

# TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE

Portland, Oregon

SOIL CONSERVATION SERVICE

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## EROSION CONTROL ON FOREST ROADS, SKID TRAILS, AND LANDINGS

Logging roads, skid trails, and landings are the main source of increased erosion and sedimentation associated with silviculture. They increase erosion by baring soil and concentrating runoff.

The most significant water quality impact from forest roads results from mass soil movements. In most cases, mass wasting is caused by undercutting unstable slopes, improperly constructed embankments, casting excavated materials onto steep unstable slopes, and drainage system failures.

A report on the Bull Run Watershed near Portland indicates that 70 percent of the sedimentation in streams resulted from road construction rather than any particular type of logging practice.

In a study by R.L. Fredriksen, 1.65 miles of road was constructed in a steep 250 acre watershed in the Oregon Cascades. Immediately after construction, storms caused the adjacent stream to carry 250 times more sediment than the undisturbed watershed nearby.

Erosion control measures must be considered in road planning, design, construction, and maintenance to reduce adverse impacts from roads. Erosion control measures must be applied at the time of construction.

This note will serve as a bibliography for references other than SCS Specifications on the planning and application of erosion control techniques used in road planning, design, construction, and maintenance. To obtain copies of any of these publications contact the SCS State Staff Forester.

SUBJECT	REFERENCE NUMBER
Planning	2, 7, 8, 9, 11, 13, 15, 16
Design	2, 7, 10, 13
Construction	2, 3, 5, 7, 12, 13
Maintenance	1, 2, 4, 7, 13, 14
Sediment and Erosion Determination	6

#### REFERENCES

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- 5) Burroughs, E.R., Chalfant, G.R., Townsend, M.H., Slope Stability in Road Construction : A Guide to the Construction of Stable Roads in Western Oregon and Northern California, U.S. Department of Interior, Bureau of Land Management, Portland, Oregon, 1976.
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- 7) Darrach, A.G., Sauerwein, W.J., Hally, C.E., Building Water Pollution Control into Small Private Forest and Ranchland Roads, USDA Forest Service, Region 6, State and Private Forestry, Portland, Oregon, 1981.
- 8) Field Guide to Oregon Forest Practice Rules, Oregon State Department of Forestry, Salem, Oregon, (Revised Periodically).

- 9) Fredriksen, R.L., Erosion and Sedimentation Following Road Construction and Timber Harvest on Unstable Soils in Three Small Western Oregon Watersheds, USDA Forest Service, Research Paper PNW 104, Pacific Northwest Forest and Range Experiment Station, Portland, Oregon, 1970.
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- 13) Industrial Waste Guide, Logging Practices, Federal Water Pollution Control Administration, Northwest Regional Office, Portland, Oregon, 1970.
- 14) Oregon Interagency Seeding Guide, USDA Soil Conservation Service, Portland, Oregon, 1988.
- 15) Sidle, R.C., Impacts of Forest Practices on Surface Erosion, Pacific Northwest Extension, PNW 195, Corvallis, Oregon, 1980.
- 16) Sidle, R.C., Slope Stability on Forest Land, Pacific Northwest Extension, PNW 209, Corvallis, Oregon, 1980.