

## Dry River Old-Growth Forest Field Trip Handout

### A Checklist for Old Growth Forest Characteristics in New Hampshire

- Old Trees: Numerous trees that are 150 years old or older and 200+ years for Hemlock.
- Big Trees: Numerous large canopy trees 20" DBH with some 30" DBH or larger.
- Snags: Large, standing dead trees are common.
- Coarse Woody Debris: Large fallen dead trees and branches lying on the ground.
- Lack of Human disturbance: No evidence of logging, roads, cellar holes, or other disturbance.
- Structural Diversity: The forest is a complex mix of young, old, and middle-aged trees with different canopy levels.
- Species Diversity: Often includes a mix of shade tolerant conifers and deciduous trees that also regenerate in the understory.
- Canopy Gaps: Small openings or canopy gaps are present and visible between the tree crowns.
- Pit and Mound Topography: Tip-up mounds and depressions are present from windthrow.
- Soils: Presence of a thick humus layer from the lack of disturbance.
- Arboreal Lichens, Mosses, Liverworts, and Fungus: Common on tree bark and downed logs.
- Nurse Logs: Downed logs with trees growing on the decaying log.

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I use the following definition for an old growth forest in New Hampshire: *“A natural forest that has developed over a long period of time, generally 150 years or more, and has not been disturbed by stand replacing events such as logging, windstorms, or forest fires.”*

This checklist will help an observer determine if a forest has the characteristics of an old growth forest in New Hampshire. Not all of these characteristics will be present, and some old growth forests at higher elevations or poor sites may have old but not large trees and still be an old growth forest.

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## References:

Magnificent Dry River Old Growth Forest. <https://extension.unh.edu/blog/2021/11/magnificent-dry-river-old-growth-forest-hidden-gem-crawford-notch-state-park>

USGS Maps of Northeast Corner of the Crawford Notch Quadrangle. The 1896 map shows the Saco River Railroad. The 1945 maps show Shelter #2 which was the terminus of the Saco Valley Railroad. <https://web.archive.org/web/20160317003032/http://docs.unh.edu/nhtopos/CrawfordNotch.htm>

Crawford Notch State Park Map.

<https://www.nhstateparks.org/getmedia/1701c1f8-c588-43b0-9e0a-ea4dd5d81be3/Crawford-Notch-State-Park-Hiking-Map.pdf>

Crawford Notch Map. Wilderness Map Company. \$2.95 at local stores. This is a more accurate map showing trails and distances between segments. Printed on water proof paper.

Logging Railroads of the Saco River Valley by Bill Gove. This 2001 book published by Bondcliff Books of Littleton, NH has a chapter and map of the Saco Valley Railroad.

Dry River was formerly called the Mount Washington River. The name is a bit of a misnomer because the narrow V-shaped valley is famous for flash flooding after a heavy rain.

The Dry River Trail is 9.6 miles long and starts on US 302 at a point 0.3 miles north of the entrance to Dry River Campground at an elevation of 1,200 feet. The trail ends at the Lakes of the Clouds Hut after climbing almost 4,000 feet in elevation. The trail is noticeably rougher than most White Mountain trails and stream crossings during high water are difficult and dangerous. At least three hikers have drowned on this trail.

The Dry River Old-Growth Forest is a 300-acre northern hardwood forest composed of sugar maple, beech, and yellow birch, and lesser amounts of red oak, hemlock, white ash, and hop hornbeam. It is bounded on the north by the Webster Cliff Trail, on the west by Route 302, on the east by the national forest boundary, and on the south by the Dry River Trail. A large part of Crawford Notch State Park has never been logged,

Presidential Range – Dry River Wilderness was designated by Congress in 1975 and is 27,605 acres in size.

Saco Valley Railroad 1892-1898. This 6.5 mile logging railroad operated in one of the toughest and most inaccessible V-shaped valleys in the White Mountains. There were 13 trestles in a four mile stretch of the railroad and subject to frequent washouts. The average grade was 6% requiring a Shay geared locomotive for climbing. The land in Cutts Grant was sold to the US Government for the White Mountain National Forest in 1919 and 1931. The logging railroad right of way in Harts Location was 6 rods wide. A rod is 16.5 feet.

Crawford Notch State Park was purchased in 1913 and is 5,775 acres in size. The State of New Hampshire purchased the park to protect scenic Harts Location from the ravages of excessive timber harvesting that was occurring at that time.

Beechdrops or Beech Drops are an interesting obligate parasitic plant of beech trees that are common in old growth northern hardwood forests that contain beech. *Epifagus virginiana* comes from the Greek “*epi*” meaning on, and “*fagus*” being the genus of beech. Beechdrops lack chlorophyll and get their nutrients from the roots of beech trees. Beechdrops are brown and are six inches to knee high, but easy to overlook. Beechdrops have two kinds of tiny flowers, chasmogamous and cleistogamous. The former are thought to be cross-pollinated by ants and the latter are self-pollinating. Fascinating plant that we will look for and may be in bloom. Bring hand lens!

<https://en.wikipedia.org/wiki/Epifagus>

## Fun Facts about the Yellow Birch

Yellow Birch

*Betula alleghaniensis*

“Birch Tree of the Allegheny Mountains”

1. The common name comes from the distinctive yellow peeling bark on younger trees.
2. The Yellow birch is the Quebec Provincial Tree.
3. The range is all of New England except Cape Cod and the Islands. Grows from Labrador to Ontario and south in the Appalachian Mountains to Northeast Georgia.
4. Our largest and most valuable birch, the lumber is used for veneer, flooring, cabinets, and furniture.
5. Can live 200-300 years in old-growth forests, and the oldest known is 387 years in Ontario.
6. NH Champion is in Dry River Old Growth Forest. 106” circumference at breast height, 80’ vertical height, and a 57’ average crown spread for 200 Points.
7. Starts producing seeds at 40 years, optimum is 70 years, a good crop every 1-4 years.
8. Male and female flowers are on the same tree. They are wind-pollinated, flower in May, with the fruit maturing in August with a heavy seed fall starting in October and going all winter. Seeds are on an erect cone-like structure.
9. Seeds are spread by wind and in winter on snow crust for thousands of feet.
10. Seeds germinate best on stumps, nurse logs, and rocks giving it legs or a stilt-like appearance.
11. Yellow birch seeds cannot penetrate sugar maple leaf litter which also has allelopathic properties. That is why it often germinates best on stumps; nurse logs, and rocks.
12. The seeds of yellow birch are eaten by pine siskins, redpolls, goldfinches, and chickadees. Ruffed grouse and blue jays are also known to eat the seeds.
13. Prefers cool and damp sites on a variety of soils.
14. Grows well in the transition zone from 2,000-3,000 elevation in the White Mountains.
15. Yellow birch is Intermediate in shade tolerance and needs a small opening like a canopy gap to create optimum light conditions and exposed mineral soil for seeds to germinate.
16. Yellow birch is the most shade tolerant of all nine NH native birch trees and shrubs.
17. Yellow birch roots go deep, and they also have long lateral roots.
18. Mixed stand species often associated with beech, sugar maple, spruce, and hemlock.
19. Sapsuckers favor yellow birch for making sap wells in summer.
20. Twigs have a wintergreen scent.
21. Yellow birch can be tapped but has a lower sugar content than sugar maple.
22. It can grow to be 100 feet tall, 2-3 feet in diameter at breast height, and is one of the largest deciduous trees in New England deciduous forests.
23. Young trees less than 1 foot in diameter have horizontal lenticels. Lenticels are a type of pore that allows gas exchange between the inner part of the tree and the atmosphere.
24. Yellow birch is very susceptible to forest fires, including low severity fires, because of its thin bark. Abundant old yellow birch indicates an absence of forest fires.

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