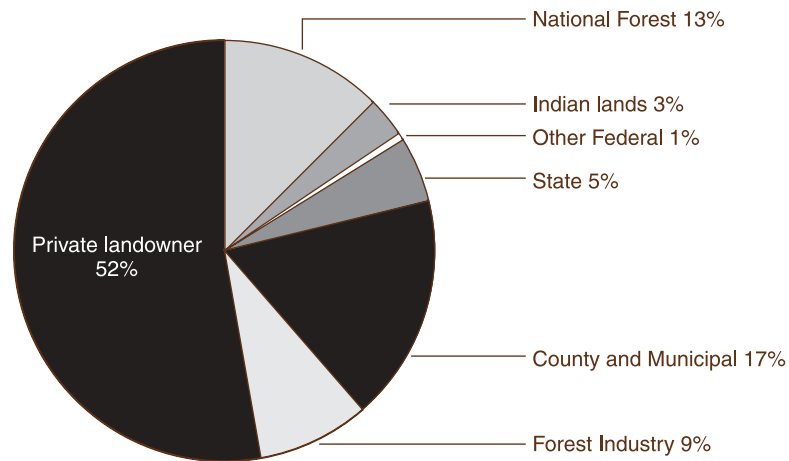


Wisconsin's Forests

Of Wisconsin's 35 million acres of land, almost 16 million acres are forested. Currently the area of forestland in Wisconsin represents 46% of the total land area of the state. Fifty-two percent of the forests are privately owned. Once forest industry and Indian forestlands are added, 64% percent of Wisconsin's forestland, or 12.5 million acres, potentially could be eligible for the Forest Legacy Program.

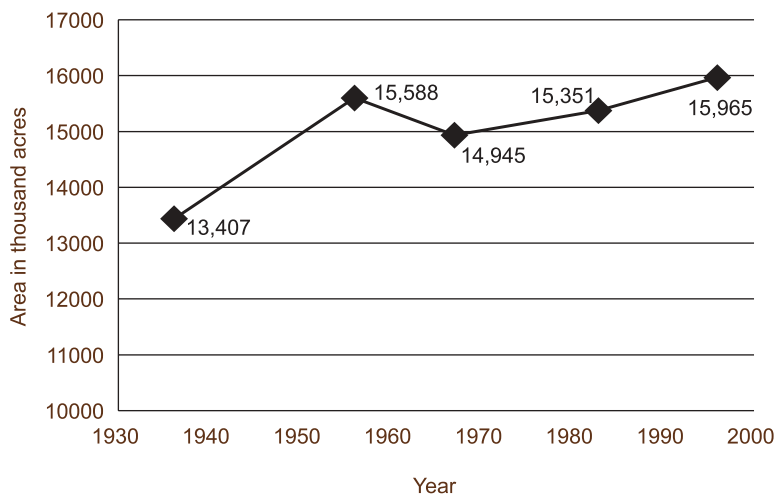
The total area of forested land in Wisconsin has been steadily increasing since 1935, mostly due to the conversion of marginal agricultural land back to forests (See Figure 1). The greatest increase in forestland took place in the northeast part of the state, where about 74% of the land is now forested.

Figure 2 — Ownership of Wisconsin's Forests, 1996



Area of various forest types has changed significantly over time. Most of the increase in area of forestland between 1983 and 1996 occurred in 20 - 80 year old forests. Aspen-birch forests have decreased, maple, basswood, and oak-hickory forests increased, and conifer forests remained roughly the same.

Figure 3 — Wisconsin Forest Area Over Time



The most abundant forest type in the state is the maple-basswood type, with 5.3 million acres. Aspen and oak-hickory also cover large areas, almost 2.9 million acres each. While 84% of Wisconsin's forests are hardwood types, there are significant conifer forests with larger acreages including red pine, jack pine, black spruce, northern white-cedar, and tamarack types (Schmidt, 1997).

Northern Mixed Forest

Glacial activity dramatically influenced the ecology of much of Wisconsin, and the entire Northern Mixed Forest region. Most of the northern area of Wisconsin is a gently rolling plain, punctuated by steeper glacial features and a few ancient pre-glacial escarpments. Tim's Hill and Rib Mountain, the highest points in the state, occur in the northern region. Much of the surface hydrology of the Northern Mixed Forest results from glacial activity.

Northern Wisconsin has one of the highest concentrations of freshwater in the world. The Ojibwe word "wisconsin" actually means "gathering place of waters". Many of the copious lakes and ponds are kettle lakes, or the result of dammed glacial outwash streams. Glacial scouring action also created the Great Lakes.

The soils of the north developed from the glacial till overlying the bedrock. They developed under forest vegetation, and tend to be lighter colored than soils further south. Most are loams or silts, fairly fertile, and support complex, well-developed maple-hemlock forests.

Both conifer and broadleaf species characterize the northern mixed forest. Most all of the fairly common native tree species can be found in the region. However, there are usually only a few primary species in any given locale. As the primary species determine the forest type of an area, the typing of an area does not clearly indicate the true diversity.

Fewer people live in northern than southern Wisconsin. Consequently, much of the north remains forested because there is less pressure for agricultural and urban development. Over 70 % of Wisconsin's forests occur in the north, on only a little over 50% of the total land area. Over half of the Northern Mixed Forest region is forested.

Wisconsin's Northern Mixed Forest is owned by a wide array of individuals and organizations. Although there is significant public ownership in the northern forests, the most common ownership class, both in terms of numbers and acres, is non-industrial private owner. County and municipal ownership is also important in the Northern Mixed Forest. Many of these forests were once bankrupt farms that returned to county ownership after the cutover period in the early part of the 1900s. Third largest, in terms of acreage, is national forest land. The Chequamegon-Nicolet National Forest is composed of a number of large tracts located across Wisconsin's northern regions. Forest industry owns 9% of the northern forest, providing wood primarily for the paper industry. Wisconsin is the number one paper-making state in the nation. The State of Wisconsin owns about 5% of the northern forestland — mostly in the state forest system. Indian lands account for about 3 % of the total forestland in the north.

Pine Forest Type

Seven percent (802,000 acres) of the Northern Mixed Forest in Wisconsin is pine forest type. Red pine, eastern white pine, and jack pine are the common pine species that occur in Wisconsin. Forest character can vary from jack pine barrens, to red pine plantations, to thick stands of young white pine, to rare old growth stands with pines hundreds of years old. Other than pines, common associates of pine forests are quaking aspen, paper birch, balsam fir, red maple, white spruce, northern pine oak, and northern red oak.

Savannas

A *savanna* is an ecosystem that is transitional between the eastern forests and the western prairies, having a mosaic of plant communities that represent a continuum from prairie to forest. Grasses and other forbs share dominance with scattered trees. Wisconsin savannas have been called, among other names, oak openings, oak barrens, and oak woodland. Currently there are approximately 500 acres of good quality oak savanna remaining in the state, with some other areas having potential for restoration (Hoffman, 1999). According to the Wisconsin's Natural Heritage Inventory, oak savanna is among the most threatened ecosystems in the world (Noss, LaRoe and Scott, 1997). Important tree species in oak savanna are burr, black, red, and white oak (Curtis, 1959).

The Forest Legacy Program could be an important tool for protecting, maintaining and restoring this important and threatened forest ecosystem.

Oak and Pine Barrens

Smaller areas of sandy, infertile, and droughty soils are very important ecologically. Some support pine barrens, an increasingly rare ecological community although other pine forests, as well as some broadleaf forests, also occur on these sandy soils. Pine barren once covered 2.3 million acres of Wisconsin prior to European settlement. Currently, only about 7% of the presettlement barrens exist (Borgerding, 1995). In the past, oak and pine barrens were often ignored in discussions of Wisconsin's forests, and sometimes considered non-productive areas. However, today they are receiving increased attention as unique and vanishing ecosystems.

Barrens are plant communities that occur on sandy soils and are dominated by grasses, low shrubs, small trees, and scattered large trees. These areas tend to be more susceptible to fire as there is little moisture contained in both the soil and vegetation. In fact, the pine species that grow in these areas have adapted to these unique conditions, fire and all. Oak and pine barrens occur mostly in the northern region of Wisconsin, although there is a significant patch in the central sands area, within and south of the tension zone.

Barrens have experienced a dramatic collapse since intense Euro-American settlement began. Ecologists believe this is in large part due to decreased presence of fire. Much of the central sands area of the state was once periodically covered in jack pine forest and barrens. These tree-dominated vegetation types intermingled and alternated with grass and forb dominated openings that were maintained by fire. Openings succeeded to jack pine dominated communities, lasted for a few decades, only to be subject again to the regressive effects of fire.

Most barrens exist in isolated fragments on protected state or federal land. According to the Natural Heritage Inventory, there are currently about 8,578 acres of pine barrens at 65 sites throughout the state. This may be a slightly low estimate. There are about 1,400 acres of oak barrens in the southern part of the state. Wisconsin's Natural Heritage Inventory lists barrens communities as globally imperiled.

As with the savanna communities, there is an opportunity within the Forest Legacy Program to maintain, protect and restore these ecologically imperiled ecosystems.