Logging Impacts on Jackass Creek Watershed, California

References


Discusses erosion rates in the Klamath Mountains of southwest Oregon. Erosion response of hillside to logging shows that harvested areas are more prone to mass wasting. Variables studied: slope angle, position of harvest on slope, aspect, mean annual precipitation, geomorphological erosion response unit (GERU).


Studies conducted in southwestern Washington examine the generation of sediment on gravel road surfaces, its transport to small streams, and its effect on streams. Discusses role of topography on delivery. Offers guidelines for management of roads where sediment has high potential to impact aquatic resources.


Focuses on how timber management influences hydrologic and sediment transport processes, including: quality of flowing water, gravel substrates, cover, and food supplies required by all salmonid species.


Dictionary of geographic terms. Geographic terms include from fields of: archaeology, anthropology, economics, law, biology, botany, geology, geomorphology, hydrology, soil science, cartography, remote sensing, surveying, and statistics. A more comprehensive work is the Longman Dictionary of Geography: Human and Physical, 724 pp., over 10500 entries.

Discusses impacts of timber harvest on landscape in Northwest California. Main focus is how soil particles impact soil surface, soil structure, and landsliding.


Examines how roads modify natural drainage networks. Discusses effects of roads on streams and effects on salmonid habitats. Main focus is on techniques to prevent or minimize damage from roads.


Relates human impacts on geomorphic systems to recovery times. Theorizes as to the universality of half-life and offers an abstract framework for prediction and comparison. Also discusses relaxation times in regard to recovery time.


Establishes a relationship between clear cutting and mass-soil movement in central Oregon. Outlines a theoretical stability analysis allowing prediction of the stability of a forested slope and assessment of the probable consequences of denudation.


Cited in LaHusen (1984)… determined that 70 percent of landslides in the Northwestern United States are related to roads.


Details geology of area surrounding Jackass Creek watershed.

Study indicates that modification of soil moisture distribution occurs as trees absorb water from the soil as they transpire. This absorption also creates negative pore pressure. These two factors are conducive to slope stability.


Analyzes sediment storage in the Bear River, California. Hypothesizes how sediment storage can relate to elevated rates of sedimentation over long periods of time.


Study of logging, infiltration, and soils. Relates accelerated surface erosion and increased stream sedimentation and turbidity to logging. Analyzes how various harvesting practices influence infiltration capacity and surface erodibility.


Study of Redwood National Park. Utilizes aerial photography to examine impacts of roads and cuts to debris flows. Isolates slope, soil characteristics, and precipitation as associative factors of mass movements.


Study of 344 miles of logging roads on Northwest California and road-related erosion. Concludes that roads are contributors of sediment to watersheds. Also concludes that roads on commercial timberlands contribute more sediment than roads on public lands.


Brief ethnographic and historical background on Northwest Mendocino County. Includes site descriptions of traditional Sinkyone archaeological sites. Also includes maps of survey maps and a cultural sequence for the North Coast Ranges.

Study concludes that most erosion occurring on timber harvesting areas is due to large mass wasting found on a small fraction of the harvest sites.


Studies rates of sedimentation from logging roads in the central Clearwater basin in the Olympic Mountains, Washington. Study produced sediment rating curves and unit hydrographs for different use levels and types of surfaces. Concludes that heavily used roads can contribute up to 130 times the amount of sediment than an abandoned road and that certain types of paved roads can yield less than 1% as much sediment as gravel roads.


Outlines a methodology for erosion risk estimates on forest roads and harvest areas in Northwest California. Concludes that most erosion related to timber harvest comes from small percentage of managed area. Offers linear discriminant analysis formulas for future planning risk assessment.


Relates downstream effects of forest practices to changes in the ways water, sediment, and woody debris move through the basin. Discusses open reaches, landslides, and excessive sedimentation in riparian corridors. Also discusses changes in channel morphology linked to forestry activities.


Details historic logging practices in Mendocino County. Includes modes and routes of transport, major markets, and technological and economic changes in timber industry.