

VERMONT'S LARGEST WHITE ASH

The White Ash tree (*Fraxinus americana*) is a highly valued hardwood in Vermont and elsewhere in the eastern United States. It is somewhat intolerant of shady conditions so is typically an early entrant into the successional stages of developing woodlands. Under forest conditions it grows tall and straight and is self-pruning, all highly desirable merchantable traits. Of the several other less common and less important species of ash native to Vermont, this one does best in well-drained rich calcareous (limey) soils. Mature White Ash trees in southeastern Vermont generally have a diameter of 24 inches or so at 4½ feet above the ground (the so-called diameter at breast height, or "DBH"), and a height of perhaps 70 to 80 feet. The seeds of ash provide food for squirrels and various woodland birds. Porcupines and beavers eat the bark. As to commercial uses of White Ash, its wood is strong, shock resistant, moderately flexible, and wears well, making it the ideal material for hammer and ax handles, baseball bats, canoe paddles, and the like. It is also much used for furniture, flooring, and other demanding products.

There is a White Ash growing in the Windmill Hill Pinnacle Association's Nature Reserve having a DBH of fully 65 inches, a height of 113 feet, and an average crown spread of 59 feet, thereby making it the largest example of this species in Vermont. The tree is located within a site currently supporting a mixed stand of oak, maple, beech, birch, and pine perhaps 60 years of age (and lightly logged perhaps 25 years ago). However, the configuration of that ash's major branches strongly indicates that it had developed in an open pasture (a late 18th century house foundation and stone walls are not far away). Moreover, the tree seems to have developed from the fused (grafted) stump sprouts of an even earlier large parent tree. The average life-span of White Ash trees is known to be about 260 years, but we have no idea how old this tree might be, although the pasture in which it grew up might conceivably have been associated with that 18th century homestead. There are no other ash trees in the vicinity of this one, whether large or small. Ash trees are either male or female, and deteriorating fruits (samaras) on the ground below this one tell us that it is a female (so has been receptive every two or three years since the age of about 30 or 40). Thus it seems that males might be too far away for the wind to bring their pollen to it. Then again, since ash seedlings are a favored food of deer, they might be absent here for that reason.

This ash seems not as yet to be afflicted with any debilitating disease or insect pest. However, two widely discussed and mortally threatening maladies of grave concern for this species should be mentioned. The first potential

concern here is Ash Yellows caused by a very tiny native microbe, *Phytoplasma fraxini*. It attacks and slowly destroys the tree's inner bark (the phloem), a tissue essential for conducting dissolved sugars throughout the tree. Once infected, the ash will invariably die within 5 to 10 years. The *Phytoplasma* is brought to a tree by leafhoppers (not themselves affected) that live in open areas, so that trees deep in the woods, such as this one, are fortunately not reached. The second potential concern is the Emerald Ash Borer (*Agrilus planipennis*), a beetle that was inadvertently introduced into Michigan from eastern Asia some 12 or 15 years ago (and has now killed many millions of ash trees there and beyond). This beetle deposits its eggs into the layer of dividing cells (the cambium) located between the tree's bark (phloem) and wood (xylem). The larvae that develop tunnel their way through those dividing cells, eating them as they go. This so-called girdling kills an infected tree without fail within about 3 to 4 years. The borers are spreading eastward, but have not as yet reached Vermont, although that seems to be inevitable.

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