



March 22, 2016

New Hampshire Site Evaluation Committee
Pamela G. Monroe, Administrator
21 South Fruit Street, Suite 10
Concord, NH 03301

Comments on the Northern Pass SEC Application from NH Trout Unlimited Council

The NH State Council of Trout Unlimited (TU), is pleased to offer comments and our recommendations related to the Northern Pass SEC Application

TU is the nations largest coldwater conservation organization, with 155,000 members nationwide and approximately 1600 members in New Hampshire. TU's Mission is to protect, restore, reconnect and sustain the nations coldwater fisheries and employs over 200 staff in locations across the nation who work on science based habitat projects in collaboration with federal, state and local government, businesses and private landowners. Our members volunteer more than 615,000 hours of time annually in this effort.

There are 8 chapters of Trout Unlimited in New Hampshire and the State Council acts as the coordinating body for the chapters and addresses issues of statewide significance to our coldwater fisheries. Angling is a major form of outdoor

recreation in New Hampshire, and TU regularly works with New Hampshire Fish and Game to both promote responsible angling and improve habitat for our coldwater species. TU has led or participated in a number of extensive stream habitat restoration projects in New Hampshire, including at Nash Stream State Forest, Cold River, Beebe River, and in the White Mountain National Forest.

Comments on the Northern Pass:

TU's principle concern regarding Northern Pass is the potential impact native and wild Eastern Brook Trout (EBT), a species of "Greatest Conservation Need" in the 2015 NH Wildlife Action Plan. The EBT has also been a focal species for extensive interagency and NGO research (See the Eastern Brook Trout Joint Venture. <http://easternbrooktrout.org>) because of its dramatic declines throughout its original range. While EBT has been eliminated through much of its range, northern New England remains a relative stronghold for this fish and an area where habitat protection and restoration are deemed especially important.

TU employs a scientific staff that has done extensive research on the impacts of climate change on coldwater species, including EBT. It is now clear that as the climate warms, trout are especially at risk because of their temperature limited habitat requirements. For example, EBT are known to become temperature stressed at levels exceeding 68 degrees F, and mortality can result when temperatures remain above 70 degrees F for any extended period.

TU members in NH have reviewed the section of the SEC report (Appendix 33) regarding cold water fisheries. We have concerns that the data provided do not support the conclusions made in the report, specifically that new crossings of small headwater streams that hold Eastern Brook Trout (EBT) and other cold water obligate fish and macroinvertebrates, will not be negatively impacted by the opening of the forest canopy. Specifically, we discussed our concerns with fishery scientists at Trout Unlimited (Dr. Jack Williams and Dr. Shawn Rummell) and Dr. Jennifer Jacobs (Professor of Civil and Environmental Engineering at UNH) ***they suggested that the documentation of the methodology used in the report, the data points used in the models and the results of the model are not sufficient to support the conclusion that EBT will not be negatively affected by the opening of previously closed canopy riparian zones on these small streams.***

Further, we note that in Figure 12 of Appendix 33, the graphs show consistently higher predicted temperatures in these small streams after clearing, and that the maximum July temperatures projected are substantially above those at which EBT can survive. (See attached Figure 12). Young EBT begin to experience stress at 68 degrees F, and mortality is likely for any extended period over 68. Adult fish can tolerate temperatures up to about 77 degrees F but only for short amounts of time. ***Any reasonable reading of Figure 12 indicates that the model predicts maximum temperatures above that lethal to EBT in the major of the streams***

listed, yet the conclusion of the report is that there would be no significant impact on EBT.

Therefore we respectfully request that the section of the SEC application on fishery impacts be thoroughly reviewed by qualified scientists, and revised as appropriate.

These small streams often remain cold primarily because of complete canopy cover from the forested landscape. Where canopy cover is eliminated, on hot summer days, solar radiation can create stream temperatures that exceed that needed for survival of EBT. This can have two negative impacts: First the sun exposed streambed, partially submerged boulders and stream water become too warm for EBT survival. Second, this "pulse" of warm water travels downstream making additional distances of stream habitat too warm for EBT survival. This can result in both mortality of small "young of year" EBT and prevent larger fish from travelling upstream to colder water refuges.

If such clearings are temporary, and trees are permitted to re-grow and provide shade, the impact can be short term (measured in years), but if power line corridors are frequently cut to keep vegetation low, the impact can be permanent, resulting in the loss of both upstream and downstream EBT habitat. None of the report addresses the potential impact on these streams from climate change, which presumably will further exacerbate temperature stresses on cold water obligate species.

TU's Preferred Alternative:

It is clear that any construction alternative has the potential to create short-term impacts on EBT and other coldwater species. Storm events that overwhelm storm water protection measures are not uncommon and climate change has increased the frequency of such events in the past few decades.

Because any construction poses short term impacts, TU is primarily concerned that whatever alternative is chosen, that Best Management Practices not only be proposed, but diligently adhered to at every stage of construction.


Our concern about longer-term impacts is greatest for the above ground transmission line corridor.

Underground alternatives, have considerably lower long term impacts on surface waters, and in most cases (except where existing transportation or transmission corridors are not used) would occur in already disturbed areas. The underground alternatives clearly pose a lower long-term threat to coldwater fisheries, given the much smaller area of watershed that would be affected by construction.

In light of the above concerns, the NH TU Council strongly urges that if the

project is approved the SEC should require that the line be buried throughout Coos and Grafton County. We oppose the construction of the proposed above ground transmission line anywhere in Coos or Grafton County and in any other location where existing wild and native EBT populations are most robust and where above ground construction has the greatest potential to negatively effect this species of special concern.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Ives', with a stylized flourish at the end.

Tom Ives, TU NH Council Chair
On behalf of the NH TU Council

Cc: Dr. Jack Williams, Chief Scientist, Trout Unlimited
Dr. Shawn Rummell, Field and Research Manager, Trout Unlimited
Keith Curley, Vice President for Eastern Conservation, Trout Unlimited

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c/o Paul Doscher, Secretary
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