

CREST Status Report – October 23, 2003

Activity: Consolidated Reporting of EarthquakeS and Tsunamis (CREST)

The installation phase of the CREST project is winding down. There are now 51 of the 53 CREST stations installed. The 2 stations that remain to be installed (see below) are scheduled to be completed in late 2003 weather permitting. The inventory of seismic stations is provided below in Table 1. Maps that show the location of sites are available at

Alaska: <http://quake.wr.usgs.gov/waveforms/crest/indexc.html>

Pacific Northwest: <http://quake.wr.usgs.gov/waveforms/crest/indexa.html>

Hawaii: <http://quake.wr.usgs.gov/waveforms/crest/indexb.html>

The project is now in maintenance mode, in which network operators maintain and repair sites as necessary. Malfunctioning stations may stay down for extended periods depending on the accessibility of the site (*i.e.*, snow, impassable roads, *etc.*), staffing limitations, servicing schedules, availability of spare parts, and availability of funds. In other cases the station may be fully operational, but the telecommunications or Internet service provided by 3rd parties may be down. This status report does not attempt to document the outage periods.

- Electronic helicorders on the web: The project now provides a near real-time helicorder of the vertical broadband component of every CREST station at <http://quake.wr.usgs.gov/waveforms/crest/>. The data are updated every 5 minutes. While all CREST stations have 6 channels (3 broadband, 3 acceleration), it is computationally too demanding to generate plots for all of 318 channels. These plots provide a quick means of verifying whether a seismic station is functional, periods of data outages, and the record of earthquakes. The plots are available for the last 7 days.
- The following summarizes the station installation status at all CREST participants.

Alaska Earthquake Information Center (AK): All sites are installed (see attached report from the UAF), but telemetry to COLD will not be completed until early November, 2004. Telemetry, which is very expensive, is a mixture of leased telephone lines, Internet, and the Alaska state microwave system.

West Coast/Alaska Tsunami Warning Center (AT): All three CREST sites are now operational. Two of the sites utilize leased telephone lines to Palmer and one uses satellite telemetry to Menlo Park where the data is exported to Palmer over the CREST network.

University of California Berkeley (BK): Alder Springs (GAS) is scheduled to be installed late 2004. Awaiting permits from the California Department of Water Resources. This station is being installed and leased line telemetry provided by UCB. CREST only purchased the datalogger.

USGS Hawaii Volcano Observatory (HV): All 3 sites are installed. Two of the sites utilize radio telemetry to HVO and the third is located at HVO.

USGS Northern California Seismic Network (NC): All 11 sites are installed. During the past 6 months 2 sites were installed. All of the sites utilize satellite telemetry to Menlo Park.

University of Oregon (UO): All 3 sites are installed. Telemetry is a mixture of leased telephone lines, Internet, and the BPA microwave system to the UW.

University of Washington (UW): All 13 sites have been installed. However, RWW (installed in 1999) had to be moved due to construction at the site. The UW is in the process of permitting a new site. Installation is scheduled for 2004. Telemetry is a mixture of leased telephone lines, Internet, and the

BPA microwave system.

- **Communications:** All CREST network links connecting Golden, Menlo Park, Seattle, Ewa Beach, Fairbanks, and Palmer continue to be functional.
- **Presentations:**

September 11, 2003: Presentation of selected tsunami warning capabilities to the National Academy of Sciences meeting on "Geological and Geotechnical Engineering in the Next Millennium".

June 16, 2003: Workshop in Montesano, WA on real-time information requirements for Grays Harbor and Pacific counties
- **Publications:** Prepared and submitted paper to Natural Hazards Special Issue on NTHMP entitled "The NTHMP CREST Project: Consolidated Reporting of EarthquakeS and Tsunamis"

Table 1. CREST Seismic Stations

| Network ¹ | # | Location | Station Name | Latitude | Longitude |
|----------------------|----|-----------------------|--------------|----------|-----------|
| AK | 1 | Atka, AK | ATKA | 52.20 | -174.20 |
| | 2 | Juneau, AK | BESS | 58.30 | -134.42 |
| | 3 | Bremner, AK | BMR | 60.97 | -144.60 |
| | 4 | Coldfoot, AK | COLD | 67.25 | -150.18 |
| | 5 | Deception Hills, AK | DCPH | 59.07 | -138.10 |
| | 6 | Chitina/Divide, AK | DIV | 61.13 | -145.77 |
| | 7 | Dot Lake, AK | DOT | 63.65 | -144.06 |
| | 8 | Cordova, AK | EYAK | 60.55 | -145.75 |
| | 9 | False Pass, AK | FALS | 54.86 | -163.42 |
| | 10 | St. Lawrence Isl., AK | GAMB | 63.78 | -171.70 |
| | 11 | Nikolski, AK | NIKO | 52.94 | -168.87 |
| | 12 | Paxson, AK | PAX | 62.97 | -145.47 |
| | 13 | Pinnacle, AK | PIN | 60.10 | -140.26 |
| | 14 | Purkeypile, AK | PPLA | 62.90 | -152.19 |
| | 15 | Saint Paul Island, AK | SPIA | 57.18 | -170.25 |
| | 16 | Seward, AK | SWD | 60.10 | -149.45 |
| | 17 | Tin City, AK | TNA | 65.56 | -167.92 |
| | AT | 18 | Unalaska, AK | UNV | 53.85 |
| 19 | | Sand Point, AK | SDPT | 55.35 | -160.48 |
| 20 | | Sitka, AK | SIT | 57.06 | -135.32 |
| BK | 21 | Shemya, AK | SMY | 52.73 | -185.90 |
| | 22 | Alder Springs, CA | GAS | 39.65 | -122.72 |
| HV | 23 | Kahuku, HI | KHU | 19.25 | -155.62 |
| | 24 | Steam Crack, HI | STC | 19.39 | -155.13 |
| | 25 | Uwekahuna Vault, HI | UXL | 19.42 | -155.29 |
| NC | 26 | Bosley Butte | KBO | 42.21 | -124.23 |
| | 27 | Cahto Pk, CA | KCPB | 39.69 | -123.58 |
| | 28 | CapeTown,CA | KCT | 41.28 | -123.45 |
| | 29 | Edson Butte, OR | KEB | 42.87 | -124.33 |
| | 30 | Hayfork Bally, CA | KHB | 40.15 | -123.47 |

| | | | | | |
|----|----|---------------------|------|-------|---------|
| | 31 | Horse Mt, CA | KHMB | 40.87 | -123.73 |
| | 32 | Mt. Pierce, CA | KMPB | 40.42 | -124.12 |
| | 33 | Mail Ridge, CA | KMR | 40.20 | -123.71 |
| | 34 | Red Mt., CA | KRMB | 41.52 | -123.91 |
| | 35 | Rodgers, CA | KRP | 41.16 | -124.02 |
| | 36 | Camp Six, CA | KSXB | 41.83 | -123.88 |
| UO | 37 | Dobson Buttes, OR | DBO | 43.12 | -123.24 |
| | 38 | Pine Mt., OR | PIN | 43.81 | -120.87 |
| | 39 | Eugene, OR | EUO | 44.03 | -123.07 |
| US | 40 | Octopus Mtn, WA | OCWA | 47.75 | -124.18 |
| UW | 41 | Ranney Well, WA | RWW | 46.96 | -123.54 |
| | 42 | Green Mt., WA | GNW | 47.56 | -122.83 |
| | 43 | Longmire, WA | LON | 46.75 | -121.81 |
| | 44 | PNNL - Sequim, WA | SQM | 48.08 | -123.05 |
| | 45 | Liberty, WA | LTY | 47.26 | -120.66 |
| | 46 | Tahkenitch, OR | TAKO | 43.74 | -124.08 |
| | 47 | Megler, WA | MEGW | 46.27 | -123.88 |
| | 48 | Tolt River, WA | TTW | 47.69 | -121.69 |
| | 49 | Forks, WA | OFR | 47.93 | -124.39 |
| | 50 | Mt. Hebo, OR | HEBO | 45.21 | -123.75 |
| | 51 | Port Angeles, WA | OPC | 48.10 | -123.41 |
| | 52 | Toledo BPA, OR | TOLO | 44.62 | -123.92 |
| | 53 | Mt Hood Meadows, OR | HOOD | 45.32 | -121.65 |

1 AK = University of Alaska Geophysical Institute Alaska Earthquake Information Center

AT = NOAA/NWS West Coast/Alaska Tsunami Warning Center

BK = University of California Berkeley Seismological Laboratory

HV = USGS Hawaii Volcano Observatory

NC = USGS Northern California Seismic Network

UO = University of Oregon Pacific Northwest Seismograph Network

US = USGS National Seismic Network

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