

## Restoration Fact Sheet: Road-Related Erosion Control

**Issue:** Roads interrupt the natural drainage of water. Road-related erosion is due to several issues including faulty culverts, unmaintained ditches and ditch lengths, unstable cut-banks and road fill material, and eroding road surfaces. Rural, forested areas often have higher road densities than urban areas, and the cumulative impact of road-related erosion / sediment can effect entire stream systems.

Sediment and erosion tend to have a circular relationship in which excess sediment constrains flowing water which then builds up, eventually causing catastrophic erosion and release of more sediment to the system.

### TOOLS

Road-related erosion can be controlled or minimized with the following practices:

- Upgrade culvert size and position for proper drainage
- Maintain road-side ditches and other road drainage features according to Oregon Department of Forestry's Best Management Practices (see table)
- Decommission abandoned roads
- Replace faulty culverts with bridges (often done for fish passage)

### NEEDED WHERE

Erosion control projects should be considered where:

- Water is pooled next to or running over a road due to improper culvert drainage
- Road fill is falling away
- Road surface is cracked or sinking due to saturation.
- Water is concentrating in road-side ditches
- Road surface is gullied
- Side-cast roads are sliding out
- Roads are no longer useful and can be decommissioned

### EFFECTS

Controlling road-related erosion, thereby reducing sediment inputs to the stream will:

- Improve stream habitat overall, especially in spawning areas (too much fine sediment is lethal to fish eggs and emerging fry)
- Decrease risk of road failure or landslides
- Improve drainage in the system overall
- Increase the life of the road
- Improve water quality

### CONSIDERATIONS

- At culvert sites and other stream crossings, account for fish passage as well as erosion control.



Installing ditch relief culvert on county road near Daniel's Creek.

Oregon Forest Practices Act Typical minimum culvert spacing for erosion control		
Road Grade	Normal Soils	Erodable Soils
0 to 1 % dry season	1500 feet	1000 feet
0 to 1 % wet season*	300 feet	300 feet
2 to 5 %	1000 feet	700 feet
6 to 12 %	700 feet	400 feet
13 to 19 %	400 feet	250 feet
over 20 %	250 feet	150 feet

*\*water ponds on flat grades so extra drainage is needed for roads used during wet periods*



Reshaped and decommissioned road.