

Relicensing Study 3.3.16

HABITAT ASSESSMENT, SURVEYS, AND MODELING OF SUITABLE HABITAT FOR STATE-LISTED MUSSEL SPECIES IN THE CT RIVER BELOW CABOT

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 and Consultation Record to Date

This study has two objectives:

1. Delineate, through field surveys, populations of state-listed mussels and suitable habitat from Cabot Station downstream to the Route 116 Bridge. Characterize the distribution, abundance, demographics, and habitat use of these populations. Surveys will identify and map potential habitat for state-listed species based on habitat preference of each species.
2. Develop binary Habitat Suitability Index (HSI) curves for all state-listed mussel species found to occur in the 35-mile reach downstream from Cabot Station, using species-specific data from the Connecticut River and other rivers in the Northeast, along with relevant publication and expert review. These HSI curves will be used in the Instream Flow Incremental Methodology (IFIM) to evaluate the potential effects of Project operations on state-listed mussel species.

Preceding the 2014 fieldwork, a study plan and scientific collection permit application was submitted to the Massachusetts Natural Heritage and Endangered Species Program (NHESP), and NHESP issued the permit on May 15, 2014. A habitat assessment (Task 2) was completed in June 2014, and results were discussed with NHESP on July 16, 2014 to reach agreement on mussel survey locations. This conversation occurred between Ethan Nedeau (Biodrawiversity), Peter Hazelton (NHESP), and Jesse Leddick (NHESP) and resulted in agreement on areas where the survey would occur.

1.2 Study Progress Summary

Task 1: Finalize Study Plan and Attain Collection Permit

The study plan for the 2014 fieldwork was completed in April 2014, a collection permit application was submitted to NHESP in early May 2014, and NHESP issued the permit on May 15, 2014.

Task 2: Mussel Survey and Habitat Assessment

A habitat assessment was completed in June 2014 on multiple trips, including an excursion specifically for this purpose, and three excursions to complete odonate fieldwork (Study 3.3.10) during which additional habitat information was collected for this study. Habitat assessment results were discussed with NHESP on July 16, 2014, and this discussion culminated in concurrence on approximately 25 mussel survey locations between Cabot Station and the Route 116 Bridge. These sites were surveyed in July and early August of 2014 using SCUBA and snorkeling methods as described in the study plan. No live state-listed mussels were detected in this entire reach; one relic yellow lampmussel shell was found near Second Island.

Task 3: Develop Binary HSI Criteria for State-Listed Mussel Species Documented in the Project Area

Development of the binary HSI criteria, including input from regional scientists on proposed criteria, will be developed in cooperation with NHESP in the 4th quarter of 2014. FirstLight will consult with NHESP during the selection process to determine an appropriate panel of experts for this study. These criteria will be used in the habitat modeling for Reach 3 (IFIM Study).

Task 4: Effects of Flow Regime on State-listed Mussels

This task will depend on the IFIM study, and will occur in 2015.

Task 5: Report

A report based on Tasks 2 and 3 will be prepared in the 1st quarter of 2015. A comprehensive report that includes an evaluation of the flow regime on state-listed mussels will be prepared by March 2016.

1.3 Variances from Study Plan and Schedule

To date, there has been no variance from the study plan. To date, no state-listed mussels have been found in the survey area, and therefore some of the parameters described in the study plan have not been collected (e.g., shell lengths, microhabitats, locations of state-listed mussels).

1.4 Remaining Activities

HSI criteria will be developed in the 4th quarter of 2014. A final report for Tasks 2 and 3 will be prepared by the 1st quarter of 2015. The report may be modified based on the IFIM study and results specific to Task 4.