

**BEST MANAGEMENT PRACTICES FOR  
ENVIRONMENTAL AND HABITAT PROTECTION  
DURING OPERATION AND MAINTENANCE OF  
RECREATIONAL BOATING FACILITIES**



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## **PREFACE**

This document lists methods and techniques, collectively known as best management practices (BMPs), that can be utilized to avoid or reduce impacts to habitat areas and the natural environment due to operations and maintenance of recreational boating facilities.

These BMPs are based on information and experience gained from hundreds of public boating facility projects completed in Oregon. Because boating facilities primarily serve as transition points between land and water, these sites are often located in or near important riparian or nearshore habitat areas. Through careful planning and project implementation recreational boating facilities can be maintained without unnecessarily harming fish or wildlife habitat areas.

These BMPs are recommendations of practices that are generally beneficial at most sites. Site-specific measures are required to reduce impacts of each facility on natural resources. To select appropriate BMPs, operators will need to consider the specific actions and consequences included in each project. Operators may need to employ other BMPs that are not listed here to provide adequate environmental protection.

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## **RAMP CLEANING**

This activity includes sweeping and flushing of ramps, access roads and maneuver areas to remove sediment and debris. This action includes use of equipment for cleaning and debris removal including loading, hauling, and disposing of excess materials. This activity is performed in all weather conditions.

### Best Management Practices for Ramp Cleaning

- When appropriate, material removed during cleaning should be disposed of above the bank line and not in any waterway or wetland.
- Recycle excavated material when feasible.
- Where feasible and appropriate evaluate and modify future ramp designs to minimize sedimentation and promote self-cleaning.
- Erosion control devices such as silt curtains, sediment fences, and other acceptable techniques, should be used when the potential exists for sediment or other materials to enter the waterway.
- Material with a potential for negative impact to aquatic habitats, e.g. silt or contaminated sediments, should be removed to an appropriate upland location for disposal or treatment.
- Materials that may be beneficial to aquatic habitats, e.g., gravel or large wood, may be retained in the stream system provided such material does not threaten downstream property or structures.
- No perennial vegetation should be removed during cleaning.
- Coordinate with waterway permitting agencies (Corps of Engineers and DSL) when performing work below ordinary high water.

## **EROSION REPAIR**

This action involves repairing water damage to boat ramps, stream banks and cut slopes, including placement of material to protect the ramp or related structures and to stabilize the site. Repairs may also include regrading to restore established slope and contours. In-water work may include, but is not limited to, excavation of a toe trench and replacement of riprap, rock or other materials that have been lost to erosion.

### Best Management Practices for Erosion Repair

- Where practicable the volume of material used in the repair should not exceed the volume of material lost to erosion (below bankfull stage). Increases in the bank profile that may restrict or impede high flows should be avoided.
- Replacement of riprap in non-emergency situations should occur during the established ODFW in-water work periods, as noted in Oregon Guidelines For Timing of In-water Work, or as directed by the district fish biologist having jurisdiction over the site.
- Emergency repairs should be coordinated with the Corps of Engineers, Division of State Lands, ODFW, National Marine Fisheries Service and U.S. Fish and Wildlife Service whenever possible.
- Erosion repair work should include use of bioengineering solutions in locations above ordinary high water where success is probable and the safety of structural elements are assured.
- Any erosion repair activities that cause significant changes in the topography or vegetation within the riparian management area should be coordinated with appropriate resource agencies.
- Materials removed during repairs should be disposed at appropriate upland sites.
- Appropriate erosion control methods should be applied, including mulching and seeding with non-invasive species, installing silt fences and installing other erosion control devices as necessary.

## **EMERGENCY MAINTENANCE**

This action includes repairing damage to boat ramps, access roads, maneuver areas and adjacent stream banks caused by storms, floods, and other activities. These actions are considered to be emergencies, regardless of official declaration or specific regulatory definition, if, in the opinion of the project engineer or other qualified professional, failure to perform these activities may result in immediate threat to life, limb or structures.

### Best Management Practices for Emergency Maintenance

- The owner should provide quick response and first inspection, and notify appropriate resource staff in a timely manner.
- In coordination with ODFW and/or appropriate resource agencies, the owner should repair any damage to fishery or water resources caused by the owner's responses to the emergency.
- Additional impacts to wetlands or streams should be avoided where possible.
- To the extent possible, adequate erosion control or bank stabilization should be provided to keep soil or streambank material from entering watercourses.
- Remedial actions for emergencies should include bioengineering and fish friendly designs, where practicable for stability and safety.

## **BOAT RAMP REPAIR**

This action includes minor repairs to the boat ramp or related features necessary for public safety, protection of the resource and to maintain boating access. Repairs may include in-kind damage repair, replacement of deteriorated components, or correction of structural defects.

### Best Management Practices for Boat Ramp Repair

- Specific sites should be evaluated for alternatives to repair, such as replacement, relocation or decommissioning.
- Where practicable, the size of the ramp should be evaluated, and if appropriate, modified to minimize disturbance to the waterway.
- When possible, repairs should be made during periods of low water or during low tide to minimize inwater work. All inwater repair work should be completed during the ODFW approved inwater work period.
- Sediment and erosion control devices should be employed to protect water resources, when appropriate.
- Vegetation Removal/Replacement BMPs (see below) should be incorporated into this activity to minimize impacts on riparian areas.
- The repairs should be planned and implemented using best available technologies to minimize environmental and habitat impacts and to avoid significant adverse modification of the aquatic system.
- Bioengineering solutions should be considered as a means to minimize riprap use in locations above ordinary high water where success is probable and the safety of structural elements are assured.
- Repairs should be completed using equipment having the least impact.
- Work should be done from the top of the bank or a floating barge, when practicable. Heavy equipment use within the active flowing channel should be avoided.
- Care should be taken to prevent any petroleum products, chemicals, or deleterious materials from entering the water during construction.
- The applicant should take all practicable steps to control erosion during construction and establish permanent erosion protection upon completion of the work.

- ☐ Excavated materials should be disposed of at an off-site, upland location.
- ☐ Only clean, suitable material should be used as fill. Fill material should be placed, not randomly dumped.
- ☐ No fill should be placed in spawning areas or areas with submerged aquatic vegetation as part of this project.
- ☐ Temporary fills should be entirely removed and the site restored to pre-existing elevation.
- ☐ Ramp structures in this project should use only steel or concrete construction materials.
- ☐ Wood treated with oil-borne preservatives such as copper naphthenate or creosote solutions, or other environmentally harmful substances should not be used in the construction of inwater structures.
- ☐ No uncured concrete should be allowed to enter the water.
- ☐ Construction impacts should be confined to the minimum area necessary to complete the work.
- ☐ Damaged areas should be restored to pre-work conditions, including use of native plant species where appropriate.
- ☐ Coordinate with waterway permitting agencies (Corps of Engineers and DSL) when performing work in wetlands or below ordinary high water.

## **VEGETATION REMOVAL/REPLACEMENT**

### Best Management Practices for Vegetation Removal/Replacement

- ☐ Vegetation removal should be confined to the smallest portion of the project area necessary for completion of the work.
- ☐ To the maximum extent practicable, riparian vegetation should be protected during construction.
- ☐ The species and location of trees to be replanted should be similar to the trees removed to ensure restoration of watershed functions. Further, the location of the replanted trees should be chosen to ensure that they do not pose a future threat to public safety or the facility.
- ☐ When practicable, vegetative material including plants and topsoil containing seeds, roots, tubers (i.e., the "seed bank") should be salvaged and stockpiled for use in site restoration after the project is completed.
- ☐ Project limits should be clearly marked to avoid unnecessary ground disturbance.
- ☐ Only vegetation within 20 feet of the construction limits should be removed. All other vegetation not within the construction area should be left in its current condition, unless the vegetation interferes with site access or if the vegetation is a noxious weed.
- ☐ Removal of mature trees (> 12 inch dbh) providing shade or bank stabilization within the riparian area of any waterway should be coordinated with ODFW or other appropriate regulatory agencies.
- ☐ In the event removal of mature trees (> 12 inch dbh) is necessary in riparian areas, two seedlings should be replanted for each tree removed.
- ☐ Trees identified by a qualified forester or appropriate resource agency staff as danger trees and any other vegetation that threatens the project, downstream structures, or public safety should be removed prior to construction.
- ☐ Only healthy trees and shrubs meeting or exceeding ANSI Z60.1, American Standard for Nursery Stock, should be used for vegetation replacement.
- ☐ Planting methods should conform to ODOT's 1996 Standard Specifications, Section 01040 - Planting, or the equivalent section of the latest version of ODOT's Standard Specifications.
- ☐ Disturbed soils should be permanently stabilized using appropriate methods (seeding, plants, mulch, fabric, etc.).
- ☐ Coordinate with waterway permitting agencies (Corps of Engineers and DSL) when performing work below ordinary high water.