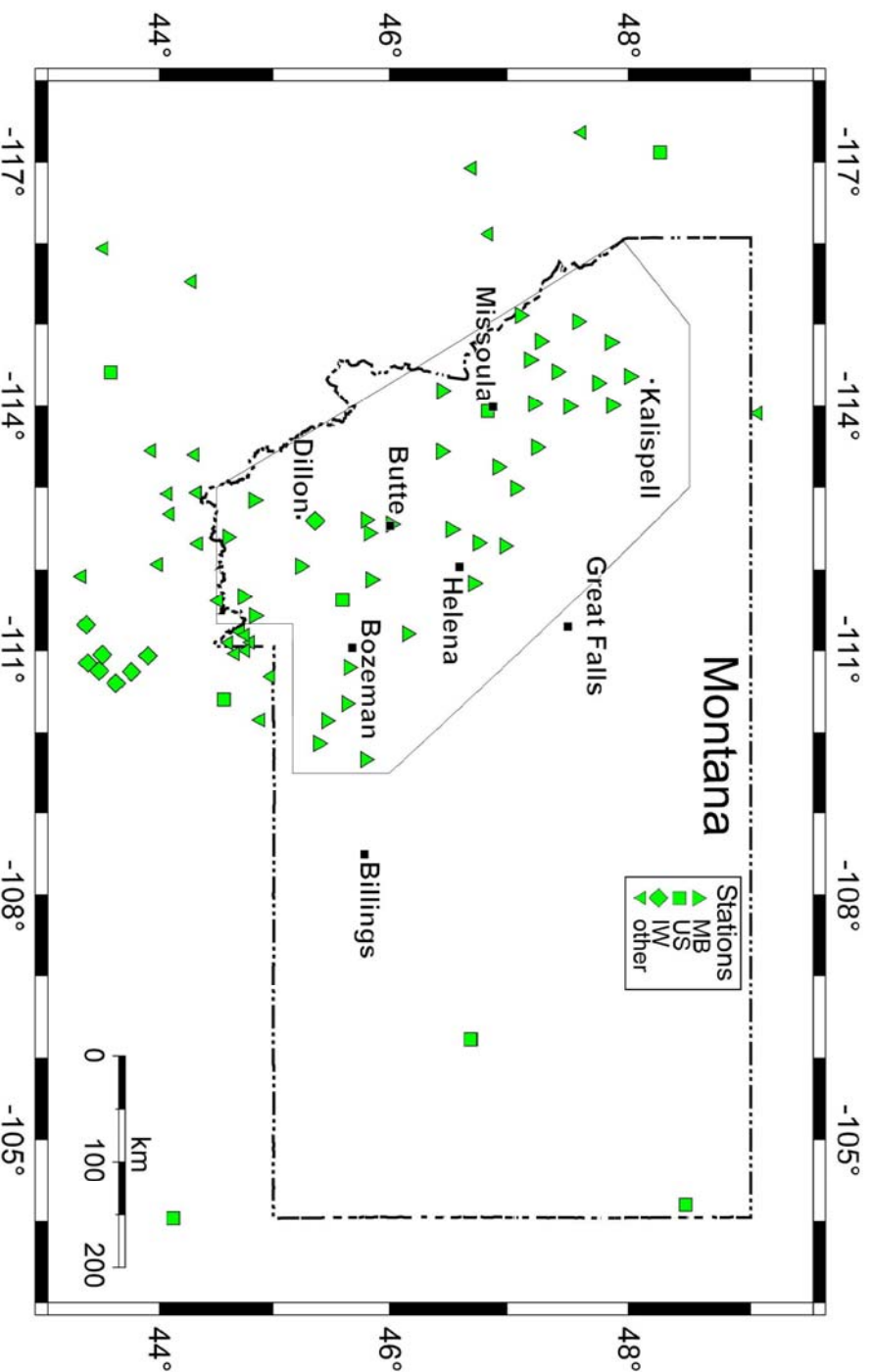
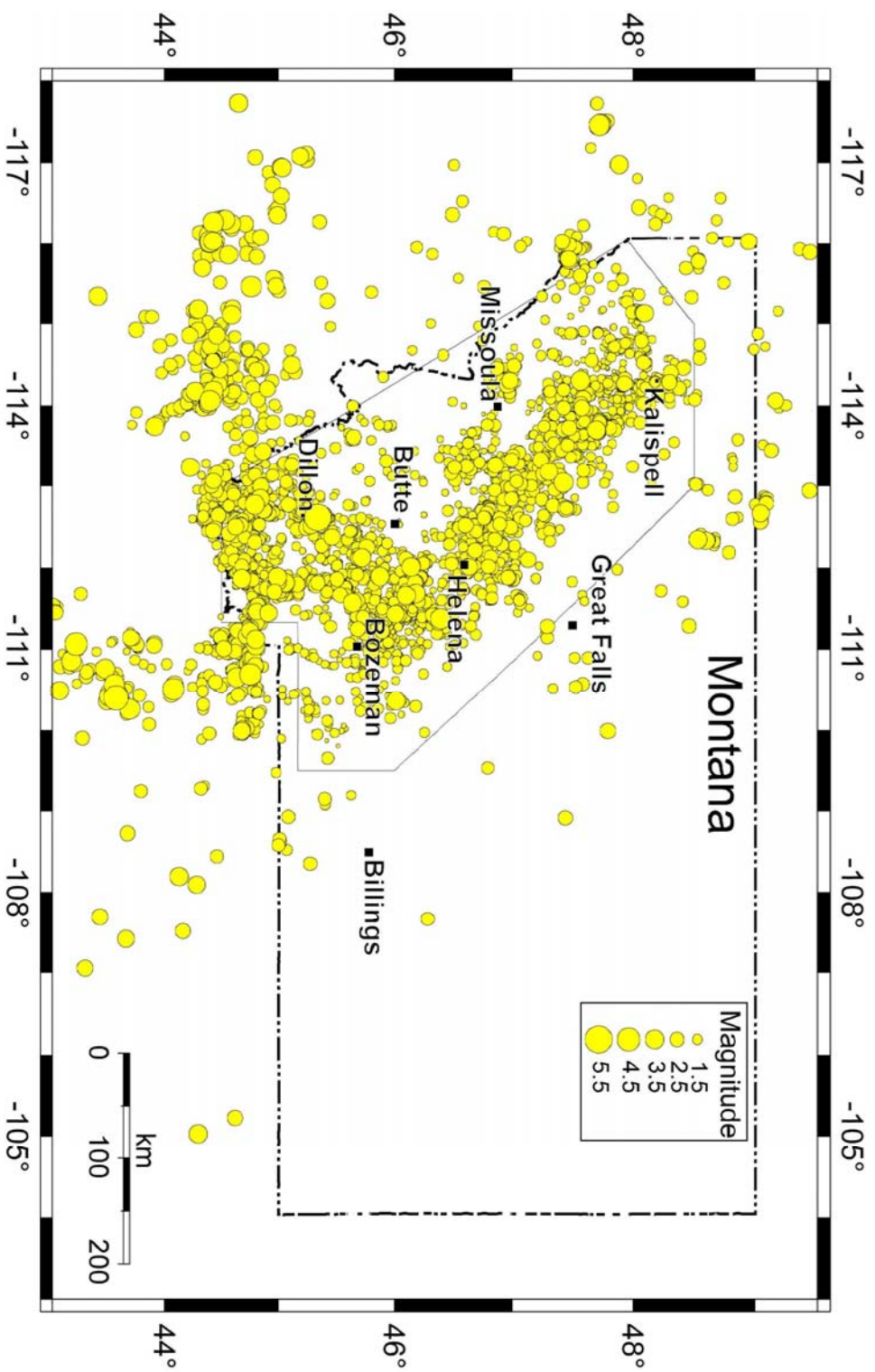


Montana Bureau of Mines and Geology Regional Seismograph Network



Seismograph stations of the Montana Regional Seismograph Network (upright triangles), US National Seismograph Network (squares), Intermountain West Network (diamonds), and surrounding regional networks (inverted triangles) used to locate regional seismicity. All stations were recorded in real-time using Earthworm as of October 2005. Surrounding networks include: Canadian National Seismograph Network, University of Idaho, University of Washington, Boise State University, Idaho National Laboratory, Brigham Young University Idaho, and the University of Utah Yellowstone Network. US and IW network stations and one University of Utah station are broadband seismographs. The polygon shows the Montana Regional Seismograph Network authoritative region.



A total of 8735 earthquakes occurring from 1 October 2000 to 30 September 2005 located using data from the Montana regional Seismograph Network and other surrounding stations. Note that August 2005 seismicity has not yet been analyzed and is not included in this figure. The polygon in western Montana shows the Montana Regional Seismograph Network authoritative region.

Table 1
Summary Statistics for Montana Bureau of Mines and Geology
Regional Seismic Network (as of January 2006)

| | |
|--|--------|
| Total no. of stations operated and/or recorded | 82 |
| Total no. of channels recorded | 166 |
| No. of short-period (SP) stations | 35 |
| No. of short-period (SP) stations with metadata (response information) | 33 |
| No. of broadband (BB) stations (USNSN stations in Montana) | 5 |
| No. of broadband (BB) stations with metadata | 4 |
| No. of strong-motion (SM) stations | 1 |
| No. of strong-motion (SM) stations with metadata | 0 |
| No. of stations maintained & operated by network | 35 |
| No. of stations maintained & operated by network with full metadata | 33 |
| No. of stations maintained & operated as part of ANSS | 35 |
| No. of stations maintained & operated as part of ANSS with full metadata | 33 |
| Total data volume (mbytes/day) [for all data we record] | ~3,100 |

The 5 broadband stations are USNSN backbone stations operated installed and operated cooperatively with the Montana Bureau of Mines and Geology

Table 2
Earthquake Data and Information Products

| Network Products | | |
|------------------------------|---|---|
| | Does the network provide the following? | Comments/Explanation |
| Primary EQ Parameters | | |
| Picks | Yes | Archived at MBMG* |
| Hypocenters | Yes | Posted at http://mbmgquake.mtech.edu |
| Magnitudes (& Amplitudes) | Yes | Magnitudes posted at http://mbmgquake.mtech.edu ; Amplitudes archived at MBMG* |

Network Products

| | Does the network provide the following? | Comments/Explanation |
|------------------|---|--|
| Focal mechanisms | Yes | First-motion focal mechanisms are generated, if possible, for $M > 3.0$ events in the Montana region and, depending on station coverage, for smaller events. These are archived at MBMG. |
| Moment Tensor(s) | No | |

Other EQ Parameters/Products

| | |
|--------------|----|
| ShakeMap | No |
| Finite Fault | No |

Supplemental Information

| | | |
|--|-----|---|
| Felt Reports | Yes | Rely on Community Internet Intensity Map data supplemented with telephone calls and email messages. |
| Event Summary | Yes | Press releases issued for significant earthquakes |
| Tectonic Summary | No | |
| Collated Maps | No | |
| Refined Hypocenters (e.g. double-difference) | No | |

Web Content

| | | |
|-----------------------------|-----|--|
| Recent EQ Maps | No | But hope to soon. |
| Station Helicorder | Yes | |
| Station noise PDFs | No | These are automatically produced and are available through IRIS. |
| Station Performance Metrics | No | |
| Network Description | Yes | Some online info. needs updating |
| Station List | Yes | Included in the annual seismicity catalogs. |
| Station Metadata | Yes | See Metadata Section below |
| Email Notification Services | No | Need to implement. |
| Contact Info | Yes | |
| Region-specific FAQs | Yes | |
| Region-specific EQ info | Yes | |

Waveforms

| | | |
|------------|-----|----------------------|
| Triggered | Yes | Archived at MBMG* |
| Continuous | Yes | Archived at IRIS DMC |
| Processed | No | |

Summary Products

| | | |
|----------|-----|--|
| Catalogs | Yes | Posted on our Web site for ~ 1 month then contributed to ANSS composite catalog. |
|----------|-----|--|

Metadata

| | | |
|--|-----|-------------------------------|
| Instrument Response | Yes | Archived at the IRIS DMC. |
| Site Info (e.g. surface geology, Vs30) | No | Nothing beyond a very general |

Network Products

Does the network
provide the following?

Comments/Explanation

description of site geology.

*Information archived at MBMG available by
request

Table 2 (Attachment)

Products and Services Provided by Our Network

- Recent Earthquakes (the 50 most recent automatic locations (regardless of quality) and reviewed event locations for the past month (typically up to 2 weeks in arrears))
- Earthquake Notification (manual notification to the Montana Department of Natural Resources and Conservation Dam Safety Program and the Confederated Salish and Kootenai Tribes Safety of Dams Program)
- Real-time Waveforms (Webicorder plots available online 24 hrs/day for 60 stations for the past 14 days)
- Earthquake Catalogs and Data (all earthquake locations submitted to ANSS catalog, which does have a search capability; annual earthquake bulletins; continuous waveforms and station metadata available via IRIS DMC)
- Did You Feel It? (linked to <http://pasadena.wr.usgs.gov/shake/imw/>)
- Earthquake Information Center (responses to public inquiries, guided tours, media interviews, maintenance and development of network Web site, educational support to University of Montana teaching, frequent public speaking engagements on earthquake topics)
- Expert Advice for Public Policy Making (involved in earthquake hazard assessment which resulted in a recent MBMG publication on probabilistic shaking hazards in Montana, advisory guidance to public officials and state agencies, involvement in state earthquake preparedness exercises)
- Data and Information on Mining-Induced Seismicity (MIS) (monitor MIS near two underground platinum/palladium mines in south-central Montana and provide magnitude information to mining company and National Institute of Safety and Health officials following significant events)
- Technical Help to Other Seismic Networks (examples during FY2005: (1) assist the University of Idaho with setup of an Earthworm system to export data from two stations and receive data from 10 Montana stations, generate Webicorder for the two UI stations; (2) provided financial assistance to Boise State University so they could export data from three stations to Montana and provide Webicorder for these stations; (3) assist BYU-Idaho with routine operational issues and display Webicorder for station CMI; and (5) provide Webicorder displays for the USGS's Teton Region ANSS seismic network in northwestern Wyoming)