

# Digital Geodata Series DGS 04-1 Earthquakes Epicentered in New Jersey

## Explanation

### MAGNITUDES

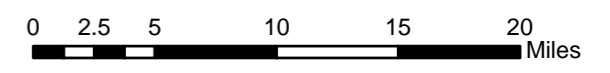
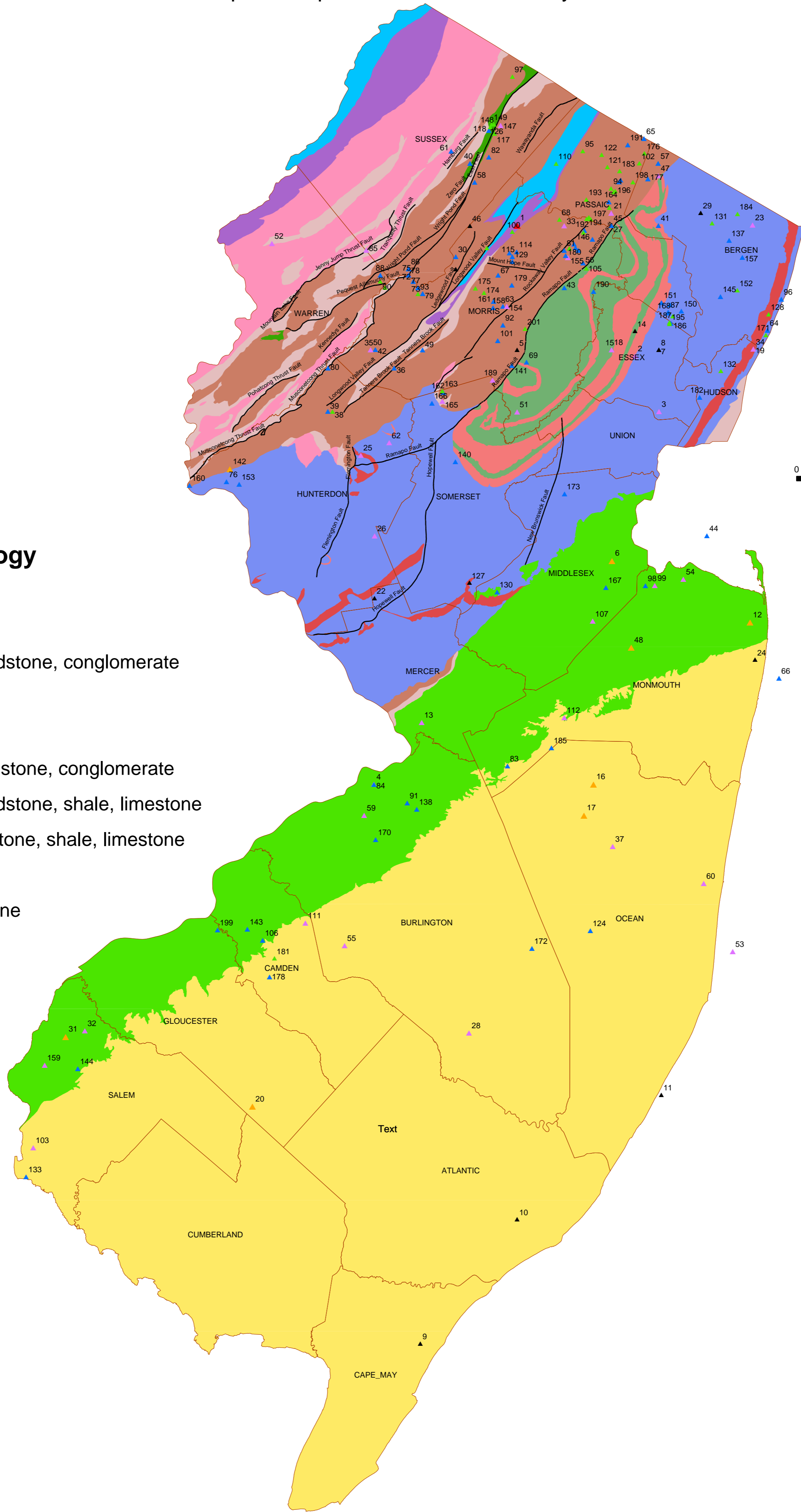
- ▲ 0.0 - 0.3
- ▲ 0.4 - 1.3
- ▲ 1.4 - 2.3
- ▲ 2.4 - 3.3
- ▲ 3.4 - 4.3
- ▲ 4.4 - 5.3

— Named Faults

□ Counties

### Generalized Bedrock Geology

- Tertiary sand, silt, clay
- Cretaceous sand, silt, clay
- Jurassic siltstone, shale, sandstone, conglomerate
- Jurassic basalt
- Jurassic diabase
- Triassic siltstone, shale, sandstone, conglomerate
- Devonian conglomerate, sandstone, shale, limestone
- Silurian conglomerate, sandstone, shale, limestone
- Ordovician shale, limestone
- Cambrian limestone, sandstone
- Precambrian marble
- Precambrian gneiss, granite





# Earthquakes Epicentered In New Jersey, DGS 04-1, Edition 20170327

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification Information:*

#### *Citation:*

#### *Citation Information:*

#### *Originator:*

New Jersey Department of Environmental Protection NJDEP, New Jersey Geological Survey NJGS

*Publication Date:* 20041217

#### *Title:*

Earthquakes Epicentered In New Jersey, DGS 04-1, Edition 20170327

*Edition:* 20170327

*Geospatial Data Presentation Form:* vector digital data

#### *Series Information:*

*Series Name:* Digital Geodata Series

*Issue Identification:* DGS04-1

#### *Publication Information:*

*Publication Place:* Trenton, New Jersey

*Publisher:* New Jersey Geological Survey

*Online Linkage:* <http://www.state.nj.us/dep/njgs/geodata/dgs04-1.htm>

### *Description:*

#### *Abstract:*

The New Jersey Geological Survey Digital Geodata Series DGS04-1 dataset shows earthquakes that had epicenters in New Jersey. This data has 201 earthquakes with epicenters in New Jersey. Most are minor with magnitudes ranging from 0.4 to 5.3 and depths up to 25 km below sea level. Earthquakes with magnitude of 0 (zero) implies that the magnitude is unknown.

Following earthquake added since Nov. 7, 2016 version:

1) 1.4 km S of Morris Plains, NJ on 3-25-2017, 13:14:50 (EDT), Magnitude 1.31, Depth 6.03 km.

#### *Purpose:*

To provide information on earthquakes which had epicenters in New Jersey.

#### *Supplemental Information:*

Various Data Sources and References:

Coffman, J. L. and von Hake, C. A., ed., 1973, Earthquake history of the United States: U. S. Department of Commerce, National Oceanic and Atmospheric Administration Publication 41-1, Revised edition

(through 1970).

Dombroski, D. R., 1992, Catalog of NJ Earthquakes Through 1990: N.J. Geological Survey, Geological Survey Report 31, 16p.

Eppley, R. A., ed., 1965, Earthquake history of the United States: U.S. Department of Commerce, Coast and Geodetic Survey Publication 41-1 Revised (through 1963).

Richter, C.F., 1935, An instrumental earthquake magnitude scale: Seismological Society of America Bulletin, v. 25 p.1-32.

Smith, W.E.T., 1962, Earthquakes of eastern Canada and adjacent areas, 1534-1927: Publication of the Dominion Observatory, Ottawa, v.24, no. 5.

Smith, W.E.T., 1966, Earthquakes of eastern Canada and adjacent areas, 1928-1959: Publication of the Dominion Observatory, Ottawa, v.32, no. 3.

Sykes, Lynn R., John Ambruster, Won-Young Kim , Leonardo Seeber and Klaus Jacob, Appendices to paper Earthquakes in the Greater NY City-Philadelphia Area: 1677-2004. (<http://www.ldeo.columbia.edu/~sykes/pages/EqCatNYC-Phil.html>)

Stover, C.W., and Coffman, J.L., 1993, Seismicity of the United States, 1568-1989 (Revised) U.S. Geological Survey Professional Paper 1527.

Stover, C.W., Reagor, G., and Algermissen, S.T., 1984, United States earthquake data file: U.S. Geological Survey, Open-file Report 84-225, 123p.

Wood, H. O, and Neumann, Frank, 1931, Modified Mercalli scale of 1931: Seismological Society of America Bulletin, v.21 no. 4, p. 277-283.

LCSN - Lamont Doherty Cooperative Seismographic Network. (<http://www.ldeo.columbia.edu/LCSN/>)

NEIC- National Earthquake Information Center.(<http://earthquake.usgs.gov/regional/neic/index.php>)

NESN - New England Seismic Network. Weston Observatory. (<http://www.bc.edu/research/westonobservatory/>)

PDE (Preliminary Determination of Epicenters) -USGS/NEIC PDE Monthly list. (<ftp://hazards.cr.usgs.gov/pde/manuscript/>)

*Time\_Period\_of\_Content:*

*Currentness\_Reference:* publication date

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 20170327

*Status:*

*Progress:* In work

*Maintenance\_and\_Update\_Frequency:* As needed

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -75.546017

*East\_Bounding\_Coordinate:* -73.936949

*North\_Bounding\_Coordinate:* 41.240002

*South\_Bounding\_Coordinate:* 39.195749

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* Earthquake

*Theme\_Keyword:* Magnitude

*Theme\_Keyword:* Depth

*Theme\_Keyword:* Epicenter

*Theme\_Keyword:* Foreshock

*Theme\_Keyword:* Aftershock

*Theme\_Keyword:* Fault

*Theme\_Keyword:* Seismic

*Theme\_Keyword:* Seismograph

*Theme\_Keyword:* Intensity

*Theme\_Keyword:* Seismological

*Theme\_Keyword:* Seismicity

*Theme:*

*Theme\_Keyword\_Thesaurus:* ISO 19115 Topic Category

*Theme\_Keyword:* geoscientificInformation

*Place:*

*Place\_Keyword\_Thesaurus:* USGS Place Names Gazetteer

*Place\_Keyword:* New Jersey

*Place\_Keyword:* State of New Jersey

*Stratum:*

*Stratum\_Keyword\_Thesaurus:* none

*Stratum\_Keyword:* Underground

*Access\_Constraints:* None

*Use\_Constraints:*

New Jersey Department of Environmental Protection (NJDEP) Data Distribution Agreement

I. Description of Data to be Provided. The data provided herein are distributed subject to the following conditions and restrictions:

#### SUBJECT DATA LAYERS

For all data contained herein, NJDEP makes no representations of any kind, including, but not limited to, the warranties of merchantability or fitness for a particular use, nor are any such warranties to be implied with respect to the digital data layers furnished hereunder. NJDEP assumes no responsibility to maintain them in any manner or form.

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1. Digital data received from the NJDEP are to be used solely for internal purposes in the conduct of daily affairs.

2. The data are provided, as is, without warranty of any kind and the user is responsible for understanding the accuracy limitations of all digital data layers provided herein, as documented in the accompanying cross-reference files (see Section 1.14 CROSS-REFERENCE). Any reproduction or manipulation of the above data must ensure that the coordinate reference system remains intact.

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"This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized."

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All copies of NJDEP GIS data utilized by an independent contractor will be required to be returned to the original user at the close of such contractual work. Users hereby agree to abide by the use and reproduction conditions specified above and agree to hold any independent contractor to the same terms. By using data provided herein, the user acknowledges that terms and conditions have been read and that the user is bound by these criteria.

*Browse\_Graphic:*

*Browse\_Graphic\_File\_Name:* <http://www.state.nj.us/dep/njgs/geodata/dgs04-1.htm#image>

*Browse\_Graphic\_File\_Description:* image

*Browse\_Graphic\_File\_Type:* JPEG

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 3; ESRI ArcCatalog 9.3.1.3000

*Security\_Information:*

*Security\_Classification\_System:* none

*Security\_Classification:* Unclassified

*Security\_Handling\_Description:* none

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Organization:*

New Jersey Department of Environmental Protection, New Jersey Geological Survey

*Contact\_Person:* Suhas Ghatge

*Contact\_Position:* Research Scientist

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:* 29 Arctic Parkway P.O. Box 420, Mail Code: 29-01

*City:* Trenton

*State\_or\_Province:* New Jersey

*Postal\_Code:* 08625-420

*Contact\_Voice\_Telephone:* (609) 292-1185

*Contact\_Facsimile\_Telephone:* (609) 633-1004

*Contact\_Electronic\_Mail\_Address:* suhas.ghatge@dep.nj.gov

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:* unknown

*Logical\_Consistency\_Report:* unknown

*Completeness\_Report:*

Some earthquake locations were in Latitude and Longitude degrees and minutes, rounded to the nearest minute and converted to decimal degrees. Others were in decimal degree and they were converted to NJ State Plane

coordinate system. Earthquakes with magnitude of 0 (zero) implies that the magnitude is unknown.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

Instrumental epicenter accuracy is estimated to be within 0.0 degrees to 0.5 degrees and non-instrumental accuracy ranges from 0 degrees to 2.0 degrees (Stover, 1984 and NEIC).

*Lineage:*

*Process\_Step:*

*Process\_Date:* 20040322

*Process\_Description:*

Data on earthquake epicenters were gathered from the regional seismic network at Lamont Doherty Observatory, Bulletins of the Northeast Seismic Network, New England Seismic Network, information from the U.S. Geological Survey and other books and reports. A table was created with this information in Microsoft Excel software. The tabular information was then imported into ESRI ArcMap software and converted into a shapefile.

Most of the earthquakes in this database were recorded with seismic equipment. The older earthquakes, included were not recorded by seismic equipment but were documented by NEIC, and the USGS. Instrumental epicenter accuracy is estimated to be within 0.0 degrees to 0.5 degrees and non-instrumental accuracy ranges from 0 degrees to 2.0 degrees (Stover, 1984 and NEIC). Earthquakes with magnitude of 0 (zero) implies that the magnitude is unknown.

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Organization:*

New Jersey Department of Environmental Protection, New Jersey Geological Survey

*Contact\_Person:* Suhas Ghatge

*Contact\_Position:* Research Scientist

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:* 29 Arctic Parkway, Box 420, Mail Code: 29-01

*City:* Trenton

*State\_or\_Province:* New Jersey

*Postal\_Code:* 08625-420

*Contact\_Voice\_Telephone:* (609) 984-6587

*Contact\_Facsimile\_Telephone:* (609) 633-1004

*Contact\_Electronic\_Mail\_Address:* Suhas.Ghatge@dep.nj.gov

*Process\_Step:*

*Process\_Description:*

Following earthquake added since July 13, 2015 version:

1) 3.5 km N of Bernardsville, NJ on 08-14-2015, 03:41 (EDT), Magnitude 2.7, Depth 3.5 km.

*Process\_Date:* 20150814

*Process\_Step:*

*Process\_Description:*

Following earthquake added since Aug 14, 2015 version:

1) 5 km WNW of Fairfield, NJ on 08-24-2015, 03:17 (EDT), Magnitude 1.4, Depth 8 km.

*Process\_Date:* 20150824

*Process\_Step:*

*Process\_Description:*

Following earthquake added since Aug 24, 2015 version:

- 1) 2.4 km NW of Ringwood, NJ on 01-02-2016, 00:58 (EST), Magnitude 2.1, Depth 8.4 km

*Process\_Date:* 20160104

*Process\_Step:*

*Process\_Description:*

Following earthquake added since Jan 4, 2016 version:

- 1) 1.1 km NW of Butler, NJ on 02-18-2016, 20:17 (EST), Magnitude 1.1, Depth 4.11 km.

*Process\_Date:* 20160219

*Process\_Step:*

*Process\_Description:*

Following earthquake added since Feb 19, 2016 version:

- 1) 1 km NW of Butler, NJ on 07-4-2016, 00:06:49 (EDT), Magnitude 1.1, Depth 2 km.

*Process\_Date:* 20160705

*Process\_Step:*

*Process\_Description:*

Following earthquake added since July 5, 2016 version:

- 1) 4.4 km NW of Butler, NJ on 05-27-2016, 12:48:43 (EDT), Magnitude 0.8, Depth 2.9 km.
- 2) 2.2 km SW of Clifton, NJ on 07-30-2016, 20:34:45 (EDT), Magnitude 0.8, Depth 4.7 km.

*Process\_Date:* 20160801

*Process\_Step:*

*Process\_Description:*

The following earthquakes added since Aug. 1, 2016 version:

- 1) 2 km N of Wanaque, NJ on 08-8-2016, 22:01:45 (EDT), Magnitude 1.0, Depth 5.61 km.
- 2) 1 km N of Butler, NJ on 08-8-2016, 22:33:00 (EDT), Magnitude 0.54, Depth 1.62 km.

*Process\_Date:* 20160809

*Process\_Step:*

*Process\_Description:*

Following earthquake added since Aug. 9, 2016 version:

- 1) 5 km NE of Wanaque, NJ on 09-19-2016, 23:04:04 (EDT), Magnitude 0.6, Depth 7.91 km.

*Process\_Date:* 20160921

*Process\_Step:*

*Process\_Description:*

Following earthquakes added since Sep. 20, 2016 version:

- 1) 2.6 km W of Bellmawr, NJ on 11-06-2016, 05:11:15 (EST), Magnitude 1.46, Depth 5 km.
- 2) 16.3 km E of Highlands, NJ on 11-06-2016, 07:15:02 (EST), Magnitude 1.98, Depth 4.48 km.

*Process\_Date:* 20161107

*Process\_Step:*



*Process\_Description:*

Following earthquake added since Nov. 7, 2016 version:

- 1) 1.4 km S of Morris Plains, NJ on 3-25-2017, 13:14:50 (EDT), Magnitude 1.31, Depth 6.03 km.

*Process\_Date:* 20170327

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Point

*Point\_and\_Vector\_Object\_Count:* 201

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000512

*Ordinate\_Resolution:* 0.000512

*Planar\_Distance\_Units:* survey feet

*Grid\_Coordinate\_System:*

*Grid\_Coordinate\_System\_Name:* State Plane Coordinate System

*State\_Plane\_Coordinate\_System:*

*SPCS\_Zone\_Identifier:* 2900

*Transverse\_Mercator:*

*Scale\_Factor\_at\_Central\_Meridian:* 0.999900

*Longitude\_of\_Central\_Meridian:* -74.50000

*Latitude\_of\_Projection\_Origin:* 38.833333

*False\_Easting:* 492125.0000

*False\_Northing:* 0.00000

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* njeearthquakes

*Entity\_Type\_Definition:* Earthquake Epicenters of New Jersey

*Entity\_Type\_Definition\_Source:* New Jersey Geological Survey

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:* Internal feature number.

*Attribute\_Definition\_Source:* ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:* Feature geometry.

*Attribute\_Definition\_Source:* ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* ID

*Attribute\_Definition:* Unique ID for each earthquake.

*Attribute\_Definition\_Source:* New Jersey Geological Survey

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* NORTHING

*Attribute\_Definition:* In NJ State Plane feet.

*Attribute\_Definition\_Source:* New Jersey Geological Survey

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* EASTING

*Attribute\_Definition:* In NJ State Plane feet.

*Attribute\_Definition\_Source:* New Jersey Geological Survey

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* QUAD

*Attribute\_Definition:*

USGS 7.5 minute quadrangle the earthquake epicenter was located.

*Attribute\_Definition\_Source:* New Jersey Geological Survey

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* MUN

*Attribute\_Definition:* Municipality

*Attribute\_Definition\_Source:* New Jersey Geological Survey

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* COUNTY

*Attribute\_Definition:* County

*Attribute\_Definition\_Source:* New Jersey Geological Survey

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* DATE\_

*Attribute\_Definition:* Date the earthquake was recorded.

*Attribute\_Definition\_Source:* NJDEP/NJGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* TIME

*Attribute\_Definition:*

Time earthquake was recorded in UTC or GMT (-5 hours for EST, -4 for EDT)

*Attribute\_Definition\_Source:* NJDEP/NJGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* LAT\_N

*Attribute\_Definition:* Latitude of the earthquake in decimal degrees.

*Attribute\_Definition\_Source:* NJDEP/NJGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* LON\_W

*Attribute\_Definition:* Longitude of the earthquake in decimal degrees.

*Attribute\_Definition\_Source:* NJDEP/NJGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* DEPTH\_KM

*Attribute\_Definition:* Depth of the earthquake in kilometers.

*Attribute\_Definition\_Source:* NJDEP/NJGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* MAGNITUDES

*Attribute\_Definition:*

Magnitude is a logarithmic measure of the size of the earthquake related to the energy released as seismic waves at the focus of an earthquake.

*Attribute\_Definition\_Source:* USGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* LOCATION

*Attribute\_Definition:* Location of the earthquake.

*Attribute\_Definition\_Source:* NJDEP/NJGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* COMMENTS

*Attribute\_Definition:* Information about the earthquake if available.

*Attribute\_Definition\_Source:* NJDEP/NJGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:* unique input

*Attribute:*

*Attribute\_Label:* DATA\_SOURC

*Attribute\_Definition:* Source of the data.

*Attribute\_Definition\_Source:* NJDEP/NJGS

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Source of the data. See "Supplemental Information" for definitions

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Distribution\_Liability:*

This organization provides the geographic data as is. This organization makes no guarantee or warranty concerning the accuracy of information contained in the geographic data. Also, this organization makes no warranty either expressed or implied, regarding the condition of the product or its fitness for any particular purpose. The burden for determining fitness for use lies entirely with the user. Although these files have been processed successfully on computers at this organization, no warranty is made by this organization regarding the use of these data on any other system, nor does the fact of distribution constitute or imply any such warranty.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* AVSHP

*Format\_Version\_Number:* 9x

*File-Decompression\_Technique:* WinZip

*Transfer\_Size:* 0.004

*Digital\_Transfer\_Option:*

*Online\_Option:*

*Computer\_Contact\_Information:*

*Network\_Address:*

*Network\_Resource\_Name:* <<http://www.state.nj.us/dep/njgs/geodata/dgs04-1.htm>>

*Offline\_Option:*

*Offline\_Media:* none

*Recording\_Format:* none

*Fees:* None

*Ordering\_Instructions:*

Available by downloading from New Jersey Geological Survey website.

*Technical\_Prerequisites:*

Internet access and web browser for viewing in internet mapping applications and software capable of viewing ESRI shapefiles for the downloadable shapefile.

*Available\_Time\_Period:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 20170327

*Distributor:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Organization:*

New Jersey Department of Environmental Protection, New Jersey Geological Survey

*Contact\_Position:* Webmaster

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:* 29 Arctic Parkway, P.O. Box 420, Mail Code: 29-01

*City:* Trenton

*State\_or\_Province:* New Jersey

*Postal\_Code*: 08625-420

*Contact\_Voice\_Telephone*: (609) 292-1185

*Contact\_Facsimile\_Telephone*: (609) 633-1004

*Contact\_Electronic\_Mail\_Address*: njgsweb@dep.nj.gov

---

*Metadata\_Reference\_Information*:

*Metadata\_Date*: 20170327

*Metadata\_Standard\_Name*: FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version*: FGDC-STD-001-1998

*Metadata\_Time\_Convention*: local time

*Metadata\_Access\_Constraints*: None

*Metadata\_Use\_Constraints*: None

*Metadata\_Security\_Information*:

*Metadata\_Security\_Classification\_System*: none

*Metadata\_Security\_Classification*: Unclassified

*Metadata\_Security\_Handling\_Description*: none

*Metadata\_Contact*:

*Contact\_Information*:

*Contact\_Person\_Primary*:

*Contact\_Organization*:

New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological Survey (NJGS)

*Contact\_Person*: Suhas Ghatge

*Contact\_Position*: Research Scientist

*Contact\_Address*:

*Address\_Type*: mailing and physical address

*Address*: 29 Arctic Parkway P.O box 420, Mail Code: 29-01

*City*: Trenton

*State\_or\_Province*: New Jersey

*Postal\_Code*: 08625-420

*Contact\_Voice\_Telephone*: (609) 984-6587

*Contact\_Facsimile\_Telephone*: (609) 633-1004

*Contact\_Electronic\_Mail\_Address*: suhas.ghatge@dep.nj.gov

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20161107

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Access\_Constraints:* None

*Metadata\_Use\_Constraints:* None

*Metadata\_Security\_Information:*

*Metadata\_Security\_Classification\_System:* none

*Metadata\_Security\_Classification:* Unclassified

*Metadata\_Security\_Handling\_Description:* none

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Organization:*

New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological Survey (NJGS)

*Contact\_Person:* Suhas Ghatge

*Contact\_Position:* Research Scientist

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:* 29 Arctic Parkway P.O box 420, Mail Code: 29-01

*City:* Trenton

*State\_or\_Province:* New Jersey

*Postal\_Code:* 08625-420

*Contact\_Voice\_Telephone:* (609) 984-6587

*Contact\_Facsimile\_Telephone:* (609) 633-1004

*Contact\_Electronic\_Mail\_Address:* suhas.ghatge@dep.nj.gov