Upper Peninsula Auto Tour

What do those signs mean?

Society of American Foresters
Growing better all the time

The numbered signs across the U.P. indicate different forest types. You can read more about them here.

INTRODUCTION

From the Society of American Foresters, WELCOME to Michigan's Upper Peninsula (U.P.)! Throughout this self-guided auto tour, we hope to help you enjoy all that the U.P. has to offer. The road signs, with the green SAF shield, have numbers that correspond to descriptions in these pages. The maps of sign locations can be found at the end of this document, one for each of the three regions of the U.P.

There are about 20 million forested acres in Michigan, with 8.7 million acres in the U.P. With that much area covered by trees, it is no wonder that the forest industry is an integral part of the Upper Peninsula economy! Michigan timber contributes about $11 billion and 175,000 jobs statewide, nine percent of which are in the U.P., through forest-based corporations and tourism/recreation. These numbers will vary with differing analyses, but the main message is that these industries are essential to the economy, forest health, and lifestyles of the U.P. Public agencies manage 40% of the forest, with the rest owned privately.

Northern hardwoods, typically sugar maple, beech, and yellow birch, make up the majority of all timber volume in the U.P. Some of the other key forest types are aspen and northern white cedar. Aspen is vital to paper production and home building materials such as oriented strand board (OSB). Hardwoods are used for a variety of products such as furniture and paper, and cedar also has important uses in home construction. The ten most common tree species are sugar maple, white cedar, red maple, quaking aspen, hemlock, yellow birch, white pine, balsam fir, red pine, and paper birch. These species account for over 3/4 of the total wood volume in the U.P.

This tour is designed to help guide you through this vast land of changing terrain and to assist the traveler in learning about our beautiful and productive forests. In this brochure you will read about the species types that we, as foresters in the U.P., manage for timber, recreation, and ecological values. A professionally managed forest provides more of all these values, plus others.

When you get the time, read through the four short sections on Forest Industry, Recreation, Wetlands, and Tree Farm System. Forests are more than just a playground and more than just a creator of jobs, taxes, and monetary wealth. Forest products and forest services are a critical element to the survival of any society, much like food and water. However, we don't often think of them in those terms. Forest products are the most environmentally-friendly raw material at our disposal. They come from renewable ecosystems that provide a wide range of services that are both essential and desirable.

For more information about forestry and forestry education, please visit the following: http://uptreeid.com, http://mff.dsisd.net, http://miforestpathways.net

If you would like more information on the Society of American Foresters, please contact SAF National Headquarters at www.safnet.org or 301-897-8720. Or for the Michigan SAF, visit http://michigansaf.org. The Michigan SAF website has a Guide to Forest Management in Michigan. Enjoy your drive in the U.P.!

The Michigan SAF Auto Tour stocks brochures at several locations, including the MDOT Visitor Center in St. Ignace. Copies of the brochure are also available by contacting Bill Cook at cookwi@msu.edu or 906-786-1575. The information is the same in both the brochure and this document. The numbers highlight the following forest types.

1	Aspen	7	Eastern Hemlock
2	White Birch	8	Spruce-Fir
3	Red Pine	9	Northern White Cedar
4	White Pine	10	Grass Openings
5	Jack Pine	11	Role of Fire
6	Northern Hardwoods	12	Old Growth

FOREST INDUSTRY

Michigan has a vast and diverse forest resource that allows for a vital forest industry. Michigan grows one of the largest forests in the United States. In the Upper Peninsula, about 1.5 million acres of forest or 18% are owned by forest investment companies such as Plum Creek, The ForestLand Group, and GMO Renewable Resources. This acreage is well managed by trained forestry professionals to provide a continuing timber supply to regional mills and buyers, as well as to provide recreational opportunity and environmental services. Their activities may be apparent as you drive along the major highways.

Some of the larger and more visible mills in the Upper Peninsula are: Louisiana-Pacific (Sagola and Newberry), NewPage (Escanaba), Timber products (Munising) and Verso Paper (Quinnesec). These mills adhere to the principles of the Sustainable Forestry Initiative. Many other mills can be spotted as you travel throughout the U.P. Almost every town in the U.P. has a mill or other business that uses wood from our forests. The approximate locations of larger companies are noted on the map by a star. ☆

Transporting products to the industrial sites can be costly and most of the companies heavily utilize the railways and roadways. Forest industry and forestry are vital to the economy and lifestyle of U.P. towns.

RECREATION

Michigan's Upper Peninsula forests offer a wide range of recreation opportunities. State and federal lands are open all year for everyone to enjoy. The abundance of these accessible lands in the U.P. includes many miles of snowmobile, cross-country ski, and ORV trails. We have some of the best-groomed snowmobile trails in the Midwest. Championship cross-country ski races and dog sled races draw competitors from as far away as Europe. During the warmer months, fishing, hiking, camping, ORV riding, mountain biking, hunting, bird watching, and ecological studies abound, made possible by our vast forests and their inherent values.

Tourists from far away (and nearby towns) boost the economy of many towns around the U.P. as they come to enjoy their favorite activity in the forest.

Due to sound forest management, we have an abundance of native animals such as white-tailed deer, black bear, and rabbits. Moose, wolf, eagle, marten, and fisher populations have rebounded in the Upper Peninsula. Deer hunting attracts hunters, which generates local economic benefits.

Although managing forests for white-tailed deer is legitimate, it should be noted that deer over-browsing negatively impact forests in many places.

Some of the key tourist spots in the U.P. are the Sault Locks in Sault Ste. Marie, Tahquamenon Falls near Paradise, Pictured Rocks National Lakeshore in Munising, Brockway Mountain in the Keweenaw Peninsula, the Porcupine Mountains in Ontonagon County, and the iron and copper mines of Marquette and Houghton.

No matter what your reason to visit the U.P., the forests offer many year-round activities.

WETLANDS

Wetlands are fascinating and complex ecosystems that provide a variety of vital ecological functions. They can be classified into 3 broad categories; marshes, shrub wetlands, and forested wetlands (swamps). Wetlands regulate water flow by detaining storm flows for short periods thus reducing flood peaks. Wetlands protect lakeshore and coastal areas by buffering the erosive action of waves and other storm effects. Wetlands improve water quality by retaining or transforming excess nutrients and by trapping sediment and heavy metals. Wetlands provide many wildlife habitat components such as breeding grounds, nesting sites, and other critical habitat for a variety of fish and wildlife species, as well as the special habitat requirements of many threatened and endangered plants and animals. Wetlands also provide a bounty of plant and animal products such as blueberries, cranberries, timber, fiber, fish, shellfish, waterfowl, furbearers, and game animals. As breeding-grounds for some of our most "famous" insects (our blackflies and mosquitoes), they also serve as part of the protein foundation of the northwoods ecosystem, as dragonflies eat mosquitoes, birds eat dragonflies, etc.

TREE FARM SYSTEM *www.treefarmsystem.org*

The American Tree Farm System is a nation-wide community of 87,000 family forest owners (about 27 million acres) linked by a desire to manage their woodlands effectively. Effective management includes producing continuous crops of trees to supply our nation's wood products need while maintaining visual quality and desired wildlife habitat. A Tree Farm might be a plantation. However, most Tree Farms are natural forests managed for a variety of outcomes.

Tree Farmers play a critical role in our nation's economy. Fully 59 percent of all timber harvested in the United States comes from the non-industrial private woodlands owned by individuals, rather than the government or timber companies. Tree Farms play a valuable role as well, providing wildlife habitat and watershed protection and often offering recreational opportunities for members of the community.

Tree Farmers generally own a minimum of 10 acres of forestland. To qualify, they must have their land inspected by one of the 4,400 volunteer foresters who donate their time to the Tree Farm system. Lands are re-inspected periodically to assure that they are properly managed.

The American Tree Farm System is administered on the state level by state Tree Farm committees. It is a program of the American Forest Foundation. Funding for the program comes from a large endowment and private donations and contributions.

ASPEN

As you drive through the Upper Peninsula of Michigan, you will notice an abundance of aspen. The smooth, pale-green barked trees with leaves that tremble in the wind are also commonly referred to as "popple" or “poplar”, and are sometimes confused with white birch. Aspen provides very important habitat for wildlife like deer, rabbits, ruffed grouse, beavers, porcupines, and a variety of songbirds. The leaves turn brilliant yellow in the fall. An aspen forest is a good place to find morel mushrooms in the spring.

Aspen are opportunists. They commonly take over disturbed areas by sprouting from the roots of mature trees. With full sunlight after a disturbance (logging, fire, wind), aspen will aggressively sprout into a thicket of new trees. Because they are nourished by a large, established root system, they can grow three to four feet in just the first season, easily outdoing their competitors. Aspen also reproduces by seed. Of interest is that an aspen tree is either male or female and will produce only male flowers (pollen) or female flowers (for seed).

Aspen grows fast but has a short life span of 50-70 years. Unless a disturbance is created, it dies and the forest changes to other types of trees. That is why you may see clearcutting in an aspen forest. This cutting provides the conditions to regenerate the aspen and begin the cycle over again.

Aspen is a major forest cover type in Michigan. The harvested trees are used for a wide variety of products including paper, oriented strand board (OSB), pallets, and lumber.

WHITE BIRCH

White Birch is one of the most striking North American trees. Birch is important for both its visual value and wood products. Birch clumps are often formed from stump sprouts, making it easy to see and adding contrast and variety to the landscape.

Most white birch is harvested for pulpwood because of its small size. However, due to its white sapwood, straight grain and smooth texture, white birch can produce a quality timber product. These include veneer logs and sawlogs which are used for furniture, and sawbolts which are made into ice cream sticks, tongue depressors, paint stir sticks, toothpicks, dowels, clothespins, etc. Its seeds provide an important food source for birds.

White birch is a short-lived, fast growing tree, which reaches maturity as early as 50-60 years, but can live longer. It is intolerant of shade, which means it needs full sunlight to get established. White birch occurs in pure stands and also as individuals in mixed stands along with balsam fir, white spruce, aspen, northern hardwoods and cedar. It grows in a climate with short, cool summers and long, cold winters with long periods of heavy snow cover.

White birch seeds are small and need mineral soil for best germination. Moderate stump sprouting can occur especially after cutting or a fire. Clearcutting and seed-tree cuts have been used to regenerate white birch. Without harvesting, white birch forests have a tendency to convert to more shade tolerant species through natural succession.

RED PINE

The largest red pine recorded in the United States is 45 inches in diameter, 122 feet tall, and is located in Gogebic County, Michigan (here in the U.P.). Many of the older red pine plantations you see on public forests are legacies of the Civilian Conservation Corps (CCC) which were planted soon after the Great Depression.

Red pine is a very attractive and distinctive native Michigan tree, with dark reddish bark and a dark green round crown. It grows best on sandy soils. Older red pine has thick, fire-resistant bark allowing it to survive in areas that are frequently burned while other trees, shrubs, and grasses are killed. The fire removes ground vegetation and exposes mineral soil needed for new red pine to germinate and grow. If you look at the base of an old red pine you may see a blackened scar called a *catface*. Previous fires caused this scar. Red pine will grow in light shade as a young tree but requires full sunlight to survive and thrive in the forest. Red pine can live to 400 years, but are often harvested much sooner, after several rounds of thinning.

Red pine provides many products we use daily, such as paper, lumber, cabin logs, and utility poles. Red pine lumber, posts, and poles can be treated to be decay resistant. Much of the green colored treated wood that you see used for utility poles and decks is made from red pine.

Red pine is easily managed for timber production and grows the most volume of wood per acre per year of any tree in the Upper Peninsula. It often produces 2-5 times more wood than other trees growing on similar areas. This is one reason why it is the most commonly planted tree in Michigan. Some of the timber management activities you may encounter are thinnings and plantings. Thinnings usually begin in red pine plantations when the trees reach 25-30 years of age. Thinnings may be possible (on better soils) every 10 years until the stand is mature. When the stand has its final harvest, it is clearcut and new trees are planted or established naturally. Sometimes trees are allowed to grow longer than 150 years to provide other forest values such as large trees for visual quality. In addition to wood products, red pine forests provide nesting and cover habitat for many species of wildlife.

WHITE PINE

White pine, monarch of the eastern forest and Michigan's state tree, was the major species of the lumber industry in the late 1800s. Creamy white to red brown, the wood is soft, straight grained, may be cut with ease, polishes well and when seasoned, warps very little. Almost everything from ships' masts to matches, including doors, flooring, framing, trim, crating and novelties have been made from this wood.

With a little practice, white pine's silhouette can be identified while driving down the highways. The upper branches often grow irregularly away from the prevailing wind direction, sometimes giving the tree a windswept appearance.

Abundant in the Upper Peninsula, white pine grows well on a wide variety of sites: from sandy soils to clay soils, on dunes as well as mounds in swamps, on flood plains and on rock ridges and outcrops. White pine can be found in nearly pure stands but usually grows in mixtures with hardwoods, hemlock, or red pine.

White pine of the original Michigan forests, were 200 to 250 years old, with trunks up to 4 feet in diameter (although most were smaller). Today, trees are harvested at 80-100 years when they measure from 12-20 inches in diameter and are about 100 feet tall. White pine natural regeneration is prolific, since seeds released from the cones can be carried as far as 1/4 mile by wind. However, when the trees reach sapling size, they become susceptible to disease (white pine blister rust fungus which kills) and insect infestation (white pine tip weevil which deforms). Over-browsing by deer reduces successful regeneration as well.

Forest management plans often leave overstory "seed" trees standing throughout a harvest area to provide an adequate seed supply to regenerate a new stand. White pine will be one of the first trees to regenerate following a fire. It is also shade tolerant enough to establish itself in the understory of stands of red pine, jack pine, aspen, and northern hardwoods and will gradually replace them as the overstory.

JACK PINE

Jack pine matures at approximately 50-55 years of age. Notable features of this species are its rock-like cones and sharp, waxy needles in bundles of two. The bark of the tree is rough and deep brown in color. Open grown jack pine trees are sometimes scrubby in appearance which is often the result of genetic variation and low soil moisture.

Jack pine typically grows on poor, sandy soils in the U.P. It also tends to grow in stands of mixed species with quaking aspen, red pine, and white pine. Jack pine is classified as a shade intolerant tree, requiring direct sunlight for proper growth. Due to this, it is necessary to clearcut a mature stand to regenerate the species. The cones of the jack pine open when exposed to intense heat from fire or direct sun after a heavy cutting. Once open, the cones release their seeds and germinate in the freshly exposed mineral soil.

Jack pine is a valuable species to the forest products industry. It provides long fibers for paper-making as well as wood for lumber.

The jack pine in the U.P. comes under attack by the jack pine budworm every 15 to 20 years. Along many of the highways you are traveling you may notice that some of the jack pine appears to be dying. This dieback may be due to a jack pine budworm infestation. The budworm feeds on the needles of the jack pine and then nests on the branches. Once the tree is defoliated, it is unable to produce food and sustain itself. With a budworm outbreak, the amount of dead trees in the U.P. forest increases, creating a fire hazard.

NORTHERN HARDWOODS

The main tree species found in a typical northern hardwood forest are sugar maple, red maple, American beech, and yellow birch. We have more northern hardwood forests than any other cover type in the U.P. It is a major source for many of our fine furniture products, paper products, and building materials.

High quality northern hardwood forests are usually managed using a technique called single-tree or group selection to create uneven-aged stands. Foresters mark the trees which should be removed with paint, generally keeping the best quality trees and providing space for regeneration of young trees in small canopy gaps throughout the stand. Trees marked for removal are generally of poor quality, high risk, too crowded, or mature. Loggers then cut the marked trees, taking care to leave the remaining trees undamaged. Stands can be sustainably thinned every 15 – 20 years by using this technique. Uneven-aged management provides landowners with periodic revenue and the benefit of increasing quality hardwood timber value, while at the same time it maintains areas of continuous forest cover.

A wide variety of wildlife species use this forest type, including many songbirds, black bear, and hawks. Northern hardwood forests provide important habitat for a number of different warblers for feeding and nesting in the spring and summer months.

One long time tradition throughout the U.P. is the "tapping" of sugar maple trees for maple syrup, both commercially and for family fun.

EASTERN HEMLOCK

Eastern hemlock is a slow growing, long-lived conifer tree found throughout the North Country. It may live for 600 years or more and reach heights of 160 feet and diameters of 5 feet. A typical mature stand of hemlock may be 150 years old with trees 80 feet tall and 3 feet in diameter. Hemlock is often found growing in association with white pine, yellow birch, and northern hardwoods in cool, moist places, frequently along streams or near lakes. The purplish brown bark of mature trees gives the hemlock a distinct appearance. These graceful trees with soft, "lacy" foliage can easily be picked out of the forest while driving down the highway. The U.P. has some of the last remaining large stocks of hemlock in North America.

The wood from hemlock can be used for making paper and sometimes lumber. Historically, tannin from the bark was used in processing leather, and lumber was used for barns and other farm buildings. Today, hemlock stands provide important shelter for many species of wildlife, especially songbirds.

Most of the time hemlock is managed as a “leave” tree in northern hardwood stands. However, management of hemlock stands for timber products can be accomplished through various thinning techniques. Regeneration is accomplished through a shelterwood system, which is a series of canopy removals that encourages new seedlings and nurses along the saplings. Browsing animals, especially deer, can prevent regeneration success.

SPRUCE-FIR

The spruce-fir forest consists mainly of white spruce and balsam fir. These trees grow well on many cold, wet sites with shallow, acidic soils. Spruce and fir trees are tall and symmetrical. They usually have a rather sharp, pointed crown and many branches surrounding the trunk. These pointed crowns allow them to shed some of the heavy snow and to offer resistance to strong winds. The trees can grow 70 to 80 feet tall but 55 to 60 feet is a more common height.

These forests reproduce themselves via lightweight seeds that are dispersed over great distances and re-establish themselves after a fire or other disturbance. Over mature stands attract large populations of spruce budworm, an insect that feeds on the needles of balsam fir and white spruce. Repeated annual defoliation causes high mortality. The death of large areas of trees then makes way for understory spruce and fir seedlings to grow into a new, healthy stand.

Many songbirds, squirrels, grouse, and other small ground animals use this forest type for food, eating the seeds and insects. People utilize the wood for pulpwood, lumber, furniture, interior trim, and other household items. American Indians once used the pliable roots of black spruce for lacing birch bark canoes. Balsam fir is a popular Christmas tree because the needles do not fall off easily and it has a pleasant fragrance.

NORTHERN WHITE CEDAR

Many of our swamps are occupied by cedar, either pure stands or mixed with other trees such as black and white spruce, tamarack, and balsam fir. Cedar is known for its aromatic smell when cut. Shavings are often preferred for animal bedding. Fence posts, poles, cabin logs, siding, lumber, and shingles are products made from cedar due to its decay resistance.

The cedar type often occurs in large areas of very dense forest. This makes ideal habitat for wintering deer by providing shelter from extreme cold and deep snow. Stand density helps reduce snow depths compared to other areas. It also provides better thermal cover than open upland areas. Cedar browse is a nutritious winter food for deer.

Management of this type of forest varies from clearcutting, strip or patch cutting, to partial overstory removal. The trees left standing provide the seed necessary to regenerate the cut-over areas. Sometimes harvest areas are burned to better provide the seeds direct contact with mineral soil. Cedar seedlings are very slow growing, taking as much as 25-30 years to become established in cool, damp swamp soils.

Besides forest products, cutting helps provide deer browse (grazing food). However, cedar can be over browsed by deer to an unreachable height and can cause regeneration failure. Browsing is what gives a cedar stand the appearance of being pruned to about 5 feet up. Older cedar stands provide important thermal cover for many wildlife species during our cold, snowy U.P. winters.

GRASS OPENINGS

Large grass openings are covered by a layer of permanent sod. Generally, they are the result of the attempts by early settlers to convert forested areas to agricultural uses. The fires that followed the clearing of the forests, fueled by large acres of logging debris, destroyed much of the ground vegetation, seed, and root systems. Such intense heat set back the productivity of the soil for both farming and timber. Farmers’ plows, livestock grazing, and compaction also kept the land open for many years. The forest soils that were less suitable for farm production were soon abandoned. Grass (sod) prevailed when trees could not.

In the absence of fires and farming, the grass openings began to be slowly reclaimed by tree cover such as aspen, willow, alder, birch, and jack pine. This accelerated in the 1930s and is still taking place. Decades later you can still see treeless and grassy fields, often called savannas.

Openings are beneficial to certain wildlife species. These openings "green up" first in the spring, providing succulent grasses. A large opening is very appealing to hawks and many seed-eating birds. Prey species such as mice and voles are abundant. Species that are adapted to a prairie-like environment, such as sharp-tailed grouse and upland plovers, might be found feeding on insects and seeds. The ritualistic spring mating flight and dance of the American woodcock is dependent upon mixed brush-grass openings.

Foresters, wildlife biologists, and other natural resource professionals manage large openings for their historic, scenic, and wildlife benefits. Prescribed (controlled) burning is one way to establish and/or maintain openings and keep this valuable habitat.

ROLE OF FIRE

Fire plays a major role in forest health and species composition. Natural fires in early times swept through old and decaying forest, regenerating new, healthy stands of sun-loving tree species. Large stands of red, white, and jack pine were created because of their adaptation to fire ecologies. By removing fire from the natural forest process, fire-intolerant tree species such as red and sugar maple prevail.

Today, prescribed fire is occasionally used in forestry, such as site preparation for tree regeneration, wildlife management, blueberry production, and controlling unwanted understory species (exotic and native). Prescribed fire can also be used to reduce fuels to protect homes and pine plantations from wildfires.

Recent wildfire sites for you to see are:

DUCK LAKE FIRE – NEWBERRY AREA – 2012
A lightning fire that charred over 21,000 acres from near M-28 to Lake Superior. Most of the fire was through jack pine and wetland habitats. Over 130 structures were lost, including a resort and the landmark Rainbow Lodge.

SLEEPER LAKE FIRE – NEWBERRY AREA - 2007
This lightning-caused fire burned 18,000+ acres over 4 weeks. With the extended drought, the fire was able to burn through mostly wetland acres but threatened a number of homes and recreational properties in adjacent woodlands.

TOWER LAKE FIRE - REPUBLIC AREA - 1998
Begun by a campfire, this fire burned 5,600+ acres west of Marquette, jumped M-95, and threatened the town of Champion. Regeneration has been slow, in part due to shallow soils and rocky ground.

STONINGTON FIRE – RAPID RIVER - 1988
The Stockyard Fire burned approximately 1400 acres, jumped U.S. 2, and was caused by sparks from an ATV. The area has successfully regenerated to jack pine but has experienced jack pine budworm and drought mortality.

SENEY FIRE – SENEY WILDLIFE REFUGE- 1976
This lightning-caused wildfire burned 74,000 acres in the drought year of 1976. It became one of the largest fires in Michigan history. Today, it is hard to see where the fire jumped M-28 except for a few remaining dead trees.

OLD GROWTH

Ecologically, old growth forests display characteristics of a mature and more or less stable-state, late successional forest. Trees of all ages populate the forest but there are more old trees, near the end of their biological lifespan, than we typically see in today's forest. Levels of certain ecological dynamics and species composition differ from other forests, such as higher amounts of decomposers. In many regards, old growth forests are like some of the similar forest types prior to the massive human disturbances in 1800s and early 1900s.

Old growth has various definitions and can mean different things to many people. A more common perception seems to be a forest with big trees. While big trees are visually attractive to most people, they do not necessarily mean old growth. Old growth involves much more than just big, old trees. Forests with big trees can be most quickly obtained and maintained through forest management. Most of the U.P. forests were heavily logged a century ago, but have been more carefully managed over the past 40 years. In fact, some well-managed forests now display such nice old growth characteristics that they have been designated "old growth" on some public lands.

Not all forest types are capable of old growth characteristics. Tree species that are short-lived and intolerant of shade are not typically part of old growth forests. Aspen, paper birch, and jack pine are examples of tree species that usually occupy early successional forest and rarely appear in old growth forests. In the Upper Peninsula, northern hardwood and cedar forests comprise the greatest potential for achieving an old growth state. Northern hardwoods have long dominated the forests of the U.P. As forests continue to change as a result of sustainable management, we may see more of them grow closer to old growth conditions, however those might be defined.

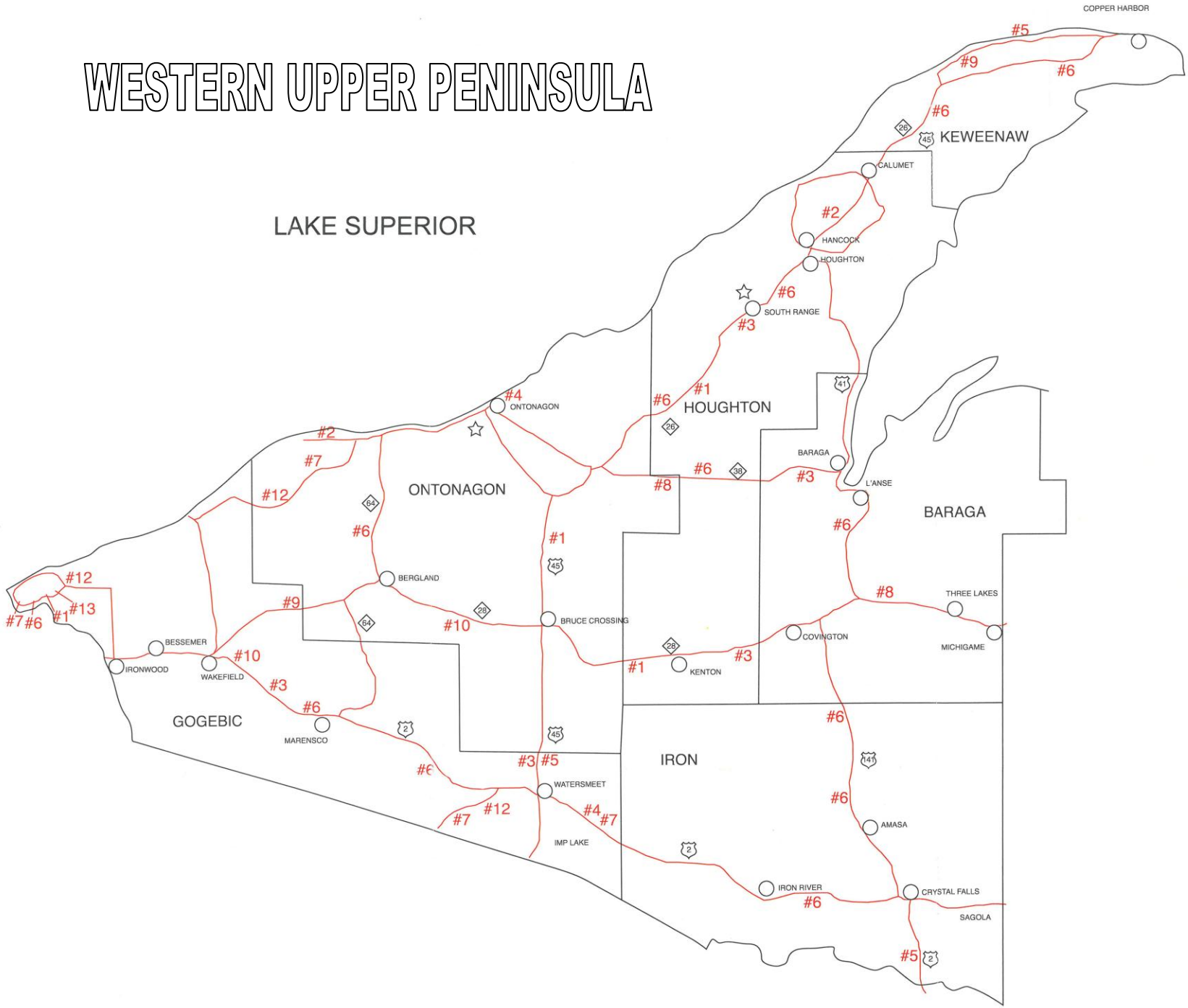
FOREST PROTECTION

What should forests be protected from? Most people, perhaps, would list wildfire, insect outbreaks, and disease epidemics. Others would add exotic and invasive species to the list. American chestnut and American elm are examples of tree species nearly lost to exotic disease. Emerald ash borer, largely spread by people through the movement of firewood, will likely eliminate most of our ash trees. American beech is on its way out due to an introduced pathogen called beech bark disease. Other tree species face impending threats. In many areas, white-tailed deer have altered forest dynamics and nearly eliminated tree regeneration and understory plants. Less obvious perhaps, but an important factor, humans have greatly reduced riparian forest (along lakes and rivers) and build relentlessly into all forests, permanently altering forest and wildlife habitat conditions. It is, indeed, possible to "love" forests to death.

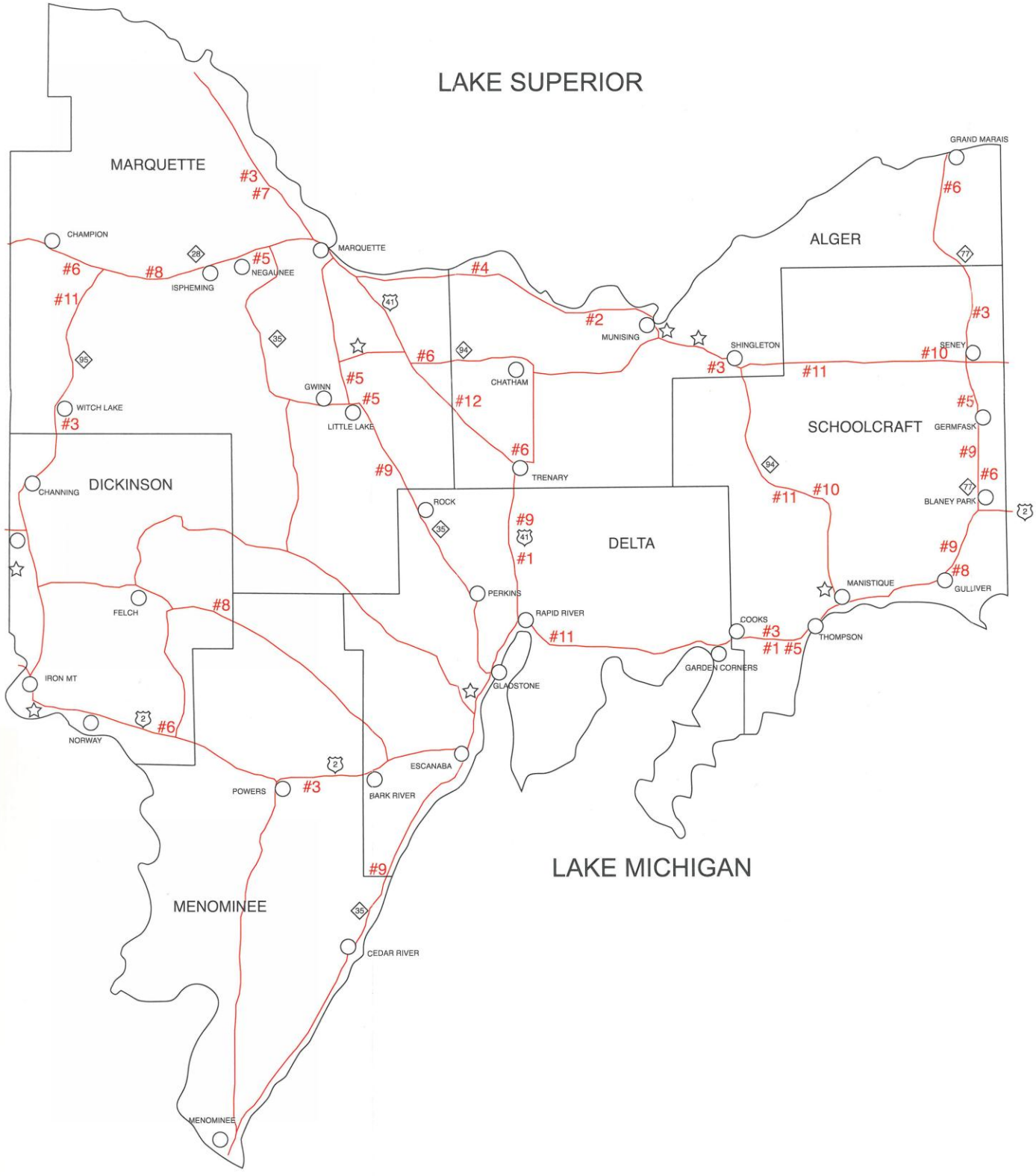
Historically, protection from wildfire has been the main focus of forest protection. Michigan has been a leader in fire-fighting tactics and machinery. Fire protection duties lie largely with state government through the DNR, with considerable assistance from the U.S. Forest Service, local fire departments, and others. Forest health, in terms of insects and diseases, is monitored by state, federal, and research communities. The best way to protect forests and minimize the negative effects of insects and diseases is to maintain a vigorous condition through management. Management can also limit the impact of wildfire. A healthy forest is far more resilient than unmanaged forests. Also, not all outbreaks, epidemics, and fire is negative.

What can you do? First, if you own forest property, consider managing it to meet YOUR objectives. Second, don't move firewood! Many insects and diseases hitchhike on firewood.

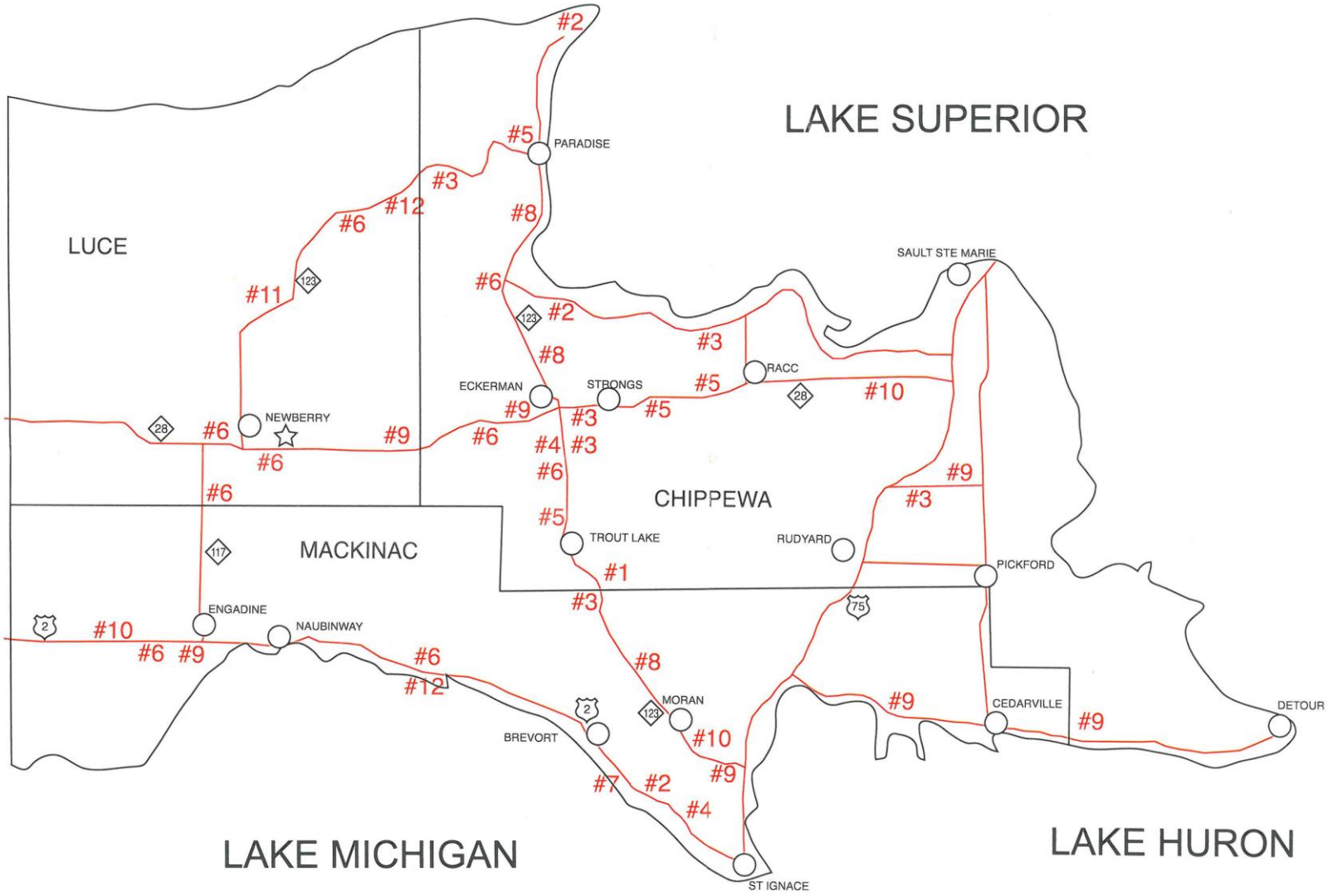
WESTERN UPPER PENINSULA



CENTRAL UPPER PENINSULA



EASTERN UPPER PENINSULA



The U.P. Forest Auto Tour is supported by many regional industries.

Society Of American Foresters
1-301-897-8720

Michigan's Sustainable Forestry Initiative
1-517-853-8880

Michigan Forest Resource Alliance
1-517-853-8880

MSU Forestry Extension
1-906-786-1575

Michigan Tech
1-800-WOODS-MI

Plum Creek
1-906-789-9076

Longyear 1-906-228-7960

NewPage Corporation
1-906-233-2153

Michigan Tree Farm
1-202-463-2462

Verso Paper
1-906-779-3477

Holli Forest Products 1-906-485-6351

The Forestland Group
1-906-288-3380

Timber Products Company
1-906-452-6221