EARTHQUAKE ACTIVITY IN THE YELLOWSTONE REGION

Preliminary Epicenters

January 1 – March 31, 2025

Prepared by the University of Utah Seismograph Stations and funded by
the U.S. Geological Survey (Cooperative Agreement No. G21AC10068)

July 17, 2025

Foreword and Data Explanation

This report contains an epicenter map (Figure 1) and listings of earthquakes (Tables 1 and 2) detected and located in the Yellowstone region (lat. 44° 00′ – 45° 10′ N, long. 109° 45′ – 111° 30′ W). The computer program HYPOINVERSE-2000 (F. W. Klein, 2012, U.S. Geological Survey Open-File Report 02-171 revised) was used to process the earthquake data. This report also includes maps and a table of operating seismograph stations in the University of Utah's Yellowstone seismic network (Figure 2, Table 3).

The earthquake listing in Table 2 is estimated to be systematically complete above magnitude 1.5 within Yellowstone. *These data are preliminary—both the locations and magnitudes in this table are subject to revision.*

The following data are listed for each earthquake in Table 2:

- Date (yymmdd) and origin time in Coordinated Universal Time (UTC). To convert to local time, subtract seven hours for Mountain Standard Time (MST) and six hours for Mountain Daylight Time (MDT). During the report period, local time was MST through 02:00 (2:00 a.m.) on March 9 and MDT thereafter.

- Earthquake location coordinates in degrees and minutes of north latitude and west longitude, and depth in kilometers below sea level. Note that prior to October 1, 2012, the earthquake depths in these quarterly reports were computed relative to a datum of 2000 m above sea level.

- "*" indicates poor depth resolution: no recording stations within 10 km or twice the depth.

- MAG, the computed Richter local magnitude (M_L) for each earthquake. "W" indicates that peak amplitude measurements from Wood-Anderson records were used. Otherwise, the estimate is calculated from signal durations and is more correctly identified as coda magnitude (M_C). The notation "--" indicates that a reliable magnitude estimate could not be made.

- NO, the number of P and S readings used in the solution.

- GAP, the largest azimuthal separation in degrees between recording stations used in the solution.

- DMN, the epicentral distance in kilometers to the closest station.

- RMS, the weighted root-mean-square of the travel-time residuals in seconds:

$$RMS = \left(\frac{\sum_i (W_i R_i)^2}{\sum_i (W_i)^2} \right)^{\frac{1}{2}}$$

where: R_i is the observed minus the computed arrival time for the i-th P or S reading, and W_i is the relative weight given to the i-th P or S arrival time (0.0 for no weight through 1.0 for full weight).

EARTHQUAKE ACTIVITY IN THE YELLOWSTONE REGION
January 1 – March 31, 2025

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During the three-month period January 1 through March 31, 2025, the University of Utah Seismograph Stations (UUSS) located 168 earthquakes within the Yellowstone region (Figure 1). The total includes 1 earthquake in the magnitude 3 range, and 11 earthquakes in the magnitude 2 range. The largest event to occur during this period was a magnitude 3.7 earthquake on January 29. One earthquake was reported felt in the region during the report period (see Table 1, a cumulative tabulation of earthquakes that were felt in the Yellowstone region during 2025). Additional information on earthquakes within the Yellowstone region is available from the University of Utah Seismograph Stations.

Online Information

A complete copy of this report, including maps and the earthquake catalog, is available on the UUSS web site at *https://quake.utah.edu/earthquake-center/quarterly-seismicity-reports*.

For earthquakes of magnitude 3 and larger in the Yellowstone region, the U. S. Geological Survey automatically posts a Community Internet Intensity Map (CIIM) on its "Did You Feel It?" web page at http://earthquake.usgs.gov/earthquakes/dyfi/. We encourage anyone who feels an earthquake to report their observations on this interactive web site; felt information is available by zip code on the CIIM site or can be obtained from UUSS directly.

Earthquakes of Magnitude 3.0 or Larger

M_L 3.7	January 28	17:59 MST	4.3 mi NW of Norris Geyser Basin, YNP

Notable Swarm Seismicity

During the report period, there were three earthquake swarms in the Yellowstone region. For reporting purposes, we use the Mogi definition [Mogi, 1963] of a swarm and require each swarm to have ten or more earthquakes. Note that typically, around 50% of Yellowstone earthquakes occur as part of a seismic swarm [Farrell et al., 2009].

A. A swarm of 39 earthquakes ($0.0 \leq M \leq 3.7$) occurred about 5.0 mi NW of Norris Geyser Basin, YNP from January 29th – February 4th.
B. A swarm of 11 earthquakes ($0.8 \leq M \leq 2.4$) occurred about 1.4 mi SSE of Grant Village, YNP on February 11th.
C. A swarm of 24 earthquakes ($-1.0 \leq M \leq 1.0$) occurred about 6.0 mi NNW of West Yellowstone, MT from March 2nd – 4th.

These swarms are labeled in Figure 1.

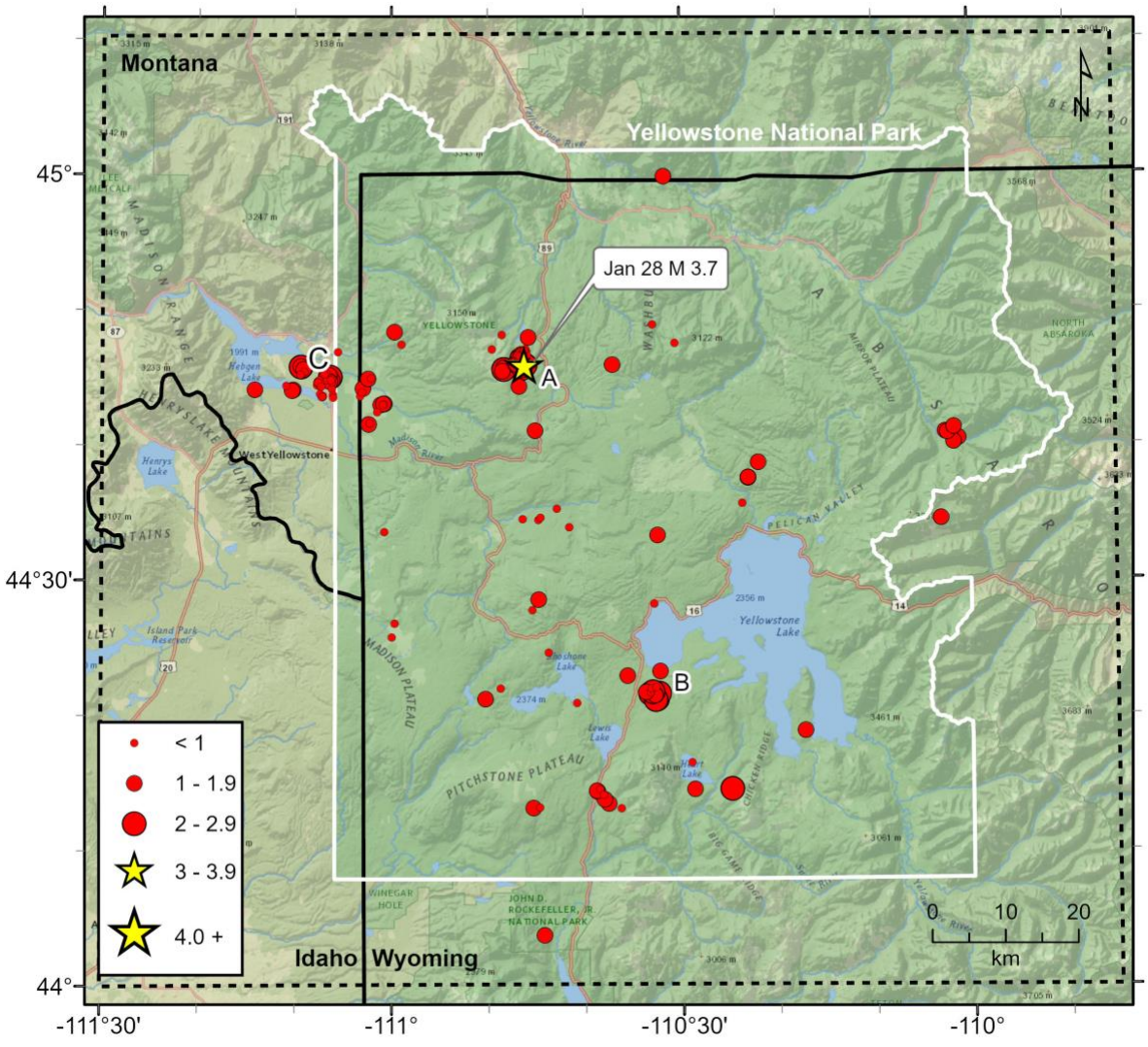

Figure 1. Epicenters of earthquakes located by the University of Utah Seismograph Stations, January 1, 2025, through March 31, 2025. Earthquake swarms (labeled A–C) are discussed in the text.

Table 1

EARTHQUAKES FELT IN THE YELLOWSTONE REGION
January 1, 2025, to March 31, 2025

Date	Time†	Felt Information‡	Latitude	Longitude	Magnitude§
January 29 January 28	00:59 UTC 17:59 MST	Yellowstone. Felt (V) at Yellowstone National Park.	44º 45.94’	110º 46.26’	M_L 3.7

† Times are listed both as Local Time—Mountain Standard Time (MST) or Mountain Daylight Time (MDT)—and as Coordinated Universal Time (UTC).
? Indicates on-line reports that appear questionable given the distance from the source
‡ *CIIM* indicates the availability of a Community Internet Intensity Map (http://earthquake.usgs.gov/earthquakes/dyfi), compiled by the U.S. Geological Survey (USGS); *ShakeMap* indicates the availability of computer-generated maps of ground-shaking (*https://quake.utah.edu*), produced by the University of Utah Seismograph Stations (UUSS). Roman numerals correspond to the Modified Mercalli intensity scale. Unless otherwise indicated, felt information is from the USGS (1) CIIM reports and/or (2) PDE Monthly (or) Weekly Listing Files (http://earthquake.usgs.gov/data/pde.php).
§ Richter local magnitude (M_L) or coda magnitude (M_C) determined by UUSS. If labeled “NEIC,” data are from the National Earthquake Information Center of the USGS.

Yellowstone Seismic Network
March 31, 2025

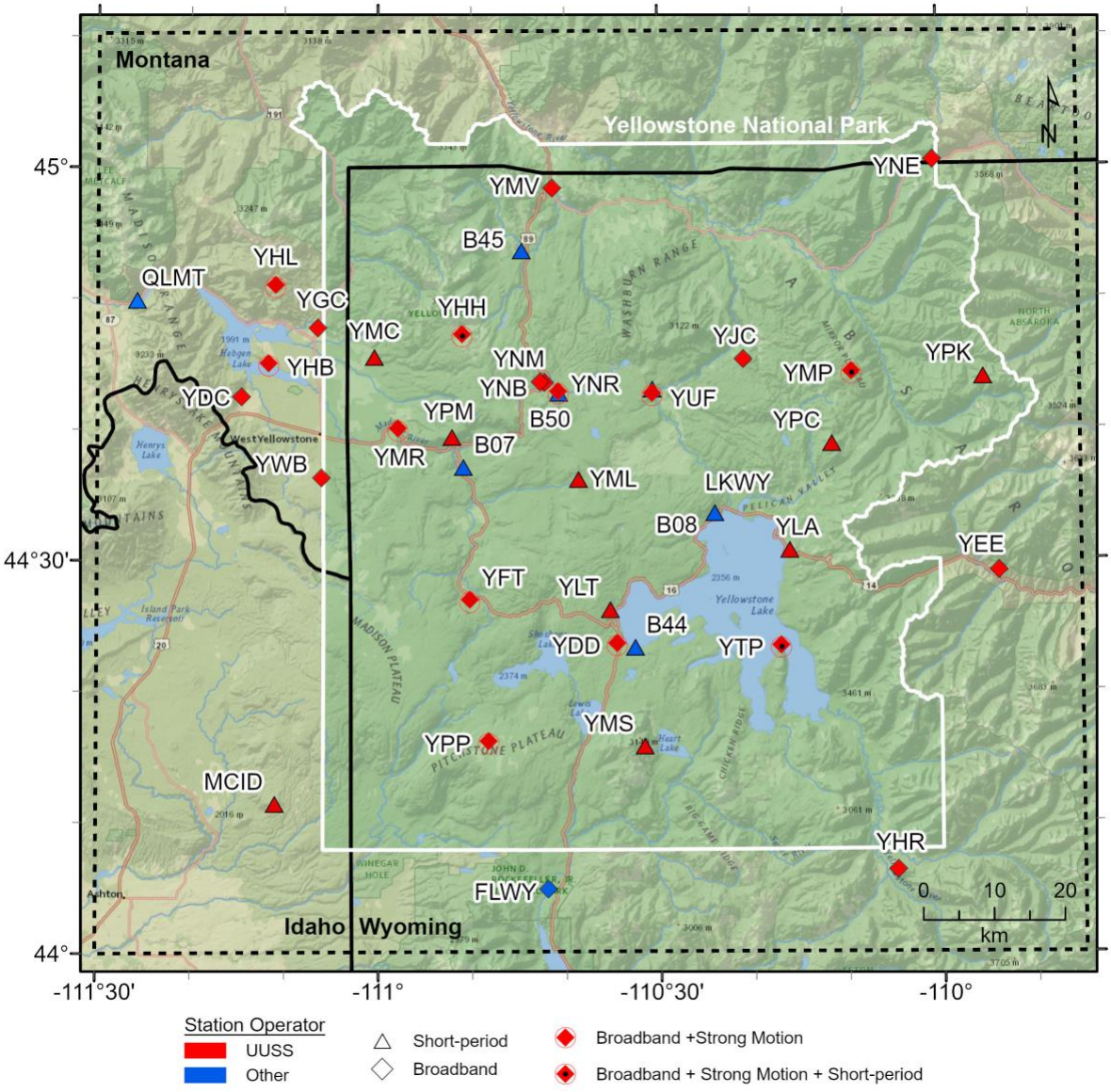

Figure 2. Seismograph stations of the Yellowstone Seismic Network as of March 31, 2025.

Table 2. Earthquakes in the Yellowstone Region: January 1–March 31, 2025

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
250101	15:21:40.52	44º44.35’	110º46.78’	6.8	1.4W	20	82	6	0.15
250101	15:21:51.02	44º41.08’	110º45.14’	-2.0	1.2	8	167	6	0.11
250102	02:16:13.19	44º13.17’	110º36.33’	7.5	0.8	9	140	8	0.23
250102	02:18:04.31	44º14.58’	110º38.52’	7.6	0.9	11	102	9	0.28
250102	02:18:21.56	44º14.42’	110º38.77’	4.9	1.3	11	103	10	0.28
250102	02:19:07.18	44º13.53’	110º37.62’	8.0	1.7W	15	117	9	0.24
250102	02:20:45.88	44º14.48’	110º38.86’	4.7	1.0	11	119	10	0.13
250102	02:21:32.29	44º13.84’	110º38.05’	4.4	1.2	10	199	9	0.12
250102	02:22:58.60	44º14.17’	110º38.15’	7.8	0.9	12	127	9	0.20
250105	20:07:25.11	44º28.60’	110º44.81’	4.1	1.1	21	52	8	0.15
250106	18:17:08.81	44º33.34’	110º32.50’	4.5	1.1	8	174	10	0.07
250108	17:49:52.22	44º37.56’	110º23.11’	4.6	1.9W	19	107	7	0.14
250108	17:50:03.19	44º37.59’	110º23.10’	3.5	1.4	15	135	7	0.16
250109	14:09:00.19	44º27.82’	110º45.47’	2.0	0.6	18	71	6	0.15
250110	01:39:52.75	44º45.66’	110º46.09’	5.2	0.6	15	112	6	0.15
250110	23:04:56.80	44º26.84’	110º59.70’	5.3*	0.8	9	151	13	0.07
250112	12:01:25.01	44º40.91’	110º02.64’	12.3	1.6	12	91	11	0.16
250113	17:28:04.29	44º45.94’	110º37.11’	4.3	1.3	25	94	8	0.22
250115	03:25:26.48	44º45.62’	110º48.36’	8.6	2.4W	34	89	9	0.14
250116	11:22:03.26	44º48.89’	110º32.94’	6.6	0.3	20	94	12	0.17
250122	22:47:31.92	44º45.73’	110º48.37’	8.0	1.6W	27	89	8	0.13
250123	18:37:43.54	44º22.97’	110º35.64’	2.7	1.9W	18	71	2	0.23
250123	20:49:32.10	44º45.62’	111º09.12’	7.9	1.2W	20	57	4	0.15
250124	04:25:48.39	44º45.83’	111º09.41’	9.8	1.3W	20	59	3	0.13
250124	21:34:06.44	44º45.49’	110º48.49’	6.9	1.3W	25	88	8	0.15
250125	04:28:41.48	44º21.76’	110º33.74’	2.6	1.0	14	119	4	0.14
250125	23:33:16.11	44º45.79’	111º09.39’	10.1	2.0W	29	59	3	0.13
250126	11:32:34.27	44º45.44’	111º09.06’	7.9	0.9W	20	56	4	0.14
250126	11:33:00.42	44º20.96’	110º40.88’	2.3	0.2	7	148	10	0.16
250128	17:01:11.12	44º33.60’	111º00.75’	11.3	0.7W	20	107	9	0.12
250128	18:21:16.16	44º18.89’	110º17.31’	10.6	1.0	19	141	9	0.19
250129	00:53:39.73	44º46.03’	110º46.77’	4.6	0.7	18	109	6	0.17
250129	00:55:22.20	44º46.68’	110º45.96’	6.2	0.6	20	215	7	0.19
250129	00:59:47.66	44º45.94’	110º46.26’	8.2	3.7W	34	76	6	0.18
250129	01:03:57.53	44º45.93’	110º46.14’	8.1	2.0W	31	76	6	0.17
250129	01:07:37.53	44º45.43’	110º46.58’	3.0	0.5W	21	81	6	0.22
250129	01:08:05.55	44º45.99’	110º46.38’	4.9	1.3W	28	77	7	0.15
250129	01:08:20.29	44º45.91’	110º46.15’	3.2	0.2	13	98	7	0.21
250129	01:27:16.97	44º46.58’	110º46.72’	4.5	0.0	17	121	6	0.21
250129	01:27:46.11	44º46.32’	110º46.54’	4.8	0.8W	25	83	6	0.17
250129	02:04:56.28	44º45.91’	110º46.76’	4.9	1.4W	16	88	6	0.12
250129	03:34:27.24	44º46.96’	110º46.02’	7.5	0.9W	16	186	7	0.09
250129	03:36:01.99	44º45.83’	110º46.37’	6.7	1.5W	21	81	6	0.16
250129	03:37:11.80	44º46.58’	110º46.37’	4.9	0.5	16	183	6	0.11
250129	07:49:17.57	44º45.88’	110º46.40’	7.9	0.6	16	89	7	0.12

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DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
250129	10:31:25.73	44º45.92’	110º46.84’	4.6	0.5	15	88	6	0.09
250129	14:03:54.20	44º46.23’	110º46.51’	4.7	0.6	16	178	6	0.11
250129	14:08:07.39	44º46.66’	110º46.94’	4.9	0.2	12	183	6	0.12
250129	15:19:55.21	44º46.27’	110º46.46’	5.4	1.1W	20	91	6	0.14
250129	20:07:07.89	44º45.80’	110º46.40’	2.1	0.2	15	191	6	0.16
250130	03:55:24.83	44º45.61’	110º46.38’	5.0	1.8W	32	75	6	0.17
250130	04:22:33.27	44º45.61’	110º46.25’	5.0	1.5W	28	75	6	0.15
250130	06:05:22.10	44º47.12’	110º46.13’	6.4	0.4	15	188	6	0.10
250131	02:48:44.78	44º45.68’	110º46.51’	4.9	2.5W	34	74	6	0.17
250131	03:48:41.99	44º46.03’	110º46.53’	4.7	1.2W	23	90	6	0.14
250131	04:25:25.04	44º45.57’	110º46.63’	5.2	0.9W	18	87	7	0.20
250201	03:22:56.44	44º45.65’	110º46.05’	5.1	0.7	22	90	6	0.17
250202	23:31:54.68	44º45.95’	110º47.19’	4.8	1.6W	23	87	6	0.18
250203	02:31:39.10	44º46.73’	110º46.57’	5.6	1.1W	15	184	6	0.09
250203	03:41:23.64	44º46.15’	110º47.10’	4.8	1.5W	22	88	6	0.15
250203	08:24:15.98	44º47.97’	110º45.82’	4.5	1.6W	24	128	7	0.20
250203	13:33:54.76	44º46.02’	110º47.16’	5.1	1.1W	28	78	6	0.17
250203	17:35:10.35	44º46.55’	110º46.91’	6.4	0.8	18	93	6	0.14
250204	05:30:21.77	44º46.08’	110º46.85’	4.8	1.3W	26	89	6	0.16
250204	05:57:11.56	44º46.48’	110º46.88’	5.1	0.9W	21	92	6	0.15
250204	08:51:23.86	44º46.63’	110º46.50’	4.8	1.1W	20	92	6	0.13
250204	11:39:12.02	44º45.98’	110º46.90’	5.1	1.5W	24	88	6	0.15
250204	13:30:20.92	44º46.67’	110º46.59’	4.8	0.3	14	183	6	0.10
250204	20:06:01.29	44º45.96’	110º47.01’	4.8	0.9	21	93	6	0.17
250204	20:06:25.98	44º46.54’	110º46.88’	5.0	1.3W	20	96	6	0.18
250205	03:13:20.45	44º03.81’	110º44.27’	8.6*	1.2	15	123	24	0.17
250207	12:42:57.44	44º47.00’	110º46.24’	6.2	0.2	14	186	6	0.10
250207	12:51:06.12	44º46.95’	110º46.29’	5.9	0.2	18	186	6	0.10
250207	15:02:10.61	44º46.51’	110º46.86’	4.8	1.1W	18	182	6	0.11
250208	07:06:47.66	44º46.35’	110º46.76’	4.8	1.0W	21	90	6	0.11
250210	11:44:31.35	44º44.10’	111º10.18’	14.4	1.6W	25	62	3	0.14
250211	03:15:53.21	44º13.21’	110º45.37’	2.0	1.0	10	95	7	0.17
250211	03:27:29.00	44º13.24’	110º44.71’	1.8	0.9	10	96	7	0.11
250211	08:35:13.20	44º14.59’	110º24.90’	4.1	2.6W	10	152	9	0.15
250211	08:35:56.08	44º21.63’	110º33.29’	11.4	2.2W	8	88	11	0.17
250211	08:38:45.45	44º21.66’	110º32.37’	8.1	2.1W	11	95	11	0.11
250211	08:44:07.42	44º21.24’	110º32.58’	4.8	2.4W	13	95	10	0.27
250211	08:52:36.93	44º21.19’	110º32.74’	10.7	2.1W	12	93	10	0.24
250211	09:04:36.65	44º21.53’	110º32.80’	7.5	1.1	13	94	11	0.20
250211	10:32:49.65	44º21.74’	110º33.29’	6.1	0.9	13	95	11	0.16
250211	10:37:09.61	44º22.02’	110º33.19’	7.5	0.8	13	87	12	0.26
250211	10:37:22.10	44º21.65’	110º32.88’	5.4*	1.1	12	91	11	0.25
250211	10:38:08.58	44º21.76’	110º33.05’	7.0	2.1W	25	89	11	0.21
250211	10:41:58.18	44º22.10’	110º32.70’	9.5*	0.8	9	130	21	0.15
250211	10:42:06.06	44º23.29’	110º32.27’	12.6	1.1	8	161	20	0.17

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DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
250211	14:30:18.43	44º59.83’	110º31.73’	16.4	0.9	29	189	13	0.19
250220	11:05:27.82	44º33.94’	110º41.63’	8.0	0.7	22	57	6	0.20
250223	10:27:00.74	44º44.21’	111º02.97’	5.4	1.1W	21	81	4	0.17
250224	23:53:54.21	44º40.85’	110º02.43’	12.9	1.4	9	94	11	0.15
250226	20:03:33.36	44º48.37’	110º59.69’	8.8	1.1W	21	123	5	0.15
250227	10:19:52.77	44º16.55’	110º29.03’	2.7	0.6	13	187	4	0.11
250227	16:58:57.91	44º22.04’	110º48.75’	2.5	0.6	14	104	10	0.17
250228	13:22:36.89	44º14.58’	110º28.74’	4.9	1.0	17	165	5	0.17
250301	14:02:23.44	44º34.65’	110º44.60’	7.3	0.6	10	95	9	0.09
250301	14:02:45.57	44º34.48’	110º44.82’	6.5	0.8	11	94	9	0.10
250302	06:58:21.47	44º44.05’	111º10.31’	12.4	0.9	18	74	3	0.11
250303	10:38:34.17	44º21.26’	110º50.31’	2.9	1.2	13	87	10	0.06
250304	02:21:05.76	44º44.76’	111º07.57’	8.4	0.6W	18	66	6	0.13
250304	02:28:45.08	44º44.82’	111º07.48’	5.8	-0.2	13	102	6	0.10
250304	02:38:14.70	44º44.49’	111º07.36’	7.4	-0.4	15	77	6	0.13
250304	02:49:41.57	44º44.71’	111º07.65’	7.9	0.0	16	75	5	0.15
250304	03:15:59.73	44º44.76’	111º07.46’	5.9	0.2	17	74	6	0.12
250304	03:22:28.32	44º43.56’	111º07.24’	2.4	-0.9	7	143	8	0.03
250304	03:25:43.64	44º44.34’	111º07.40’	7.2	-0.4	14	78	6	0.11
250304	03:29:40.53	44º43.60’	111º07.14’	2.7	-0.8	7	142	8	0.05
250304	03:30:30.34	44º44.62’	111º07.62’	7.7	-0.1	17	75	6	0.14
250304	03:32:42.65	44º43.67’	111º07.14’	2.3	-0.9	9	141	7	0.04
250304	03:37:55.27	44º43.63’	111º07.16’	2.2	-0.5	9	108	8	0.07
250304	03:38:20.90	44º44.34’	111º07.32’	7.7	-0.9	9	119	6	0.15
250304	03:50:27.55	44º44.44’	111º07.73’	7.6	0.2	21	64	5	0.14
250304	04:04:43.64	44º43.62’	111º07.17’	2.9	--	8	142	8	0.05
250304	04:19:51.20	44º44.65’	111º07.52’	8.1	0.2	22	65	6	0.18
250304	04:29:49.96	44º44.56’	111º07.36’	7.3	-0.5	14	76	6	0.13
250304	05:11:02.24	44º44.71’	111º07.51’	7.9	-0.2	14	75	6	0.12
250304	05:11:56.14	44º44.66’	111º07.64’	7.7	-0.7	14	75	5	0.17
250304	05:13:00.43	44º44.67’	111º07.65’	7.9	0.3	20	64	5	0.14
250304	05:23:55.41	44º44.72’	111º07.65’	8.3	0.5	23	64	5	0.15
250304	06:26:11.50	44º44.62’	111º07.72’	7.8	-0.2	18	63	5	0.14
250304	07:29:09.49	44º47.44’	110º58.97’	6.0	-0.7	12	217	4	0.18
250304	12:26:09.88	44º45.22’	111º09.44’	9.2	0.0	12	116	6	0.11
250304	12:54:04.90	44º43.93’	111º03.06’	3.3	0.0	10	87	5	0.14
250304	14:34:11.71	44º43.79’	111º07.42’	2.5	-0.9	11	85	6	0.08
250306	19:23:45.71	44º34.52’	110º03.15’	12.6	1.8	14	95	16	0.19
250308	10:00:03.48	44º41.56’	111º02.38’	5.5	1.2W	26	70	6	0.16
250308	10:27:01.67	44º41.64’	111º02.28’	6.4	0.8	17	70	6	0.16
250310	07:37:24.77	44º45.35’	111º06.78’	8.6	0.8	16	57	5	0.11
250312	06:06:38.35	44º41.24’	110º01.76’	12.7	1.2	8	95	10	0.07
250315	15:42:15.84	44º44.11’	111º14.18’	12.4	1.6W	25	84	3	0.14
250317	10:17:56.87	44º35.69’	110º23.73’	1.9	0.8	9	147	4	0.12
250317	15:14:38.87	44º47.52’	110º30.63’	2.3	0.8	16	141	8	0.13

Table 2. Earthquakes in the Yellowstone Region: January 1–March 31, 2025

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
250319	17:42:38.04	44º44.81’	111º06.15’	9.0	1.4W	20	82	5	0.15
250319	17:42:47.15	44º43.74’	111º06.07’	2.6	0.9	9	80	7	0.09
250319	18:11:51.26	44º44.68’	111º06.18’	7.9	0.9W	18	79	6	0.12
250319	18:11:58.38	44º43.53’	111º06.06’	2.7	0.4	9	141	8	0.10
250320	00:31:11.68	44º28.27’	110º32.86’	4.2	0.8	12	69	5	0.10
250320	16:08:32.43	44º40.14’	110º01.77’	10.3	1.6	12	102	11	0.16
250320	21:26:41.47	44º45.05’	111º06.36’	10.7	2.2W	27	61	5	0.13
250320	21:44:05.56	44º44.83’	111º06.29’	9.2	0.5	9	103	5	0.08
250321	11:39:36.40	44º44.89’	111º06.18’	9.2	0.8W	11	82	5	0.07
250321	12:02:02.76	44º44.82’	111º06.80’	8.3	0.7W	16	75	5	0.09
250321	13:57:28.65	44º45.17’	111º06.43’	10.8	1.1W	16	84	5	0.13
250321	14:24:21.05	44º40.43’	110º01.28’	12.9	1.8	9	104	10	0.17
250322	13:01:04.60	44º44.71’	111º06.39’	7.7	1.0W	19	78	6	0.13
250322	13:03:51.40	44º44.18’	111º06.18’	5.1	0.9W	16	76	7	0.14
250322	22:30:08.05	44º24.68’	110º43.78’	2.1	0.9	11	103	10	0.14
250323	14:40:16.94	44º46.89’	111º05.56’	8.0	0.8	10	135	2	0.06
250323	15:53:58.92	44º44.40’	111º10.92’	9.1	0.6	13	95	2	0.09
250326	12:01:49.26	44º44.92’	111º02.43’	7.6	1.0W	21	91	3	0.16
250326	12:01:59.55	44º44.95’	111º02.12’	7.4	0.9	20	92	3	0.15
250328	05:40:33.82	44º34.55’	110º46.44’	2.1	0.3	13	105	8	0.14
250329	11:48:49.14	44º47.09’	110º49.61’	5.4*	0.7W	27	102	11	0.15
250329	17:26:13.51	44º48.15’	110º48.56’	7.6	0.6	16	191	11	0.12
250330	00:59:23.32	44º38.70’	110º22.04’	4.4	1.1	15	77	10	0.15
250330	04:13:58.08	44º45.25’	111º06.94’	10.4	0.7W	22	59	5	0.15
250330	05:39:37.47	44º43.08’	111º00.85’	10.3	0.9W	19	59	5	0.15
250330	05:43:19.20	44º43.64’	111º03.25’	8.1	0.6W	19	74	5	0.15
250330	05:49:02.59	44º43.08’	111º00.73’	10.7	1.4W	29	58	5	0.16
250330	06:02:13.01	44º43.00’	111º01.12’	9.1	1.0W	21	60	5	0.14
250330	06:12:29.64	44º42.46’	111º01.49’	5.2	-0.5	7	195	6	0.03
250330	06:12:46.74	44º43.04’	111º00.79’	9.7	0.9W	22	58	5	0.14
250330	06:42:09.86	44º43.01’	111º00.91’	9.8	0.5	21	59	5	0.15
250330	22:37:18.00	44º35.31’	110º42.91’	8.1	0.9W	18	75	6	0.12
250331	14:16:06.57	44º25.82’	110º59.99’	3.8*	0.6	12	151	13	0.12

number of earthquakes = 168

* indicates poor depth control

W indicates Wood-Anderson data used for magnitude calculation

Table 3
UNIVERSITY OF UTAH YELLOWSTONE SEISMIC NETWORK
Operating Seismograph Stations
March 31, 2025

SEED Station	Location	SEED Channel	No. of Channels	Network Code	Latitude	Longitude	Elevation (meters)	Sensor	Digitizer	Telemetry	Sponsor
B206*	Canyon206bwy2008, Yellowstone, WY	EH[ZEN]	3	PB	44° 46.66′	110° 30.70′	2400	IESE-S2	Q330	Digital	EarthScope
B207*	Madisn207bwy2007, Yellowstone, WY	EH[ZEN]	3	PB	44° 37.14′	110° 50.91′	2182	IESE-S2	Q330	Digital	EarthScope
B208*	Lakejn208bwy2008, Yellowstone, WY	EH[ZEN]	3	PB	44° 33.61′	110° 24.09′	2406	IESE-S2	Q330	Digital	EarthScope
B944*	Grantt944bwy2008, Yellowstone, WY	EH[ZEN]	3	PB	44° 23.38′	110° 32.63′	2365	IESE-S2	Q330	Digital	EarthScope
B945*	Panthr944swy2008, Yellowstone, WY	EH[ZEN]	3	PB	44° 53.64′	110° 44.65′	2249	IESE-S2	Q330	Digital	EarthScope
B950*	Norris950bwy2013, Yellowstone, WY	EH[ZEN]	3	PB	44° 42.77′	110° 40.71′	2328	IESE-S2	Q330	Digital	EarthScope
FLWY*	Flagg Ranch, WY	BH[ZEN]	3	IW	44° 04.96′	110° 41.96′	2078	3ESP	RT-130	Digital	ANSS
IMW*	Indian Meadows, WY	BH[ZEN]	3	IW	43° 53.58′	110° 56.58′	2670	3ESP	RT-130	Digital	ANSS
LKWY*	Lake, WY	BH[ZEN]	3	US	44° 33.91′	110° 24.00′	2424	STS-2	Q330	Digital	USGS
LOHW*	National Elk Refuge, WY	BH[ZEN]	3	IW	43° 36.76′	110° 36.30′	2245	3ESP	RT-130	Digital	ANSS
MCID	Moose Creek, ID	EHZ	1	WY	44° 11.45′	111° 11.03′	2137	L4C	PSN	Analog	USGS
MOOW*	Moose Ponds, WY	BH[ZEN]	3	IW	43° 44.92′	110° 44.69′	2128	3ESP	RT-130	Digital	ANSS
QLMT*	Earthquake Lake, MT	EHZ	1	MB	44° 49.84′	111° 25.80′	2064	L4C	-	Analog	MBMT
REDW*	Red-Top Meadows, WY	BH[ZEN]	3	IW	43° 21.74′	110° 51.18′	2322	3ESP	RT-130	Digital	ANSS
SNOW*	Snow King Mountain, WY	BH[ZEN]	3	IW	43° 27.75′	110° 45.31′	2390	3ESP	RT-130	Digital	ANSS
TPAW*	Teton Pass, WY	BH[ZEN]	3	IW	43° 29.41′	110° 57.04′	2512	3ESP	RT-130	Digital	ANSS
TPMT*	Teepe Creek, MT	EHZ	1	MB	44° 43.79′	111° 39.94′	2518	L4C	-	Analog	MBMT
YDC	Denny Creek, MT	HH[ZEN]	3	WY	44° 42.51′	111° 14.60′	2025	Trillium 120	Centaur	Digital	USGS
YDD	Grant Junction, Yellowstone, WY	HH[ZEN]	3	WY	44° 24.00′	110° 34.80′	2400	STS-2	Q330	Digital	USGS
		EN[ZEN]	3					Episensor			
YEE	East Entrance (YNP), WY	HH[ZEN]	3	WY	44° 29.12′	109° 53.81′	2270	Compact PH	Centaur	Digital	USGS
YFT	Old Faithful (YNP), WY	HH[ZEN]	3	WY	44° 27.05′	110° 50.24′	2292	Compact	Centaur	Digital	USGS
		EN[ZEN]	3					Titan			
YGC	Grayling Creek, MT	HH[ZEN]	3	WY	44° 47.77′	111° 06.45′	2075	Trillium 120	Centaur	Digital	USGS
YHB	Horse Butte, MT	HH[ZEN]	3	WY	44° 45.07′	111° 11.71′	2157	Compact	Centaur	Digital	USGS
		EN[ZEN]	3					Titan			
YHH	Holmes Hill (YNP), WY	EHZ	1	WY	44° 47.30′	110° 51.03′	2717	S13	PSN	Analog	USGS
		HH[ZEN]	3					Trillium 120	Centaur	Digital	
		EN[ZEN]	3					Titan			
YHL	Hebgen Lake, MT	HH[ZEN]	3	WY	44° 51.05′	111° 10.98′	2691	Trillium 120	Q330	Digital	USGS
		EN[ZEN]	3					Titan			
YHR	Hawk's Rest, WY	HH[ZEN]	3	WY	44° 06.36′	110° 04.90′	2976	Trillium 120	Q330	Digital	USGS

SEED Station	Location	SEED Channel	No. of Channels	Network Code	Latitude	Longitude	Elevation (meters)	Sensor	Digitizer	Telemetry	Sponsor
YJC	Joseph's Coat (YNP), WY	HH[ZEN]	3	WY	44° 45.33′	110° 20.95′	2684	Trillium 120	Centaur	Digital	USGS
YLA	Lake Butte (YNP), WY	EHZ	1	WY	44° 30.76′	110° 16.12′	2580	L4C	PSN	Analog	USGS
YLT	Little Thumb Creek (YNP), WY	EHZ	1	WY	44° 26.25′	110° 35.28′	2439	L4C	PSN	Analog	USGS
YMC	Maple Creek (YNP), WY	EH[ZEN]	3	WY	44° 45.53′	111° 00.41′	2073	S13	PSN	Analog	USGS
YML	Mary Lake (YNP), WY	EH[ZEN]	3	WY	44° 36.20′	110° 38.63′	2653	S13	PSN	Analog	USGS
YMP	Mirror Plateau (YNP), WY	EHZ	1	WY	44° 44.38′	110° 09.40′	2774	S13	PSN	Analog	USGS
		HH[ZEN]	3					Trillium 120	Q330	Digital	
		EN[ZEN]	3					Titan			
YMR	Madison River (YNP), WY	HH[ZEN]	3	WY	44° 40.12′	110° 57.90′	2149	Trillium 120	Q330	Digital	USGS
		EN[ZEN]	3					Titan			
YMS	Mount Sheridan (YNP), WY	EHZ	1	WY	44° 15.84′	110° 31.67′	3106	L4C	PSN	Analog	USGS
YMV	Mammoth Vault (YNP), WY	HH[ZEN]	3	WY	44° 58.42′	110° 41.33′	1829	Trillium 120	Centaur	Digital	USGS
YNB	Norris Basin (YNP), WY	HH[ZEN]	3	WY	44° 43.64′	110° 42.67′	2307	Trillium 120	Centaur	Digital	USGS
		HDF[1,2,3]	3					InfraBSU			
YNE	Northeast Entrance (YNP), WY	HH[ZEN]	3	WY	45° 00.46′	110° 00.48′	2343	Compact	Centaur	Digital	USGS
YNM	Norris Museum (YNP), WY	HH[ZEN]	3	WY	44° 43.59′	110° 42.22′	2311	Trillium 240	Centaur	Digital	USGS
YNR	Norris Junction (YNP), WY	HH[ZEN]	3	WY	44° 42.93′	110° 40.75′	2336	Trillium 120	Q330	Digital	USGS
		EN[ZEN]	3					Titan			
YPC	Pelican Cone (YNP), WY	EHZ	1	WY	44° 38.88′	110° 11.55′	2932	L4C	PSN	Analog	USGS
YPK	Parker Peak (YNP), WY	EH[ZEN]	3	WY	44° 43.91′	109° 55.32′	2897	L4C	PSN	Analog	USGS
YPM	Purple Mountain (YNP), WY	EHZ	1	WY	44° 39.43′	110° 52.12′	2582	L4C	PSN	Analog	USGS
YPP	Pitchstone Plateau (YNP), WY	HH[ZEN]	3	WY	44° 16.26′	110° 48.27′	2707	Trillium 120	Centaur	Digital	USGS
		EN[ZEN]	3					Titan			
YTP	The Promontory (YNP), WY	EHZ	1	WY	44° 23.51′	110° 17.10′	2384	L4	PSN	Analog	USGS
		HH[ZEN]	3					Trillium 120	Centaur	Digital	
		EN[ZEN]	3					Titan			
YUF	Upper Falls (YNP), WY	HH[ZEN]	3	WY	44° 42.76′	110° 30.71′	2394	Trillium 120	Centaur	Digital	USGS
		EN[ZEN]	3					Titan			
YWB	West Boundary (YNP), WY	HH[ZEN]	3	WY	44° 36.35′	111° 06.05′	2310	Trillium 120	Centaur	Digital	USGS

* Station operated by another agency and recorded as part of the Yellowstone Seismic Network
Network Statistics: 163 data channels from 46 stations were being recorded at the end of this report period

EXPLANATION OF TABLE

UURSN Code: Station code formerly used in routine processing. Owing to software limitations, the station code may not be the same code used by the original operator. For multi-component stations, the vertical, east-west, and north-south high gain (low gain) components are identified by an appended Z(V), E(L), and N(M), respectively, in UUSS phase files.

Location: General description of station location. YNP = Yellowstone National Park.

SEED Station: The SEED (Standard for the Exchange of Earthquake Data) station code used by the original operator.

SEED Channel: The SEED format uses three letters to name seismic channels. See <<http://www.iris.edu/manuals/SEEDManual_V2.4.pdf>> for information about the SEED channel naming convention. Relevant sections are reproduced below. In the SEED convention, each letter describes one aspect of the instrumentation and its digitization. The first letter specifies the general sampling rate and the response band of the instrument. Band codes used in this table include:

Band Code	Band Type	Sample Rate	Corner Period
E	Extremely short period	≥ 80 Hertz	< 10 seconds
H	High broadband	≥ 80 Hertz	≥ 10 seconds
B	Broadband	≥ 10 to < 80 Hertz	≥10 seconds
S	Short period	≥ 10 to < 80 Hertz	< 10 seconds

The second letter specifies the family to which the sensor belongs. Sensor families used in this table are:

Instrument Code	Description
H	High gain seismometer
L	Low gain seismometer
N	Accelerometer

The third letter specifies the physical configuration of the members of a multiple axis instrument package. Channel orientations used in this table are:

Z E N	Traditional (Vertical, East-West, North-South)

Number of Channels: Total number of waveform channels recorded.

Network Code: The FDSN (Federation of Digital Seismographic Networks) registered network code. See <<http://www.iris.edu/dms/nodes/dmc/services/network_codes>> for information about registered seismograph network codes. Network codes referenced in this table:

Network Code	Network name; Network operator or responsible organization
IE	Idaho National Laboratory Seismic Network
IU	IRIS/USGS Network; USGS Albuquerque Seismological Laboratory
IW	Intermountain West Network, U.S. Geological Survey
MB	Montana Regional Seismic Network; Montana Bureau of Mines and Geology

PB	Plate Boundary Observatory (EarthScope Consortium)
UU	University of Utah Regional Network; University of Utah
US	US National Network; USGS National Earthquake Information Center
WY	Yellowstone Wyoming Seismic Network; University of Utah

Latitude, Longitude: Sensor location in degrees and decimal minutes; North latitude, West longitude.

Elevation: Sensor altitude in meters above sea level.

Sensor	**Description**
L4, L4C	Mark Products L4 or L4C short-period seismometer
S13, 18300	Geotech S13 or 18300 short-period seismometer
Ranger	Kinemetrics Ranger short-period seismometer
40T	Guralp CMG-40T broadband seismometer
3T	Guralp CMG-3T broadband seismometer
3ESP	Guralp CMG-3ESP broadband seismometer
STS-2	Streckheisen STS-2 broadband seismometer
FBA23	Kinemetrics FBA-23 accelerometer
EpiSensor	Kinemetrics EpiSensor accelerometer
Applied Mems	Applied Mems accelerometer
PA-23	Geotech PA-23 accelerometer
Compact	Nanometrics Compact broadband seismometer
Compact PH	Nanometrics Compact Posthole broadband seismometer
Trillium 120	Nanometrics Trillium 120 broadband seismometer
Trillium 240	Nanometrics Trillium 240 broadband seismometer
Titan	Nanometrics Titan accelerometer
Observer	Refraction Technology (REF TEK) Model 151 Observer broadband seismometer
IESE-S2	Institute of Earth Science and Engineering S-2 model borehole seismometer

Digitizer	**Description**
K2	Kinemetrics Altus Series K2 (19-bit resolution field digitizer)
Etna	Kinemetrics Altus Series Etna (18-bit resolution field digitizer)
72A-07	Refraction Technology (REF TEK) model 72A-07 (24-bit field digitizer)
72A-08	Refraction Technology (REF TEK) model 72A-08 (24-bit field digitizer)
ANSS-130	Refraction Technology (REF TEK) model 130-ANSS/02 (24-bit resolution field digitizer)
RT-130	Refraction Technology (REF TEK) model RT-130 (24-bit resolution field digitizer)
Q330	Quanterra, Inc Q330 digitizer (24-bit resolution field digitizer)
SMART-24	Geotech SMART-24 digitizer (24-bit resolution field digitizer)
PSN	PSN-ADC-SERIAL version III (16-bit resolution field digitizer)
Basalt	Kinemetrics Basalt (24-bit resolution field digitizer)
Taurus	Nanometrics Taurus (24-bit resolution field digitizer)
Centaur	Nanometrics Centaur (24-bit resolution field digitizer)

Telemetry	Description
Analog	Data transmission is analog along part of the transmission pathway
Digital	Data are converted to digital form at the station site
None	On-site recording system

Sponsor (or Operator for stations marked by * in preceding columns)

USGS	U.S. Geological Survey
Utah	State of Utah
ANSS	Advanced National Seismic System
INL	Idaho National Laboratory
MBMT	Montana Bureau of Mines and Geology
EarthScope	EarthScope Consortium
NSF	National Science Foundation

Network Changes During January 1–March 31, 2025

None