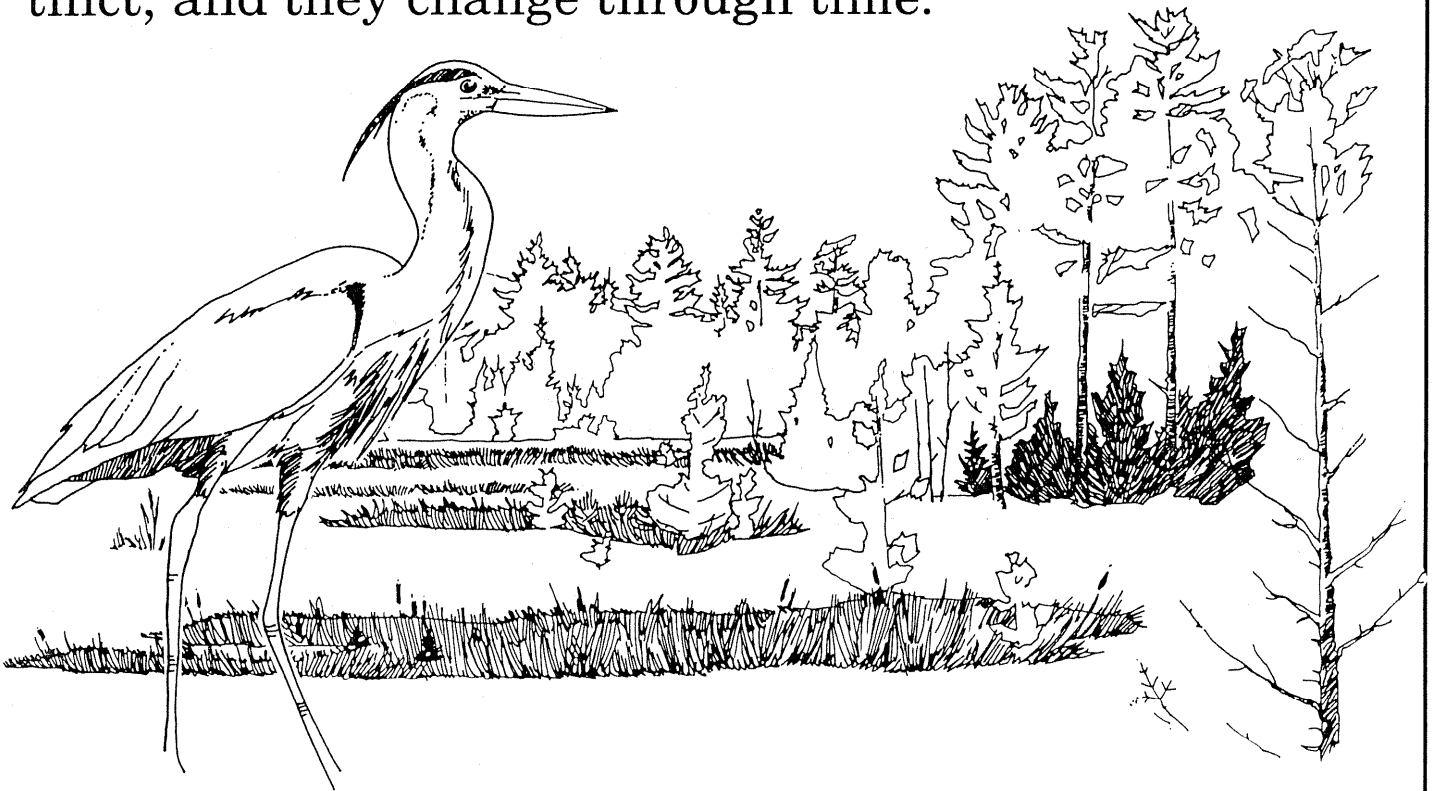
You are standing on an old beach ridge created by wave action when lake levels were higher. Consider how these differ from the barren dunes on Sand Point where erosion, sand transportation, and deposition are actively in progress.



Wetland Communities



community consists of groups of plant and animal species living and interacting within their habitat. Community boundaries are often indistinct, and they change through time.

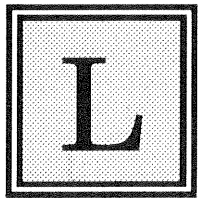


Here, ancient dry beach ridges with wet swales between them support a patchwork of diverse wetland plant and animal associations.

You are now in a forested swamp. Along the trail you will pass through a shrub swamp, wet meadow, and dry forest communities. Ponds, and the creeks which connect them, are representative examples of aquatic communities.

As you continue through this canopy of white cedar, look for tracks and other signs of wildlife.

Forest Interdependence



isten. The calls you hear may be those of a red squirrel or pine siskin that live here. The forest you are visiting produces the seeds these animals utilize for food. Here the relatively dry soil of the dune ridge supports red and white pine, black ash, and white cedar trees.

Compare the size of these trees to the smaller, stunted white cedar found along wetter parts of the trail. As you continue, sniff a few pine and cedar trunks. How do they smell?



Red Squirrel: Identified by a white eye ring, ear tufts, and two-tone fur of reddish-grey over white.

Call: A distinctive scolding or ratchety sound. (Bold behavior for such a small mammal!)



Nest: Constructed of leaves or bark shreds in hollow trees or among branches.

Food: Nuts, pine cones, mushrooms.

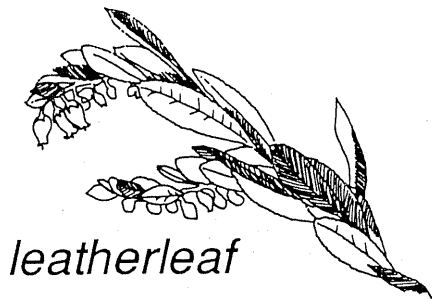


Habits: Stores food in underground caches and tree forks. Arboreal, but also runs from tree base to tree base. Average life span of ten years. Home range about 200 square yards.



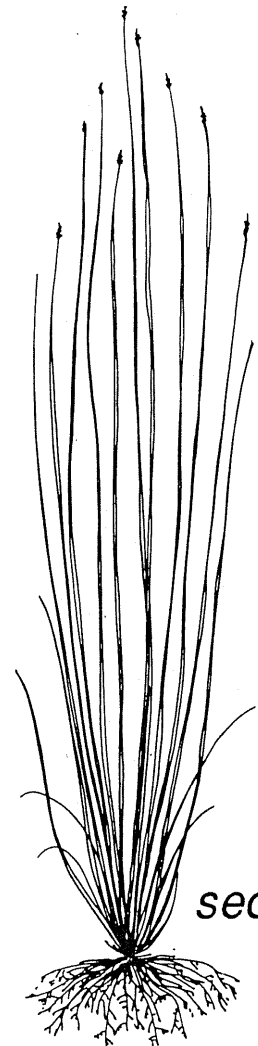
A Wilderness Clearing

The presence of water often controls plant diversity. Here a small watercourse winds through the middle of the swamp. Beaver have constructed a dam at the channel outlet near the road culvert by the lake. The dam regulates the water level of this wetland much of the year.



leatherleaf

sweetgale

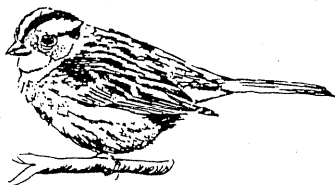


sedge

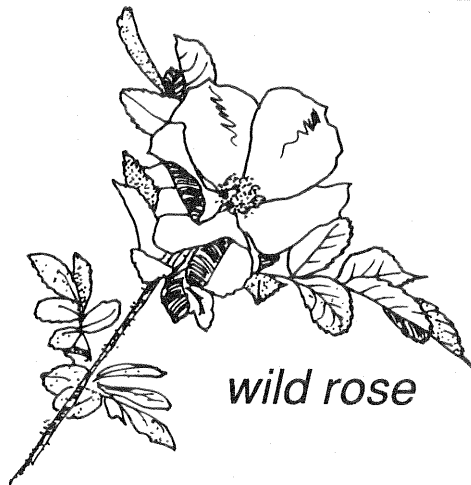
Like many northern shrub swamps, this area is dominated by moisture-dependent sedges, leatherleaf, and sweetgale.

There are some 500 species of sedges throughout the world, half of which grow in North America. At least five species are found in this wetland signifying a diversity of species in a relatively small area.

Several species of animals eat sedge seeds including swamp and whitethroat sparrows. Watch for these small birds flitting about the bushes. In early spring and summer listen for the call of the white throat sparrow, "poor peabody peabody peabody."

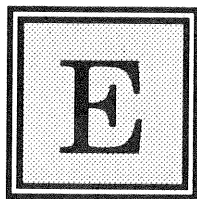


white throat sparrow



wild rose

Similar But Different!

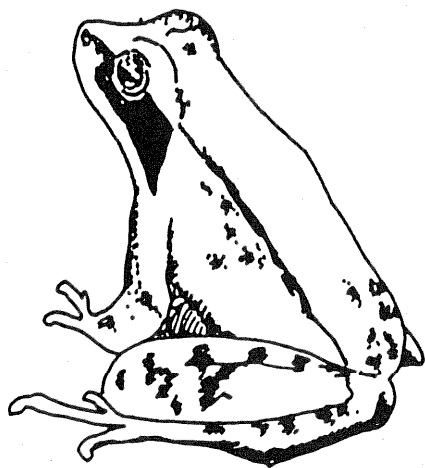


Even moving a few feet down the trail reveals a different combination of plants and animals. Here we find more leatherleaf than sedge. Wild roses bloom with fragrant pink flowers, turning to bright red rose-hips in autumn. Winterberry, or Michigan holly, with its blaze-red fall fruit also blooms nearby.

While Michigan holly might make a beautiful addition to a winter bouquet, we must remember too that the berries are a source of food for birds and seeds for future plants. Please do not pick the branches which are protected by law.



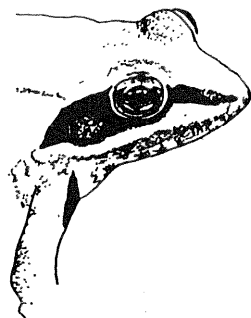
Michigan holly



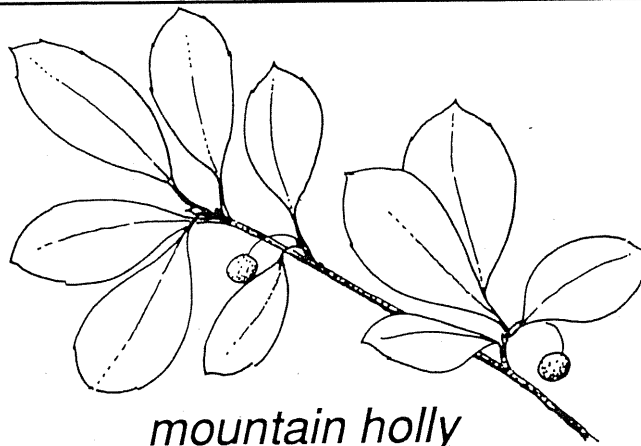
wood frog

Watch for short-tailed shrews and frogs as they move through the ground cover.

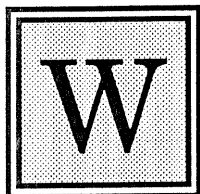
In spring listen for wood frogs calling with their grating one syllable "scritch" call... (like two walnuts being ground together).



Just Another Ridge?



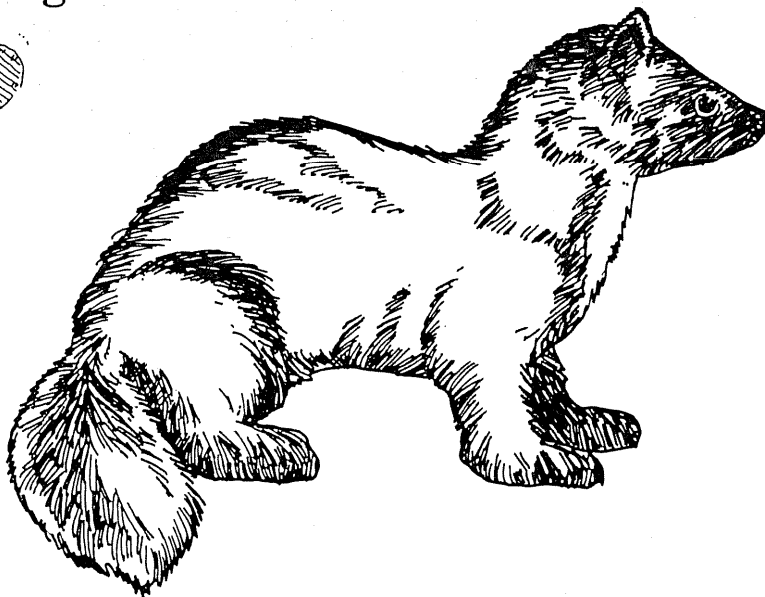
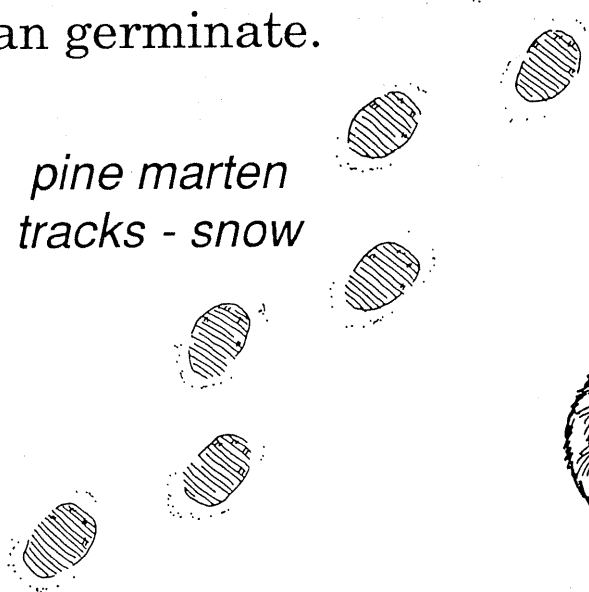
mountain holly



Welcome to another plant association! Black spruce dominate this low ridge with a scattering of red and white pine. An occasional tamarack grows among mountain holly, bracken fern, and leatherleaf.

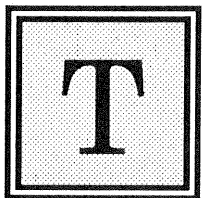
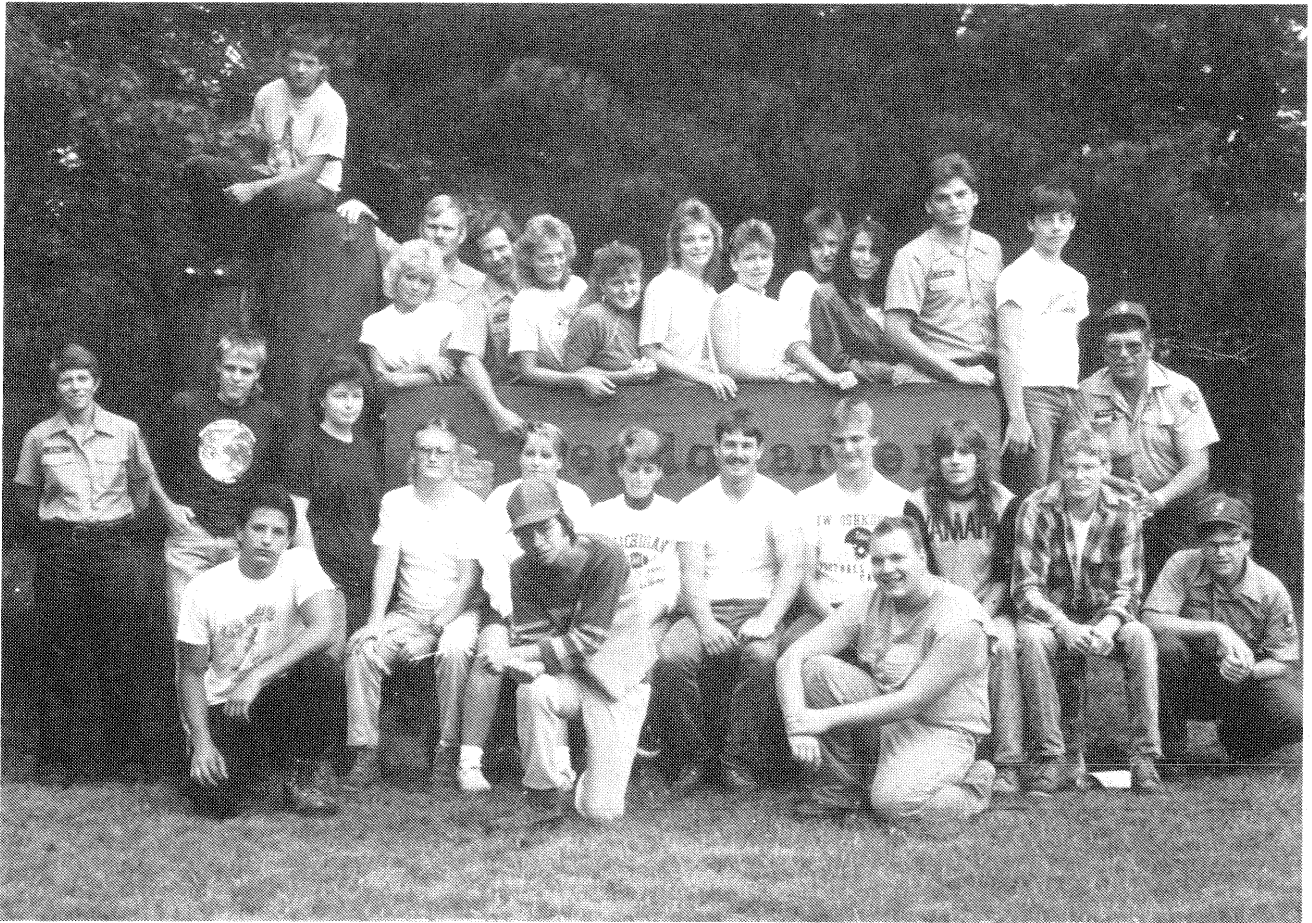
Notice the fire-charred snags and fire scars at the bases of trees. Fire has played a role in the development of this community by opening the forest canopy, releasing nutrients, and exposing mineral soils in which seeds can germinate.

*pine marten
tracks - snow*



One mammal you may see in dense woods like these is the pine marten. Nearly eliminated from this region by trapping and logging associated habitat destruction, marten are making a strong comeback. This member of the weasel family eats small rodents including red squirrels.

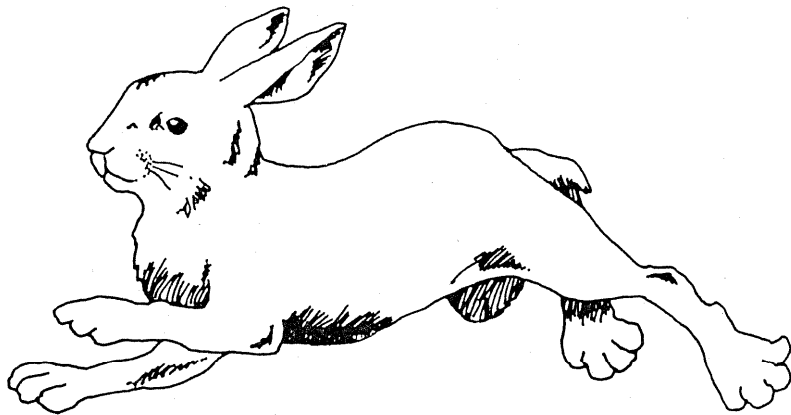
The Sand Point Marsh Trail



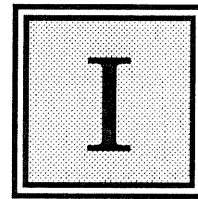
This trail was designed to provide access to and interpret a unique wetland environment. The project was designed for all visitors including those with mental, physical, or developmental disabilities. The trail was constructed by members of the Youth Conservation Corps and other staff of the Pictured Rocks National Lakeshore during the summer of 1989.

Funding for this project was provided by the W.K. Kellogg Foundation, Munising Rotary Club, local businesses, and the National Park Service.

Winter Wonderland



snowshoe hare



Imagine a cold moonlit night with two feet of snow covering the ground. Snowshoe hare feed in open areas while fox and coyote make their

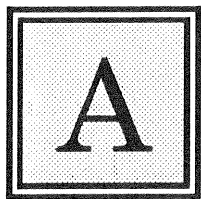
rounds. Ruffed grouse take advantage of snow's insulating effect by burrowing into it to spend the night. River otter cavort among the creeks where they feed on minnows.

Many northern animals are marvelously adapted to winter. For example, snowshoe hare turn completely white in the fall, except for the black tip of their nose. They have large hind feet which enable them to move about easily in deep snow. In winter the hair on their feet is longer and more coarse, an advantage on icy footing. Hare feed mostly at night and their range is small, often only a few acres.



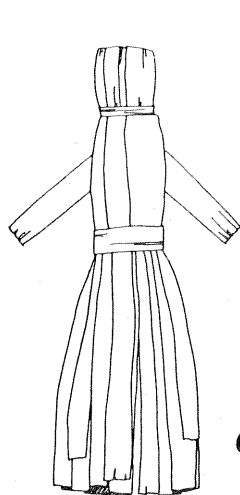
hind foot

Early Residents

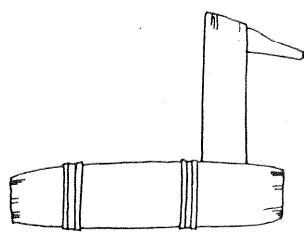


Anishinabe (Ojibwa or Chippewa) people have lived in this region for about 300 years. Their lives depended on the ability to hunt game and knowing how to use the plant resources at hand. Many plants used by the Anishinabe for fiber and food grow in wetlands. Bark of red osier dogwood was mixed with other herbs and smoked like tobacco. Alder provided a yellow dye. Labrador tea leaves were brewed to provide relief from ulcers. Cattail leaves were woven into reed mats, while the stems were eaten like potatoes. Canoe paddles and ribs for birch bark canoes were carved from white cedar.

Could you make a meal, build a home, and raise a family using these wetland materials?



cattail doll



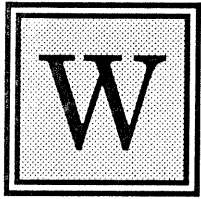
duck decoy



Ojibwa couple

Life was not all work and no play for the Anishinabe. Toys were made from local plant materials. Small duck decoys and dolls were made from cattail leaves and stems. White pine boughs were fashioned into toy dolls. Long, straight sticks were tossed for distance in the winter game of "snow snakes."

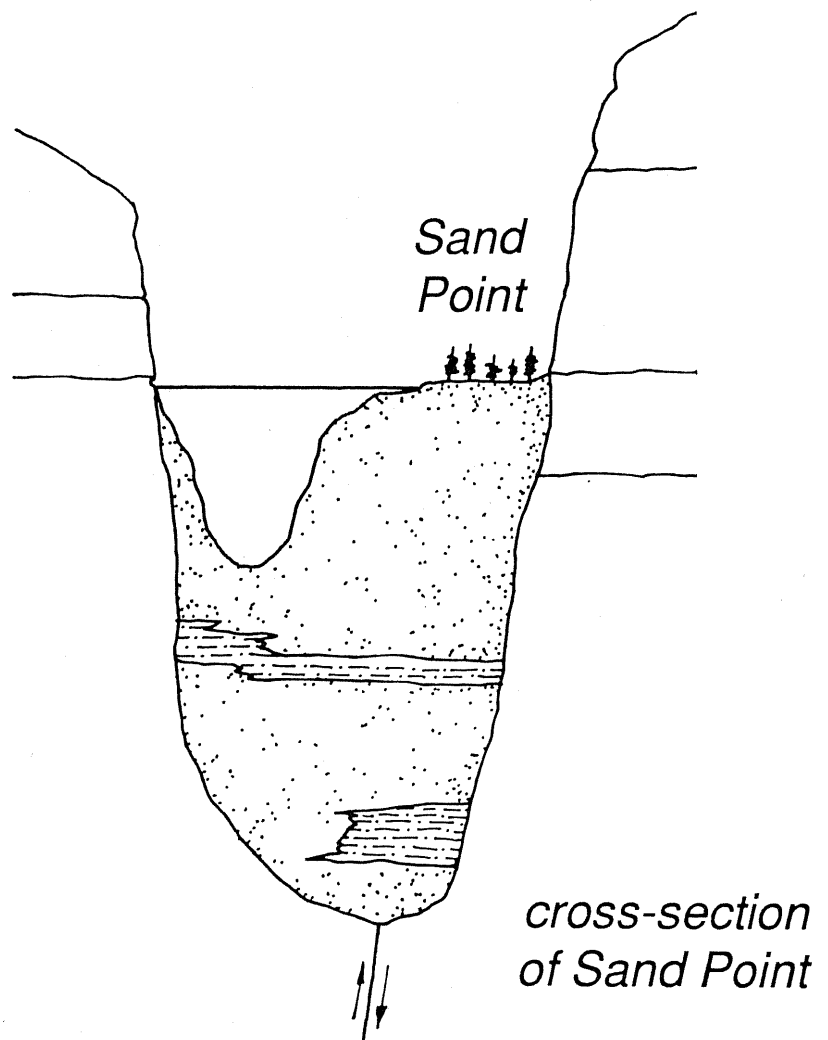
Sand Point's Life Stream



Water on Sand Point comes from snow and rain, surface water running off the top of the cliffs, and groundwater from within the bedrock of the Pictured Rocks escarpment.

Water percolates slowly through the nearby porous sandstone cliffs. Creeks on top of the cliffs also contribute water via waterfalls. Think for a moment of the volume of water flowing beneath you, through sand, vegetation, and beaver channels on its way to Lake Superior. How do water levels change with the season or with beaver colonization?

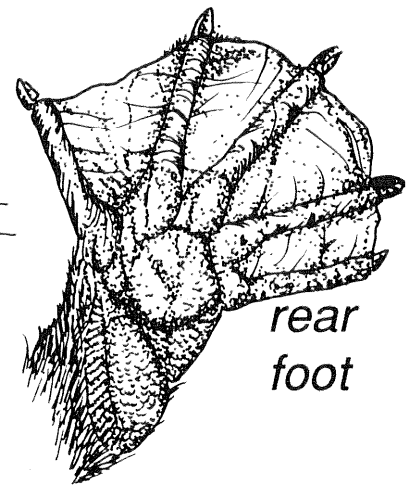
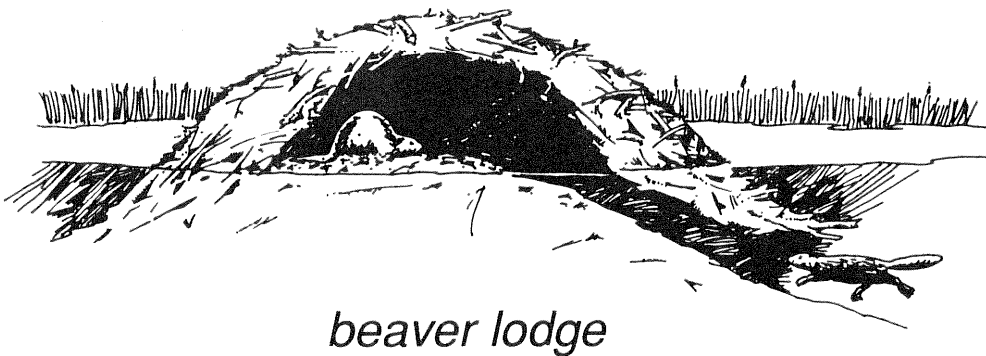
Wetlands are like giant sponges, able to retain enormous quantities of water. Sphagnum moss, a common wetland plant, can absorb eight times its dry weight in water. During dryer times of the year this wetland slowly releases clean water to Lake Superior.



Look, A Beaver!

Beaver have built dams in at least two places on Sand Point. The dams regulate the flow of water and help to maintain pond levels. Adult beaver have built a lodge in this pond. Can you see it? Food caches of water lily roots and alder branches are located in the water beyond the lodge near the opposite shore. These caches are collected by beaver in late summer and fall as a winter food supply.

Beaver are well adapted to an aquatic environment. Membranes cover their eyes, allowing them to see under water. Their hind feet are webbed and have a split claw used to comb oil into their fur. Strong, razor-sharp teeth are used to snip water lily roots and nibble succulent tree bark.

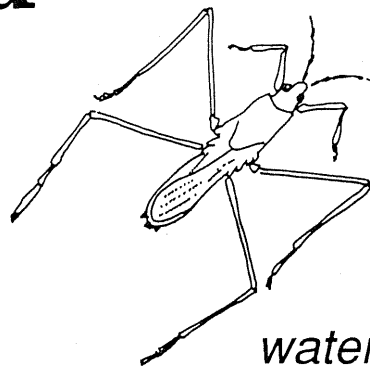


Giardiasis or "beaver fever" is a disease caused in humans by exposure to the protozoan Giardia lamblia. Beaver and other aquatic mammals carry Giardia in their intestinal tract. People who drink untreated surface water are at risk of contracting giardiasis. To be safe, Lakeshore visitors are encouraged to obtain drinking water from public pumps or to boil surface water for one full minute.

Life Of The Pond

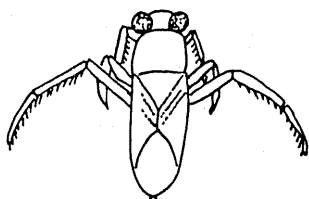
T

he creek channel is "home" for several aquatic species which swim, dive, and search for food in the still water. Dragonflies rest on emergent vegetation.



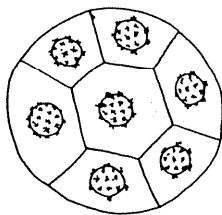
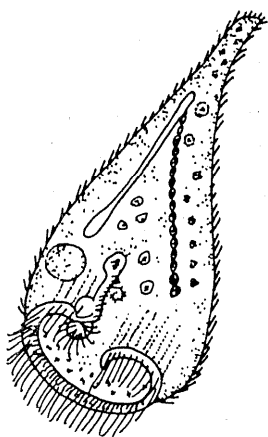
water strider

What would happen to wetland species diversity if the beaver dams were removed? What would this scene look like without water?

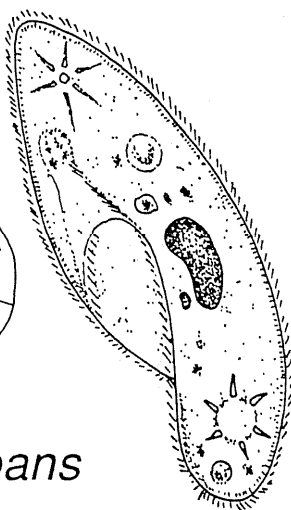


backswimmer

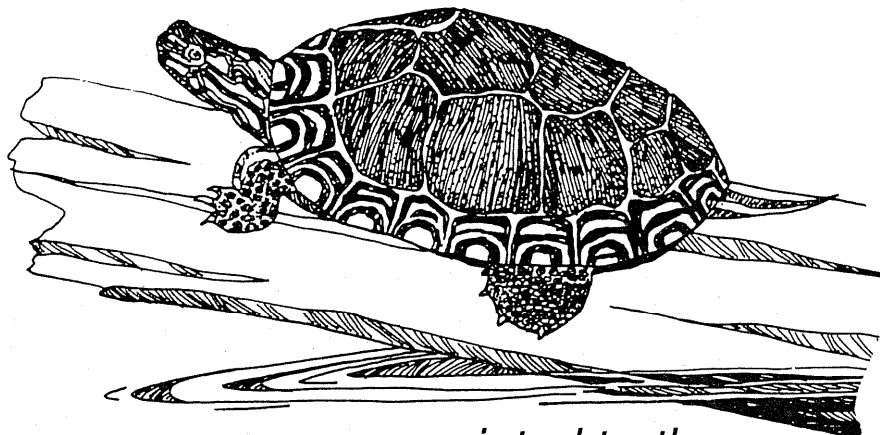
Diatoms, copepods, rotifers, and protozoa are not names of space probes, but tiny animals, intricate components of an aquatic food chain. Pond water teems with millions of



protozoans

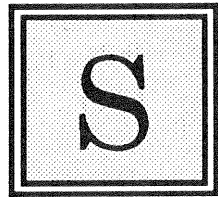


these creatures that are eaten by larger animals...that are eaten by larger animals...that are eaten by larger animals...

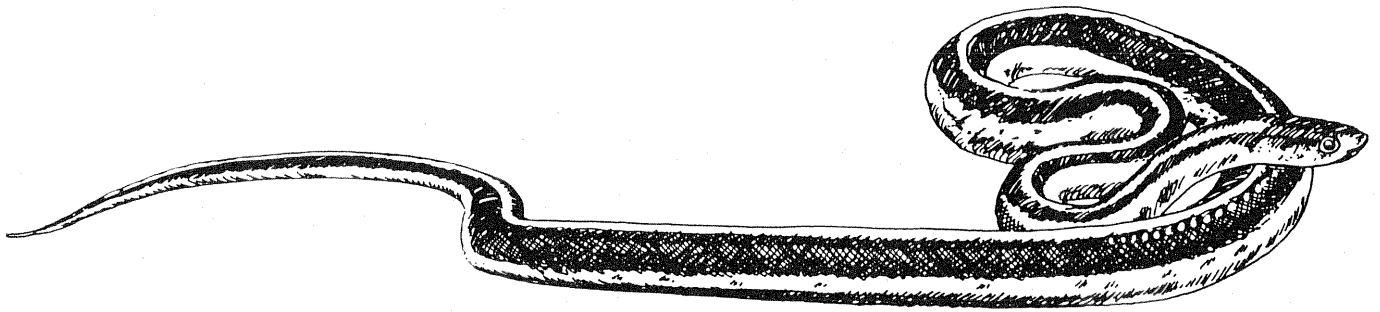


painted turtle

A Northern Forest



unlight streams down in shafts through the canopy. A whisper of wind moves through the red pines as their needles bake in the sun, releasing a pungent odor. Garter snakes hunt mice among the blueberries.



garter snake

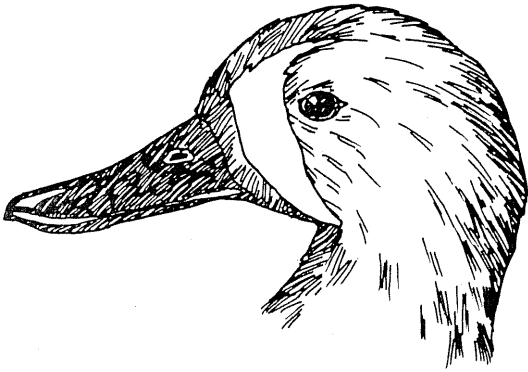
Once again we are among plants and animals that exist in dryer soil conditions. Like an island in a sea of fresh water, this ridge adds to the mosaic of the diverse wetland.



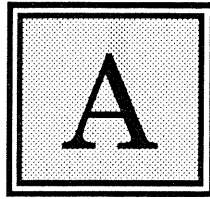
blueberries

Three species of blueberries, the Canada (velvetleaf), low, and late low blueberry grow within the Lakeshore. Each are representative of the north country. Each blooms and bears fruit at different times. Each puts a smile on your face when added to pancakes.

Seasonal Sounds



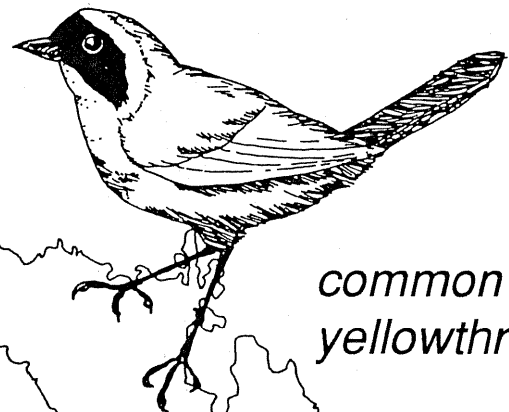
blue-winged teal



As the pond ice melts in early spring, sandhill cranes arrive, rattling their prehistoric call. Spring peepers fill the air with their ritual sounds of mating.

In summer, warm breezes whisper in the pines as the veery, and whitethroat call at dusk. Cedar waxwings twitter in the tree tops.

Toward autumn, mallards and blue winged teal settle noisily onto the pond. Snowflakes fall silently on the wetland, and yet even in winter, spirited calls of chickadees, nuthatches, ravens, and bluejays fill the crisp air.

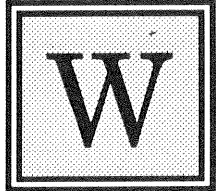


common yellowthroat

Many migrating birds travel long distances twice a year. Some are only passing through for a brief time to rest, feed, and move on north to breed and raise their young. Perching birds like the yellowthroat winter in Central and South America. Without preservation of critical habitat around the world, numbers of these birds will continue to rapidly decline.

Legacy Of The Marsh

Somewhere today, a wetland is being lost to a drainage project, housing development, or the construction of a parking lot.



Wetlands— swamps, marshes, bogs, no matter what they are called, are important for many reasons. Wetland communities filter, purify, and slowly release surface water. They help control flood waters and protect water quality by recharging groundwater. They provide critical habitat to many plant and animal species.

Wetlands are also refuges for the human spirit, places to visit but not stay. Places to study, and someday more fully understand.

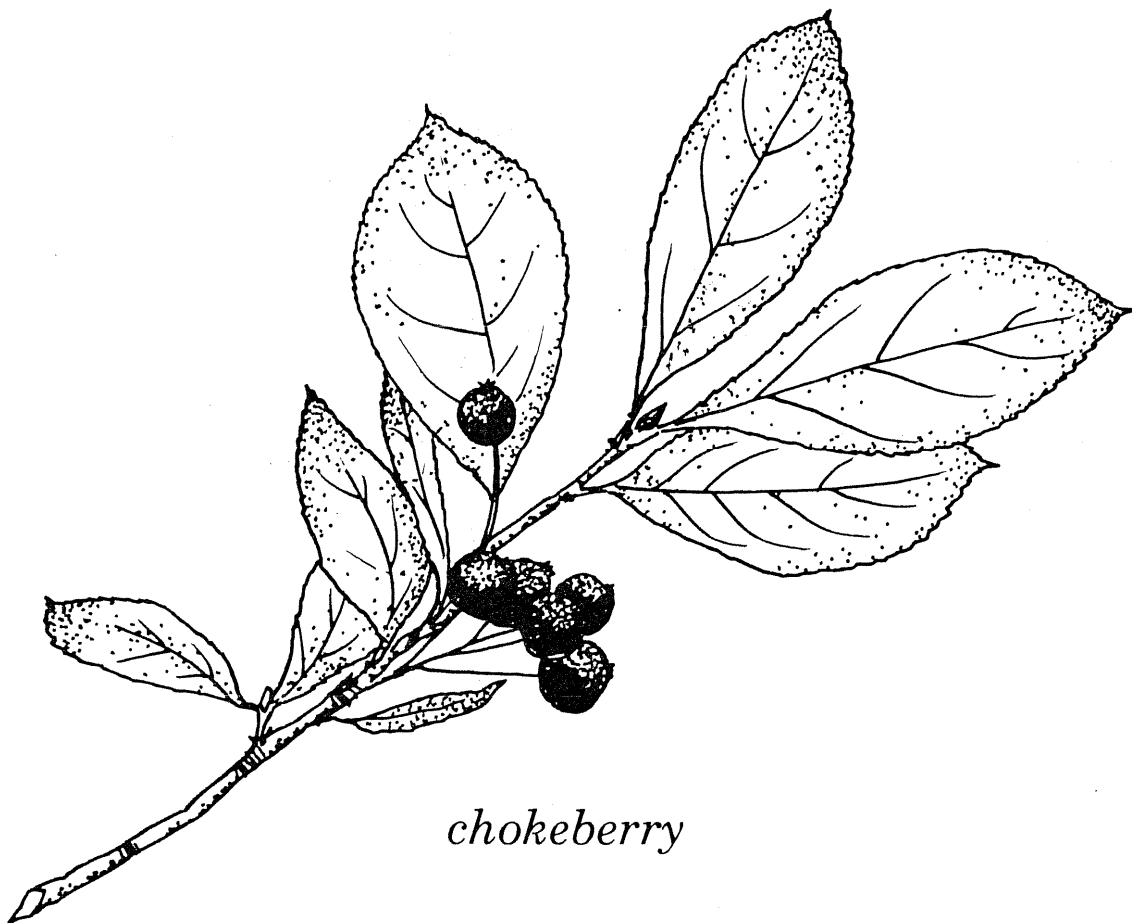


We must place a higher value on wetlands and the natural processes that maintain them. We must teach our children the need to preserve these wild sanctuaries.

Nearly half of the eastern upper peninsula of Michigan is wetland. Although this seems like a lot of land, Michigan has already lost 71% of its original wetlands. Only people can preserve wetlands. People like you.

The Sand Point Marsh Trail is located on Sand Point Road, four miles northeast of Munising, Michigan, within Pictured Rocks National Lakeshore. For further information on the trail or group interpretive activities associated with the trail, call (906) 387-2607 or write:

Superintendent
Pictured Rocks National Lakeshore
P.O. Box 40
Munising, MI 49862



chokeberry

If you have no further use for this brochure, please return it to the box at the trailhead.

Thank You