



Watershed Friendly

# STREAM MAINTENANCE

**FAQ 2017**

Guidelines for **Stream  
Obstruction Removal**



# Watershed Friendly STREAM MAINTENANCE

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# INTRODUCTION

Log jams, fallen trees, sediment (silt, sand and/or gravel), debris, and other materials can build up and obstruct flow in ditches, streams, culverts, and under bridges during and after periods of heavy rainfall. These obstructions may create an increased risk of flooding, property and infrastructure damage, and result in erosion and increased sedimentation. Removing stream obstructions is a temporary solution; streams naturally deposit sediment and form meanders during periods of high flow.

Natural debris and sediment play important roles in aquatic ecosystems. If done improperly or excessively, removing stream obstructions may have negative impacts on-site, upstream, and downstream of where the obstructions are being removed. The answers provided in this FAQ outline common best practices for stream obstruction removal.



# FREQUENTLY ASKED QUESTIONS

## **Do I need a permit to remove stream obstructions?**

If the best practices outlined in this FAQ are followed, no. Be aware that depending on the type of work being done, other federal, state and/or local regulations may apply. Failure to follow these best practices may result in potential penalties and remediation actions. ↩

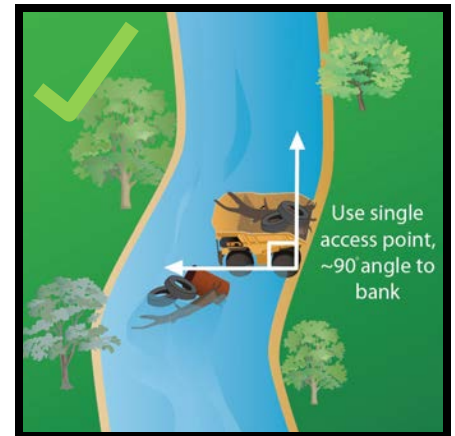
## **Why do we remove obstructions from streams?**

Often after floods loose debris, vegetation, and dead trees will collect in bridges and culverts and obstruct stream flow. This debris should be removed to ensure the stability of bridges or culverts and to maintain flow through the structure. ↩

# FREQUENTLY ASKED QUESTIONS

## What is the best way to remove obstructions from streams?

Obstruction removal should be done from the stream bank or a nearby bridge. Equipment (bulldozers, tractors, front end loaders, etc.) should not be driven into the stream. If working from the bank is impossible, efforts to minimize disturbance of the riparian zone and the stream bed should be made. Use equipment with rubber tires and limit access to a single perpendicular (90 degree) crossing. Major disturbance of the bank or stream bed may require a permit.



Access the stream from a single point.

## How should you access streams?

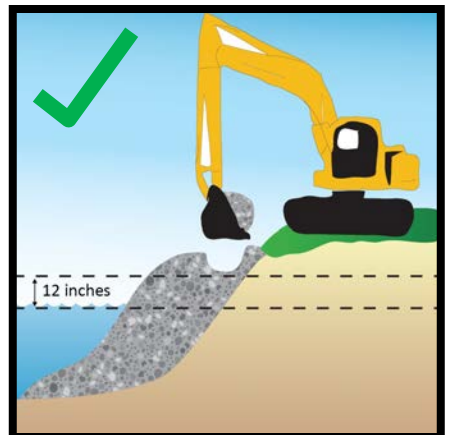
Use overland travel as much as possible and limit the number of access points to the stream bed. **Do not use the stream as a road.** If you create an access road, state and local floodplain permits and a 401 water quality certification may be required. For more information on floodplain permits and 401 water quality certification requirements, contact the Kentucky Division of Water at (502) 564-3410 or [water@ky.gov](mailto:water@ky.gov).



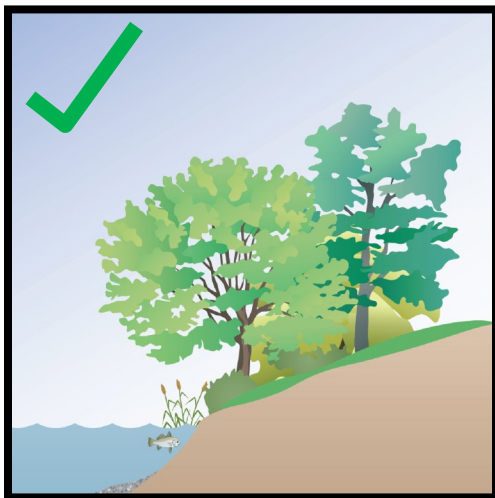
Do not use the stream as a road.

## What is the best way to remove gravel and gravel bars from streams?

Removing gravel out of the stream channel should be done from the stream bank or a nearby bridge. Limit gravel excavation to areas outside of normal stream flow. Gravel should only be removed from gravel bars. Gravel shouldn't be excavated from a stream within 12 inches above the water's surface. This material should be left so the stream bed remains stable. Materials should not be pushed or piled along the stream banks; this material is not stable and will quickly erode. Riparian buffers should be left intact and maintained for bank stability. If working from the stream bank is not possible, please contact the DOW Water Quality Certification Section at (502) 564-3410 or [water@ky.gov](mailto:water@ky.gov) for guidance.



Only excavate within 12" above the water's surface.



*Riparian zones prevent erosion.*

## What are riparian buffers and why are they important?

Riparian buffers are the grasses, shrubs, trees or other vegetation growing along streams. These plants control erosion and protect the stream from pollutants and runoff. They absorb excess nutrients such as nitrogen and phosphorus from farm and livestock operations. Plants prevent property loss from erosion by intercepting soaking up water that would otherwise wash out stream banks. This also helps reduce flooding events. Tree stumps and root wads should be left to promote bank stability. A good practice is to leave areas within 25-50 feet of the top of the stream bank undisturbed for riparian buffers.



## What can I do with the materials removed from streams?

Material removed from streams should be stored outside the floodplain and areas to the stream so that they are not washed back into the waterway in a rain event. If materials must be stored in the floodplain, a state and local floodplain permit will be required. Visit <http://watermaps.ky.gov/RiskPortal/> to see the floodplains in your area. If the removed material is going to be sold commercially, or transported out of your county, a permit from the Kentucky Division of Mine Reclamation and Enforcement may be needed. Visit <http://dmre.ky.gov/Non-Coal%20Review%20Branch/Pages/default.aspx> for more information.



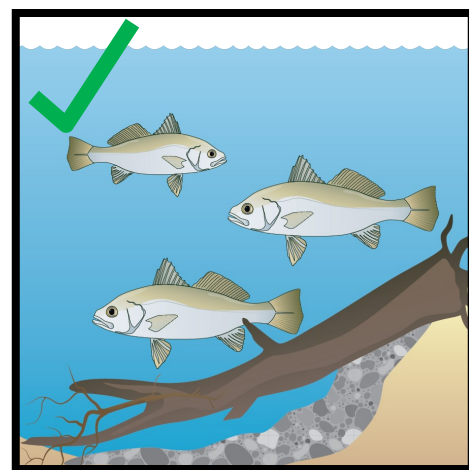
## When is the best time to remove obstructions from streams?

Conduct activities during low-flow seasons, preferably during late summer & fall. Stream obstructions should not be removed during fish spawning season (April 15<sup>th</sup>-June 15<sup>th</sup>). Woody debris create critical habitat for young fish, allowing them to find food and escape predators.



## How often can I remove obstructions from streams?

Limit the frequency of excavation to the greatest extent possible. For example, remove gravel once per year and stockpile at an upland location for future use.



*Avoid working when it may harm wildlife.*

## What should I avoid when removing obstructions from streams?

Don't straighten streams. Artificially straightened streams result in swifter flowing water, which leads to increased stream bank erosion and increased flooding to you and your neighbors. Meanders in the stream naturally reduce the energy of flowing water, especially during floods. Slower water is less likely to erode the stream bank.

Also, don't disturb critical areas such as wetlands and Outstanding State Resource Waters (OSRW). To find wetlands or OSRWs near you, visit the Water Health Portal at <http://watermaps.ky.gov/WaterHealthPortal/>.



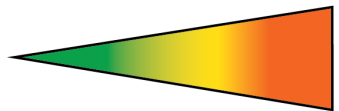
### Creek Curves



Meandering

Straight

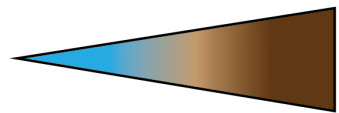
### Water Velocity



Slow

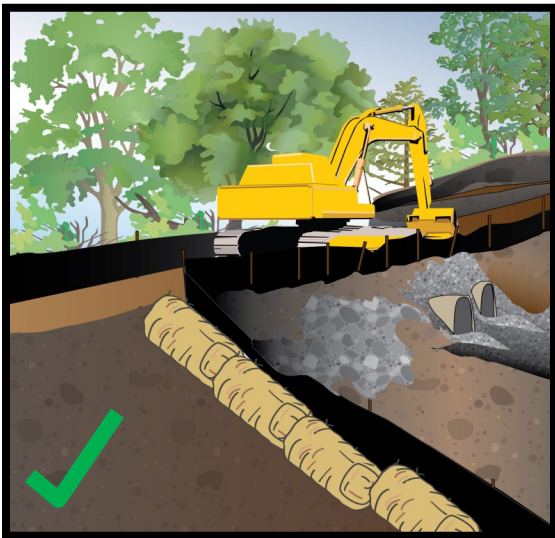
Fast

### Erosion



Low

High



*Silt fences prevent sediment from entering the stream.*

## What sediment and erosion control measures should I use when removing materials from streams?

Use temporary measures to reduce soil erosion while you are working. This can be done by placing sediment barriers to manage stormwater runoff and by seeding disturbed areas. Sediment control measures, such as silt fences or straw bales, shouldn't be placed within streams. These features should be located along the stream banks to catch sediment before it reaches the water. Permanent seeding measures should be implemented when work is complete. Another method for sediment control is bioengineering, which uses natural materials that can be left in place after construction is finished.



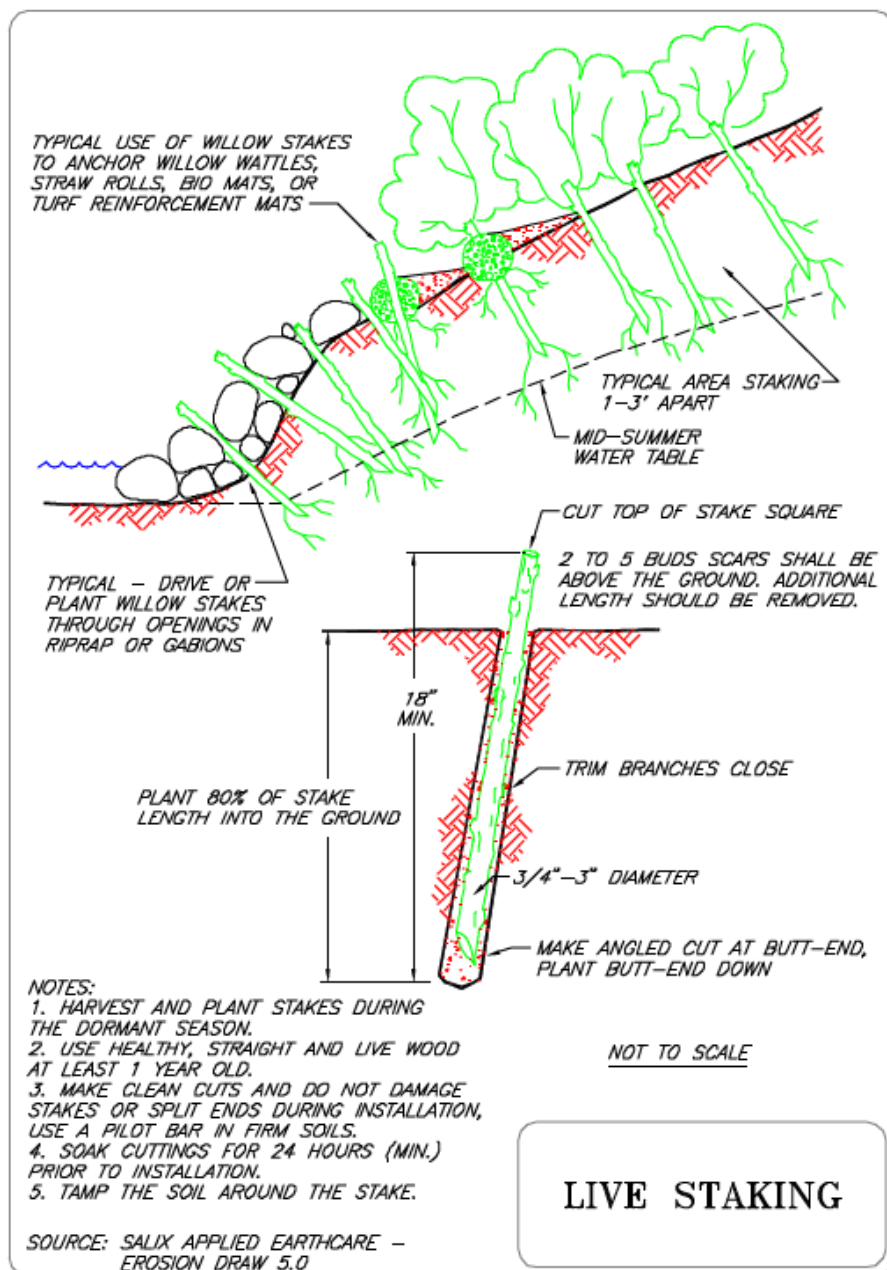
## What is bioengineering?

Bioengineering uses low-impact, biological, or recyclable materials to the greatest extent possible (e.g. mulch berms in place of silt fences). Bioengineering may also involve inserting and tamping of live, vegetative cuttings into the ground in a manner that allows the stake to take root and grow. These practices may reduce waste, reduce removal costs of sediment and erosion control measures, remove excess soil moisture and encourage bank stabilization.



## Why should bioengineering be used to stabilize stream banks?

Bioengineering can be used for repairs of small earthen slumps, gullies, and stream channels. Bioengineering methods also encourage natural plant colonization and improve the effectiveness of other stream bank stabilization measures.



An example of bioengineering used to stabilize a stream bank. For other methods that could be employed click [here](#).

# CONCLUSION

Maintaining the health of your stream is part of being a good neighbor, because what you do on your property will affect everyone downstream. And most of us are downstream of someone else! If we use these common sense practices, we can help keep our creeks healthy and ensure clean water for everyone to use.



Photo courtesy of USFW ([www.fw.ky.gov](http://www.fw.ky.gov))

## FOR MORE INFORMATION

If you still have questions about removal of obstructions from the creek and whether or not you need a permit, contact:

### **Kentucky Division of Water**

[Water Quality Branch](#)

300 Sower Blvd.

Frankfort, KY 40601

**Phone:** 502-564-3410

**Email:** [water@ky.gov](mailto:water@ky.gov)



### **Other Resources:**

[Special Use Designations for Waterways](#): Learn if your has a Special Use Designation or has special restrictions

[Water Health Portal](#): Learn more about the overall health of your stream

[401 Certification Application](#): For construction across or along a stream and/or Water Quality Certification

[Special Use Waters App](#): Log into this web application from your phone or desktop and find out what waterway you are near, and determine if it has any special protection status that would require you to obtain a permit before beginning construction.