JUVENILE MUSSELS MAY BE RECOVERED FROM FRESH-DEAD FISHES

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Abstract

Juvenile mussels are threatened if fish die just prior to the excystment period. We removed gills with nearly metamorphosed glochidia from fresh-dead fishes and kept them in a well aerated environment in hopes of recovering juvenile mussels. The likelihood of recovering juvenile mussels increases if the mussel larvae are near the excystment period and if the dead fish is relatively fresh. Juvenile Higgins' eye (*Lampsilis higginsii*) were recovered from artificially infested, fresh dead largemouth bass, and Anodontine juveniles were obtained from a naturally infested northern hognose sucker. This technique increases the likelihood that a greater number of juvenile mussels will be recovered from juvenile mussel propagation or research projects.

Introduction

- Juvenile mussel propagation is a promising tool for conserving rare species
- Juveniles may be lost if fish die prior to the excystment period
- The objective of this study was to determine if juvenile mussels could be recovered from recently deceased fishes

Methods

- Studies were conducted at the USFWS Genoa National Fish Hatchery, WI (Genoa) and University of Minnesota (UMN)
- Largemouth bass were artificially infested at Genoa with Higgins eye (*Lampsilis higginsii*) glochidia but died just prior to the juvenile excystment period during 2002
- Fishes naturally infested with glochidia and collected from the St. Croix River during spring 2003 were held at UMN but several died during the juvenile excystment period
- Gills were excised from fresh-dead fish and placed in a well-aerated container (Figure 1).
- Containers were checked for juvenile mussels every 2-8 days
- A mussel was considered a juvenile when foot movement or valve closure was observed
- Mussel and fish nomenclature follows Turgeon et al. (1998) and Robins et al. (1991) respectively

Results and Discussion

Federally listed mussel species

Case 1 Higgins eye (*Lampsilis higginsii*)

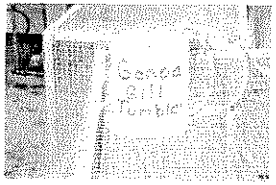
335 juvenile mussels were recovered from sixteen largemouth bass that died just prior to and during the juvenile excystment period

Case 2 winged mapleleaf (*Quadrula fragosa*)

No juveniles were recovered from six infested channel catfish during the excystment period

Naturally infested fishes from St. Croix River

- Seven Anodontine juveniles were collected from a northern hognose sucker that jumped from an aquarium and had laid on the floor for at least 8 hours before the gills were excised.
- No juvenile mussels were recovered from the following deceased fishes: northern pike (1), walleye (1), smallmouth bass (5), white bass (1), yellow perch (1), and burbot (1)



USFWS tumbler
- Juvenile mussels should be removed from turbulent water every 12 hours or less

Univ. of Minnesota incubation beaker
- Gills held under steady aeration
- Water changed every 1-2 days
- Juveniles generally recovered after the first few days of incubation

Figure 1. Gill incubators.

Results and Discussion

- Juveniles may or may not be recovered from excised gills even if glochidial metamorphosis is nearly complete
- Most juvenile mussels are recovered within the first week that fish gills are excised

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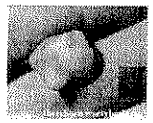

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