

# Best Management Practices for Woody Debris in Riparian Areas of Salmon Bearing Streams of the Lagunitas Creek Watershed DRAFT August 2006

The natural recruitment of woody debris into a creek is a long-term and self-sustaining process which supports habitat diversity and species abundance. The best way to promote this process is to allow nature to take its course with minimal disturbance. That being stated, it is acknowledged that the lands of the Lagunitas Creek watershed serve purposes beyond the preservation of nature, including, but not limited to, residences, watershed protection and management for water supply, recreation, transportation, and agriculture.

The following best management practices are understood and agreed on by all parties to be used as guidelines for the development of a self-sustaining system for the natural recruitment and treatment of woody debris in salmon bearing streams of the Lagunitas Creek watershed. For further information, please call MMWD at (415) 945-1193.

## PRIORITIZATION

The highest priority use for woody debris and potential woody debris (standing trees) in riparian areas is for stream habitat enhancement.

## DEFINITIONS

**Downed Wood** - Any fallen tree or woody pieces of any size in one of the three Zones described below (includes Large Woody Debris, Small Woody Debris and Debris Jams).

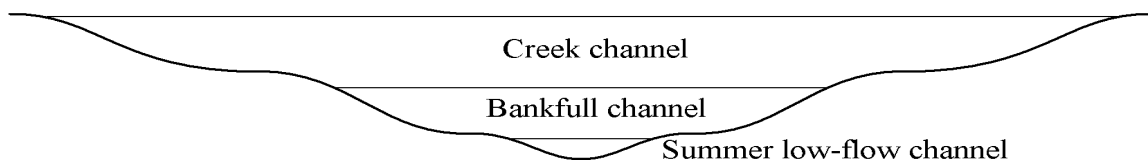
**Large Woody Debris** - downed wood in one of the three Zones described below that is:

- a) greater than 12 inches in diameter, at any point, and at least ten feet long including rootball, if attached; or
- b) of any size when attached to a rootball or stump greater than three feet in diameter.

**Standing Trees** - Live or dead trees in one of the three Zones described below (i.e. potential large woody debris).

## ZONES

**Creek Channel Zone** - The area between the left and right banks of a creek including the wet channel, gravel bars, and vegetated islands. In many cases this is larger than what is traditionally known as the “bankfull” channel (see drawing).



**Riparian Zone** – the area on either side of the creek channel which includes the floodplain (the area adjacent to the creek channel that could be inundated by high stream flows of any magnitude and transport woody debris into the creek) and extends 200 feet upslope beyond the floodplain. (See Appendix A for a general guide to the area in question.)

**Kent Lake Zone** –the area around Kent Lake where large woody debris can be collected for use as stream habitat enhancement.

## **BEST MANAGEMENT PRACTICES**

The treatment of “Standing Trees,” “Downed Wood” and “Large Woody Debris” is here divided into four categories – Standing Trees in the Riparian Zone, Downed Wood in the Riparian Zone, Wood in the Creek Channel, and Wood in the Kent Lake Zone

### **STANDING TREES IN THE RIPARIAN ZONE:**

Standing trees greater than 12 inches diameter breast height (DBH) for hardwoods and six inches DBH for conifers, and within the riparian zone as defined above, and including the uphill sides of roads and trails, should not be felled.

However, a standing tree of this size and in this zone may occasionally cause concern for safety because it is diseased or old. If so, a registered professional forester or similarly accredited professional should determine in writing that the tree poses an imminent threat to public safety and recommend a course of action. If such a tree must be cut, and is downhill from a road or trail, every effort should be made to fell it toward the creek and leave it as intact as possible. If such a tree is on the uphill side of a road or trail, it should be placed as intact as possible at a safe and accessible site until its usefulness as stream enhancement can be determined; if it is determined that the tree is not useful for this purpose, it shall be moved to the downslope side of the road/trail and released in a safe manner. If none of the above is possible, see “Unusual Situations and Emergencies.”

### **DOWNED WOOD IN THE RIPARIAN ZONE**

Downed wood, within the riparian zone, should not be cut or moved.

However, downed wood in this zone may occasionally block access to a road or trail. If so, a step by step process to determine the best course of action should be followed:

- 1) Treat wood that is lying partly in the creek channel as ‘Wood in the Creek Channel’ which is discussed in the next section, or
- 2) Move wood, intact, out of the way and towards the creek, or
- 3) Cut the minimal number of branches to clear the obstruction, or
- 4) For trails, reroute the path around the wood, or
- 5) For trails, cut steps into the wood or construct steps over the wood to provide access.

If none of the above is a possible way forward, then see “Unusual Situations and Emergencies.”

### **WOOD IN THE CREEK CHANNEL**

Any and all wood in the creek channel (standing trees, downed wood, large woody debris, small woody debris and debris jams) should not be cut or moved.

However, a piece of wood or a debris jam in the creek channel may occasionally cause concern for public facilities by way of threatening bank stability, public safety or obstruction of roads or trails. If so, see “Unusual Situations and Emergencies.” Moving or removing such wood may require consultation with, or a permit from, the US Army Corps of Engineers, the SF Bay Regional Water Quality Control Board, and/or a Lake or Streambed Alteration Agreement from the California Department of Fish and Game.

### **WOOD IN THE KENT LAKE ZONE**

Any and all wood in the Kent Lake Zone should be assessed for its potential as large woody debris, which should be prioritized for stream habitat enhancement using above guidelines modified to facilitate transport.

## UNUSUAL SITUATIONS AND EMERGENCIES

Any discrepancy between the Woody Debris MOU, including these Best Management Practices, and an agency's preferred plan of action should be resolved through the following steps:

- 1) Identify the problem and its urgency;
- 2) If the problem is an immediate emergency or professional consultation is unavailable (see #3) before the problem is likely to become an immediate emergency, then follow the Fish4C guidelines (Appendix B); if otherwise, then
- 3) Call for a team of appropriately qualified professionals (Appendix C), consisting of a minimum of at least one individual from each of at least two signatory or resource agencies to make a recommendation.
- 4) Clarify the plan of action.
- 5) Document the problem, consultation (if any) and course of action taken.
- 6) Contact the MMWD Fisheries Department at (415) 945-1193 and provide the following information: the size and type of log relocated, presence of a rootball, and final location of log.

## FURTHER READING

*The Ecology and Management of Wood in World Rivers*, eds. Gregory, Boyer and Gurnell. This book is a collection of papers on the importance, function and management of wood in rivers and the riparian corridor. MMWD Fisheries Department has a copy of this book.

*Guidelines for Protecting Aquatic Habitat and Salmon Fisheries for County Road Maintenance (Dec 2004)*. FishNet4C. This document has a section on woody debris with accompanying best management practices for creeks alongside roads. It can be downloaded at:

[http://www.fishnet4c.org/projects\\_roads\\_manual.html](http://www.fishnet4c.org/projects_roads_manual.html)

## APPENDIX A

### Maps of the Lagunitas Creek Watershed

## APPENDIX B

### FishNet4C Guidelines for Managing Woody Debris

## APPENDIX C – Professional Resources

### Marin Municipal Water District

Eric Ettliger, Aquatic Ecologist	(415) 945-1193
Gregory Andrew, Fishery Program Manager	(415) 945-1191
Michael Swezy, Resource Specialist	(415) 945-1190

### County of Marin

Liz Lewis, Stormwater Program Administrator	(415) 499-7226
Kallie Kull, Senior Planner	(415) 499-6532

### California Department of Parks and Recreation

Dave Boyd, State Park Resource Ecologist	(707) 769-5665 x223
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### National Park Service

Brannon Ketcham, Hydrologist	(415) 663-8522
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### San Francisco Bay Regional Water Quality Control Board

Leslie Ferguson, Civil Engineer	(510) 622-2344
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### California Department of Fish and Game

Bill Cox, Fisheries Biologist	(707) 823-1001
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