



Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

ENDANGERED SPECIES HABITAT ASSESSMENT GUIDELINES: *Freshwater Mussels* (May 2013)

PURPOSE

The Natural Heritage and Endangered Species Program (NHESP) may request that a project proponent conduct an Endangered Species Habitat Assessment for state-listed freshwater mussels. This will be used to help the NHESP:

1. determine whether or not a proposed project will adversely affect the actual Resource Area habitat of imperiled wildlife (MA Wetlands Regulations, 310 CMR 10.00);
2. determine whether or not a proposed project will result in a “take” of imperiled state-listed species (MA Endangered Species Regulations, 321 CMR 10.00);
3. evaluate the level of impact to state-listed species habitat during the Conservation and Management Permit application process (321 CMR 10.04(3)(b));
4. identify approaches to avoid or minimize project-related impacts to imperiled state-listed species and their habitats.

IN ADVANCE OF THE HABITAT ASSESSMENT

- The Habitat Assessment must address all *state- and/or federally listed mussel species identified by the NHESP*.
- *The NHESP MUST pre-approve the candidate mussel biologist who can demonstrate adequate field experience before Assessment work begins.* The ability to locate and identify state-listed freshwater mussel species and their habitat(s) is required for an adequate freshwater mussel Habitat Assessment. The NHESP may reject Habitat Assessments that are not conducted by qualified individuals.
- Please forward the resume of the candidate mussel biologist to the NHESP for approval prior to the initiation of Habitat Assessment work.
- The mussel biologist is required to obtain a *Scientific Collection Permit* from the Division of Fisheries and Wildlife to handle dead or live rare mussels. If federally listed mussel species are present, the mussel biologist may also need a permit from the USFWS (e.g., to collect vouchers).
- The mussel biologist shall submit a proposed Scope of Work for the mussel Habitat Assessment (e.g., methods, timing) with their application for a Scientific Collection Permit; the Scope of Work shall follow the *Key Elements* of the *NHESP Endangered Species Habitat Assessment Guidelines: Freshwater Mussels* (described below) and must be approved in writing by the NHESP. The required *Key Elements* may be modified after consultation with the NHESP due to proposed project scope, existing site conditions, habitat availability, and mussel information.

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Natural Heritage & Endangered Species Program

North Drive, Route 135, Westborough, MA 01581 Tel: (508) 389-6360 Fax: (508) 389-7891

REPORTING REQUIREMENTS

1. A narrative report that addresses all the *Key Elements* (described below) of the Freshwater Mussel Habitat Assessment, including: **Methods, Existing Conditions, Maps, and Impact Analysis.**
2. The report should include:
 - A description of the study area including location, water body, size (area) of the survey area.
 - Description of the Habitat Assessment methods used:
 - Boat, SCUBA, snorkel, bucket, and shoreline assessment
 - Number of surveyors
 - Time spent conducting the assessment and weather conditions
 - Summary of Results including:
 - General habitat description for mussels (e.g. substrate composition, flow (runs, riffles, pools), stream gradient, channel morphometry, bank vegetation, etc.)
 - Micro-habitat descriptions for state-listed species
 - Problems encountered or threats observed.
3. Photographs of the study area(s) and representative habitat(s) shall be included in the report.
4. Representative photographs of any mussel species observed should be included in the report and spent shells collected should be forwarded to NHESP for documentation and identification purposes.
5. Names, qualifications, and contact information of all surveyors.
6. The report should be submitted by December 31 of the same calendar year of survey completion.
7. All other items specifically requested by the NHESP.
8. Number of copies of the Habitat Assessment report to be submitted to the NHESP:
 - If you observe a state-listed species: 2 paper + 1 copy on CD
 - If you do not observe a state-listed species: 1 paper + 1 copy on CD

Mail Report To:

Regulatory Review
The Natural Heritage & Endangered Species Program
One Rabbit Hill Road
Westborough, MA 01581

REQUIRED KEY ELEMENTS OF THE HABITAT ASSESSMENT:

Freshwater Mussels (May 2013)

HABITAT ASSESSMENT METHODS	<ol style="list-style-type: none"> 1. The freshwater mussel Habitat Assessment shall systematically cover the <u>entire</u> portion of river, stream, lake, or pond associated with a proposed project <u>and</u> its potential direct and indirect impacts (e.g., from bank clearing, downstream sedimentation, equipment staging, access, etc.). <ul style="list-style-type: none"> • In lakes and ponds, assessments should include, at a minimum, the limit of work and the 50 feet beyond the limit of work in all directions. • In rivers and streams, assessments should include, at a minimum, the limit of work and extend 300 feet downstream and 150 feet upstream beyond the limit of work • The NHESP may modify the area to be assessed based on the project type, existing site conditions, habitat availability, and mussel information. For example, if the assessment area does not encompass all direct/indirect proposed project impacts, the NHESP may increase the assessment area as necessary. 2. Habitat Assessments should be conducted in the absence of significant rainfall. 3. Habitat Assessments in depths over three feet shall be conducted by boat, SCUBA, or snorkeling; wading with mucket buckets is permitted in depths less than three feet. 4. Shoreline surveys shall be used to assess upland features and some aquatic characteristics, but will not be accepted as the sole method used to assess mussel habitat.
EXISTING CONDITIONS	<ol style="list-style-type: none"> 1. Habitat Description and Analysis - Describe the habitat at the study area (e.g., substrate composition, flow (runs, riffles, pools), stream gradient, water quality, water clarity, stream depth and width, aquatic vegetation, bank and riparian areas, adjacent landuse etc.) and evaluate its quality and variation in regards to its suitability for state-listed mussels. 2. Host Fish - List any fish species observed. 3. Other important site features - Both natural and human-induced features of the study area, such as existing disturbance or development (e.g., paved roads, bridges, pipes, culverts, docks, impoundments, dams, eroding banks, recreational uses, scouring, predation, areas of recent forest clearing) should be described as well as any <i>off-site habitat features</i> that may be important to rare mussels. 4. Representative Photographs - Photos of the study area, including pictures representative of the habitats encountered, must be provided; indicate the photograph location and include the cardinal direction of view (e.g. photo #1; looking northeast) or a symbol on the site map which indicates where the photo was taken.

MAPS	<ol style="list-style-type: none"> 1. Habitat Map: overlaid on current ortho-photo of the project site with indication of scale <ul style="list-style-type: none"> • All portions of the project site should be classified and mapped based upon its ability to provide habitat for the relevant species (e.g., substrate composition, flow (pools, runs, riffles), depth, aquatic vegetation, bank and riparian areas, adjacent landuse etc...) 2. Mussel Distribution Map: <ul style="list-style-type: none"> • The location(s) of any state-listed mussels or concentrations observed should be mapped. • The Mussel Distribution Map should be overlaid on an ortho-photo of the project site (e.g. 2005 MassGIS color orthos) with an indication of the scale.
IMPACT ANALYSIS	<ul style="list-style-type: none"> • If state-listed mussels are present, then this section should include quantification of the impacts of the proposed project to the mussel’s habitat. For example, what proportion of the mussel bed observed will be altered by the proposed project or will the project result in alterations to the substrate, hydrology, and/or water quality within state-listed species habitat? • Potential impacts should be thoroughly evaluated and discussed. In addition, recommendations should be provided for protective measures and design changes that avoid and/or minimize project impacts to state-listed species and their habitats, and mitigate such impacts. • If any species is also listed pursuant to the U.S. Endangered Species Act (16 U.S.C.A. §§ 1531-1544), this section must reference and include guidance from the applicable federal Recovery Plan.
<p>IF ANY STATE-LISTED SPECIES ARE OBSERVED, RARE ANIMAL OR PLANT OBSERVATION FORM(S) MUST BE SUBMITTED TO THE NHESP WITHIN 45 DAYS OF THE OBSERVATION.</p>	