

**KENTUCKY DIVISION OF WATER**  
**GUIDELINES FOR ONE-STEP REMOVAL OF STREAM FLOW OBSTRUCTIONS**

**PURPOSE**

Log jams, fallen trees, sediment (silt, sand and/or gravel), debris, garbage and other materials can build up and obstruct flow in ditches, streams, culverts and under bridges during periods of heavy rainfall. These obstructions may create an increased risk of flooding, property and infrastructure damage, and increased erosion and sedimentation. Although excessive amounts of these materials may obstruct flow, it is important to remember that natural debris and sediment play important roles in aquatic ecosystems. Obstruction removal is only a temporary fix unless the long-term sources of materials are addressed. If done improperly or excessively, obstruction removal operations and activities may have negative impacts on-site as well as upstream and downstream.

This document is intended to provide guidance for the one-step removal of flow obstructions from streams in the Commonwealth in an environmentally sound manner. No two streams are alike, but many share common problems and characteristics, so these guidelines have been designed for broad application and are quite general. **If this guidance is applied where obstructed flow conditions exist and the one-step removal practices are followed, then 401 Water Quality Certification is not required; however anyone considering doing activities in and around streams should be aware that other federal and/or state regulations may apply.** Failure to follow these guidelines may result in violations of laws and with potential penalties and remediation actions required (401 KAR 10:031; KRS 224.70-100, 33 USC § 1341).

This guidance provides descriptions of stream obstruction conditions and one-step removal practices which involve removing materials before placing them outside of the channel and floodplain. Materials should never be stockpiled in the stream channel, stream banks or floodplain.

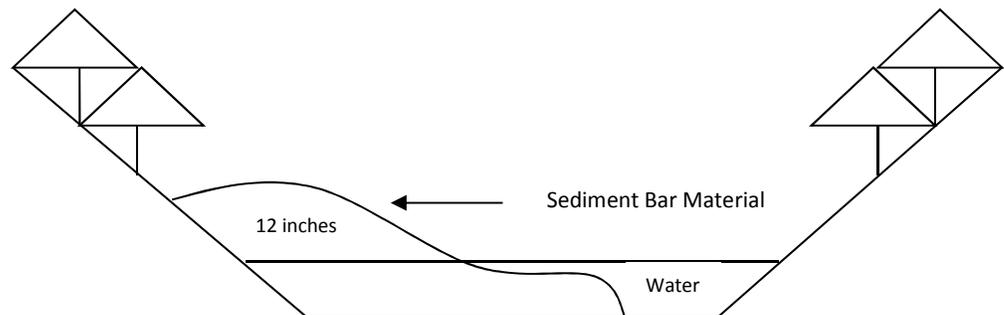
**STREAM OBSTRUCTION CONDITIONS**

- **Minor Stream Obstruction Conditions**- These obstructions may contain various amounts of debris and sediments but do not pose a risk. These materials are a natural part of stream systems and are usually washed downstream or relocated during high flow events. It is recommended that channels which have minor flow obstructions be left alone.
- **Moderate Stream Obstruction Conditions** - For large accumulations of material that span the entire width of the stream and are creating backwater effects, it is recommended that these materials be pulled or lifted out of the stream using tools such as axes, chain saws, cables, portable winches or floats. In the case of sediment removal, small machinery could be used operated from one side of the bank or other temporary access point (i.e., bridge, low-water crossing, or road).
- **Major Stream Obstruction Conditions** – For major obstructions that have created obstructed flow conditions and caused erosion and/or flooding, the use of small machinery may be the only effective way to remove obstructions. Access should occur from one side of the bank or other temporary access point (i.e., bridge, low-water crossing, or road). For areas prone to frequent obstructions, inspections should be made following high flow events.
- **Special Stream Conditions**- Stream segments that possess unique, sensitive or especially valuable biotic resources should be dealt with on a case-by-case basis and the Kentucky Division of Water must be contacted regarding authorization for the work. Examples include; areas harboring threatened or endangered aquatic species, mussel beds, spawning and rearing areas. These designated areas are listed and updated here: <http://eppcapp.ky.gov/spwaters/>.

## ONE-STEP REMOVAL GUIDELINES

To help to ensure that one-step removal activities will not negatively impact streams, we recommend the following best management practices be used:

- The material removed from the channel or floodway should be placed sufficiently upland/landward outside of the floodplain enough to prevent the runoff from re-entering streams and/or wetlands;
- The temporary or permanent disposal and/or side-casting of removed material into wetlands, stream tributaries, side ditches, or other surface water is not allowed under one-step removal and would require appropriate state and federal authorizations before the work is done;
- The removal of vegetation should be limited to the removal of dead snags, loose debris and live vegetation which obstructs stream flow. The stumps and roots of trees and/or shrubs should be left undisturbed to protect against erosion.
- Where obstruction removal is needed, access routes for efficient operation of equipment should be selected to minimize disturbance to the floodplain and riparian areas. All work should be performed outside of the flowing section(s) of the stream preferably from the bank or other temporary access point;
- All disturbed areas outside of the stream channel should be restored to original conditions, reseeded or replanted with native riparian species and mulched in order to prevent erosion and sedimentation; please refer to the following for a suggested riparian species list:  
<http://water.ky.gov/permitting/Lists/Working%20in%20Streams%20and%20Wetlands/Attachments/1/SpeciesList.pdf>;
- If necessary, equipment which can scoop or lift material out of the channel from the stream bank is recommended for this type of work as long as material is not pushed against the banks or piled in the channel;
- Activities should take place during low-flow or no flow conditions (during late summer or fall);
- Removal of materials should not be conducted during the fish-spawning season (April 15 to June 15);
- Precautions should be taken to prevent petroleum products such as lubricating, engine, or transmission oils and greases, etc. from entering surface waters. Washing, fueling, or servicing of equipment is prohibited where spillage or wash water can impact surface waters;
- For sediment bar excavation, only the material more than 12 inches above the normal water elevation should be removed.



- Agricultural operations, as defined by KRS 224.71-100(1) conducting activities pursuant to KRS 224.71-100 (3), (4), (5), (6), or 10 shall be implementing an Agriculture Water Quality Plan pursuant to KRS 224.71-145.
- The commercial excavation, removal, and sale of gravel requires a permit from the Department of Natural Resources, Division of Mine Reclamation and Enforcement, Non-Coal Review Branch. Please contact Fred Buckner at 502-564-2340 or [FredW.Buckner@ky.gov](mailto:FredW.Buckner@ky.gov). <http://dmre.ky.gov/Non-Coal%20Review%20Branch/Pages/default.aspx>;

If you have any questions about this guidance, please contact the Kentucky Division of Water, Water Quality Certification Section at (502) 564-3410 or <http://water.ky.gov/permitting/Pages/KYWaterQualityCertProg.aspx>.