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Forest Management Planning Forest Improvement and Restoration
Woodland Appraisals Wildlife Habitat Management
Timber Sales and Project Management Town Forest Management
Ecological Studies Conservation Planning

To: The Atkinson, NH Conservation Commission

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Notes about the Chadwick Forest

Field Visit with Paul Wainwright and Denise Legault on March 13, 2019. We followed the trail loop through oak forest northeast of the pond.

Oak Forest Observations

Soils: Chatfield/Hollis/Canton soil complex. These are intermixed well-drained, ledgy soils. The terrain is dry in the summer and fall. Tree heights are noticeably shorter on shallow-to-bedrock areas, typically atop small knolls. Considerably taller, more diverse growth is found downslope in moist, enriched pockets.

Primary tree species: Red oak, black oak, white oak, and scarlet oak

Secondary tree species: (First three were found in moister areas) Shagbark hickory, red maple, white ash, and scattered white birch.

Natural History: This stand is consistently even-aged, with most overstory trees about 75± years of age. In the early 20th century, a white pine-dominated forest occupied the area. The oak stand was established after an acute disturbance, with the following events being a possible cause: a) Blowdown of the pine forest by the Hurricane of '38, followed by timber salvage; b) Fire (1947?) followed by timber salvage; or c) a clearcut of the pine in the early to mid-1940's. The present forest has developed over the last eight decades, with periodic gypsy moth defoliations (severe in 1980-1982) as the only significant visible disturbance.

Wildlife Features: The following features were noted within the stand:

- Stream/riparian area – Seeps; diverse herbaceous and some shrub vegetation, more insects and amphibians for possible varied food sources; travel corridor
- Vernal pool – Potential productive breeding habitat for frogs and salamanders. Possible turtle use.
- Stick nests, tree cavities – Nest sites for raptors, primary excavators (woodpeckers) and secondary users (many cavity-using bird and mammal species)



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- Pond – Aquatic, semi-aquatic wildlife. Pond/forest edge may be used by species such as kingfisher.
- Mast forest – Acorns—a wildlife food staple—are periodically abundant in this oak stand. The various oak species can produce plentiful acorns on different years.

Forest Condition: Exotic, invasive plants were not noted within the oak stand, though the local area contains exotics. In addition to invasive plants, this forest is vulnerable to gypsy moth (and possibly oak wilt, someday, in the future) due to its high concentration of oak. The forest will be better able to withstand future problems if: a) It is kept free of exotic, invasive plants; b) forest management is applied to encourage a greater diversity of species; and c) forest management is applied with the aim to increase the structural complexity of the stand, gradually introducing new tree generations to produce a mixed-aged condition (versus even-aged) in the more distant future (50+ years).

Possible Management Approach: Apply a very light harvest, removing weaker trees to provide growing space and to create small canopy gaps. One or two natural canopy gaps were observed, created by the death of a tree or small group of trees. White pine and birch seedlings occupied the forest floor beneath the gaps.

Challenges to conducting a harvest: 1) Harvesting causes visual disturbance; 2) Public perception; 3) Yarding locations are limited, and more than one yard is likely needed; 4) Very small project, lacks economy of scale, may not even breakeven. The value of the harvested trees will be minimal, both because they are still relatively young, but also because poor quality trees are to be removed, while healthy, high value trees are left to grow.



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