



Jim Beyer  
Maine Department of Environmental Protection  
17 State House Station  
Augusta, ME 04333-0017

April 10, 2020

Dear Mr. Beyer:

Thank you for the opportunity to share comments on the Department of Environmental Protection's (the Department, DEP) draft order conditionally approving Central Maine Power's (CMP) applications for State land use permits for its proposed New England Clean Energy Connect project (the project, NECEC) on behalf of Maine Audubon and our 30,000 members and supporters. Maine Audubon submitted comments to the DEP during its public comment period, focusing on the proposed project's impact to wildlife and habitat. Our comments demonstrated that NECEC, as proposed, would have substantial wildlife impacts, particularly in the "new" 53.5-mile corridor (Segment 1), and that significant mitigation and compensation measures could and should be taken to reduce those impacts if the project were permitted.

We are encouraged that the draft order acknowledges that the proposed project would cause significant habitat fragmentation and that the proposed impact on wetlands, significant wildlife habitat, rare and endangered species, rare plants and natural communities, and habitat is unreasonable and must be minimized and compensated for. While the Department's draft conditions are laudable, several areas must be improved in order to achieve the Department's intent to minimize and compensate for impacts, as well as match the project's magnitude. In our modern era of environmental review and permitting, the state of Maine has never seen a project of this magnitude and impact on undeveloped forest ecosystems and wildlife. Maine Audubon's comments focus on strengthening the Department's conditions so that they fully account for the project's unprecedented impacts. Only if the Department modifies the conditions as recommended should a final permit be issued.

Our comments first focus on the conditions that seek to address habitat fragmentation, including tapering, taller poles and vegetation, and the need for additional, off-site mitigation in the form of land conservation. Then, our comments address a series of other conditions and Department findings related to wildlife and habitat impacts. We have included a full list of our recommendations after the conclusion of our comments.

### **Conditions that Address Habitat Fragmentation**

As described in our comments submitted to the Department on April 4, 2019, one of Maine Audubon's primary concerns about the project was—and is—the fragmenting impact NECEC would have on wildlife habitat and wildlife's ability to move through their lifecycles, especially as

the climate changes. A growing body of research demonstrates the negative impacts of habitat fragmentation, ranging from “edge effects” (caused by sharp transitions from one habitat to another), to the spread of invasive species, to changes in species composition and behavior over time from reduced habitat patch sizes. Forest fragmentation is of particular concern for wildlife species that require mature, closed-canopy forest cover, such as the American marten and many interior forest nesting birds.

The region that NECEC would fragment is truly unique. Maine’s “North Woods” are the core of one of the world’s last remaining temperate mixed broadleaf forests and the largest connected forest in the eastern United States. The North Woods allows for the movement of wildlife throughout the Northeast, becoming more important over time as a key pathway for plants to spread and animals to move as the climate changes. Western Maine, where the first 53.5-miles of the corridor would require entirely new clearing, is of particular importance, as it has been identified as a globally significant Breeding Bird Area; an internationally significant pathway for wildlife between New Hampshire, Maine, Quebec, and New Brunswick; and a resilient landscape that will maintain a diversity of plants and animals even in the face of a changing climate.

Maine Audubon is pleased that the Department, in its draft order, recognized that the project “could contribute to habitat fragmentation and have unreasonable adverse impacts on wildlife as a result of effects on wildlife travel lanes and lifecycles and accessibility to suitable and sufficient habitat” and that the measures proposed by the applicant to reduce those impacts are “not sufficient to avoid substantial and harmful fragmenting of habitat.” *See* Draft Order, pgs. 75, 76. The draft order would require the applicant to take steps with regard to tapering, taller poles, taller vegetation, and additional land conservation to account for the project’s fragmenting impacts. Maine Audubon offers the following comments and recommendations regarding those elements of the Department’s conditions and findings.

### **1. Taller Poles, Taller Vegetation**

Numerous expert witnesses testified to the many and cumulative negative impacts the proposed project would have on a suite of fish and wildlife in western Maine, including American marten, brook trout, vernal pool amphibians and reptiles, and white-tailed deer. In his February 25, 2019 testimony, intervenor witness Dr. Malcolm Hunter stated, “many hundreds of species are present in the region [that would be] affected by this corridor. Although habitat fragmentation affects different species in different ways, it is clear that many other species would be affected in addition to deer. These include birds such as scarlet tanager and black-throated blue warbler, mammals including American marten and Canada lynx, amphibians such as spotted salamander and wood frog, and reptiles such as the wood turtle. The proposed mitigation and compensation plan does not adequately address the cumulative impacts to the full array of Maine's wildlife.”

Several intervenors and intervenor witnesses offered suggestions for reducing and mitigating these impacts by using taller poles, narrowing the cleared width of the corridor, tapering vegetation within the corridor, adding wildlife travel corridors, and conserving large blocks of forest land managed for mature forest characteristics in the area. The Department responded to this testimony by limiting clearing of the corridor to 54’ under and adjacent to the overhead wires, requiring taller poles at a handful of sites to ensure taller trees can grow there,

requiring tapering of vegetation within the remainder of the 150' wide corridor, and requiring vegetation buffers within riparian filter areas surrounding coldwater fish streams.

Several intervenors and intervenor witnesses recommended using taller poles to allow taller trees and other vegetation to grow in the corridors to reduce the conversion of forest to shrubland and to facilitate animal movement between forest patches on either side of the corridor. All clearly stated that taller poles were preferred over tapered vegetation. For example, The Nature Conservancy stated in its May 1, 2019, supplemental testimony: “To avoid and minimize habitat fragmentation, taller overhead poles would always be preferred to tapering. The best method for avoiding and minimizing habitat fragmentation is to allow for mature forest canopy in the right-of-way.” Yet, the draft order only requires full canopy height at three of the designated “Wildlife Areas” and taller poles that would allow 35' high trees at the 9 other Wildlife Areas, for a total of 14 miles along Section 1, primarily to benefit deer, endangered roaring brook mayfly, and several important coldwater stream crossings.

## 2. Tapering

The goal of tapering is to minimize impacts from habitat fragmentation, retain some canopy cover, and facilitate some animal movement from one side of the corridor to the other—albeit not as successfully as with full canopy cover. The Department’s proposed tapering scheme would allow a 54' wide wire area with low shrubs followed by three 16' wide areas with a minimum of 15' tall trees, 25' tall trees, and 35' tall trees moving from the wire area to the outside of the 150' wide corridor.

However, the draft order would allow trees to be cut at their base as soon as they approach or exceed the 15', 25', or 35' height requirements. If the forest stand is an even-aged stand, as many stands in northern Maine are, in practice this means most or all of the trees could be cut at the same time, leaving no tall trees left in the tapered areas until new ones grow to the required minimum height. Even in a multi-aged stand, if there are not many taller trees in the understory, the result is effectively a young regenerating stand. In either case, it could take decades or longer after cutting for the younger trees to reach the minimum height required – and then, according to the draft order, they could get cut down again. Even at 35', most trees are not likely to have fully developed boles or crowns. Maine Audubon consulted with several professional foresters regarding the draft order and they confirmed that continued cutting of trees 15-35' or less in height would likely leave stands of small diameter, less vigorous, diminished trees that are more prone to disease and damage. This is a serious deficiency and would not allow a “greater opportunity for wildlife to cross the corridor and reduce the time/distance crossing wildlife would be out in the more open [scrub-shrub] habitat.” *See* Draft Order, pg. 77.

To fix the deficiencies related to taller poles and tapering, Maine Audubon recommends the following modifications to the Department’s conditions:

- **Require taller poles along more sections of Segment 1 to retain a mature forest canopy of 60-70' tall trees and a 70% forest canopy along the entire corridor.**
- **While taller poles are preferable, in the event that tapering is used, require a minimum canopy closure of 60-70% to ensure that not all taller trees are cut at**

**the same time, undermining the goal of tapering.** This would benefit American marten and the many other wildlife species, including interior nesting birds, that prefer a more structurally complex forest with a dense, tall canopy cover.

- **Consistent with Dr. Hunter’s testimony, quoted on page 2 of our comments, we ask that at a minimum these species be identified as impacted species: scarlet tanager, black-throated blue marble, American marten, Canada lynx, spotted salamander, wood frog, and wood turtle.**

Relatedly, Maine Audubon recommends that modifications be made to the conditioned Wildlife Areas. The Department’s rules implementing Site Law require an applicant to make adequate provision for the protection of wildlife and fisheries by maintaining “suitable and sufficient habitat”, including “travel lanes between areas of available habitat.” *See* 06-096 C.M.R. ch. 375, § 15. Similarly, the rules implementing NRPA establish criteria for avoidance and minimization of project impacts to significant wildlife habitat. *See* 06-96 C.M.R. ch. 335, § 3(B). Maine Audubon supports the Department’s condition that the applicant manage 12 “Wildlife Areas” within Segment 1 to maintain travel lanes and to minimize impacts to significant wildlife habitat. The Department chose the Wildlife Areas based on the location of stream crossings, proximity to conserved lands, areas recommended by Intervenor Group 6, and areas identified by the applicant as roaring brook mayfly, Northern spring salamander, and deer wintering habitat. *See* Draft Order, pg. 78. It is notable, based on GIS analysis by Maine Audubon, that each of the Wildlife Areas (see Table C-1) contains or is within close proximity to significant wildlife habitat and thus serves to minimize impacts to a variety of species protected by NRPA, including significant vernal pools, waterfowl and wading bird habitat, and the state threatened roaring brook mayfly, as examples. *See* 38 M.R.S.A. § 480-B(10). That said, Maine Audubon recommends the following modifications to the location, size, and quality of the Wildlife Areas:

- **Expand the width of all Wildlife Areas to at least 500’.** Intervenor witness Dr. Erin Simons-Legaard stated in her testimony dated May 1, 2019, that American marten—an umbrella species that represents the habitat needs of many other wildlife species in Maine—“avoid using narrow strips of forest generally, and the most relevant study suggests that marten would avoid habitat corridors less than 400 feet wide.” A 400’ width is a minimum. Dr. Simons-Legaard also stated “wider is always better for wildlife.” The Land Use Planning Commission’s recently adopted subdivision rules required wildlife corridors be a minimum of 500’. *See* 01-672 CMR ch. 10.25(Q)(d)(3)(2019).
- **When expanding the Wildlife Areas, we recommend expanding them to further include significant vernal pools and to more fully account for the unprecedented impact to the myriad species that rely on this significant wildlife habitat, described in more detail later in Maine Audubon’s comments.**

### **3. Additional, Off-site Land Conservation Mitigation**

Maine Audubon agrees that tapering and maintaining vegetation—even if the Department modifies the conditions to be consistent with Maine Audubon’s recommendations—is not

sufficient to ensure adequate provision for the protection of wildlife and that additional, off-site mitigation in the form of land conservation is necessary to meet the Department's permitting standards. *See* Draft Order, pg 79. However, we believe the additional, off-site mitigation condition should be modified to account for the breadth of habitats impacted by the project, particularly significant vernal pools.

Site Law, 38 M.R.S.A. § 484(3) (2011) and the Natural Resource Protection Act (NRPA) 38 M.S.R.A. § 430-D(3)(E) (2011) each have standards pertaining to compensating for impacts to wildlife habitat. The Department's rules implementing Site Law require the applicant to demonstrate that they have made "adequate provision for the protection of wildlife and fisheries, including . . . when appropriate . . . on-site or off-site habitat improvement or preservation." 06-096 C.M.R. ch. 375, § 15(C) (2016). Similarly, NRPA requires the applicant to demonstrate that they will not unreasonably harm any significant wildlife habitat and in determining whether there is unreasonable harm to significant wildlife habitat, the Department may consider mitigation, including "compensating for an impact by replacing the affected significant wildlife habitat". 38 M.S.R.A. § 430-D(3)(E). The rules implementing NRPA describe compensation as "off-setting of a lost habitat function with a function of equal or greater value" and that "[e]very case where compensation may be required is unique due to differences in habitat type and geographic location." 06-96 C.M.R. ch. 335, § 3(D). "The amount of compensation required to replace lost functions depends on a number of factors, including: the type of habitat to be altered; the size of the alteration activity; [and] the functions of the habitat to be altered . . ." *Id.* The Department provides minimum compensation ratios that the Department may increase if "a different ratio is appropriate to directly off-set habitat functions to achieve an equal or higher net benefit for habitat." The minimum ratio for preservation is 8:1. *Id.*

Significant wildlife habitat is defined to include, among several wildlife habitats, significant vernal pool habitat. 38 M.R.S.A. § 480-B(10). Intervenor witnesses Dr. Malcolm Hunter and Dr. Aram Calhoun described the unprecedented impact that the proposed project would have on significant vernal pools in their respective testimonies. Dr. Hunter described that, as proposed, the project would result in the direct loss of 1,000 acres of forested habitat, which could impact millions of individual amphibians that rely on vernal pools throughout their lifecycle. *See* Testimony of Dr. Malcolm Hunter Jr., February 25, 2019. Dr. Hunter testified that Segment 1 of the project would create more than 100 linear miles of permanent new edge habitat and, assuming an edge effect of just 330 feet, the acreage affected by Segment 1 would increase to roughly 5,000 acres. *Id.* As described by Dr. Hunter, forest edges contribute to declines in biodiversity and ecosystem functions that occur as a result of differences in light and wind exposure, associated changes in plant community composition and structure, introductions of invasive species, and changes in predator/prey relationships. *Id.* Dr. Calhoun, a vernal pool expert, testified that edge effect may cause vernal pools to cease to function due to lack of shade, changes in species composition, increased predation, and disease. *See* Testimony of Dr. Aram Calhoun, February 28, 2019. She also described that vernal pool breeding amphibians prefer uncut or partially cut forests and suffer the most in clear-cuts and other extreme openings and that all vital populations of amphibians rely on intact forested landscapes where connections between breeding pools, dispersal routes, and post-breeding habitats are strong. *Id.* Maine Audubon agrees with Dr. Calhoun that the project, as proposed, would have a significant impact on vernal pool communities and that the applicant's and the Maine Department of Inland Fisheries and Wildlife's assessment of vernal pool impacts "barely scratch the surface of accounting for the nature and extent of damages that [would



be incurred by the project].” *Id.*

The Department’s draft order states that the applicant has avoided and minimized significant wildlife habitat (including significant vernal pools) to the greatest extent practicable, and that, with payment to the In-Lieu Fee (ILF) program, the proposed project meets the applicable standards. *See* Draft Order, pg. 81. Maine Audubon disagrees with the former (that the applicant has avoided and minimized significant wildlife habitat to the greatest extent practicable) and has offered recommendations related to taller poles and tapering, and will offer additional recommendations related specifically to vernal pool impacts later in our comments. Additionally, even if the Department were to modify those conditions to be consistent with our recommendations, the proposed payment to the ILF program is simply not sufficient to offset “lost habitat function with a function of equal or greater value” and is commensurate with the project’s “geographic location”, “the size of the alteration activity . . . and the functions of the habitat to be altered”. 06-96 C.M.R. ch. 335, § 3(D). As set forth in Dr. Hunter and Dr. Calhoun’s undisputed estimate in their testimonies, the immense size of the proposed project will directly impact millions of individual amphibians and still millions more as a result of edge effects. Filling even a portion of a pool or clearing the habitat around a pool has an outsized ecological impact on the entire vernal pool system, including the pool itself, the species that use that pool and live much of their lifecycle in the surrounding forestland, and nearby forested wetlands. Each habitat type is essential to support the complex life cycle of amphibians and other wildlife that breed in or otherwise use vernal pools. These local migratory species need to move among overwintering sites, breeding sites, and summer refugia each year to sustain their populations. For the purpose of the draft order, the Department only considered the small fraction of pools and the 250’ of Critical Terrestrial Habitat that fell within or intersected with the proposed corridor. With regard to significant vernal pools, the draft order does not entirely recognize the magnitude of these ecosystem-wide impacts and merely attempts to meet the minimum standards and ratio for preservation. The minimum is inappropriate and insufficient because of the unprecedented size and scope of this project, including the cumulative impacts of the project’s large area, and because the minimum standards were designed primarily for smaller, site-specific projects and subdivisions.

As such, Maine Audubon recommends that the Department’s draft condition requiring additional, offsite mitigation in the form of land conservation be modified in the following ways in order to satisfy permitting standards related to significant vernal pools and other significant wildlife habitat, as well as the myriad species the project would impact:

- **Additional, offsite mitigation in the form of land conservation should include significant vernal pools within a larger, protected forested landscape. The protected habitat should include not only the regulated pool and 250’ of Critical Terrestrial Habitat around the portion of the pool within the corridor, but the entire pool, at least a 750-1000’ upland area around the pool (where they spend 90% of the year), nearby forested wetlands (where amphibians spend the summer), and drier upland forests (where amphibians overwinter), as well as travel lanes between those habitats.**
- The draft order calls for 40,000 acres of additional, offsite mitigation in the form of land conservation. This is not commensurate to offset lost habitat function and the type of

habitat that would be altered, given the area's unique character and the many cumulative impacts to significant wildlife habitat and other wildlife and habitat in the region. Furthermore, the project is unprecedented; consistent with Dr. Hunter's testimony, there are no comparable development projects in Maine, let alone in the North Woods. *See* Testimony of Dr. Hunter, February 25, 2019. **To that end, Maine Audubon recommends conserving 100,000 acres (20:1 ratio) because of the scope of permanent and temporary impacts to wildlife and wildlife habitat, including vernal pools.**

- **The areas to be conserved should be selected and administered by a third party, similar to the process followed by Maine's Natural Resource Compensation Program, in order to ensure that the areas are equal to or exceed lost habitat functions. Fee lands are preferable over easement lands, in contiguous blocks of at least 25,000 acres, within the same bio-geographic region, and preferably adjacent to existing or future conserved lands to enhance habitat connectivity and facilitate management that better meets the mitigation goals. We recommend that the lands be owned or held by the State of Maine or a nonprofit conservation organization with adequate management funds provided with the land acquisition by the applicant. In the event fee lands are unavailable, any conservation easements should include strong language ensuring long-term protection of biodiversity and habitats consistent with management standards equivalent to the New England Forestry Foundation's Exemplary Forestry program. We also recommend that the areas include at least one 10,000-acre block designated as an Ecological Reserve.**
- **The land should be managed for structurally complex, well-connected mature forest, with high canopy cover and plenty of down woody material.** As described by Dr. Calhoun, "vernal pool breeding amphibians prefer uncut or partially cut forests and suffer the most in clear-cuts and other extreme openings." *See* Testimony of Dr. Calhoun, February 28, 2019. This type of management will support vernal pools, as well as the myriad species, such as wood turtles, flying squirrels, Canada warblers, and black-backed woodpeckers, that thrive in that type of forest.

## **Comments on Other Conditions, etc.**

### **1. Unprecedented Language**

The impacts of this project on Maine's protected natural resources and wildlife are unprecedented. We do not believe that the draft order itself is unprecedented and we respectfully request that language on Page 1 ("These conditions provide an unprecedented level of natural resource protection for transmission line construction in the State of Maine") be revised to reflect that the project's *impacts* are unprecedented and the permit conditions are appropriate and in fact legally necessary to avoid, minimize, and compensate for the scope of this massive project's impact on undeveloped forested ecosystems including wetland complexes, vernal pools, rivers, streams and brooks, and the habitats of numerous endangered and threatened Maine wildlife.

## 2. Alternatives Analysis: Undergrounding and No Action Alternative

Maine Audubon agrees with the Department's conclusion that the type of underground construction effort presented by the applicant would result in a greater environmental impact than the proposed overhead alternative. *See* Draft Order, pg. 73. However, we do not believe that the applicant provided sufficient testimony to support a finding that *any* underground technology would result in greater environmental impact.

As described on Page 72 of the draft order, the applicant provided testimony exclusively on "the most affordable and common construction technique . . . direct burial." Direct burial is only one of many types of underground technology. In fact, the applicant plans to use horizontal directional drilling (HDD) to bury the line under the Kennebec Gorge, which demonstrates that HDD is a viable undergrounding technology. Maine Audubon appreciates that HDD is costly, however, we believe cost should not preclude the consideration of an alternative. As such, we do not agree with the Department's finding that "the evidence on the record is sufficient for the Department's review of whether the applicant has met its burden of proof on licensing criteria, including the requirement that the applicant provide an analysis of alternatives. *See* Draft Order, pg. 72.

Similarly, we do not believe that the applicant presented sufficient evidence for the Department to fully consider the no action alternative. Specifically, we disagree with the Department's assertion that they are not required to assess competitive projects in other states, even when those projects would fulfill the same purpose: ". . . to provide renewable electricity from Quebec to the New England grid." *See* Draft Order, pg. 2. Instead, other options were only considered in relation to the cost of the project. For example, an applicant witness testified that a Vermont project had not demonstrated economic feasibility (with regard to underground technology). Maine Audubon argues that, because this is a regional project, projects in other states should be fully considered as "no action alternatives" and as such, the applicant did not sufficiently demonstrate whether there is a practicable alternative to the project that would be less damaging to the environment.

## 3. Vernal Pools

As discussed earlier, Maine Audubon disagrees with the Department's finding that the applicant has minimized impact to significant wildlife habitat (including significant vernal pools) to the greatest extent practicable, and that, with payment to the In-Lieu Fee (ILF) program, the proposed project meets the applicable standards. *See* Draft Order, pg. 81. In addition to modifying the condition related to additional, off-site mitigation in the form of land conservation, Maine Audubon recommends the following to reduce impacts to vernal pools:

- **Require vegetation management around all vernal pools consistent with Maine Audubon's Forestry Habitat Management Guidelines for Vernal Pool Wildlife (see <https://www.maineaudubon.org/wp-content/uploads/2017/03/Forestry-Habitat-Management-Guidelines-for-Vernal-Pool-Wildl.pdf>). Limiting this type of management to significant vernal pools is insufficient because significant vernal pools are a small fraction (less than 25%) of the total number of vernal pools along the corridor.**



- **For the purpose of calculating the contribution to the ILF program for impacts to significant vernal pools, including vernal pool habitats, shrub restoration around significant vernal pools should not be credited at 40% because shrubland is not an adequate substitute for the uncut or partially cut forests that vernal pool amphibians prefer, and will likely lead to a decline in pool habitat quality and juvenile dispersal and survival over time. Because these areas are integral to the ecology of vernal pool amphibians and their lifecycle, and not just a “buffer”, conversion of those areas should be compensated at the same 100% rate as direct impacts.**

#### **4. Riparian Filter Areas**

As described in the draft order, 674 small and large streams will be crossed by the proposed corridor. As multiple intervenors and intervenor witnesses testified, clearing a corridor adjacent to these streams, especially those harboring the last stronghold in the eastern United States for coldwater fish, such as brook trout, will undermine the integrity of those streams and the ability of those streams to provide the multiple habitat needs of these fish and other aquatic animals.

With the most extensive distribution, abundance, and habitat diversity of eastern brook trout within their native United States range, Maine’s wild brook trout waters represent a unique, valuable, and irreplaceable ecological resource. Today, Maine contains over 50% of the nation’s remaining wild population, more than 90% of all remaining native lake and pond populations, and as many intact subwatersheds as all other states in the eastern range combined. Western Maine harbors more of this habitat than most other areas of the state. Brook trout are sensitive species that require clean, cold waters and are intolerant to changes in habitat. They move up and down streams to find habitat for feeding, resting, spawning, raising young, seeking coldwater refugia, and overwintering. They require well-shaded streams to maintain the cool water temperatures they need, as well as the input of large woody material to create the microhabitats within the stream.

The Department responded by requiring 75-100’ buffers (Riparian Filter Areas) around all of these streams. Within these areas, all woody vegetation within the wire zone (54’ wide area under the wires) will be cut to the ground and maintained that way on a 2- to 3-year cycle in Segment 1 and a 4-year cycle in other Segments. Outside the wire zone, trees are allowed to grow up to 35’, but similar to the tapered areas, all trees reaching or exceeding the minimum 35’ height requirement may be cut at the base as long as they leave at least 10’ tall shrubs underneath. Realistically, this could result in the Riparian Filter Areas being nothing more than a sea of 10’ tall shrubs. This clearly does not meet the goal of retaining a shaded forest canopy over these streams.

Under their shoreland zoning rules, the Maine Forest Service (MFS) requires timber harvests in the Unorganized Territories to “retain sufficient vegetation to maintain shading of surface waters.” 01-669 C.M.R. ch. 21 § 8(B)(4) (2015). In most cases, the MFS requires timber harvests to meet the following shade and retention standards adjacent to streams: “A well-distributed stand of trees which is windfirm, and other vegetation including existing ground cover,

must be maintained.” 01-669 C.M.R. ch. 21 § 7. It offers several different ways to do this, including (1) limiting cutting to no more than 40% of the stand in any 10-year period; (2) requiring a minimum basal area be retained; and (3) an outcome-based alternative approved by the MFS. *Id.* Clearly, the allowances for cutting within the project’s Riparian Filter Areas do not even meet the MFS standards for maintaining shade over streams.

To improve the integrity of the Riparian Filter Areas, Maine Audubon recommends:

- **That every effort be made to place the poles outside the 75’ or 100’ wide Riparian Filter Area.**
- **In the event that is not possible, taller poles should be required within the Riparian Filter Area so that trees may grow a minimum of 60-70’ tall, and those remaining stands should be required to keep a minimum of a 60-70% canopy closure.**
- **Also, consistent with MFS rules, we recommend that the Department require that all new or upgraded crossings built to maintain the corridor be built to allow fish passage. See more detail below.**

## **5. Culvert Funding and Replacement**

As stated earlier, Maine Audubon recommends all new or existing stream crossings that will be used to support construction or maintenance of the corridor be built to Stream Smart specifications to improve passage of brook trout and other aquatic life. In addition, we support the requirement to commit funding to replace undersized culverts with Stream Smart culverts to help offset the disruption of high quality aquatic habitats in Maine’s western forests caused by this project, particularly in Segment 1 where the highest value stream networks are located. Numerous undersized crossings that act as barriers to fish movement during some part of the year exist on private forest lands in the vicinity of the proposed corridor and their replacement with Stream Smart crossings would be beneficial.

To more fully account for the impacts from road crossings, we recommend:

- **That crossings to be replaced should be selected in consultation with stakeholders with experience in restoration of aquatic habitat connectivity, such as the Maine Forest Service, Maine Department of Inland Fisheries and Wildlife, and The Nature Conservancy, and/or other members of Maine’s Stream Connectivity Work Group.**
- **Crossings to be replaced should be prioritized based on the greatest benefits to be gained (i.e., more than a half mile of high quality habitat would be reconnected, within coldwater high value stream systems, etc.).** Such an approach will likely favor replacing multiple key culverts within particular subwatersheds in order to reconnect the most habitat.

- Finally, while we applaud the recommendation to increase the amount of compensation required to replace culverts, based on recent cost estimates for similar work across the state, it is unclear if the proposed amount will achieve the aspiration of replacing approximately 25 culverts with Stream Smart crossings. Costs for construction and materials for similar infrastructure work were roughly 50% higher than anticipated just last construction season. **Based on our previous estimate of \$120,000 for the average crossing, at a 50% construction cost increase, we recommend increasing the amount to fund culvert replacements to \$4,500,000.**

## 6. Rusty Blackbird Habitat Management.

According to experts we spoke with on this topic, there is a strong possibility that there are more patches of rusty blackbird habitat along the corridor than currently mapped; the mapped data is old and incomplete. Because these birds have experienced some of the most dramatic population declines of all songbirds in recent years (over 80% since 1960), we recommend that additional precautions be made to avoid impacts to this species, including:

- **As field crews walk the corridor to flag wetlands, riparian filter areas, vernal pools, and other important natural resource areas, they should also flag patches of 5-15' tall spruce-fir that serves as valuable rusty blackbird habitat.**
- **Avoid cutting in the flagged habitats, as well as the mapped habitat, between April 4 and June 30 (not May 31, as stated in the current conditions).**
- **If any of the flagged, potential habitats later become mapped habitat for rusty blackbirds, they should be managed similarly to the management requirements for the mapped habitat – i.e., maintain 10-15' foot tall spruce vegetation as stated in Condition 22.**

## 7. Refueling Near Wetlands

Maine Audubon recommends that the Department not allow refueling near wetlands. When fuel is being transferred from one tank or vehicle to another, there will inevitably be some spillage or spills and likely substantial spills far beyond residential gasoline usage given the magnitude of the project. **We recommend that the Department require that refueling be limited to areas at least 250' from any wetland to reduce the risk of a large spill reaching a protected resource. This is consistent with the Department's requirements for refueling near streams. See Draft Order, pg. 135.**

## 8. Unusual Natural Areas: Jack Pine Forest

The proposed project would result in 9.229 acres of clearing in a Jack Pine Forest located in Bradstreet Township. Jack Pine Forest is a critically imperiled plant community. There is only one other Jack Pine Forest community known in Maine. According to the Maine Natural Areas Program, most of the Jack Pine Forest has been clear-cut within the last 25 years and is now growing back as young Jack Pine Forest. Maine Audubon found little or no evidence of

consideration of an alternative that would avoid or minimize impacts to this unusual natural area, and note that the applicant agreed to redesign a section of the proposed project to avoid impacts to whorled pogonia and to maintain a riparian buffer to minimize impacts to Goldie's wood fern (both rare plants). *See* Draft Order, pg. 87.

We appreciate the condition that the applicant make a contribution to the Maine Natural Areas Program's Compensation Fund, however, the impact to this community underscores the need for additional, offsite land conservation mitigation, a significant portion of which should be managed for structurally complex, mature forest, with a closed canopy. Jack Pine Forest is a closed canopy forest and, as such, provides habitat for coniferous forest specialists and uncommon moths and butterflies, such as the western pine elfin.

## 9. Invasive Species

In addition to the intentional direct alteration of the natural vegetation associated with the construction of new transmission lines, transmission line corridors provide a travel lane into new habitats for invasive species, which can outcompete native species and disrupt natural systems. Invasive species can be brought in on construction vehicles during initial site construction, on maintenance vehicles during regular maintenance activities, or on ORVs and other vehicles that utilize the new corridors for travel. Invasive plants tend to prefer disturbed soil and a great deal of sunlight—two things in large quantity in new corridors.

The proposed project area is unique in its relative absence of invasive species. In his February 15, 2019, testimony, intervenor witness Dr. Hunter said, "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. 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 uncontrolled for many years, and control becomes virtually impossible once populations have gained a strong foothold."

In order to keep invasive species from inhabiting the area, Maine Audubon recommends:

- **That natural vegetation be maintained to the extent possible.**
- **Soil disturbance be kept to a minimum. Where outside fill must be brought in, it should be sterilized to avoid transporting non-native seeds into the construction site.** By maintaining the natural seedbed, native species are given an opportunity to establish themselves and outcompete non-natives.
- **After construction is complete, a monitoring regime should be developed to survey for and identify non-native species and eradicate them before they can become established. Invasive species surveys should be conducted on a regular basis with a control plan at the ready to eliminate invasives when found.**

- **To prevent additional non-native plant introductions, all maintenance vehicles should be cleaned off-site prior to maintenance and vegetation management activities, and efforts should be made to prevent off-road vehicles from accessing the right-of-way and introducing invasive species.**
- **The applicant’s invasive species plan should include a monitoring plan to quickly identify the presence of invasive species, an eradication plan to address invasive species removal, and a flexible long-term maintenance plan to keep invasives out of the corridor in perpetuity. Invasive species plan implementation should not end when construction of the transmission line is complete.**

## 10. Condition Severability

Maine Audubon recommends that the Department modify the third condition. It reads:

“Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.”

This language may be prudent for most Department projects, but it is neither prudent nor appropriate for this project. Given the magnitude of this project, including impacts to forested ecosystems with virtually no invasive species or protected natural resource impacts, this severability language is inappropriate; only the totality of the conditions is sufficient to satisfy the Department’s permitting standards to first avoid, then minimize, and then finally compensate as legally necessary for unavoidable natural impacts. If a condition is found to be invalid or unenforceable, the project would not achieve the Department’s permitting standards; it would inadequately provide for the protection of wildlife and fisheries and result in lost significant wildlife habitat function and value. **We recommend the condition be modified to allow the Department, in the event a condition or conditions are found to be invalid or unenforceable, to modify remaining conditions or add additional conditions to satisfy the Department’s permitting standards. The severability provision could specify, for example: “In the event that the avoidance, minimization, or compensation conditions and requirement in this approval are deemed invalid or unenforceable, this permit is likewise deemed void *ab initio*.”**

## Conclusion

As discussed at the outset, Maine Audubon is thankful the Department’s draft order acknowledges the proposed project would cause significant habitat fragmentation and that the Department found the proposed impacts on wetlands, significant wildlife habitat, rare and endangered species, rare plants and natural communities, and coldwater streams were such that the project did not meet the Department’s standard to make adequate provision for the protection of wildlife. The Department’s proposed conditions are laudable, particularly the conditions related to habitat fragmentation. We are thankful that the Department embraced the concept that to truly account for wildlife impacts, one must account for each lifecycle stage, as well as habitat fluctuation as the climate changes. We feel strongly that in crafting the draft order, the Department



intended to fully account for fragmenting and site-specific impacts.

As outlined in our comments above, upon a careful look at the draft order's conditions, as well as the purpose of the Natural Resources Protection Act (NRPA) and Site Law, we do not believe that the conditions are adequate, due to the scale, scope, and cumulative impacts of this enormous project. The minimum standards required under NRPA and Site Law are precisely that: minimum standards. The standards were designed for smaller, site-specific projects and subdivisions and as such, the minimum is not appropriate or sufficient for this project and do not adequately protect the ecology of Maine's impacted habitats or the ability of fish and wildlife to seek and find habitats protected by Maine's laws. Furthermore, the conditions related to vegetation management, for example, were not crafted to adequately minimize wildlife impacts. Our comments seek to address the implementation of specific conditions, as well to modify other conditions to right-size protections with the magnitude of the project

Thank you for your consideration of our comments. We recommend approval of the final permit only if the totality of our recommendations are incorporated which we summarize here from above:

- **Require taller poles along more sections of Segment 1 to retain a mature forest canopy of 60-70' tall trees and a 70% forest canopy along the entire corridor.**
- **In the event that tapering is used, require a minimum canopy closure of 60-70% to ensure that not all taller trees are cut at the same time, undermining the goal of tapering.**
- **At a minimum, identify these species as impacted species: scarlet tanager, black-throated blue marble, American marten, Canada lynx, spotted salamander, wood frog, and wood turtle.**
- **Expand the width of all Wildlife Areas to at least 500'.**
- **When expanding the Wildlife Areas, expand them to further include significant vernal pools.**
- **Additional, offsite mitigation in the form of land conservation should include significant vernal pools within a larger, protected forested landscape. The protected habitat should include not only the regulated pool and 250' of Critical Terrestrial Habitat around the portion of the pool within the corridor, but the entire pool, at least a 750-1000' upland area around the pool, nearby forested wetlands, and drier upland forests, as well as travel lanes between those habitats.**
- **Conserve 100,000 acres (20:1 ratio) of additional, off-site land conservation mitigation, as opposed to 40,000 acres (8:1 ratio).**

- **The additional, off-site conserved lands should be selected and administered by a third party, similar to the process followed by Maine’s Natural Resource Compensation Program, in order to ensure that the areas are equal to or exceed lost habitat functions. Fee lands are preferable over easement lands, in contiguous blocks of at least 25,000 acres, within the same bio-geographic region, and preferably adjacent to existing or future conserved lands to enhance habitat connectivity and facilitate management that better meets the mitigation goals. We recommend that the lands be owned or held by the State of Maine or a nonprofit conservation organization with adequate management funds provided with the land acquisition by the applicant. In the event fee lands are unavailable, any conservation easements should include strong language ensuring long-term protection of biodiversity and habitats consistent with management standards equivalent to the New England Forestry Foundation’s Exemplary Forestry program. We also recommend that the areas include at least one 10,000-acre block designated as an Ecological Reserve.**
- **The conserved land should be managed for structurally complex, well-connected mature forest, with high canopy cover and plenty of down woody material.**
- **Revise the language on Page 1 (“These conditions provide an unprecedented level of natural resource protection for transmission line construction in the State of Maine”) to reflect that the project’s *impacts* are unprecedented and the permit conditions are appropriate and in fact legally necessary to avoid, minimize, and compensate for the scope of this massive project’s impact on undeveloped forested ecosystems including wetland complexes, vernal pools, rivers, streams and brooks, and the habitats of numerous endangered and threatened Maine wildlife.**
- **Require vegetation management around all vernal pools consistent with Maine Audubon’s Forestry Habitat Management Guidelines for Vernal Pool Wildlife (see <https://www.maineaudubon.org/wp-content/uploads/2017/03/Forestry-Habitat-Management-Guidelines-for-Vernal-Pool-Wildl.pdf>).**
- **For the purpose of calculating the contribution to the ILF program for impacts to significant vernal pools, including vernal pool habitats, shrub restoration around significant vernal pools should be credited at the 100%.**
- **Every effort should be made to place the poles outside the 75’ or 100’ wide Riparian Filter Area.**
- **In the event placing poles outside the Riparian Filter Areas is not possible, taller poles should be required within the Riparian Filter Area so that trees may grow a minimum of 60-70’ tall, and those remaining stands should be required to keep a minimum of a 60-70% canopy closure.**

- **Consistent with MFS rules, we recommend that the Department require that all new or upgraded crossings, built to maintain the corridor, be built to allow fish passage.**
- **Crossings to be replaced should be selected in consultation with stakeholders with experience in restoration of aquatic habitat connectivity, such as the Maine Forest Service, Maine Department of Inland Fisheries and Wildlife, and The Nature Conservancy, and/or other members of Maine's Stream Connectivity Work Group.**
- **Crossings to be replaced should be prioritized based on the greatest benefits to be gained (i.e., more than a half mile of high quality habitat would be reconnected, within coldwater high value stream systems, etc.).**
- **Increase the amount to fund culvert replacements to \$4,500,000.**
- **As field crews walk the corridor to flag wetlands, riparian filter areas, vernal pools, and other important natural resource areas, they should also flag patches of 5-15' tall spruce-fir that serves as valuable rusty blackbird habitat.**
- **Avoid cutting in the flagged habitats, as well as the mapped habitat, between April 4 and June 30 (not May 31, as stated in the current conditions).**
- **If any of the flagged, potential habitats later become mapped habitat for rusty blackbirds, they should be managed similarly to the management requirements for the mapped habitat – i.e., maintain 10-15' foot tall spruce vegetation as stated in Condition 22.**
- **Require that refueling be limited to areas at least 250' from any wetland to reduce the risk of a large spill reaching a protected resource.**
- **Maintain natural vegetation to the extent possible.**
- **Keep soil disturbance to a minimum. Where outside fill must be brought in, it should be sterilized to avoid transporting non-native seeds into the construction site.**
- **After construction is complete, a monitoring regime should be developed to survey for and identify non-native species and eradicate them before they can become established. Invasive species surveys should be conducted on a regular basis with a control plan at the ready to eliminate invasives when found.**
- **To prevent additional non-native plant introductions, all maintenance vehicles should be cleaned off-site prior to maintenance and vegetation management**

activities, and efforts should be made to prevent off-road vehicles from accessing the right-of-way and introducing invasive species.

- **The applicant’s invasive species plan should include a monitoring plan to quickly identify the presence of invasive species, an eradication plan to address invasive species removal, and a flexible long-term maintenance plan to keep invasives out of the corridor in perpetuity. Invasive species plan implementation should not end when construction of the transmission line is complete.**
- **Condition 3, the “severability condition”, should be modified to allow the Department to, in the event a condition or conditions are found to be invalid or unenforceable, modify remaining conditions or add additional conditions to satisfy the Department’s permitting standards. The severability provision could specify, for example: “In the event that the avoidance, minimization, or compensation conditions and requirement in this approval are deemed invalid or unenforceable, this permit is likewise deemed void *ab initio*.”**

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Eliza Donoghue".

Eliza Donoghue, Esq.  
Director of Advocacy & Staff Attorney