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Dawn Hallowell
Director, Southern Maine Regional Office
Maine Department of Environmental Protection
312 Canco Road
Portland, ME 04103
necec.dep@maine.gov

RE: NECEC Conservation Plan Comments

Dear Ms. Hallowell,

I am a licensed forest and ecologist and have spent decades focusing on wildlife habitat management in Maine's forests. I have reviewed the NECEC Conservation Plan and have the following comments.

Mature Forest Definition is Inadequate

The July 21, 2022 Board Order, page 57, states:

Here, the Order sets out the guidelines to ensure the conservation parcel(s) and the management of these lands achieves the intended purpose, including the requirement that the Department review and approve the Conservation Plan. This Conservation Plan must contain, among other things, a draft forest management plan establishing how the conservation area(s) will be managed. The areas must be managed consistent with the primary goal of the Conservation Plan – compensating for the fragmenting effect of the transmission line on habitat in the region of Segment 1 and the related edge effect. This includes providing (1) blocks of habitat for species preferring mature forest habitat and (2) wildlife travel corridors along riparian areas and between mature forest habitats. While, as noted above, commercial timber operations are not expressly precluded, standard sustainable forestry operations commonly allowed in areas subject to working forest easements would not be consistent with the primary goal of the Conservation Plan.

The Conservation Plan defines Mature Forest as an area with trees at least 50 feet tall and with a basal area (BA) of at least 60 square feet. Forest stands of this height and density are most commonly what are called "pole" or mid-aged stands and are far from being mature. Using a general rule of thumb of 1 foot of growth per year for most species from early- to mid-age, a stand 50 feet in height is likely to be about 50 years of age, and maybe less for fast growing hardwoods. These are intermediate-aged forests that do not have large trees that provide wildlife denning and nesting sites, multiple canopy layers that provide nesting and feeding habitats for different bird species guilds (for example, mature overstory canopy nesters, mid-story nesters, or a shrubby layer for species that nest and feed there), and large

downed and decaying trees that provide habitat for insects, fungi, small mammals, which in turn benefits larger predators. Depending on harvest history, some stands meeting the minimum Conservation Plan definition could have larger residual trees, but at 60 square feet BA the overstory canopy would be very open and not desirable habitat for many species that prefer mature forest habitat.

My wildlife habitat evaluations have found that the majority of canopy trees in stands used by mature-forest wildlife are at least 65 feet in height, and canopy dominants often exceed 75 feet on average sites. However, I do not recommend using tree height as a measurement for mature forests in a regulatory context because it is impossible to define which trees in the canopy should be measured in a way that can provide consistent and reliable verification that the permit requirements are being met. Instead, stand stocking measures including volume, basal area, and the basal area in large trees is a much more reliable way to identify forests that provide mature forest habitat.

In my experience assessing and managing for wildlife habitat and reviewing scientific literature, minimum standards for mature forest wildlife habitat would be at least:

Northern Hardwoods: minimum 25 cords per acre, basal area of at least 80 square feet, and a minimum basal area of 40 square feet in trees at least 12" diameter at breast height (DBH).

Mixed Hardwood/Softwood: minimum 33 cords per acre, basal area of at least 100 square feet, and a minimum basal area of 50 square feet in trees at least 12" diameter at breast height (DBH).

Softwoods: minimum 40 cords per acre, basal area of at least 120 square feet, and a minimum basal area of 60 square feet in trees at least 12" diameter at breast height (DBH).

To ensure that components of old and complex forests are also present, regional wildlife management guides¹ recommend that at least a significant area of forested landscapes should include trees of at least 16" DBH. Because the focus of the Conservation Plan is to ensure that there are blocks of habitat for mature-forest species,

Old/Complex Stands: At least 20% of the area in mature forest as defined above should have at least 40 square feet of basal area in trees at least 16" DBH.

Note that these recommendations are for wildlife that prefer mature forests. A truly ecologically mature forest would be much older and generally more heavily stocked.

Other Comments

Business as Usual. The Conservation Plan of at a minimum of 50% meeting the Plan's proposed definition of mature forests is inconsistent with the Board Order to provide mature forest habitat and

¹ Degraaf et al. 2006. Technical Guide to Wildlife Habitat Management in New England. University of Vermont Press;

Maine Audubon. 2017. Forestry for Maine Birds (see pages 83-84);

New England Forestry Foundation. Acadian Exemplary Forestry Standards and Metrics.

R. Bryan. 2007. Focus Species Forestry: A Guide to Integrating Timber and Biodiversity Management in Maine (see page 67)

ignores the Board Order that “standard sustainable forestry operations commonly allowed in areas subject to working forest easements would not be consistent with the primary goal of the Conservation Plan.” After the forest reaches the 50% goal in 2065 as described in the Conservation Plan, by my calculations, clearcutting or other heavy harvesting could proceed at a sustainable rate of over 4,000 acres every 10 years. This is essentially business as usual commercial forestry and does not meet the intent of the Board Order.

Recommendation: To meet the intent of the Board Order, a significantly higher percentage of mature forest (as defined above) should be required.

Adequate Forest Blocks of Mature Habitat are Not Ensured. How mature forest blocks are situated on the landscape are critical too. While corridors managed for mature forest such as those along riparian areas are important, when riparian management areas such as those proposed in the Plan (up to 330 feet from a stream) and other linear corridors are located adjacent to heavily harvested areas they do not provide the same interior-forest habitat as more rectangular blocks.

Recommendation: When accounting for mature forest habitat blocks, corridors of mature forest that are less than 1,000 feet in width should not be included.

Thank you for allowing me the opportunity to comment on the Conservation Plan.



Robert R. Bryan
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