



Canada Yew

A Unique Remnant

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Canada Yew. Photo Courtesy of Bill Cook, Michigan State University, Bugwood.org

Alger County, Michigan - The Canada yew is an evergreen shrub native to the central and eastern areas of North America. This type of conifer is also called the Canadian yew, American yew, ground-hemlock or simply yew. Its scientific name is *Taxus canadensis* and it thrives in ravines, riverbanks, swampy forests and on lakeshores. Mostly found north of the Ohio River, there are some rare ice age relicts as far south as the Appalachian Mountains.

A sprawling shrub, northern natives called it something that translated: “that which sprawls about everywhere.” Though occasionally classified as a tree, most call it a shrub as it rarely exceeds three feet, though some can grow as tall as six. The branches of the shrub are dense and spread up to six feet long.

Each of its cones contain a single seed partly surrounded by a bright, berry-like fruit called an aril, which is open at the end. Birds including waxwings and thrushes, among others, eat the seeds, and disperse the hard seeds through their droppings.

However, production of new stems or seedlings by sexual reproduction by Canada yew appears rare. Instead of a seed germinating, Canada yew reproduces predominantly by layering its stems. Arching lateral branches are pressed to the ground and take root, resulting in a spreading growth form that often produces roughly circular-shaped patches comprised of dense tangles of intertwining stems; this patchy growth form is especially evident in high-density areas with large individual stems Alison (1990).

“Most areas of previously abundant yew in the Upper Peninsula have been highly degraded or extirpated, primarily from land use change and overbrowsing by deer.” Dr. Steve Windels



Deer overbrowse of Canada yew. Photo Courtesy of The Nature Conservancy/Emily Clegg

Historically, the Canada yew was more prevalent in the Great Lakes than it is today. Various land uses, including logging and subsequent fires as well as the increasing populations of white-tailed deer, have removed about 90% of the Canada yew population in the Upper Peninsula.

Canada yew provides much of the understory structure in northern forests. Though no single species' fate depends directly on the Canada yew, without it, the understory structure is changed, which, because of nature's reliance on other species for survival, changes how animals and plants thrive. Islands in the Great Lakes region with high humidity, low deer population and low fire occurrence create the perfect conditions for yew. Canada yew can still be observed on many islands in Lake Superior and Lake Michigan, sometimes reaching 6-8 feet tall and almost impenetrable to walk through.

Canada yew is browsed heavily by mammals like deer and moose. Canada yew is considered the most preferred browse item by deer in the Great Lakes states, so much so that it is often eaten disproportionately more than other highly preferred browse items such as white cedar (*Thuja occidentalis*). A recent study looked at 29 yew sites in Marquette and Alger Counties – the yew varied from low percent cover on the ground to high percent cover on the ground. The researchers found a pattern of decreasing browsing intensity on Canada yew stems as Canada yew abundance increased - or in other words deer ate less in a big patch of yew and often only along a deer trail. They also suggest that Canada yew's patchy growth form may physically inhibit deer penetration into patches of yew >2 m in diameter, thus creating a refugia to browsing deer in the interior of these patches. (Windelis, 2013). Conclusions from the study suggest that intensity of deer browsing on Canada yew in the Lake Superior Watershed was affected by two factors operating independently at two landscape scales relevant to white-tailed deer. The results suggest that as the size of individual Canada yew patches increases, the likelihood of the patch persisting under a constant deer browsing pressure also increases. The research speculates that the disappearance of Canada yew from a stand occurs on a patch-by-patch basis rather than a steady decline across all stems within a stand. As stems at the edges of patches gradually die from heavy browsing, functional patch size decreases and new stems nearer the interior become susceptible to browsing.

Yew can still be found in the high snow depth, low deer density areas of Luce County and along cliffs and ledges and steeper slopes within Pictured Rocks National Lakeshore in Alger County. If you see yew growing in an area, it is usually a good indicator that the location may not be the place to encounter a lot of deer.

More Information

- Allison, T. D. (1990). The influence of deer browsing on the reproductive biology of Canada yew (*Taxus canadensis* marsh.)-I. Direct effect on pollen, ovule, and seed production, *Oecologia*, 83 #4 pp. 523–529.
- Windels, S. K. & Flaspohler, D. J. (2013). Scale-Dependent Browsing Patterns on Canada Yew (*Taxus canadensis*) by White-Tailed Deer (*Odocoileus virginianus*). *International Journal of Forestry Research* vol. 2013 (2013), Article ID 276583, 11 pp. <http://dx.doi.org/10.1155/2013/276583>

<http://www.rook.org/earl/bwca/nature/shrubs/taxuscan.html>

<http://atthecreation.com/DEER/DEER.DAMAGE.html>