

West Virginia Mussel Stream Guidance to Aid in State and Federal Consultation and Coordination

1.0 Introduction:

West Virginia is currently home to 64 species of freshwater mussels 10 of which are federally endangered. The state recognizes 42 mussel species as very rare or rare, making them species of greatest conservation need (West Virginia Division of Natural Resources (WVDNR) State Wildlife Action Plan). Mussels represent an important part of our stream ecosystem providing filtration, sediment stability, and nutrients. Mussels tend to be long lived individuals, with some living upwards of 80 years, with most species utilizing host fish specific reproductive mechanisms. Unlike other aquatic animals, mussels are primarily immobile, only able to move short distances in their very localized area, but typically do migrate several inches up and down within the substrate. Given the immobility of freshwater mussels, special care should be taken, when practical, to avoid and minimize potential impacts associated with streambed disturbance, natural flows, and water quality.

Various state and federal laws, regulations, and agency policies include provisions related to avoiding, minimizing, and in some cases mitigating impacts to aquatic resources, including freshwater mussels, endangered species, and their habitats (e.g. federal authority is derived from the Clean Water Act (CWA) Section 404 (b) and the Endangered Species Act (ESA)). While the WVDNR does not have regulatory authority to enforce these acts, the WVDNR frequently provides the federal agencies responsible for their enforcement with technical recommendations and feedback. This document summarizes guidance commonly given to project proponents when mussels may be impacted. The guidance herein is provided to facilitate planning and to help project proponents prepare for actions that may be required by state and federal agencies. This guidance reflects the WVDNR's recommendations both for conservation and for efficient coordination and consultation with our sister agencies. In most cases, results of surveys performed using the West Virginia Mussel Survey Protocol generally are acceptable by other agencies, including the United States Fish and Wildlife Service (USFWS), United States Army Corps of Engineers (USACE), and West Virginia Department of Environmental Protection (WVDEP), and may be used to develop site-specific guidance. This document and the recommendations found within do not constitute federal law, a USACE's regulatory guidance letter, or WVDNR Scientific Collection Permit conditions.

Project proponents can frequently save time and money, and avoid delays in their project permitting, by coordinating with the WVDNR and USFWS early in their planning process. The information contained in this document is advisory in nature and does not constitute provisions that are enforced by WVDNR, all official consultation should occur with the appropriate regulatory agency(ies).

2.0 Alternative Construction Methods:

Projects should first be designed to avoid or minimize impacts to waters of the U.S. including impacts to streams containing mussel populations to the maximum extent practicable. For example, road crossings should be designed to completely span mussel streams. Routes for pipelines should be designed to avoid crossing mussel streams or minimize the number of stream crossings. Over many project consultations involving impacts to mussel populations, the

USFWS and WVDNR have found that practical alternatives to avoid or minimize impacts can be developed for most projects.

3.0 Alternative Locations:

Moving project locations slightly upstream or downstream, or making minor modifications to the project design, is often sufficient to avoid or minimize impacts to mussel populations including federally listed species and may allow projects to proceed with minimal delays. Any project that has potential alternative locations for activities (e.g., bridge alignments, pipeline crossings) can include surveys for alternative locations. The WVDNR recommends a phased approach to prioritize sites with follow-up surveys within the least impacting project site selected. Proposals can include survey areas large enough to include all practical alternative locations.

4.0 Horizontal Directional Drilling:

For activities such as pipelines, waterlines, or other utility line crossings, crossing methods such as horizontal directional drilling (HDD) are generally preferred. The WVDNR suggests trenchless methods as the first priority over open trenching to minimize potential impacts to mussels and habitat quality. If horizontal directional drilling is proposed, the risk level of discharge of drilling materials (inadvertent return or release (IR)) to the stream should be considered. For Group 2 and 4 streams additional consideration should be given to the risk of an IR occurring. Some factors that are beneficial to consider include, but are not limited to: 1) the proposed drilling depth of the pipe beneath the waterbody; 2) engineering and/or geologic evaluations (geotechnical analyses); 3) entry and exit locations for the pipe; 4) prior experience on nearby HDDs or similar projects that the applicant has performed; and 5) the diameter and length of pipe proposed for installation. Information on these factors may be requested by relevant regulatory agencies, thus consideration by project proponents can streamline consultation and coordination. It is generally beneficial to provide an IR response plan along with an analysis on the potential for such an event to occur. Pipelines that may be subject to Nationwide Permit 12, West Virginia Water Quality Certification, are required to have an Inadvertent Return Contingency Plan certified by a West Virginia Professional Engineer. Reference information provided below.

4.1 Reference IR Information:

A contingency/IR response plan¹ should include contact information for:

1. USACOE: Pittsburgh District (412-395-7155); Huntington District (304-399-5210)
2. WVDEP Emergency Spill Line: (800-642-3074)
3. USFWS West Virginia Field Office (if Group 2 or 4): (304-866-3858)
4. Nearest downstream municipalities
5. WVDNR, Environmental Coordination Program: (304-637-0245)

Relevant Information to be available for reporting:

1. Extent of the IR
2. Volume of discharge
3. Safety Data Sheets (SDS) of additives to drilling fluids
4. Coordinates for the IR
5. Photo documentation provided by the environmental inspector

(Reference IR cont.)

Suggested information to be included in the plan:

1. Environmental Inspector will be on site during all boring
2. Provide information on availability of recovery equipment and containment materials (for example, distance/time to nearest vac truck)
3. Plan for containment of released materials, and disposal of recovered materials

5.0 Water Withdrawals

Water withdrawals that do not impact the stream bottom may not require mussel surveys. Some water withdrawals may fall under the purview of the WV Department of Environmental Protection; please check the project specific requirements. The WVDNR does offer technical assistance for water withdrawals when wildlife issues are of concern. It is recommended that water withdrawals on Group 2 streams include early coordination with the USFWS to address any federally listed species issues in the planning phase. A monitoring plan and evaluation of areas that could be affected by the water withdrawal is recommended even if not required. The recommendations in section 5.1 were created in part due to incidences of channel dewatering resulting in the stranding of mussels. Withdrawal locations planned to be in place for greater than five years are considered permanent and may require a mussel survey.

Water Intake Nearshore

These are water intake structures associated with the stream edge. Those that extend into the stream greater than 2.5m would be covered under waterline/pipeline of the WV Mussel Survey Protocol. If work is not from the shore, spudding must be addressed. See Spudding in the WV Mussel Survey Protocol.

¹ For mussels, WVDNR and potentially the USFWS need to be notified only for IR's that occur within or near aquatic environments.

5.1 Recommendations for Water Withdrawals in Mussel Streams

These recommendations are made for oil and gas operations specifically due to the relatively large volume of water withdrawn for horizontal well fracking, and to reflect WVDEP's specific identification on this class of withdrawal, but we recommend they be applied to all water withdrawal activities. The following recommendations were produced to offer general advice that can be applied anywhere in the state to offer protection to freshwater mussels in all streams unless further study determines otherwise. These recommendations are created to give what we consider to be a liberal safety factor for most relevant streams, and do not represent WVDNR right-of-entry permit conditions. The variability in stream conditions (size and flow requirements) and availability of real time data between watersheds may affect management decisions. WVDEP's water withdrawal tool (<https://tagis.dep.wv.gov/wwts/>)

- Water withdrawals should cease if the water stage is 5 inches above, or if water flows reach a level 25% above the WVDEP recommended passby flow (WVDEP Water Withdrawal Tool). A staff gauge should be installed at the nearest downstream riffle and zeroed at the passby flow value. Once flows drop to 5 inches above this point or 25% above passby flow, withdrawals should cease. Note: Where site-specific data on stream flows are available, these data should be used to refine the height and appropriate passby flow accordingly.
 - For non-oil and gas withdrawals we recommend that withdrawals cease when flows have reached 25% above WVDEP's water withdrawal tool's posted minimum flow.
- The staff gauge(s) and/or WVDEP Water Withdrawal Tool should be checked daily before withdrawing water to ensure adequate flow (as described above).
- Regardless of flow, water withdrawals should cease if stream temperature reaches 27° C at 16:00 hours. Temperature will be monitored at the nearest downstream riffle and should be checked daily prior to withdrawing water. Withdrawals may resume when subsequent checks at 16:00 hours indicate water temperature has remained below 27° C.
- Water withdrawers should exercise caution and use common sense, particularly during drought or extended dry conditions, or in cases where multiple users may be withdrawing water from the same source.