

I originally became involved in the opposition to the NECEC because the proposed transmission line would cross the Kennebec gorge where I've been rafting since I was 18 years old and guiding since I was 23 years old. Since I became involved, I have read much about the pros and cons of this project. The evidence that this corridor will not be good for Maine's wilderness, wildlife, and way of life for the people who live in this region is overwhelming to me. I'm more convinced that this project is a detriment to more than just that immediate area. I have studied the testimonies of Malcolm L. Hunter Jr., PhD, Rob Wood, Andy Cutko, and Bryan Emerson of The Nature Conservancy. After reading these testimonies, I am even more convinced and concerned about the negative impacts this project would wreak should it be green-lighted.

Malcolm L. Hunter Jr., PhD of the Nature Conservancy submitted testimony in favor of the NECEC that I began reading with rebutting in mind. However, the further I read into his testimony, the further it solidified my belief that the NECEC will destroy some unique features of the Maine wilderness through which it is proposed. First, when Dr. Hunter discusses habitat fragmentation, he says, "In short, it is widely recognized that fragmentation is one of the leading causes of biodiversity decline across the globe..." (Hunter, pg. 3). He goes on to explain that the project area, "... is an extensively managed, working forest, traversed by logging roads and marked by a patchwork of forests in various age classes and harvest conditions... it is important to recognize that with the exception of haul roads, clearing from forest management is **temporary**, and even industrial forest management requires forests to grow back to maturity before they are harvested again" (Hunter, pg. 3). I have hiked mountains, canoed and rafted rivers, and driven the roads in and around the proposed project area, and it is NOT all clear-cuts like some imply and contend that it is. There are large tracts that are in various stages of regrowth, from brand new cuts to 30, 40, maybe 50 years or more old. Hunter characterizes the area as, "...largely intact and connected landscape... Maine's wildlife are able to move among these patches. In contrast to these temporary and shifting impacts of forest management, **the proposed NECEC corridor would be a permanent fragmenting feature, much**

like the few major forest roads in the region... A 150-foot wide powerline will create a wider barrier to movement than a typical woods logging road... generalist species such as black bear will react to a utility corridor very differently than a smaller species that strongly prefers a shaded forest floor, like a spotted salamander or wood frog,” (Hunter, pg. 3). Dr. Hunter is pointing out the very reasons for which the DEP and LUPC were created and are charged with protecting: our shrinking natural environment with its vulnerable wildlife. He also explains how there are no known examples of comparable development (and impacts) of this large proportion which cross lands that The Nature Conservancy identifies as “Resilient and Connected,” meaning the lands are capable of supporting biodiversity as the climate changes, (Hunter, pg. 3).

Dr. Hunter also addresses the immediate loss of forest vegetation, increase in “edge” (the border between a forest and an opening), and a decrease in the overall amount of “interior” forest; all of which have short-term and long-term impacts. He states, “...the proposed NECEC corridor will retain shrub and herbaceous vegetation cover, Segment 1 (from Beattie Township to the Forks) is nonetheless a direct loss of nearly 1000 acres of habitat for forest-dwelling species... home to more than 800 species of vertebrate wildlife, including 200 that are listed as Species of Greatest Conservation Need... For species [like] the red-backed salamander whose populations can reach one per square yard in northern New England forests, the loss of 1000 acres of forested habitat could impact millions of individuals,” (Hunter, pg. 4). He continues, “...the distribution and density of ungulates are affected by powerline RoW, especially when combined with roads... caused by a higher risk of predation, poor foraging conditions, hindered movement and decreased habitat quality,” (Hunter, pg. 4). Our Maine wildlife, from amphibians to ungulates to bears will be adversely affected if the NECEC is passed.

Dr. Hunter discusses the effects of increased [forest] edge and reduced [forest] interior in his testimony. He states, “Forest loss associated with a transmission line and associated construction

roads is amplified by the edge effects that extend the corridor's impact far into the adjacent forest... forest edges influence... forests and contribute to worldwide decline in biodiversity and ecosystem functions. These changes occur as a result of differences in light and wind exposure at forest edges, associated changes in plant community composition and structure (e.g., forest vs. shrub), introductions of invasive species, and changes in predator/prey relationships. ***Segment 1 of the NECEC will create more than 100 linear miles of permanent edge habitat in Segment 1 alone.*** (Hunter, pg. 4). He continues, "...many species [that] are restricted to the specific habitat of interior forest[s]. Depending on the species in question the edge impact may extend hundreds of feet into the forest... In particular, smaller-bodied amphibians, larger reptiles, and some medium-sized mammals experience greater reduction from edge effects than other forest-core species... distance from power lines has also been demonstrated as the most important factor determining the choice of nest and rest sites, influencing the movement of migratory birds and acting as a barrier to populations... Northeastern forests have been shown to support important breeding grounds for many of these species, and these areas-sensitive habitat specialists will decline if the size of habitat blocks falls." (Hunter, pg. 5). All of this testimony is alarming! I can think of no better reasons for the NECEC to be struck down by the DEP and the LUPC members than to preserve this fragile ecosystem that so many varied species use for habitat.

In reference to invasive species Dr. Hunter cites concerns he has about them in this area. He cites Mosher, Silander, and Latimer as saying, "Overall the region surrounding the proposed NECEC corridor has few invasive species documented, probably because large forest blocks resist woody plant invasions better than land that has a history of agricultural or residential use." He continues, "The current rarity of invasive plants in the region increases the importance of keeping them out, because after new populations establish in remote locations, they may go undetected or controlled for many years, and control becomes virtually impossible once populations have gained a strong foothold," (Hunter, pg. 6).

In addressing the cumulative, long-term consequences of forest fragmentation, Hunter voiced concerns that "...the impacts are not always immediate and may in fact, take years, or even decades, to fully play out on the landscape." He quotes Tere and Parasharya who say, "... the cumulative effects of power lines and other sources of mortality might be noticed only after a few decades, making it difficult to reverse population declines. If, for example, is [if] the edge effect of a powerline causes just a 10% decline in reproduction rate of a population deterred from crossing a power line each year, over many years the cumulative impact of this may have a significant lag time, whereby impacts created today set in motion a population decline that is not fully manifested for years to come." (Hunter pg. 7). Again, the testimony Hunter gives is disturbing; if the NECEC comes to fruition, the ramifications will take decades to play out.

Finally, Hunter specifies that there are shortcomings to the proposed mitigation plan. He reiterates that, "... there really is no comparable precedent for assessing the impacts to wildlife connectivity... there are approximately 800 species of vertebrate wildlife in Maine and thousands of species of invertebrates, and many hundreds of species are present in the region affected by this corridor... ***The proposed mitigation and compensation plan does not adequately address the cumulative impact to the full array of Maine's wildlife,***" (Hunter, pg. 8). Hunter contends that based on his evidence, "... CMP has not made adequate provisions for the protection of wildlife and fisheries," (Hunter, pg. 8).

I contend that Hunter's evidence is damning for the NECEC, and should be taken as reasons to deny a permit for it because his testimony and evidence therein support the mission of the DEP which is: *"Legislative mandate directs DEP to prevent, abate and control the pollution of the air, water, and land. The charge is to preserve, improve and prevent diminution of the natural environment of the State. The Department is also directed to protect and enhance the public's right to use and enjoy the*

State's natural resources, 1" (DEP Website, About Us page, March 14, 2019). The testimony and evidence supports the LUPC's "About LUPC" website page which promises to protect Maine's natural assets, *"Along with carrying out its planning and zoning responsibilities, the LUPC... For larger development projects requiring DEP review under the Site Location and Development Law, the LUPC certifies that the proposed land uses are allowed and that proposed development activities comply with applicable LUPC land use standards... The unorganized and disorganized areas include...the western mountains and up to the Canadian border. These areas are important to the vitality of both the State and local economies, are home to many Mainers, and are enjoyed by Maine residents and visitors in pursuit of outdoor recreation activities including hunting, fishing, boating, hiking, and camping, 2"* (LUPC website, About LUPC page, March 14, 2019). If there was a poster child of evidence for why the NECEC should not be given a permit, Dr. Hunter's testimony would be it.

1. <https://www.maine.gov/dep/about/index.html> (last visited March 14, 2019)

2. <https://www.maine.gov/dacf/lupc/about/index.shtml> (last visited March 14, 2019)

I also studied the testimony submitted by Rob Wood, Andy Cutko, and Bryan Emerson of The Nature Conservancy. In their opening statements, they explain how they are basically neutral on the NECEC, and all they want to see happen is, "...avoidance, minimization, and compensation for unavoidable impacts," (Wood, Cutko, and Emerson, pg. 1). The impacts are completely avoidable if there is no permit issued for the NECEC. They point out, "The Department's second procedural order states that 38 M.R.S. § 480-D (3) and DEP Chapter 375 § 15 are within scope of the NECEC hearing... [and] provides significant latitude for the Department to consider cumulative, landscape-level impacts that extend beyond isolated impacts to specific resources. The relevant Chapter 375 § 15 language is:

"B) Scope of Review. In determining whether the developer has made adequate provision for the protection of wildlife and fisheries, the Department shall consider **all relevant evidence to that effect, such as evidence that: ... (2) Proposed alterations**

and activities will not adversely affect wildlife and fisheries lifecycles.” (Emphasis added.)”

They declare, “We also believe that the scale and cumulative impact of the habitat fragmentation caused by Segment 1 of the proposed NECEC corridor could potentially “adversely affect wildlife and fisheries lifecycles” for many years into the future,” (Wood, Cutko, and Emerson, pg. 2). In their exhibits, they discuss how unique the Western Maine forest is because of its concentration of well-connected and climate-resilient wildlife habitat, and how the NECEC will contribute to fragmentation of the landscape. In their **TNC Exhibit 1** explanation, they again mention how unique the Western Maine forest is, in that it has high-connectivity scores. In **TNC Exhibit 3** they assess the forest block through which the NECEC would traverse at more than 500,000 acres and as one of the largest unfragmented blocks in the region. They assert, “Moreover, western Maine is the core of one of the world’s last remaining contiguous temperate broad-leaf mixed forests... Maine has successfully maintained forest connectivity over time while other regions have become increasingly fragmented,” (Wood, Cutko, and Emerson, pg. 3). Their testimony mirrors and complements much of Dr. Hunter’s testimony, but they also include information about species that Dr. Hunter did not. “...the western Maine region supports exceptional biodiversity... It contains... forest ecosystems... that provide habitat for roughly 140 rare species and the last stronghold for wild native brook trout in the eastern U.S.,” (Wood, Cutko, and Emerson, pg. 3). In addition, “... the region has also been mapped by the National Audubon Society as a globally important bird area, providing crucial nesting habitat for more than 30 northern woodland songbird species,” (Wood, Cutko, and Emerson, pg. 4). They explain that the diversity of the region’s landforms (wetlands, floodplains, mountaintops, and steep slopes will, “... be especially effective at maintaining biodiversity as the climate changes. This resilience to climate change is a function of the region’s connectedness. Connected forests allow for great species movement over time in response to climate change, and western Maine will serve as a key wildlife linkage in the northern Appalachian region,” (Wood, Cutko, and Emerson, pg. 4).

In their analysis of habitat fragmentation effects of the proposed NECEC corridor, Wood, Cutko, and Emerson assert, "Segment 1 of the proposed NECEC corridor would create a new linear fragmenting feature in what is currently a large, mostly unfragmented forest block. We contend that this new fragmentation will have unpredictable implications for the health and viability of wildlife and plant species over time, and that such implications could be significant. A growing body of research presents findings on the negative impacts of habitat fragmentation from edge effects... to spread of invasive species, to increased pressure from associated uses (such as motorized vehicle use), to changes in species composition and behavior over time from reduced habitat patch sizes," (Wood, Cutko, and Emerson, pg. 4). They also point out that the NECEC Site Location of Development Application acknowledges the potential direct impacts: "... they may affect species movement, dispersal, density, nesting success and/or survival... may include fragmentation and creation of new linear edges... Habitat conversion along transmission line corridors results in loss of habitat types which, in turn, may adversely impact species that are reliant on the original habitat types... **However, the applicant does not propose any measures to avoid, minimize, or compensate for these impacts,**" (Wood, Cutko, and Emerson, pg. 4). In their closing statements on habitat fragmentation effects, the author's voice apprehension to the applicant's statement that the corridor is located in an intensively managed timber production area and therefore not likely to significantly alter existing fragmentation. They go on to say, "...our concerns about habitat fragmentation stem from the linear and permanent nature of the corridor... long-term forest management roads... are much narrower than the proposed transmission line... A 53.5-mile corridor would create 107 miles of new habitat edge, while business-as-usual timber harvesting will result in significantly less edge- and, moreover, timber harvesting edge will change over time, whereas edge from a new transmission corridor will likely be permanent," (Wood, Cutko, and Emerson, pg. 5). Finally, the authors reveal that they are concerned with more than just the NECEC. They state, "... there is ample evidence that habitat fragmentation from a variety of fragmenting features can have cumulative, and significant negative effects on ecosystems over time, As well as ample research on specific species (e.g., American

marten) that are averse to forest edges. Moreover, NECEC could potentially allow for new fragmenting features to develop in the future that could exacerbate habitat fragmentation— for example, new roads to access and service the NECEC line or new energy infrastructure development in the additional 150' of the Segment 1 right-of-way,” (Wood, Cutko, and Emerson, pg. 6). I will echo their apparent concern. It is my fear that if the NECEC is approved, the other 150' of the corridor will be utilized by wind power that will be developed on the nearby ridges and mountains. The wild feel of this area will disappear with the habitat and varied species if NECEC is permitted.

Wood, Cutko, and Emerson’s testimony points out that the applicant has made some attempts at compensating and mitigating the cold water fisheries habitat and mitigating habitat fragmentation. They point out that as part of the mitigation, the applicant has budgeted \$200,000 for 20-35 Stream Smart culverts on lands outside of CMP’s ownership, but the cost of just one Stream Smart culvert can range from \$50,000 to several hundred thousands of dollars depending on traffic. They think that realistically at the very least \$1 million would be needed to achieve the desired number. They also think a minimum of 100 foot buffers along all streams should be provided. They also note the applicant acknowledges the impact the NECEC would have on habitat connectivity and plans on, “... allowing 25-35 foot softwood stands to grow under the lines in the Segment 1 Deer Wintering Area and raising pole heights... in Roaring Brook Mayfly and Northern Spring Salamander habitat,” (Wood, Cutko, and Emerson, pg. 9). They are also quick to point out that those, “... strategies apply only to a very small portion of the 53.5-mile Segment 1 corridor,” (Wood, Cutko, and Emerson, pg. 9). The authors also bring attention to habitat edge effects. They state, “... we estimate that Segment 1 of the proposed NECEC corridor could directly and permanently impact more than 5,000 linear acres of habitat for species that require mature forest,” (Wood, Cutko, and Emerson, pg. 9).

I wholeheartedly disagree with Wood, Cutko, and Emerson on their recommendations to the Department should NECEC be authorized. They made a rock-solid case for why NECEC should

NOT be permitted AT ALL, and here's where I disagree with them: they allude that they are okay with the corridor by giving suggestions on how to "do it better" when the best way to minimize the habitat fragmentation they (and Dr. Hunter) so eloquently educated us about, is to not allow large scale projects like NECEC to be permitted, especially when if allowed, more development would further degrade the area's habitat. These testimonies contain more convincing evidence for why the DEP and LUPC should not permit the NECEC than they make a case for it.