

1. Regional Seismic Monitoring in Western Washington
14-08-0001-A0622 R.S. Crosson, P.I.
and

1991/1

2. Seismic Monitoring of Volcanic and Subduction Processes in Washington and Oregon
14-08-0001-A0623 S.D. Malone and A.I. Qamar, P.I.s

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Investigations

Operation of the Washington Regional Seismograph Network (WRSN) and preliminary analysis of earthquakes in Washington and Northern Oregon continue under these contracts. Quarterly bulletins which provide operational details and descriptions of seismic activity in Washington and Northern Oregon are available from 1984 through the third quarter of 1991. Final published catalogs are available from 1970, when the network began operation, though 1986.

The University of Washington operates 81 stations west of 120°W under these agreements, 28 are supported under A0622, 51 under A0623, and 2 are operated jointly. This report includes a brief summary of significant seismic activity. Additional details are included in our Quarterly bulletins.

Network Operations

In August and September 1991, under JOA 14-08-0001-A0623 4 new stations in Oregon (SSO, FBO, WMO, and RNO) were added to the network. Station GRO in Oregon was resited and renamed TKO. APW, funded under A0622, was removed in March due to blasting at a nearby quarry and will be resited. Locations of recent significant earthquakes located by the WRSN can be obtained over the ethernet using the utility "fingerquake@geophys.washington.edu".

Seismicity

Figure 1 shows earthquakes ($M_c \geq 2.0$) located in Washington and Oregon during this reporting period. Excluding blasts, probable blasts, and earthquakes outside the U. W. network, a total of 794 earthquakes west of 120.5°W were located between April 1 and Sept 30, 1991. Of these, 279 were located near Mount St. Helens, which has not erupted since October of 1986. East of 120.5°W, 121 earthquakes were located.

During this reporting period there were 6 earthquakes reported as felt west of the Cascades, and 1 reported as felt to the east of the Cascades. No damage was reported. The largest earthquake within the area shown in Fig. 1 was a M_c 3.9 earthquake which occurred on April 15 (UTC) at a shallow depth (< 5 km) in the north Cascades approximately 35 km NE of Chelan and was felt in Chelan and Douglas Counties. An earthquake sequence in the Portland area between July 17 and August 3 included two felt earthquakes and 18 others larger than magnitude 1., most at depths between 10 and 20 km. Both felt earthquakes occurred on July 22 with M_c 3.5 and 2.2 at 09:04 and 09:11 UTC respectively.

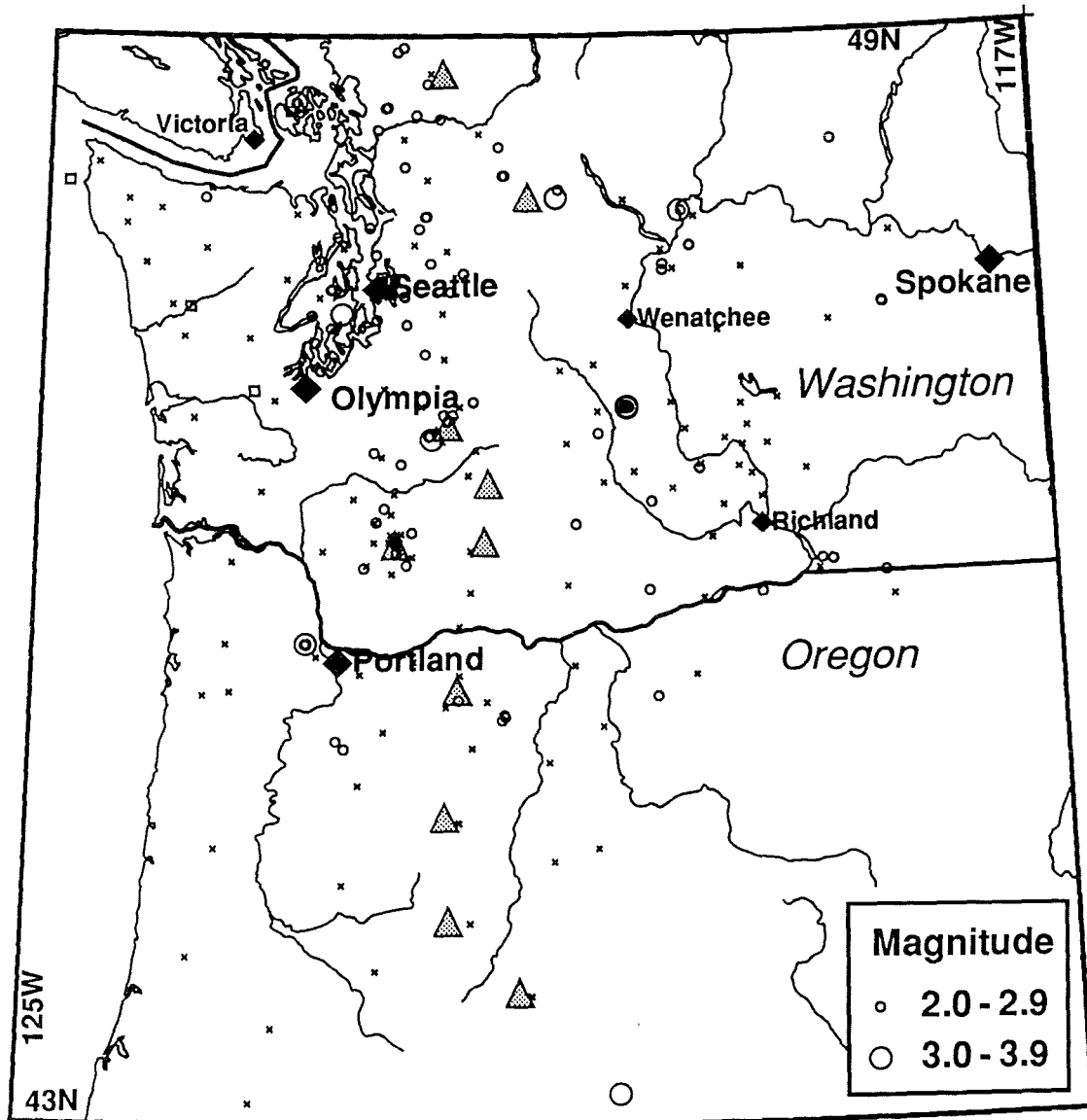


Figure 1. Map view of Washington and Oregon showing locations of earthquakes ($M_c \geq 2.0$) that occurred between April 1 and September 30, 1991. Earthquakes shallower than 30 km are shown as circles, while deeper events are indicated by squares. Shaded triangles represent Cascade volcanoes, and seismic stations operated by the WRSN are indicated by "x".

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