

In the series: *Getting Started with Forestry*

New York's Forests—Then and Now

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As I travel around the state and meet other people interested in nonindustrial private forest management, I am continually amazed by the extent of our forested lands. As interesting is the way New York forests change from north to south and east to west, and the varied history of our forested landscape. By understanding the characteristics of our current forests and how the forest has changed to arrive at its current condition, we can better understand what the forest can provide and how it must be tended.

New York was predominately forested at the time of European colonization. The nonforested areas of our landscape existed as open meadows, pine barrens, lakes, and nonforested wetlands; nonforested areas resulting from soil or topographic features or opened due to a recent disturbance. Our best records suggest that New York forests in the late 1700's and early 1800's were dominated predominately by red spruce and balsam fir at the highest elevations, sugar maple, American beech, and yellow birch on good soils, and oaks, hickory, and American chestnut on the drier and warmer sites. White ash occurred as scattered, infrequent trees mixed with other species on fertile soils. Black cherry occurred on a wide range of sites. Certainly other species occurred, approximately 60 tree species in various areas of the state.

As colonists spread across New York shortly after the Revolutionary War, they cleared land in small patches for subsistence farming. As today, agriculture was important to the early colonists of New York, and as the population grew so did the acres being cropped and grazed. Then as now, New Yorkers used the forest land as sources of lumber and other forest products and as habitat for wildlife, but the early citizens went to great lengths to clear the land of forests as demands increased for agricultural crops.

By late in the 1800's, most of the lands outside of the Adirondacks were being farmed or had been farmed during the previous century. Agriculture continued to dominate the New York landscape, with 75% (22.6 million acres) of the state being used for agriculture. However, many farms were located on soils limited in suitability for agriculture. Beginning in the 1890's, the amount of land in agriculture began to decline and over the next several decades the abandonment of agricultural land peaked and waned depending on a variety of circumstances. On most lands not suitable to remain in agriculture or be used for development, the forest began its return. The early successional maples, ash, and aspen with light-weight seeds blew onto agricultural fields starting many of the forests that now cover our state.

The succession of farm field to forest is too long of a story for now, but we know that agricultural lands in New York declined from about 75% to 25% by the 1990's with large shifts in acreage from farm to forest. As the forests developed, many species of wildlife expanded their populations into the newly created habitat. Other species, such as the ring-neck pheasant, were introduced to use the grass and shrub habitats that covered the state. The State Conservation Department (now Department of Environmental Conservation) and the Civilian Conservation Corps (CCC) planted red pine, Norway spruce, and eastern white pine to reforest the state, stabilize soils, and reduce erosion. The forests grew, changing from seedlings mixed among grasses and golden rod to saplings and by 1953 52% of the forests (6.6 million acres, about one-fifth of the state) were classified as seedling or sapling sized forest and almost 20% (2.3 million acres) of the forests were "pole" sized (trees between 6 and 11 inches in diameter at 4.5 ft above ground). In 1953, 30% (3.8 million acres) of the forests were classified as sawtimber (greater than 12 inches in diameter).

You can imagine that the change in the character of the forest was not constant across the state. Areas that seeded into the faster growing but shorter-lived aspen reached pole size sooner, and areas that seeded to sugar maple were slower to reach pole size. Trees in other areas, particularly those having poor soils may not have grown so quickly or as tall. Thus, our forests have a fairly similar "birth date", but differ depending on the first species to invade and survive and the rate they grew. The forests that started from field have changed through time, some of the early invaders have died, leaving an opening filled either by the leafy crowns of their neighbors or by seeds and then seedlings from surrounding areas. Many forests around the state are between 60 and 90 years old, ages that reflect the changing land use and history of disturbances.

A common feature of many forests, a result of them originating at the same time in a given area, is that they are even-aged. Even-aged is a term used by foresters to reflect that even though the forest can have trees of different sizes, all trees are approximately the same age. This feature is both interesting and useful. It is interesting that trees of very different

sizes (I have seen trees 4 inches in diameter the same age as trees 10 inches in diameter) are about the same age. It is useful because it helps us understand how to manage the forests. The larger trees are those species or individual trees (due to genetics) able to grow quickly. If we try to manage our even-aged forests by cutting only the largest trees, we remove the genetically best and fastest growing species. We leave behind the "runts of the tree world" that may not be able to utilize the increased soil and light resources available following a timber harvest. This process of taking the largest and best trees and leaving the runts provides interesting food for thought and the topic of a future article.

Our forests today are beautiful, abundant, and productive. Other than the virtual loss of American chestnut by the chestnut blight (caused by the fungal pathogen *Cryphonectria parasitica*), we have all the species present in the 1700's plus a few introduced species -- some of which we would be better off without. Our state is 62% forested, 18.6 million acres of our 30 million total acres. Currently, 53% of the forests are sawtimber, 30% are pole-sized, and 17% are seedling or sapling sized. In a state where agriculture once dominated, now only 7 counties have greater than 50% of their land devoted to agriculture. Twenty-five counties have between 50 and 75% of their land as forest, and 10 counties have greater than 75% forest land. Other than the New York metropolitan area, all counties have greater than 25% forest land. The 8 most abundant tree species (in decreasing order) are sugar maple, red maple, eastern hemlock, eastern white pine, white ash, American beech, northern red oak, and black cherry. A recent economic analysis indicates that the companies that comprise the forest industry employ over 60,000 people, account for 5.6 percent of the state's total manufacturing, and directly contribute \$4.6 billion to New York's Gross State Product.

For all of us interested in forests and forestry, New York is a wonderful place. If you would like additional information on the characteristics of forests throughout the state or in your area contact your local office of the Department of Environmental Conservation. If you would like more information on your particular forests and how to manage it to meet your objectives, contact the DEC or a professional consulting forester.

(I appreciate access to reports by B. Stanton and N. Bills, Cornell Univ. Dept. of Agric., Res., and Manag. Economics; NYS - Dept. of Environ. Cons.; and the Empire State Forest Products Assoc.)