

2 hour VIDEO on youtube  
**"Forest Trees of the Ceded Territory"**  
(n. Wisconsin)  
presented by Mike Heim

July 2020  
Joseph Jenkins Lecture Series at Cable Natural History Museum  
Cable, Wisconsin

SUMMARY: The Ceded Territory of northern Wisconsin has a great diversity of trees. This is due to its particular location as an ecotone or transition zone, not only between northern boreal and central hardwood forest types, but Appalachian and prairie border types as well. Join Mike Heim as he covers identification, ecology, and interesting facts will be covered for each species of tree.

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CONNIE BARLOW created this **time-coded, linked table of topics** for Heim's lecture, which is also linked from [Heim's webpage on the Torreya Guardians website](#).

**Click on any timecode below to go directly to that point in the youtube video.**

00:04 Introduction to the geography and history of "the ceded territory."

02:22 The TREES section begins with the deep-time story (incl. ginkgo & dawn redwood)

03:51 Northern WISCONSIN is a transition zone N-S from boreal to deciduous hardwood forest and W-E from prairie to Appalachian deciduous species

06:51 CONIFERS section begins with NORTHERN WHITE CEDAR (Thuja) and the history of "cedar" applied to any species with fragrant wood, and "arbor vitae" for curing scurvy. Unusual for creating alkaline soil (hence, orchids). Vegetative repro ("tipping") in cedar swamps. Winter food favored by overpopulated deer, so young trees are rare. Extremely fire-sensitive.

16:00 EASTERN RED CEDAR is genus Juniperus, bird-dispersed berries (Cedar waxwing); cedar chests insect repellent.

20:16 PINE section begins with TAMARACK (eastern larch), our only deciduous conifer; valued for strong and flexible wood. By 1900 all old ones killed by European larch sawfly, but no subsequent death.

22:08 EASTERN HEMLOCK, genus Tsuga, likes cool mossy deep woods. Hemlock & Sugar Maple are the most shade-tolerant trees. Map of slow return from its peak glacial refuge just 2,000 years ago. Trees still lagging in return include Black gum, Sassafras. Deer will overbrowse young hemlocks in winter. Overharvesting of bark used in tanneries. Host of medicinal Ganoderma shelf fungus.

29:31 BALSAM FIR, short-lived, uses of resin, wood for paper pulp

32:22 WHITE & BLACK SPRUCE boreal conifers. (Colorado Blue Spruce horticultural plantings). Black spruce (and Tamarack) are only ones in sphagnum bogs; white spruce gets much bigger. Black spruce does vegetative cloning by branches in bogs. (Tamarack is only conifer here that can sprout from the roots.)

39:36 NORWAY SPRUCE horticultural plantings have fully naturalized and dispersed. Even bigger than our White Spruce. Wood used for violins.

42:48 EASTERN WHITE PINE is tallest, most massive native tree in Wisconsin (a "supercanopy" tree where bald eagles nest). WI only 5-needled pine.

45:16 thru 45:37 video freezes during his answer to a Q about rooting a Dawn Redwood cutting.

46:27 WHITE PINE historic photo of giants. Dominant on sandy soils. Scattered giants on richer soils dominated by hardwoods (deciduous). Old growth giants today were defective in 1800s when all prime specimens were harvested for lumber and masts for British Navy. Problem of bad forestry leaving only poor genetics to reseed. Rocky lake edges favor white pines (wind and UV resistant). Problem of introduced White Pine blister rust (but 20% of pines can resist it). Native White Pine Weevil deforms by killing leaders. Deter weevils by planting pines in shade of aspen or birch.

55:35 RED PINE has platy bark that sheds too quickly for lichens to grow, so bark is red. Resistant to ground fires by spongy bark and dropping lower branches (self pruning). 80 million year old fossils of red pine in Dakota Sandstone of WI are exactly same morphology as today, But genetics show it almost went extinct.

1:02:50 thru 1:03:29 video freezes

1:03:30 JACK PINE serotinous cones lock seeds inside till fire. "Jack Pine want to burn." It needs full sun, so depends on periodic fires to deter other trees from shading it out. Only commercial value is paper pulp. "Pine barrens" have coarse sandy soils, so a sign of poor soil for farming. Bearberry (*Arctostaphylos*) in barrens is a sprawling form of manzanita shrub.

1:09:07 SCOTS PINE is the most common pine in Eurasia and is naturalized here, but genetics chosen were wavy horticultural. So now good genetics planted for timber here.

1:11:21 HARDWOODS SECTION BEGINS with importance of OAKS for wildlife, especially chipmunk, gray squirrel, turkey, bluejay (also helpful for deer, bear, humans, and pigs). Shed oak leaves are devoid of nutrients, just tannins, and make soil acidic, which is good for blueberry and wintergreen.

1:14:52 Distinguish WHITE OAK fr RED OAK species. Gray oaks eat White oak acorns in fall (low tannin), but bury high-tannin Red oak acorns (tannin leaches out during winter).

1:17:03 BUR OAK has corky twigs for fire resistance, deep taproot. Ventures out into Great Plains. Important for plains tribes.

1:19:46 NORTHERN RED OAK prefers rich soil and moisture. See red bt bark plates when at fast-growing sites. Most valuable oak for furniture. Oak Wilt fungus via Ambrosia beetles attracted by wound, so never prune in early summer. Fungus then spreads via root grafts to neighboring unpruned trees.

1:23:48 BLACK OAK doesn't grow as far north as Red.

1:24:40 NORTHERN PIN OAK is the one that can grow in pine barrens. Shiny waxy leaves is adaptation to full sun and drought. Acorns are small, striped, and with sharp tip. Pin and Bur oaks easily burn to ground but then sprout from roots.

1:26:51 MAPLE section begins with RED MAPLE. which has soft wood; flowers bloom early. Used for high quality magazine paper.

1:28:38 SILVER MAPLE is soft wood; a floodplain tree associated with GREEN ASH (both make great street trees. Often multi-trunked close to ground growing in a V shape. In contrast, Sugar Maple and Yellow Birch intolerant of street conditions.

1:31:17 SUGAR MAPLE is hardwood for flooring. Young sugar maples uniquely have White Paint Lichen patches on trunk (if air not polluted). Store sugars as starch in roots, then return to sugars in spring. Requires better soil than red maple (less acidic; need some silt not too sandy).

1:36:47 NUTRIENT-PUMPING MESIC HARDWOODS (leaf drop enriches soil so diverse understory plants) include Sugar Maple, Basswood, Ash, Butternut. Oak and pine does the opposite. Wild leek, trout lily, spring beauty are spring ephemerals.

1:40:52 BOX ELDER is a prairie maple tolerant of drought and adversity.

1:42:43 BASSWOOD fragrant when in bloom (honey) then seed has helicopter wing. Fairy ring capacity is adaptation to mastodons pushing it down to eat leaves. Wood soft for carving art.

1:47:46 ASPENS (3 native species): Quaking, Bigtooth, and Balsam Poplar (nutrient pumpers); help habitat heal after clearcut. Genet suckering. Oyster mushrooms on dead trunks. Quaking aspen white powder UV protection in winter, as trunk and branches can photosynthesize. Northern-most hardwood: doesn't need leaves to make sugar. Bigtooth range is only Great Lakes.

1:52:19 PAPER BIRCH (breathing pores are lenticels because bark is photosynthetic but tight). HEARTLEAF BIRCH. YELLOW BIRCH requires cool, moist, deep forest as with hemlock. Can start on fallen tree, then results in stilt roots.

1:55:21 3 ELMS all get Dutch Elm Disease. AMERICAN ELM favored morel mushrooms. SLIPPERY ELM inner bark cough syrup. ROCK ELM has wings on twigs and branches; very hard wood.

1:57:49 SUBCANOPY TREES: IRONWOOD (*Ostrya*) have seeds for grouse, bark and leaves like tiny white oak. BLUE BEECH (*Carpinus*, hornbeam). Both very hard, so wigwam supports. SERVICEBERRY. HAWTHORNS. 3 CHERRIES (chokecherry, Black Cherry, Pin Cherry).

2:02:52 3 ASH species all have opposite leaves: WHITE ASH (biggest, baseball bats) in richest soils with basswood and Sugar Maple. GREEN ASH floodplains and street tree. BLACK ASH uniquely can grow in standing water and is most valuable wood; snowshoes and baskets.

2:06:10 BUTTERNUT is White Walnut (black is farther south). Alternate leaves. The nuts delicious but rancid quickly so not sold. Very fuzzy buds and nuts and leaves. Butternut canker is exotic disease; some trees resistant.

2:08:09 BITTERNUT HICKORY - the only native hickory in N. WI. Shagbark is southward.

2:09:01 MOUNTAIN-ASH (Sorbus) - deer eat it year-round.

2:10:08 BLACK LOCUST (Robinia) - Farmers brought this northward for honey (flowers delicious too) and ideal for fenceposts.

2:12:03 CONCLUSIONS: List of benefits of living trees