



Michigan Freshwater Mussel Survey Protocols and Relocation Procedures

Jessica Pruden, U.S. Fish and Wildlife Service, Ecological Services
Scott Hanshue, Michigan Department of Natural Resources, Fisheries



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Purpose and Development

- Purpose
 - Provide guidance and standardized survey and relocation protocols to minimize impacts to state and federally listed mussel
- Development
 - Adapted from West Virginia and Ohio Protocols
 - Working group representatives from
 - MDOT
 - DEQ
 - USFWS
 - DNR
 - MNFI
 - Reviewed by practitioners and MI Mussel Working Group
- Protocol document will be updated annually



Identifying Stream Group

- Purpose of Stream Groups

- Required level of effort
- Necessary permits
- Relocation authorization process

- Development of Groups

- Element occurrence data
- Conservation status
- Species Distribution Model

- Stream Groups

- Group 1: Stream and rivers known to support mussels considered to be special concern by the State, but lacking mussel occurrence data at the project site.
- Group 2: Streams and rivers known to support populations of State threatened and endangered mussels.
- Group 3a: Small and medium streams and rivers with a drainage area less than 300 mi² that support populations of federally listed mussels.
- Group 3b: Large rivers (drainage area greater than 300 mi²) that support populations of federally listed mussels.



Jeff Grabarkiewicz, MDOT



USFWS

Groups 2 and 3 rivers

 Group 3

 Group 2

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Permit Requirements

- State of Michigan Permits
 - Cultural and Scientific Collectors Permit issued by the MDNR Fisheries Division
 - All native mussels are protected in Michigan
 - Group 1, 2, 3
 - Threatened and Endangered Species Permit, MDNR Endangered Species Program
 - Group 2



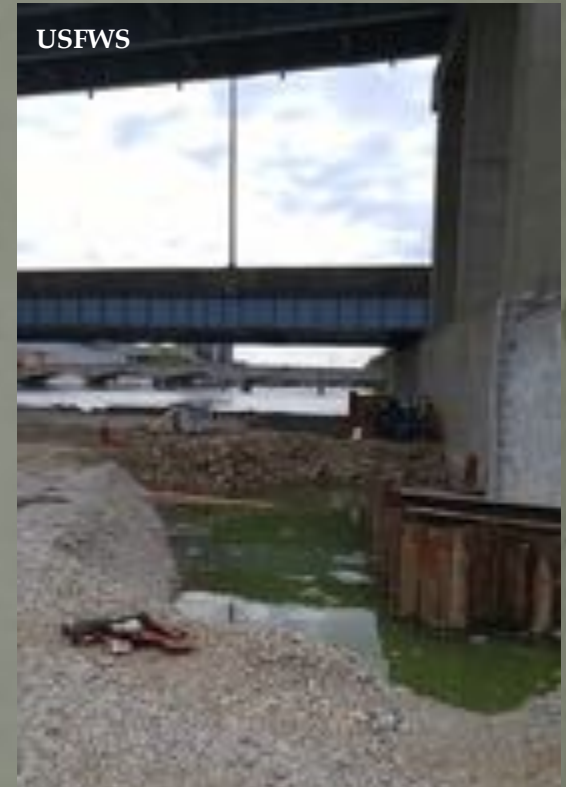
Permit Requirements continued

- Federal Permits issued by USFWS
 - Section 10(a)(1)(A) permits for scientific purposes or to enhance the propagation or survival of a species
 - Includes permits to conduct surveys (e.g., mussel surveys)
 - Group 3
 - Authorization from USFWS required for relocation of federally listed species



Survey Plans and Prior Notification

- Must provide survey plans to MDNR (all rivers/streams) and/or FWS (Group 3 only) for review in advance of surveys
 - Notification of MDNR and/or FWS at least 15 days prior to the actual survey date
 - MDNR review of final survey results
 - Site specific authorization
- Purpose of prior notification
 - Allow time for agency review
 - Appropriate protocol is applied for a stream type and construction activity



Project Planning

- Survey and Relocation Season
 - Survey season = June 1-October 15
 - Water temp = above 50 deg
 - Air temp = 50-90 deg
 - Relocation season = June 1-September 15
- Site Specific Authorization
- Authorization of Relocation under ESA



Project Planning continued

- Information, Planning, and Conservation System:
<http://ecos.fws.gov/ipac/>
 - Project scoping, resource maps, regulatory review, and impact analysis
- Midwest Region's section 7 consultation and technical assistance:
<http://www.fws.gov/midwest/endangered/section7/s7process/index.html>

Survey Techniques

- Methodology
 - Reconnaissance
 - Semi-quantitative
 - Quantitative
- Reconnaissance
 - Areas lacking mussel occurrence data (Group 1)
or
 - Presence expected, but site specific survey data absent or dated (Group 2 and 3)
 - Effort
- Relocation
 - Site selection
 - Post relocation monitoring
- Reporting
 - Survey
 - Relocation
 - Post relocation monitoring



Protocol Document:

<https://www.fws.gov/midwest/eastlansing/te/>

Jessica Pruden

USFWS Michigan Field Office, East Lansing
Jessica_Pruden@fws.gov, 517-351-8245

Scott Hanshue

MDNR, Fisheries, Plainwell
hanshues1@michigan.gov, 269-685-6851

