



## Managing Debris in Streams and Rivers

Effectively managing a section of stream without impacting upstream and downstream neighbors can be challenging. Although the landowner is responsible for the stream, it is generally recommended that a stream professional be consulted. Permits may be required and you could be liable if your actions cause damage to another property.

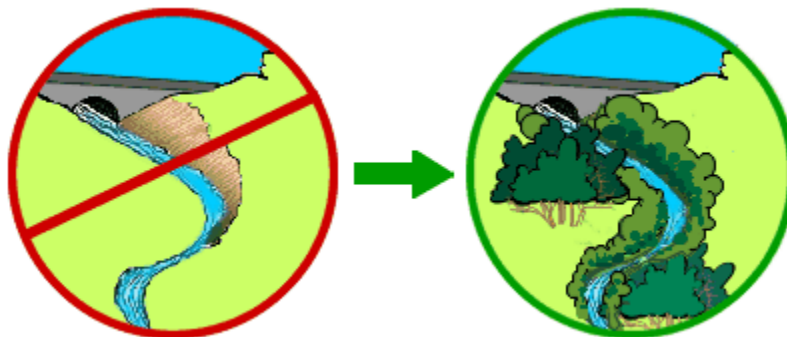
### Stream Maintenance Tips

**Be a Good Neighbor** – Keep in mind that streams are dynamic systems that adjust to changes. Disturbance in one section of a stream corridor (including the channel, banks, floodplain, riparian and upland areas) may have damaging results to other sections, both upstream and downstream.

**If trees and other natural debris in the stream** do not pose an imminent threat to stream corridor development it is generally best to leave them alone and let nature take her course.

**Keep structures and materials away from the top of the streambank**, including debris that is removed from the stream. These can wash into the stream and contribute to problems during a flood event.

**Preserve and restore streambank vegetation**, which helps hold the streambank in place and slow down flood waters.



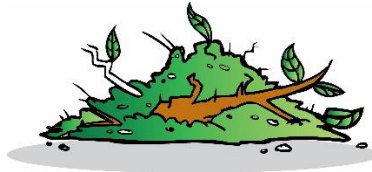
## What Types of Stream Work May be Helpful or Harmful?

If you are concerned about your stream, start by evaluating the situation. Is maintenance necessary? Keep in mind that when stream work is not properly designed, it can cause conditions to worsen in the next flood event.

**Man-Made Debris** – Tires, appliances and other garbage should be removed from streams.



**Woody Debris** – Leaves, branches and even logs are a natural part of healthy stream systems, providing nutrients and improving in-stream habitats. Woody material can also contribute to channel stability by slowing down the flow and reducing erosion. The stream may change its path to flow around an obstruction or overflow onto the floodplain more frequently. If this occurs in a location where development is not threatened, then no action is required.



**Woody Debris in Developed Areas** – Downed trees in rivers and streams are not always harmless. In developed areas, debris removal may be desired to reduce the likelihood of future problems. Trees can be removed from the stream channel when diverted flow causes flooding or erosion damage to roads, bridges and other development. However, because flooding is a natural process, any flood reduction benefits of debris removal may be minor or temporary.

**Rooted Trees** – Leaning or fallen trees can be cut if there is a concern about flooding or erosion damage or to enable recreational use. However, stumps should not be removed, as the root systems prevent streambank erosion.

**Sediment** – Sand, gravel and boulders are naturally carried downstream during high flow events. Excess sediment is generally a consequence – rather than the cause – of an unstable stream system. Material should not be removed from the bed or banks of a system without evaluation and guidance by a stream professional.



**Beaver** – Beavers and their dams alter the local environment, creating ponds and wetlands that are generally beneficial for water quality, downstream flooding and wildlife. However, when their engineering projects threaten development, it may be desirable to undertake actions to discourage or remove beavers.



**Streambank Vegetation** – Whenever possible, preserve natural vegetation near a stream. The root systems hold the soil in place – preventing bank erosion – and the plants slow down the water during high flows- reducing the potential for erosion and downstream flooding. It may be beneficial to plant trees and other plants on streambanks and riparian areas, especially native species.

## IS A PERMIT NEEDED?

Regardless of who owns a stream various government entities retain police power over activities that may impact navigation, public safety, the environment or the rights of property owners.

**New York State** – A New York State Protection of Waters Permit is required for temporary or permanent disturbance of the bed or banks of classified streams. Using heavy equipment on the bed or banks of a “protected stream” (within 50 feet) generally constitute a disturbance and requires a permit. A permit is generally not required to remove trees or debris with hand equipment or to pull it out with machinery that is located away from the streambank. A DEC Permit is required for many actions near levees and other flood control lands. Regulated activities include new or altered structures, destruction of vegetation, adding gutters, paving, outdoor lighting, operation of a motor vehicle or snowmobile and other activities. A permit will be required for the removal of nuisance beavers or disturbance of a beaver dam.

**Federal** – A Federal Permit may be required if mechanized equipment will be used in or adjacent to “Waters of the United States”, including dredging, filling, excavating, land clearing, ditching, stream channelization and relocation, shore protection and dock construction.

**Municipal** – Excavation, fill and any other development activities in a FEMA-designated floodplain require a Floodplain Development Permit from the local municipality. Other local land use regulations may also apply.

## WHO CAN HELP?

Resources include:

New York State Department of Environmental Conservation  
US Army Corps of Engineers  
USDA Natural Resources Conservation Service  
Town and Village of Harrison Engineering Department



