

Mary Hill 1979 (Ref.)

Redwood National Park - Redwood Creek
Watershed
LIBRARY. HUMBOLDT STATE UNIVERSITY

DEPARTMENT of the INTERIOR

news release

GEOLOGICAL SURVEY

— Mary Hill (415) 323-8111, ext. 2953
Don Kelly (703) 860-7444

For release: March 13, 1979

LANDSLIDES, EROSION INCREASE NEAR REDWOOD NATIONAL PARK, CALIF.

Streamside landslides have increased more than fourfold during the past 30 years in the Redwood Creek basin near Redwood National Park, Calif., and are major contributors to high sediment loads in the creek, according to a recent U.S. Geological Survey, Department of the Interior, progress report.

The ongoing USGS study is part of a cooperative effort with the National Park Service to study and understand the physical processes that potentially are damaging the resources of Redwood National Park. High sediment loads in Redwood Creek are considered a particular problem because they alter the shape of the channel and have an adverse effect upon aquatic habitat and riparian vegetation, including the redwoods.

According to Deborah R. Harden, USGS geologist, Menlo Park, Calif., and senior author of the report, "The question of how much of the increase in landslides and stream sediment loads is natural and how much manmade has been a controversial one and we are still unable to provide a definite answer.

"Our analysis of streamside landslides, timber harvesting, and rainfall patterns of flood-producing storms over the past 30 years indicates that both recent floods and logging have contributed to the decreased hillslope stability," Harden said. "The complex interactions among such factors as storm distribution, storm intensity, and location and timing of streamside timber harvesting, however, prevent us from pinning down any one dominant cause of most slide activity.

"So far two lines of evidence are the most straightforward in pointing to human activity as a major contributor to the dramatic increase in landslides in recent years. These are the frequent association of slides with road cuts, fills, and drainage structures and the disproportionately large erosional impacts of the 1964 and 1972 storms compared to earlier storms of similar magnitude that occurred before extensive road construction and timbering began," the USGS spokesman said.

(more)

"At the same time, our monitoring of ten lines of stakes driven into recently harvested hillslopes have not documented exceptionally high mass movement rates 2-3 years following timber harvest, even in slide-prone areas," Harden said.

"Finally, our ongoing studies of the sediment in Redwood Creek suggest that landslides do not account for all the sediment in Redwood Creek, and at times may not be the dominant source of sediment," she said. "This further suggests that attempts to reduce the sediment load in Redwood Creek may not be able to focus on any one particular process or source of sediment."

Harden and her USGS colleagues also indicated that different types of landslides respond differently to land-use changes and storm rainfall. Shallow-seated, rapidly moving, episodic types of failure, such as debris slides, are more likely to be triggered by brief intense rainfall and timber harvest than deep-seated, slowly moving, persistent forms of failure, such as earthflows, which respond primarily to prolonged rains of moderate intensity.

*Order
7/31/79*

The 164-page report, "Mass Movement and Storms in the Drainage Basin of Redwood Creek, Humboldt County, California--A Progress Report" by D. R. Harden, R. J. Janda, and K.M. Noland, and issued as USGS Open-File Report 78-486, summarizes the recent history of major flood-producing storms in northwestern California, presents the record of streamside landsliding along Redwood Creek, and shows the result of three years of repeated surveying of stakelines on 10 different landslides. The report may be purchased from Open-File Services Section, Branch of Distribution, U.S. Geological Survey, Box 25425 Federal Center, Denver, Colo. 80225 for \$4.50 for each microfiche copy and \$32.00 for each paper copy. Orders must include check or money order payable to the U.S. Geological Survey.

Copies of the latest report, as well as earlier reports from the project, are available for inspection only at USGS libraries in Menlo Park, Calif. (345 Middlefield Road) and in Reston, Va. (Room 4A100, USGS National Center, 12201 Sunrise Valley Dr.).

#

(see attached photo)



Streams such as this one near Redwood National Park, Calif., are being studied by scientists from the U.S. Geological Survey, Department of the Interior, because landslides have increased more than fourfold in the past 30 years. The USGS and the National Park Service have joined in a cooperative effort to find the causes of the increase in landslides and sediment that are potentially damaging to the streamside environment and vegetation, including the redwoods.