

# North Atlantic Landscape Conservation Cooperative



September 16, 2013

Dr. Hector Galbraith  
National Wildlife Federation  
Dummerston, VT 05301

Dear Hector,

I am writing to provide you with the results of the peer review of the report *Climate Change and Cold Water Fish Habitat in the Northeast: a Vulnerability Assessment* and to ask you to make appropriate revisions in preparing a final version of the report. The peer review is part of our standard procedures for obtaining independent scientific input on North Atlantic LCC-sponsored products.

We obtained reviews from three experts in the fields addressed in the report: Than (Nathaniel) Hitt and Thomas Hutchinson of USGS and Keith Nislow of the U.S. Forest Service. In addition to requesting written comments (attached), we held a conference call where the reviewers could collectively discuss their comments. I am passing along highlights from the call where it augments the written comments. Please consider these issues as well in revising the document.

Highlights and issues from the peer review conference call:

- The reviewers reiterated their overall comments that the report is informative and scientifically accurate. In particular, they thought that a strength of the report was its emphasis on increased understanding of local variability in sensitivity to climate impacts in small streams compared to early studies that depicted more uniform, broad regional responses to climate change.
- The reviewers agreed with each other's comments to a large degree.
- The reviewers agreed that Fig. 1 (Glick et al.'s vulnerability framework) was a useful organizational framework and recommended that it be adopted further in the structure of the report. A logical sequence for the report therefore would be Exposure, Sensitivity, Potential Impact, Adaptive Capacity, Vulnerability, rather than the current structure (Sensitivity, Vulnerability [prior vulnerability analyses], Exposure, Adaptive Capacity). Because a key consideration in vulnerability is the issue of how stream temperatures respond to changing air temperatures / climate, they recommended that this issue be clearly be placed within the Glick framework.
- The reviewers recommended that the future time horizon(s) of the report, and the specific climate and biological endpoints being considered, be more clearly defined. For example, streams that are likely to be resilient cold water habitat for the next 25 years may not be in 100 years; neither time horizon is more "correct" than the other, though they have

different outcomes. They suggested, however, that the time step(s) be chosen with application by managers in mind (which would suggest shorter time horizons).

- Continuing on the theme of defining biological endpoints of concern, I am attaching a conceptual figure that one of the reviewers prepared after the call to illustrate how there is a range of temperature sensitivities to different physiological / ecological effects rather than a simple temperature breakpoint. This could be appropriate for incorporation into the sensitivity discussion. (Note that this was a quickly derived figure that would probably need some additional work to confirm and cite.)

We request that you complete the revisions by October 18. This would allow us to present this report as complete to the North Atlantic LCC Steering Committee prior to their meeting on November 5. Thank you very much for consideration of the peer review comments and please let me know if you have any questions.

Sincerely,



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#### Attachments

- Conceptual figure on cold water fish tolerance to temperature
- Reviewer #1 response to charge to reviewers and redline/strikeout comments
- Reviewer #2 response to charge to reviewers
- Reviewer #3 response to charge to reviewers and redline/strikeout comments