

|                     |        |          |
|---------------------|--------|----------|
| Landowner/Producer: |        | Farm #:  |
| Field/Stand(s):     | Acres: | Tract #: |
| Soil Map Unit(s):   |        | County:  |
| Planner:            |        | Date:    |

**DEFINITION:** Forest Trails and Landings provide temporary or infrequent access to forest stands for management, removal and collection of forest products, recreation, and wildlife. These areas, whether planned or existing, include developed trails, skid roads, and log landing sites. Properly constructed or maintained Forest Trails and Landings minimize onsite and offsite damage to resources (including water quality) during periods of access, minimize future maintenance costs, and provide usable infrastructure for future management.

**PURPOSE: (check all that apply)**

- Provide routes for temporary or infrequent travel by people or equipment for management activities
- Provide periodic access for removal and collection of forest products
- Enhance wildlife values

**SPECIFICATIONS:**

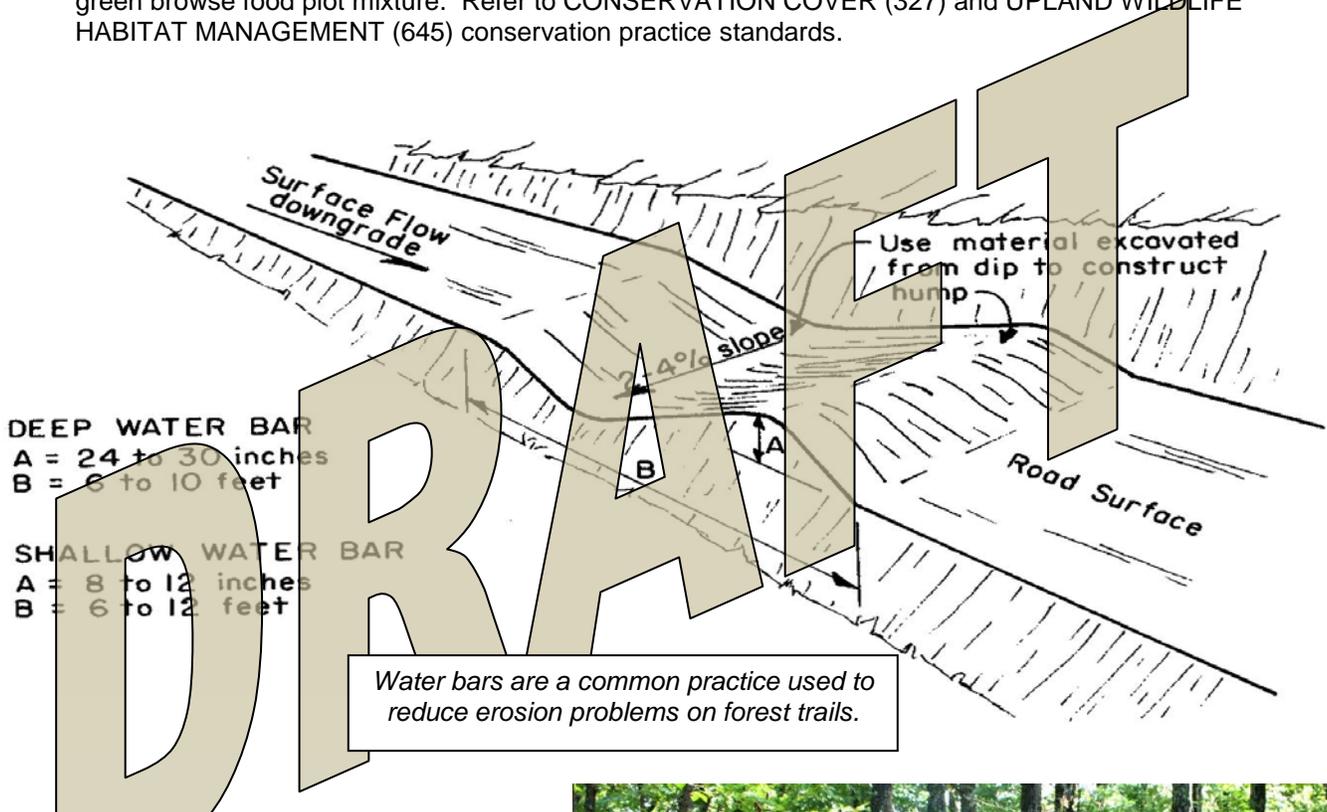
- Review forestland soil interpretations and limitations to determine suitable locations for trails and landings.
- When placing trails, keep grades as low as possible. Avoid long, steep grades that exceed 20%.
- Minimize the use of stream crossings and remove any temporary bridges and culverts when logging activities are completed. If stream crossing must be used, they should be at narrow points where banks are low and be perpendicular to the stream to prevent future erosion and water quality issues.



*A simple practice such as a conveyor-belt water bar can direct concentrated runoff flow away from a trail where it will not cause erosion.*

- On trails with existing erosion problems, install water bars, rolling dips, and other drainage measures to route runoff away from the road. Stabilize diversion outlets with stone riprap or brush debris. Crowning the trails will improve drainage. See Table 1 for water bar spacing guidelines.
- On steep ground, water bars will need to be spaced closer than on flat ground. Longer intervals between bars are acceptable on relatively flat portions. Location of the upper most water bar on the slope is the most critical. Position water bars on about a 30 degree angle down slope and extend them beyond the width of the road/trail to move the water into undisturbed areas and to prevent it from running around the end of the bar.
- The installation of appropriate drainage structures, along with the addition of the autumn leaf fall, will often sufficiently protect roads from erosion if vehicular traffic is controlled. Where these measures are not sufficient, seed areas that are still susceptible to erosion. Refer to CRITICAL AREA PLANTING (342) conservation practice standard (CPS).
- Completely close, rehabilitate, and re-vegetate problem areas.

- Locate landing areas on well drained ridge tops, areas close to an all-weather road, or sites close to the stand being harvested.
- Landings should have a slight slope to facilitate drainage. Do not locate landings within 200 feet of streams, ponds, lakes, sinkholes, springs, caves, or wetlands.
- Clear log yard debris from landing areas and, if erosion will not be a problem, seed those areas down to a green browse food plot mixture. Refer to CONSERVATION COVER (327) and UPLAND WILDLIFE HABITAT MANAGEMENT (645) conservation practice standards.



**Table 1. Recommended spacing between water bars**

| Trail Grade (%) | Distance between water bars (ft) |
|-----------------|----------------------------------|
| 2               | 245                              |
| 5               | 125                              |
| 10              | 78                               |
| 15              | 58                               |
| 20              | 47                               |
| 25              | 40                               |
| 30              | 35                               |



Water bars can be easily installed using traditional logging equipment on site during the harvest operation.

**SITE SPECIFIC PROVISIONS:**

|   |  |
|---|--|
| Total Length of Trails - feet                         |  |
| Average Width of Trails - feet                        |  |
| Total Area of Trails - acres                          |  |
| Total Number of Water Bars - number                   |  |
| Total Number of Log Landings - number                 |  |
| Total Area in Log Landings - acres                    |  |
| Total Area to be Seeded (trails and landings) - acres |  |
| Total Number of Culverts and Size - Inches            |  |

| Trail Grade (%) | Length (feet) | Water Bar Spacing (ft) |
|-----------------|---------------|------------------------|
|                 |               |                        |
|                 |               |                        |
|                 |               |                        |

| Seeding Specifications<br>(Refer to 655 CPS Table 1. for guidance) |       |            |       |
|--|-------|------------|-------|
| Species  | Acres | Ibs PLS/ac | Dates |
|  |       |            |       |
|  |       |            |       |
|  |       |            |       |

**MAINTENANCE: (check all that apply)**

After rehabilitation, close trails where vehicular traffic will cause unacceptable damage. Construct gates or otherwise block the trail with logs, trees, root-wads, etc. to prevent further use.

- Maintain vegetation on especially erosive areas.
- Prevent vehicular traffic when trails are wet and subject to damage if used.
- Rehabilitate water bars and turnouts if they fail to function due to excess sediment buildup or if scour develops at the outflow point.
- Maintain green browse planted on log landings and openings through adequate fertilization and replant as necessary. See JS-Biol-25 Food Plot Job Sheet for more information.

**ADDITIONAL COMMENTS AND RECOMMENDATIONS:**

For further information on forestry Best Management Practices (BMPs), see Missouri Watershed Protection Practice: 2006 Management Guidelines for Maintaining Forested Watersheds to Protect Streams – Missouri Department of Conservation (<http://mdc4.mdc.mo.gov/Documents/441.pdf>).