

State of Vermont  
Operations Division

Main Line: 802-828-2587

Web: <http://www.aot.state.vt.us/maint/Operations.htm>

Agency of Transportation

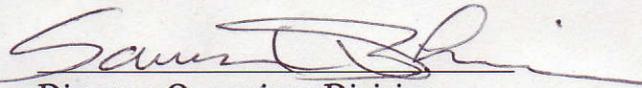
One National Life Drive

Montpelier, VT 05633-5001

Best Management Practice: "RIPARIAN BUFFER TREE & BRUSH REMOVAL"

Effective Date: 12-10-2007

VTrans Authorized Signature:



Director, Operations Division

## VTRANS STATE HIGHWAY SYSTEM RIPARIAN BUFFER TREE & BRUSH REMOVAL BEST MANAGEMENT PRACTICES (BMPs)

These standards are applicable only to the VTrans State Highway System.

Riparian Areas are defined for the purpose of implementing this BMP as the area from the water's edge up the bank slope and typically 50 ft from the top of the water body slope inland (see figure 1). These areas provide necessary shade to lakes, rivers, and streams, stabilize shorelines, prevent erosion and provide important habitat for fish, birds, amphibians, reptiles and water-dependent mammals. Protection of riparian areas in their natural state is important to maintain and improve water quality and the ecological health of Vermont's waterways. Refer to Appendix A for more information regarding the definition and benefits of riparian areas.

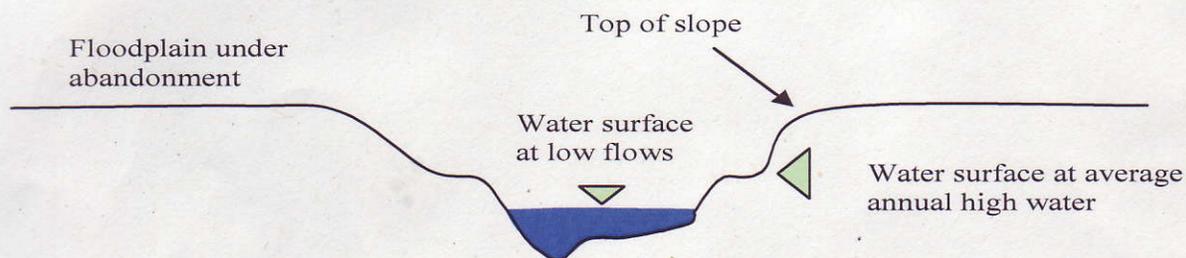


Figure 1: The top of slope is a break in slope adjacent to steep-banked streams that have little or no floodplain; or a break in slope where the side slopes adjacent to an incised, or deeply cut, channel meet floodplains that have been abandoned or are undergoing abandonment (see illustration above)

## **PURPOSE**

The VTTrans State Highway System Riparian Buffer Tree and Brush Removal BMPs are intended to guide vegetation management activities in Riparian Buffers in order to:

Minimize all cutting within riparian areas (as defined above) recognizing that there are situations where trees and brush must be removed because they present a safety hazard or interfere with the function, maintenance or repair of transportation infrastructure.

## **GUIDING PRINCIPLES**

The BMP has several guiding principles:

- Create consistent requirements throughout the state;
- Form the basis for contractor specifications;
- Limit vegetation management and removal activities only to those areas where it is necessary for the safety of the traveling public and long-term infrastructure protection;
- Create mechanisms and standards for addressing environmentally sensitive areas – riparian areas, steep slopes, wetlands, rare and endangered species and their habitats, unique natural areas, and certain wildlife habitats;
- Create provisions for areas of special landscape treatment;
- Long term sustainable landscape vegetation management minimizing the need for excessive management.

## **VTRANS WILL PRACTICE ENVIRONMENTAL STEWARDSHIP OF RIPARIAN AREAS UNDER THE AGENCY'S CONTROL BY IMPLEMENTING THE FOLLOWING BMPs:**

### **TREE REMOVAL**

VTTrans will retain all riparian area trees – those on the bank or within 50 ft. of the top of the bank - unless those trees:

1. Are considered hazardous and pose a safety threat due to their poor health or other conditions that will cause them to fall all or in part on humans or facilities;
2. Potentially affect a bridge structure or culvert as described in the Bridge and Culvert Section below;
3. Overhang and shade the roadway thus exacerbating icing and interfering with winter maintenance;
4. Constitute a highway “clear zone” hazard;
5. Affect the line of sight for the traveling public.

VTTrans will coordinate with the Agency of Natural Resources (ANR) stream engineers (see contact information in Appendix B) when removing riparian area hazardous tree(s) that do not affect a bridge or culvert as described below, overhang the roadway, constitute a clear zone hazard or impact the line of sight for the traveling public. Hazardous and all tree and brush removal under these conditions will be at VTTrans' discretion.

When removing mature riparian area trees over twelve inches diameter at breast height (dbh), the Operations Division will coordinate with the VTTrans Operations Environmental Coordinator (EOC) and the VTTrans Regional Environmental Specialist (RES) to determine appropriateness of replanting two native seedlings/cuttings for every tree removed. The VTTrans EOC and RES will ensure that the replanted trees will not pose a future threat to structures and roadways.

Downed trees in the waterway will not be removed unless they pose a threat to transportation infrastructure, exacerbate hazardous flooding conditions or block the inlet or outlet of culverts carrying perennial streams.

#### **BRUSH REMOVAL**

Riparian area brush (shrubs and tall herbaceous plants) will be left in place unless the brush interferes with the proper functioning of the roadway, including compromising the line of sight for the traveling public and other safety issues; causes a fire hazard; or involves noxious or invasive weeds as described in the Invasive Species Section of the BMP. Brush removal requiring the use of herbicides will be under the jurisdiction of appropriate Agency of Agriculture permits.

#### **BRIDGES AND CULVERTS**

Riparian area trees and brush adjacent to abutments and piers and other bridge and culvert members will be removed when necessary to undertake bridge and culvert maintenance activities, prevent water retention and/or deterioration of the bridge or culvert. Limb trimming may also be necessary during bridge inspections. All other non-hazardous trees and brush, not within the roadway clear zone, will be retained, unless there is interference with sight distance, shading of the structure and/or roadway, and/or the presence of a noxious or invasive weed as described in the Invasive Species Section of the BMP.

#### **MOWING**

This section is under development and will be finalized in the next 3 months and will be incorporated by reference upon its completion.

#### **INVASIVE SPECIES**

This section is under development and will be finalized in the next 6 to 9 months and will be incorporated by reference upon its completion.

#### **GUARD RAIL MAINTENANCE**

This section is under development and will be finalized in the next 6 to 9 months and will be incorporated by reference upon its completion.

END

**VTRANS STATE HIGHWAY SYSTEM  
RIPARIAN BUFFER TREE & BRUSH REMOVAL  
BEST MANAGEMENT PRACTICES (BMPs)**

**SEE ATTACHMENTS:  
APPENDIX A  
APPENDIX B**

## RIPARIAN AREA DEFINITION AND BENEFITS

Riparian areas are comprised of streams, rivers, lakes, wetlands, and floodplains that form a complex and interrelated hydrologic ecosystem. Riparian areas extend up and down streams and along lakeshores, from the bottom of the water table to the top of the vegetation canopy, and include all land that is directly affected by surface water.

Because of the dynamic nature of riparian areas, they support a wide variety of plant and animal communities. These communities form an interconnected food web that includes insects, reptiles, amphibians, fish, plants, waterfowl, songbirds, bats, mink, and otter. Healthy riparian areas support species that inhabit them as well as species that use the lakes and streams near them, including those species that use the water only at certain times during their life cycles, such as during breeding or migration.

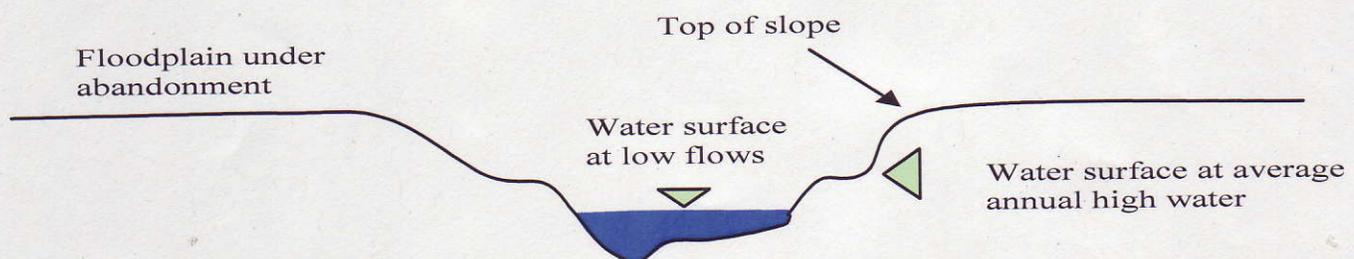
Besides being important plant and animal habitat, riparian areas also contribute to the health of adjacent waters. Downed wood, leaves, and other organic material from riparian areas contribute to aquatic systems as a component of the food base and habitat structure in Vermont's water bodies. Riparian area mature trees shade aquatic habitats, thus reducing water temperatures, and filter overland runoff to protect water quality. Riparian vegetation also stabilizes lakeshores and stream banks, thus preventing excessive erosion and sediment buildup in aquatic habitats.

Riparian areas protect water quality for drinking and recreation, protect public and private investments from flood and ice flow damage, and provide for recreation and education opportunities.

Conserving riparian ecosystems supports the following functions:

- Protection of water quality and aquatic habitats;
- Providing habitats for terrestrial wildlife, including travel and dispersal corridors;
- Supporting significant natural communities and adjacent wetlands; and
- Protecting channel-forming processes and channel stability.

The top of slope is a break in slope adjacent to steep-banked streams that have little or no floodplain; or a break in slope where the side slopes adjacent to an incised, or deeply cut, channel meet floodplains that have been abandoned or are undergoing abandonment. See illustration below



## VERMONT RIVER MANAGEMENT CONTACTS BY REGION

[ refer to Vermont DEC web page for latest contact information  
[http://www.anr.state.vt.us/dec/waterq/rivers/htm/rv\\_management.htm](http://www.anr.state.vt.us/dec/waterq/rivers/htm/rv_management.htm) ]

### Department of Environmental Conservation Stream Engineers:

- Chris Brunelle, 802-879-5631, [chris.brunelle@state.vt.us](mailto:chris.brunelle@state.vt.us), Department of Environmental Conservation Essex Regional Office, 111 West St. Essex Junction, VT 05641-4266
- Patrick Ross, 802-476-2679, Cell: 802-279-1143, [patrick.ross@state.vt.us](mailto:patrick.ross@state.vt.us), Department of Environmental Conservation Barre Regional Office, 5 Perry Street, Barre, VT 05641
- Fred Nicholson, 802-786-5906, [frederick.nicholson@state.vt.us](mailto:frederick.nicholson@state.vt.us), Department of Environmental Conservation Rutland Regional Office, 450 Asa Bloomer State Office Building, Rutland, VT 05701

