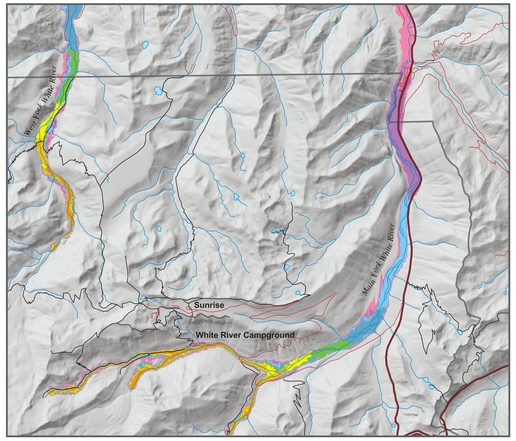
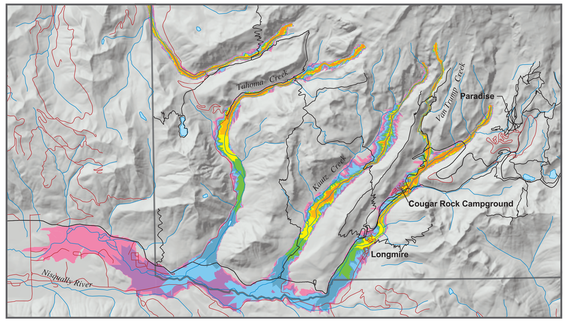
Map 1 - Sunrise and White River Areas



Scale 1:65,000
0 1 2 MILES
0 1 2 KILOMETERS

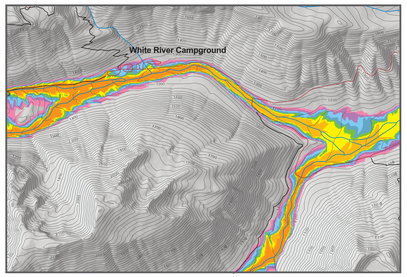
Map 2 - Longmire, Cougar Rock, and Paradise Areas



Scale 1:65,000
0 1 2 MILES
0 1 2 KILOMETERS

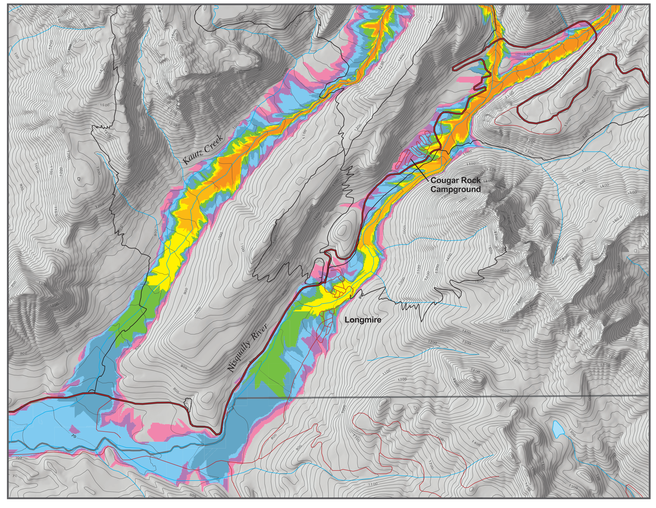
Location Map

Map 3 - White River Campground and vicinity



Scale 1:24,000
0 1 2 MILES
0 1 2 KILOMETERS
CONTOUR INTERVAL 20 METERS

Map 4 - Longmire and Cougar Rock Campground and vicinity



Scale 1:24,000
0 1 2 MILES
0 1 2 KILOMETERS
CONTOUR INTERVAL 20 METERS

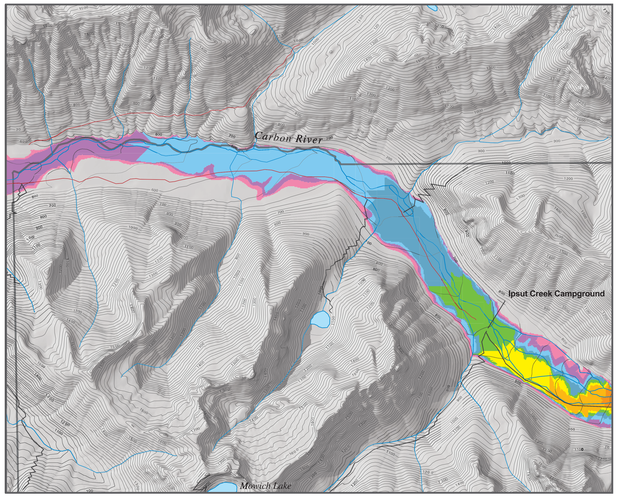
Maps Showing Areas of Potential Inundation from Debris Flows for Selected Streams at Mount Rainier, Washington

by

J.W. Vallance, M.L. Cunico, and S.P. Schilling

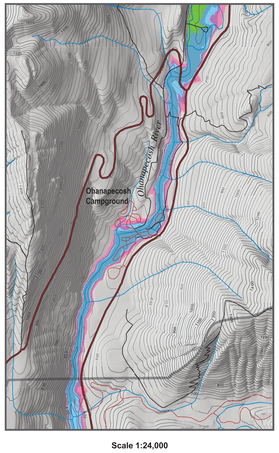
2003

Map 5 - Ipsut Creek Campground and vicinity



Scale 1:24,000
0 1 2 MILES
0 1 2 KILOMETERS
CONTOUR INTERVAL 20 METERS

Map 6 - Ohanapecosh Campground and vicinity



Scale 1:24,000
0 1 2 MILES
0 1 2 KILOMETERS
CONTOUR INTERVAL 20 METERS

EXPLANATION

Debris - Flow Hazard Zones

Channels headed by glaciers at Mount Rainier are subject to debris flows generated by glacial outburst floods, torrential rains, and drainage diversions. Hazard zones begin at glacier termini and are subdivided into eight categories on the basis of a range of hypothetical debris flow volumes.

- Area that could be inundated by a debris flow having a volume of 125,000 cubic meters. *Highest probability.*
- Area that could be inundated by a debris flow having a volume of 250,000 cubic meters. On the basis of historical data since 1924, debris flows of this size and smaller will occur an average of once every two years.
- Area that could be inundated by a debris flow having a volume of 500,000 cubic meters.
- Area that could be inundated by a debris flow having a volume of 1 million cubic meters.
- Area that could be inundated by a debris flow having a volume of 2 million cubic meters.
- Area that could be inundated by a debris flow having a volume of 4 million cubic meters. This area is approximately equivalent to that inundated by the largest historical debris flow at Mount Rainier. The probability of occurrence is about once every 100 to 200 years.
- Area that could be inundated by a debris flow having a volume of 8 million cubic meters. Debris flows inundating areas this large and larger have not occurred in historical time.
- Area that could be inundated by a debris flow having a volume of 16 million cubic meters. *Lowest probability.*
- Highways
- Other roads
- National Park trails

NOTE: Although the map shows sharp boundaries for hazard zones, the degree of hazard does not change abruptly at these boundaries. Rather, the hazard decreases gradually as distance from the volcano increases (small volume events are more common than large events). In addition, for debris flows, the hazard decreases rapidly as the elevation above the valley floor increases. Areas immediately beyond outer hazard zones should not be regarded as hazard free, because the boundaries of hazard zones can be located only approximately, especially in areas of low relief. Many uncertainties about the source, size, and mobility of future events preclude locating the boundaries of zero hazard zones precisely.

Base maps from U.S. Geological Survey 1:24,000 scale Washington quadrangle series; Lake Kapowsin (1990), La Dout Creek (1990), Elbe (1990), Ashford (1990), Mineral (1990), Anderson Lake (1990), Glacier (1990), Acme Peak (1990), Evammler (1993), Cyclone Creek (1986), Greenwater (1986), Nagrom (1986), Lester (1989), Bhowan Mtn (1989), Old Baldy Mtn (1986), Boatland Mtn (1986), Clay Pitts Peak (1986), Sun Top (1986), Noble Knob (1986), Bever Rock (1989), Golden Lakes (1971), Mowich Lake (1971), Sunrise (1971), White River Park (1971), Norse Peak (1987), Greenwater River (1987), Huckleberry Mtn (1987), Mount Daniel (1987), Cle Elum Lake (1987), Snoqualmie Pass (1987), Bumping Lake (1986), Tatoosh Lake (1985), Ohanapecosh Hot Springs (1989), White Pass (1988), Spiral Butte (1986), Packwood (1994), Packwood Lake (1988), Old Snowy Mtn (1987), Pinegrass Ridge (1986), Sumner (1993), Buckley (1993), Orting (1992), Wilkeson (1992).

This map is preliminary and has not been reviewed for conformity with U.S.Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.