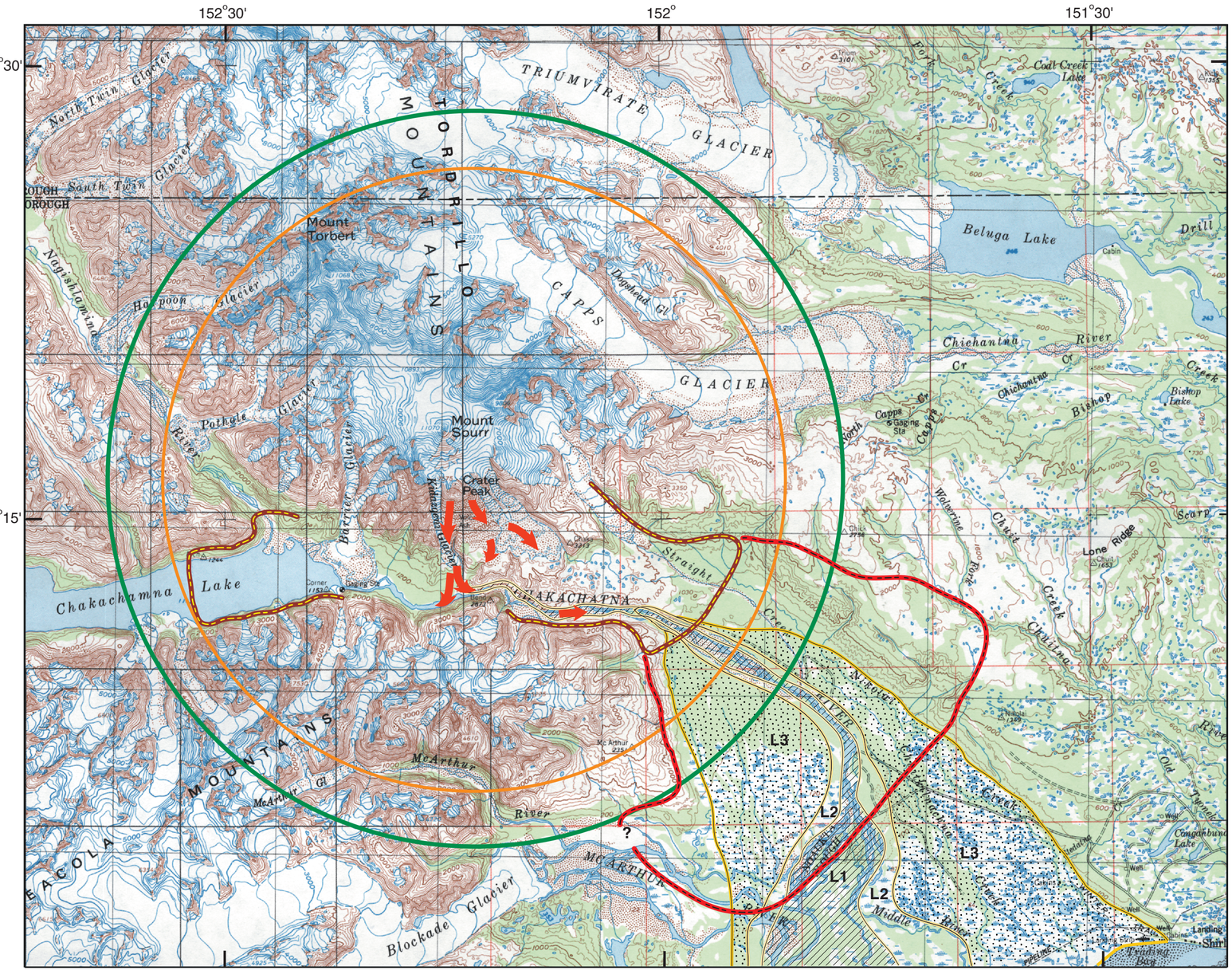
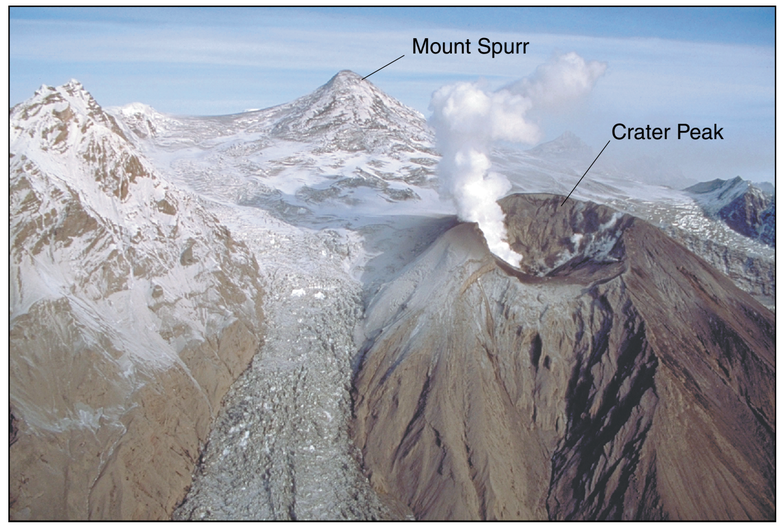


Base from U.S. Geological Survey, 1:250,000
Tyonek, 1958
Universal Transverse Mercator projection

Contour interval variable, 100 and 200 feet



Mount Spurr and Crater Peak, showing steam plume. Crater Peak was vent for 1953 and 1992 eruptions. View is toward northeast.

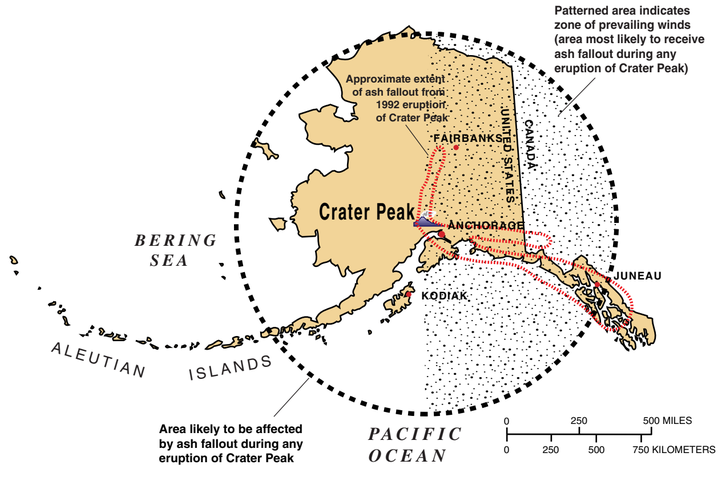
NOTE ABOUT VOLCANO HAZARD-ZONE BOUNDARIES

The preliminary hazard-zonation map indicates generalized hazardous areas associated with future eruptions of Mount Spurr volcano from Crater Peak vent. Also indicated are areas at risk from various volcano-related events such as debris avalanches and lahars that may not be related to an actual eruption. Pyroclastic eruptions are likely to initiate lahars and floods and probably would result in variable amounts of ash fall. Debris avalanches are uncommon at this volcano and are unlikely to be significant hazards. A large flank collapse could evolve to a lahar that would inundate some parts of Chakachatna River valley.

The hazard-zone boundaries do not indicate a major change in the degree of hazard but are generalized approximations based on known deposits and eruptive characteristics of similar volcanoes. The degree of hazard generally decreases in a downvalley direction and as height above the valley floor increases.

VOLCANIC-ASH HAZARDS

The hazard zone for volcanic ash is likely to be similar to the extent of ash fallout of recent eruptions of Crater Peak and other Cook Inlet volcanoes. The specific area of ash fallout depends on the prevailing winds, which are generally from the west. Ash plumes could rise to a height of 15,000 meters or more and would drift down-wind as ash clouds for days to weeks after an eruption. Drifting clouds of volcanic ash would be hazardous to all aircraft in areas downwind from the volcano.



EXPLANATION

LAHAR HAZARDS

[See discussion in section "Lahars, Lahar-Runout Flows, and Floods," under "Volcanic Hazards," in main text of report]

L1 — Areas likely to be inundated by lahars (volcanic-debris flows), lahar-runout flows, and floods having initial volumes of about 100,000 cubic meters. These flows are about as large as those generated by 1992 eruption of Crater Peak

L2 — Areas likely to be inundated by lahars (volcanic-debris flows), lahar-runout flows, and floods having initial volumes of about 1,000,000 cubic meters. These areas are less likely to be affected than zone L1

L3 — Areas likely to be inundated by lahars (volcanic-debris flows), lahar-runout flows, and floods having initial volumes of about 10,000,000 cubic meters. These areas are less likely to be affected than zones L1 or L2

DEBRIS-AVALANCHE HAZARDS

[See discussion in section "Debris Avalanches," under "Volcanic Hazards," in main text of report]

Probable extent of debris avalanche from Crater Peak for *H*/*L* = 0.2

Probable extent of debris avalanche from Crater Peak for *H*/*L* = 0.1

PYROCLASTIC-FLOW AND PYROCLASTIC-SURGE HAZARDS

[See discussion in section "Pyroclastic Flows and Surges," under "Volcanic Hazards," in main text of report]

Possible extent of pyroclastic flows for *H*/*L* = 0.2. Pyroclastic flows associated with lava-dome collapse could extend to about this (approximate) boundary during moderate to large eruptions. Pyroclastic flows associated with collapsing lava domes would be directed over discrete sectors of volcano and along major valleys—most likely in upper Chakachatna River Valley

Most likely flow paths for pyroclastic flows and surges. During moderate to large eruptions, pyroclastic flows and surges could be directed along topographically low areas such as valleys and drainages and could extend beyond hazard-zone boundary defined by *H*/*L* = 0.2

LATERAL-BLAST HAZARDS

[See discussion in section "Directed Blasts," under "Volcanic Hazards," in main text of report]

Extent of area that could be affected by directed blast similar to blast generated during 1980 eruption of Mount St. Helens in Washington. This hazard boundary is worst-case condition for Mount Spurr volcano. If directed blast were to occur, it could engulf as much as 180-degree sector of indicated hazard zone

PRELIMINARY VOLCANO-HAZARD ASSESSMENT FOR MOUNT SPURR VOLCANO, ALASKA

by
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2002

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