

Relicensing Study 3.3.4

EVALUATE UPSTREAM PASSAGE OF AMERICAN EEL AT THE TURNERS FALLS

Initial Study Report Summary

Northfield Mountain Pumped Storage Project (No. 2485)
and Turners Falls Hydroelectric Project (No. 1889)

Prepared for:



Prepared by:



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1.1 Study Summary

The purpose of this study is to assess upstream passage of juvenile American eel at the Turners Falls Project (FERC No. 1889). Eels visual surveys and trapping with the objectives of identifying concentrations of eels staging in pools or are currently able to pass the Turners Falls Dam complex (as evidenced by documented presence of eels upstream), but the total number of eels attempting to pass Turners Falls and the proportion successfully passing the Turners Falls Project are unknown [letter from the National Marine Fisheries Service (NMFS)], Comments on FirstLight Power Resources Notice of Intent to File License Application, February 27, 2013). The assessment employs attempting to ascend wetted structures; and assessing whether eels can be passed in substantial numbers and whether sites are viable for permanent passage structures.

The locations where eel stage in attempts to pass upstream of the Turners Falls Project are being investigated through systematic surveys of eel presence and relative abundance. Surveys are in progress and will be conducted 10-12 times during the 2014 eel upstream migratory season. The surveys consist of visual inspection on foot in areas where eels are likely to concentrate as they attempt to climb structures wetted by spill or leakage flow in the Turners Falls Dam complex area and are being conducted in accordance with the RSP unless otherwise stated in Sections 1.3 *Variations from Study Plan and Schedule*. Survey locations, as identified in the RSP, include:

- Cabot Station spillway (emergency water control gates).
- Cabot fishway.
- Cabot log sluice.
- United States Geological Survey (USGS) Conte Lab flume outfall.
- Station No. 1 outfall.
- Small turbine and process water outfalls from the Cabot Canal.
- Spillway fishway attraction water stilling basin.
- Leakage points along the downstream face of Turners Falls Dam (as site safety conditions allow).

Further, as stipulated in Section 3.9 *Matrix of Comments and Responses* of the RSP, FirstLight adopted recommendations to include the spillway fishway entrance and lower pools.

In addition to those listed above, other potential eel staging locations were identified during field surveys including:

- Cabot Station lower gate sluice.
- Station No. 1 canal drain gate sluice.
- City of Montague combine sewer outfall (CSO) No.1.
- The Spillway fishway

These areas have been incorporated into the nighttime surveys.

In year two of study (2015), areas identified as having eels present in sufficient numbers will be targeted as potential areas for permanent eel trap/passes and will be initially assessed using temporary/portable traps. The temporary trap/passes will be designed and built for each location, and operated throughout the eel upstream migratory season, beginning within one week of eels being recorded at the Holyoke eel pass and continuing through October. Ramp-type traps with supplementary attraction flow will be provided. Traps will operate daily (24 hours per day) and will be checked every two to three days or after rain events to quantify the catch.

No consultation for implementing this study was required. The RSP for this study was approved by FERC in its February 21, 2014 Study Plan Determination Letter (SPDL) with no modifications.

1.2 Study Progress Summary

Task 1: Systematic Surveys

Holyoke Gas & Electric (HG&E) operates the first dam on the Connecticut River, the Holyoke Hydroelectric Project, and maintains upstream eel passage facilities. FirstLight consulted with HG&E to determine the beginning of the upstream eel migration within the Connecticut River main stem. The passage of a significant numbers of eel (>100/day) at Holyoke began on June 9, 2014 and prompted the first systematic surveys of the Turners Falls Dam Complex on the evening of June 11, 2014, during which no eel were observed. Additional surveys were conducted on the evenings of June 26, July 2, 10, 17, 21, 31, August 7, 21 and September 4, 2014. Eels were first observed on June 26 and have been observed in each subsequent survey with varying abundance.

Task 2: Trap Collections

Trap collections have not yet begun and will be conducted during the second year of study (2015).

Task 3: Data Analysis

Upon completion of field surveys data were/will be reviewed to assure quality and archived. Data analysis has not yet begun but will include tabular and graphic summaries of eel abundance by location.

Task 4: Reporting

A report will be prepared detailing the methods and results of the study and is anticipated to be completed by the 1st quarter of 2015.

1.3 Variances from Study Plan and Schedule

The surveys are proceeding in accordance with the methods described in the RSP. On the evening of June 26, 2014 the Turners Falls Dam was spilling and Station No. 1 was in operation; on that day these areas were not surveyed for safety reasons. No eel were observed in the small turbine and process water outfalls from the Cabot Canal and the survey of these areas was abandoned beginning on July 17 as these areas are particularly difficult to access at night and were deemed a safety hazard.

1.4 Remaining Activities

Additional (1-3) surveys will be conducted during the months of September and October 2014. Remaining tasks will be conducted in 2015.