New Hampshire
Fish and Game Department

HEADQUARTERS: 11 Hazen Drive, Concord, NH 03301-6500
(603) 271-3421
FAX (603) 271-5829

www.WildNH.com
e-mail: info@wildlife.nh.gov
TDD Access: Relay NH 1-800-735-2964

September 30, 2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

RE: Comments on Updated Study Reports filed on August 1, 2016 for FERC No. P-1892 (Wilder), P-1855, (Bellows Falls) and P-1904 (Vernon).

Dear Secretary Bose:

As the agency responsible for protecting fish and wildlife resources in New Hampshire, the New Hampshire Fish and Game Department (NHFGD) monitors and attempts to reduce the impacts of hydroelectric facilities on fish and wildlife species and their habitats. The mission of the New Hampshire Fish and Game Department (NHFGD) is to conserve, manage and protect the state's fish, wildlife and marine resources and their habitats, and to provide the public with opportunities to use and appreciate these resources.

On August 1, 2016, TransCanada Hydro filed with FERC the Updates Study Reports (USR) and a status summary of all USRs indicating that comments were due by September 30, 2016 for the following three hydroelectric projects on the Connecticut River: Wilder Project (FERC No. 1892), Bellows Falls Project (FERC No. 1855), and
Vernon Project (FERC No. 1904).

Please keep in mind that we also support any comments received regarding these reports from the Vermont Agency of Natural Resources, VT Fish and Wildlife Department, VT Department of Environmental Conservation, The Nature Conservancy, the US Fish and Wildlife Service (USFWS), and the NH Department of Environmental Services.

In addition, the Department has reviewed the September 28, 2016 letter by the Ct. River Joint Commission and we concur with their request for the potential establishment of compensatory mitigation for unavoidable impacts, that TransCanada establish, by December 2016, as a mitigation and enhancement fund for the lower Connecticut River as part of the draft license agreement for impacts to public and private resources.

The Department has reviewed the USRs mentioned above for the three facilities and offers the following comments.

Study 21: American Shad Telemetry Study

Page 55:

"Upstream Fish Passage Effectiveness was calculated to be 51.0% overall which falls within the range (40-60%) of the management objective in the Connecticut River Atlantic Salmon Commission (CRASC) management plan for shad in the Connecticut River (CRASC, 1992)."

The 40-60% management objective referenced in the report is a measure of passage efficiency relative to the American shad count at the immediate downstream facility, not a measure of fish passage efficiency within the Vernon fishway itself (CRASC, 1992). By this definition, FishPassage Effectiveness in this study would be 16% (as opposed to 51%), because 16 of the 100 dual-tagged and pit-tagged fish released above Turners Falls were recorded above the counting window in the Vernon Dam fishway. By contrast, overall shad passage at Vernon Dam exceeded the CRASC management objective with 68.5% of the shad passing the Turners Falls facility also passing the counting window at Vernon. The low passage rate of tagged fish in this study compared to the overall passage rate relative to Turners Falls suggests that there may have been some negative effects experienced by shad during the tagging process. Knowing the total number of First Light tagged American shad recorded as passing the Turners Falls Dam, compared to the 104 shad that were recorded at the Vernon Dam in this study, would be helpful in evaluating the passage success of different release groups.

Page 55:

"For fish that entered the study area but did not enter or pass the fishway, nearly 65% were detected by manual tracking downstream of Vernon and spawning was also documented in that reach. It is likely that these shad lacked the predisposition to continue upstream beyond Vernon."

The average time between detection at the tailrace and detection at the attraction flow was 2.5 days. Median time was over 20 hours. This suggests some difficulty in locating the fishway entrance. It cannot be determined from this study whether shad "lacked the predisposition" to continue upstream. It is equally possible that fish were motivated to go upstream, but had difficulty locating the entrance to the fishway. Residence times of fish recorded in the tailrace, but not in the attraction flow, should also be reported. The presence of fish downstream should not be considered evidence of successful spawning or lack of predisposition to move upstream.

Page ES-2: Executive Summary

The statement that most shad passed through the fish pipe is technically correct, but somewhat misleading. The primary goal of downstream passage at a hydroelectric project is to encourage fish to not pass through the turbines. In this study, if you exclude the 5 fish for which passage route could not be determined, 19 fish passed through turbines and 20 fish passed by way of the fish pipe or the spillway. Therefor just fewer than 50% of the fish in this study took an undesirable route through the project on their way downstream.

Study 16: Sea Lamprey Spawning Assessment,

Page 87:

"Although the proportion of the spawning population using continuously inundated habitats is unknown, it is erroneous to assume that all spawning occurs in shallow water."

The relative viability of deep water nests compared to shallow water is unknown. It appears that 2015 was a relatively high flow year and greater nest exposure would have occurred in previous modelled years, assuming that nests were established at similar elevations. It is likely that some level of nest exposure occurs in most years. The influence of water level fluctuation on spawning behavior, nest construction, and egg survival was not evaluated. Over 52 miles of potential spawning habitat has been inundated by impoundments. This increases the importance of the remaining riverine sections. While spawning has been documented in the tributaries of the Connecticut River, the extent of spawning habitat necessary to maintain a healthy sea lamprey population in the Connecticut River is unknown. The relative importance of tributary vs. mainstem river spawning was not evaluated. Access to spawning tributaries may vary each year. None of the tributaries used by sea lampreys for spawning were evaluated for accessibility in Study 13.

Page 86:

"Vulnerable nest elevations were therefore most accessible to spawning lamprey in flow periods beyond project operations. Spawning and gestation could occur entirely or mostly during extended periods of continuous submergence."

High flow events rarely last the entire spawning season. In most years, spawning sea lamprey will experience some project influenced flows. It is interesting to note that the Black River, which had the greatest amount of active spawning activity among the tributary spawning sites, experienced the same period of high flows in June, but it did not result in any exposed nest sites.

Study 14 and 15: Resident Fish Spawning in Impoundments and Riverine Sections

One potential impact not considered in this study is the influence of water level fluctuation on backwater spawning habitat quality. Fluctuating water levels may alter the aquatic vegetation community along the shallow margins of these backwaters. They may also affect fish behavior as the backwater changes in depth and area over a relatively short period.

Page 128:

"Despite the high proportion of spawning days when WSEs exceeded spawning WSE criteria, Yellow Perch appear to remain at high abundance in all project reaches (e.g., first in abundance in the Wilder impoundment, Study 10 [Normandeau, 2016b]), and consequently the population of Yellow Perch does not appear to be adversely affected by either normal project operations or high flow operations."

The justification that yellow perch and smallmouth bass are among the most abundant species found in the fish assemblage study, and therefor successful spawning must be occurring is not valid. These species were chosen in part because of their abundance to facilitate the evaluation of project effects on spawning behavior. The relative abundance of each fish species under existing conditions is irrelevant because it cannot be compared to the fish assemblage that might exist under a different management regime in which flows fluctuated more naturally (Yoder 2015).

Page 128
:
"However, it is also likely that existing branch elevations are determined in part by the current range of normal WSE fluctuations, and changes that produce more consistent inundation of branches may lead to decomposition of such branches and a return to a state of diurnal inundation of terrestrial vegetation."

This statement fails to acknowledge that new branches and trees would continue to fall into the water.

Study 13: Tributary and Backwater Fish Access and Habitats

Page 59: Study Conclusions

The threshold of flows greater than 0.5 feet for at least 25% of the time may not capture accessibility during critical time periods for certain species. The period when the mainstem temperature begins to exceed 20 degrees Celsius, usually occurring in late June, is important for trout species seeking thermal refuge in the tributaries. Sea lamprey spawning season in the spring (mid May to late June) and trout spawning season (mid-September to late October) in the

Fall are also important time periods. A closer look at tributary accessibility during these time periods across multiple modelled flow years may be warranted.

Thank you for this opportunity to comment on this very important relicensing project. If you have any questions or comments regarding these recommendations, please do not hesitate to contact either Fisheries Biologist, Matt Carpenter at 603-271-2501 or Carol Henderson, Environmental Review Coordinator at 603-271-3511.

Sincerely,

Glenn Normandeau
Executive Director

Literature cited:

Yoder, C.O., E.T. Rankin, and Lon E. Hersha. 2015. Development of Methods and Designs for the Assessment of the Fish Assemblages of Non-Wadeable Rivers in New England. MBI Technical Report MBI/2015-3-3. U.S. EPA Assistance Agreement RM-83379101. U.S. EPA, Office of Research and Development, Atlantic Ecology Division, Narragansett, RI and U.S. EPA, Region I, Boston, MA. 152 pp. http://www.midwestbiodiversityinst.org/.

Document Content(s)