

NED Release Notes

December 2008

The December 2008 release of the National Elevation Dataset (NED) represents the 48th update of the 1-arc-second NED layer since the bi-monthly maintenance schedule began in June 2000. This release includes existing source data and all new 7.5-minute digital elevation models (DEMs) available in the USGS DEM Database as of October 15, 2008. Non-standard (non-USGS) source data are also included in this release. NED metadata are developed with the assembling of the elevation dataset. The complete spatial metadata, available as ESRI Shapefiles or as ESRI Export files, may be downloaded at: <http://ned.usgs.gov/Ned/metadata.asp>

Elevation data for Mexico are being included in the 1-arc-second layer as of the October 2008 release. The Mexico dataset is a result of collaboration between the U.S. Geological Survey (USGS) and Mexico's National Institute of Statistics and Geography (INEGI). The data were provided and quality control conducted by INEGI. Topographic staff at USGS EROS processed the data to improve edge matching, making the dataset seamless within itself and along the U.S. / Mexico border.

Areas where the new source data were incorporated for this release (and previous releases) are indicated in Figure 1.

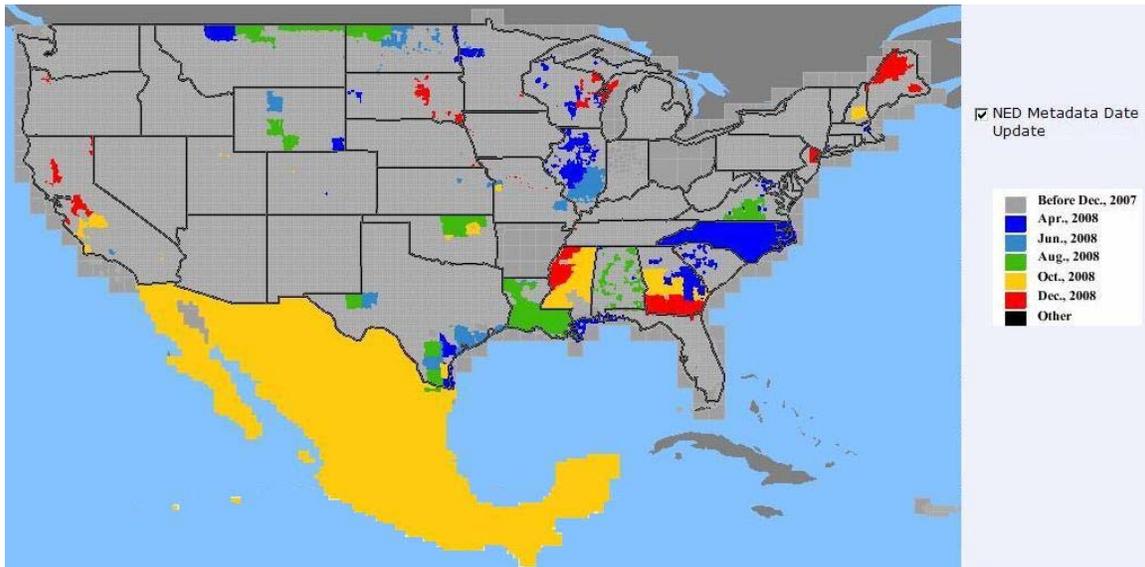


Figure 1. 1-arc-second NED, updated areas by release date

Figures 2 and 3 show additional information that is available in the spatial metadata.

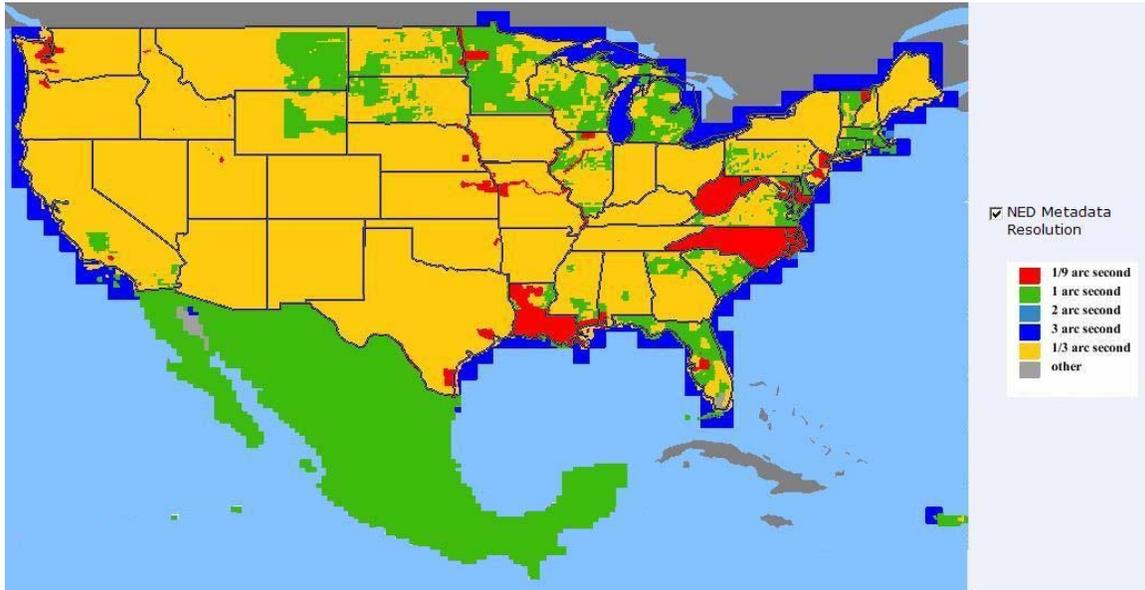


Figure 2. NED source data by resolution

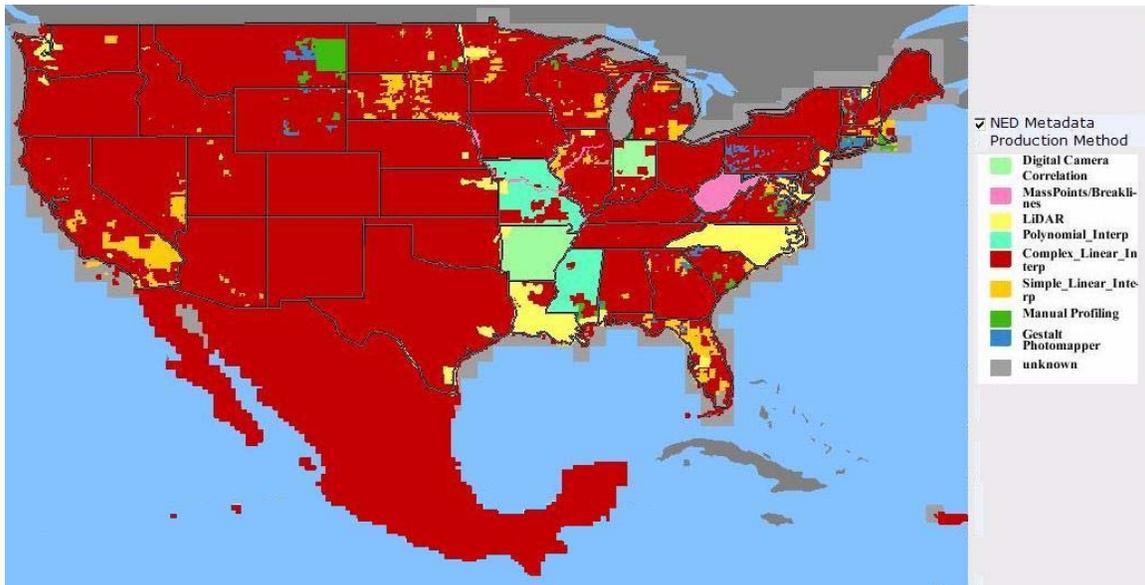


Figure 3. NED source data by production method

In addition to the spatial metadata, a NED Data Dictionary, which explains the codes and terms in the spatial metadata, is available at the documentation download Web site.

(http://ned.usgs.gov/Ned/NED_DataDictionary.pdf)

NED Tile Processing

The number of tiles and changes by release date are listed in Table 1.

Release date	Number of tiles	Note
June 2000	1,367	CONUS: 925 tiles; AK: 428 tiles; HI: 14 tiles
April 2001	1,375	8 tiles added: Puerto Rico and Virgin Islands
June 2001	1,387	12 tiles added: Pacific islands
August 2001	1,392	5 tiles added: Pacific islands
October 2008	1,651	259 tiles added: Country of Mexico

Table 1. Number of NED tiles and changes, by release date.

For the current release, 136 tiles were updated, which represents 14% of NED (excluding Alaska and Mexico tiles). The number of NED tiles processed for each of the 48 releases is shown in Figure 4.

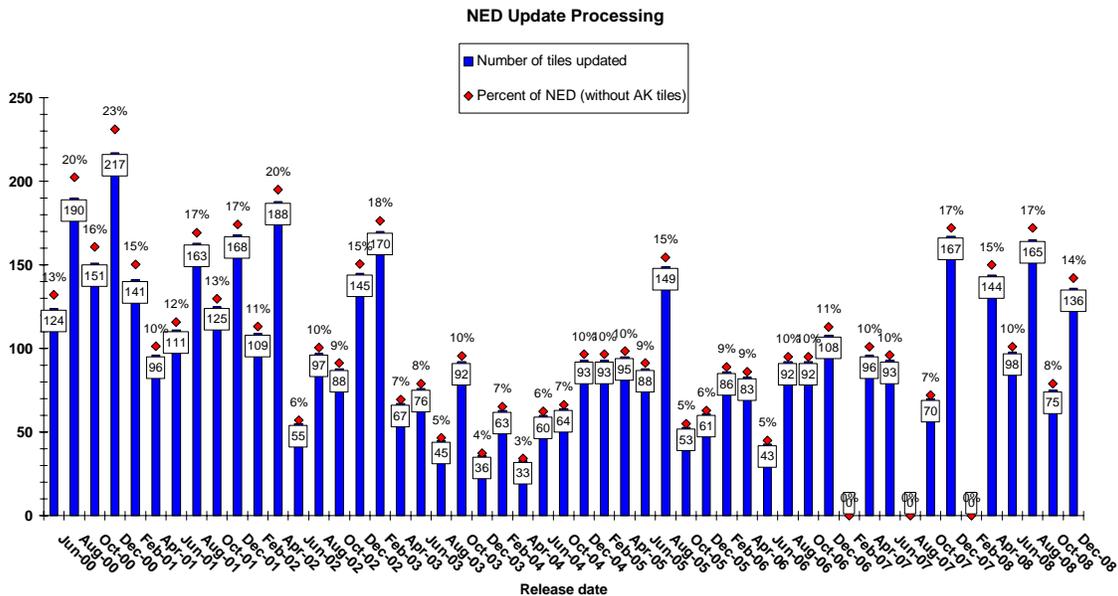


Figure 4. Number and percentage of NED tiles processed, by release date

Source Data for the NED

Source data for the NED are selected from available DEMs according to the following ranking (highest priority listed first): high-resolution elevation data (derived from lidar or photogrammetry); 10-meter and 1/3-arc-second USGS DEMs; 30-meter Level 2 USGS DEMs; 30-meter Level 1 USGS DEMs; 2-arc-second USGS DEMs; and 3-arc-second USGS DEMs. Note that the 2-arc-second DEMs are used only in Alaska, and the 3-arc-second DEMs are used only to fill in values over some large water bodies. The composition of the source data used in the December, 2008 NED release continued the trend seen in previous releases with an increase in 10-meter and 1/3-arc-second DEMs and a corresponding decrease in 30-meter DEMs. Thus, the ongoing production of

USGS 10-meter DEMs is reflected in each NED release. The percentages of NED derived from each type of source DEM for the 48 releases are shown in Figure 5. Note that the percentages in Figure 5 include source data at a 30-meter resolution or higher, so Alaska is not included. Also, Mexico was not included since it is intended to be a static dataset.

The Alaska DEMs were reprocessed for the April 2008 release. The datum was converted from NAD27 to NAD83 with the National Geodetic Survey Nadcon software. Now all the NED layers are on the NAD83 datum.

Alaska NED has been updated in certain areas for the June 2008 release. For the first time, portions of Alaska will be available at resolutions of 1- and 1/3-arc-seconds; the entire State will remain available at a resolution of 2-arc-seconds. Both of the updated areas (a portion of the North Slope, and parts of the Aleutian Islands) are radar-derived, either from airborne interferometric synthetic aperture radar (IFSAR) or high resolution Shuttle Radar Topography Mission (SRTM) data. The inclusion of SRTM data in the Aleutian chain is particularly significant, as it replaces 3-arc-second Digital Terrain Elevation Data (DTED), which are generally of poor quality and are cast in the WGS72 datum.

The first Alaska 1/9-arc-second data layer, Valdez, was add to the NED collection during the December 2008 release. Four other data set were also new to the NED 1/9-arc-second data layer. These data sets included Portland, Oregon, Northeast portion or the state of New Jersey, and two areas along the Texas and Mexico borders.

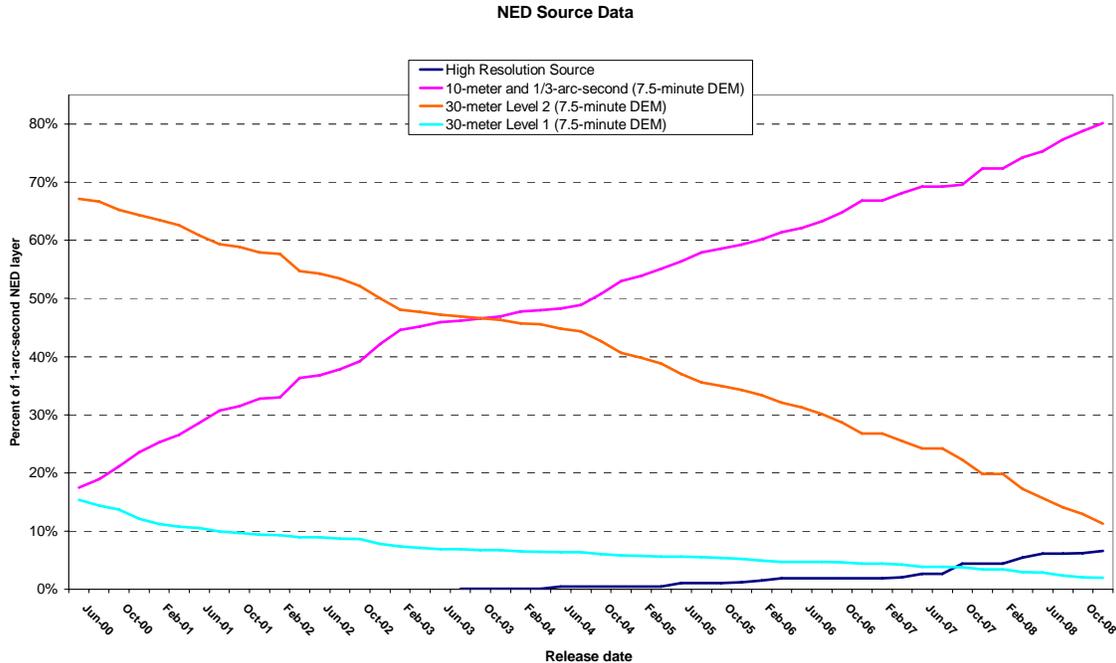


Figure 5. Type of DEM source data, 1-arc-second NED, by release date

Multi-resolution NED

In addition to the standard 1-arc-second resolution, NED data for all of the continental United States are available in 1/3-arc-second resolution (approximately 10 meters). These higher resolution data have been produced where 10-meter DEMs and other high-resolution DEMs are available as NED source data. The current release of 1/3-arc-second NED (December 2008) includes all USGS 10-meter and 1/3-arc-second DEMs produced as of October 15, 2008. Figure 6 shows the current coverage of 1/3-arc-second NED over CONUS. In addition, 1/3-arc-second NED is available over Hawaii and the Pacific basin islands. As with 1-arc-second NED, some of the 1/3-arc-second NED is derived from “non-standard” source data (data other than standard USGS 7.5-minute DEMs). As new source data (either high resolution data or USGS 10-meter DEMs) become available, production of 1/3-arc-second NED will continue, and additional areas will be made available as they are completed. The data are available for download through the seamless data distribution system (SDDS) (<http://seamless.usgs.gov>) or for NED bulk data delivery via hard drive -- contact USGS EROS Customer Service custserv@usgs.gov (605-594-6151) to order.

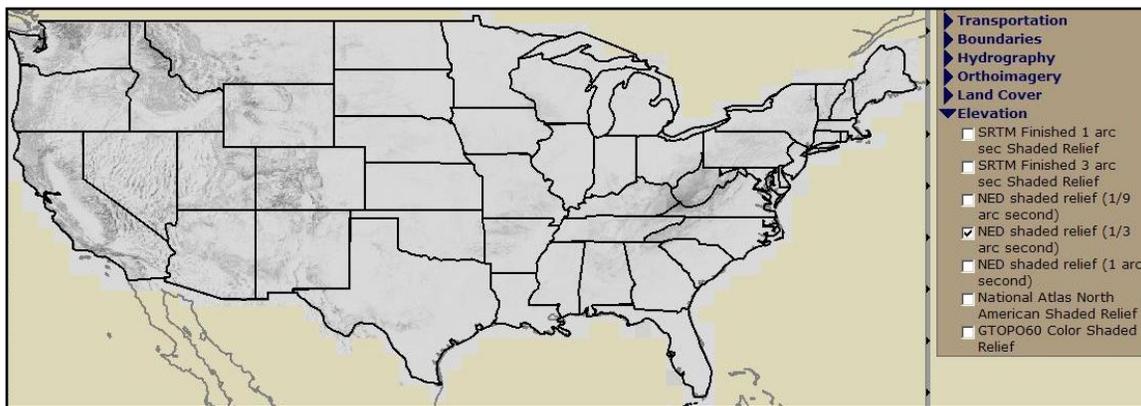


Figure 6. 1/3-arc-second NED available through SDDS

The 1/3-arc-second NED shown in Figure 6 currently covers 100% of the United States (excluding Alaska). However, it is important to note that source data with a resolution of 10 meters or higher currently exists for only 86% of the United States (excluding Alaska), so a portion of the current 1/3-arc-second NED coverage is derived from oversampling of 30-meter DEM source data. The oversampling of 30-meter data occurs where no high-resolution (10-meter or better) data exist. Figure 7 shows the distribution of source data resolution within the current 1/3-arc-second NED coverage. The NED spatial metadata delivered with each order can be queried to determine the source data used to produce 1/3-arc-second NED over any given area. As new high resolution source data become available, either from 10-meter DEMs or other sources, the data derived from 30-meter DEMs will be replaced. Oversampled 30-meter data has been assembled into the 1/3-arc-second NED as a convenience to the user community. If the data were not available from the SDDS download site, users would have to do the oversampling themselves for many study areas.

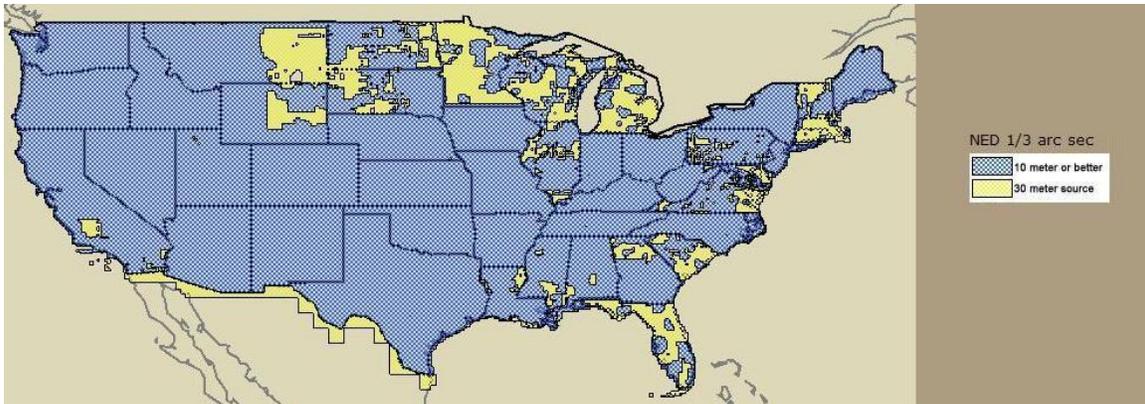


Figure 7. 1/3-arc-second NED, December 2008 release, by source resolution

The 1/9-arc-second NED is being developed from high resolution (3 meter or better point spacing from lidar, photogrammetry, or other sources). As data are acquired and made available in the public domain, they are incorporated into the NED. The higher resolution data are then used as sources to update the NED-1/3 and the NED. Figure 8 shows the areas that have been received and have been incorporated into the NED 1/9-arc-second layers.

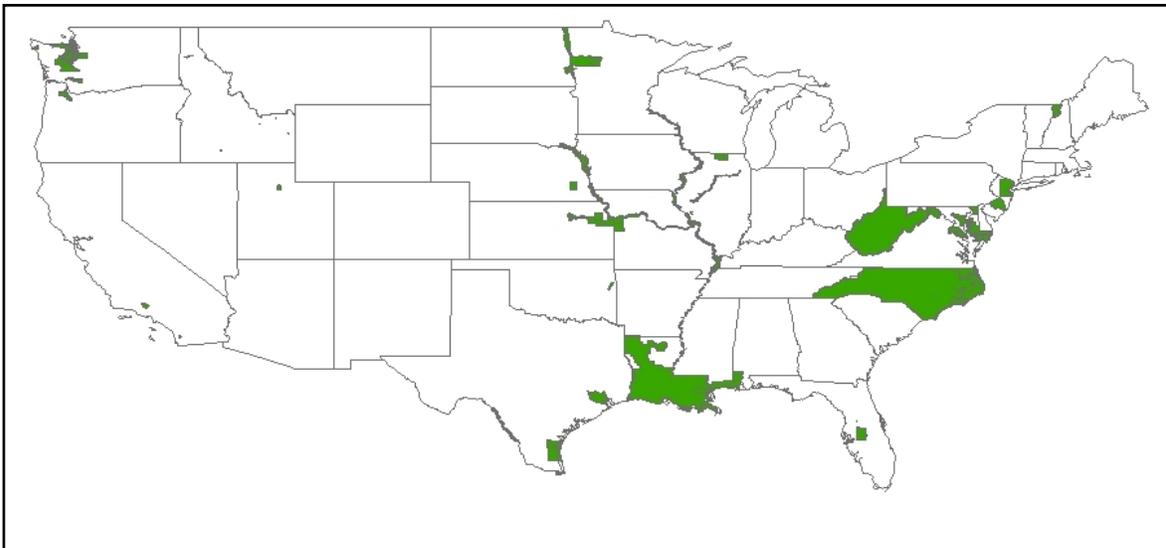
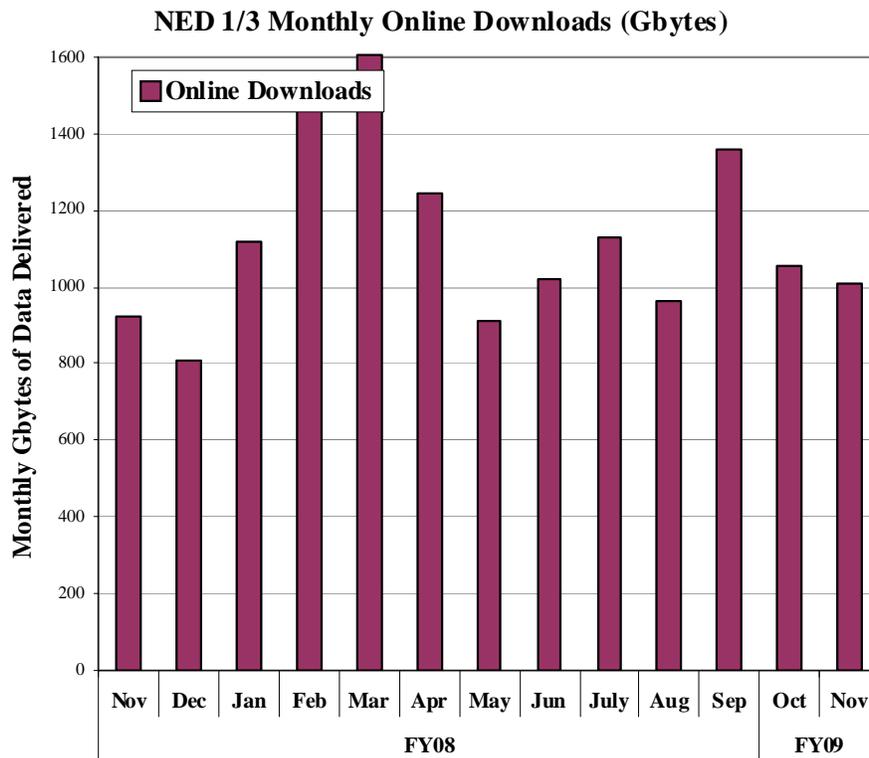
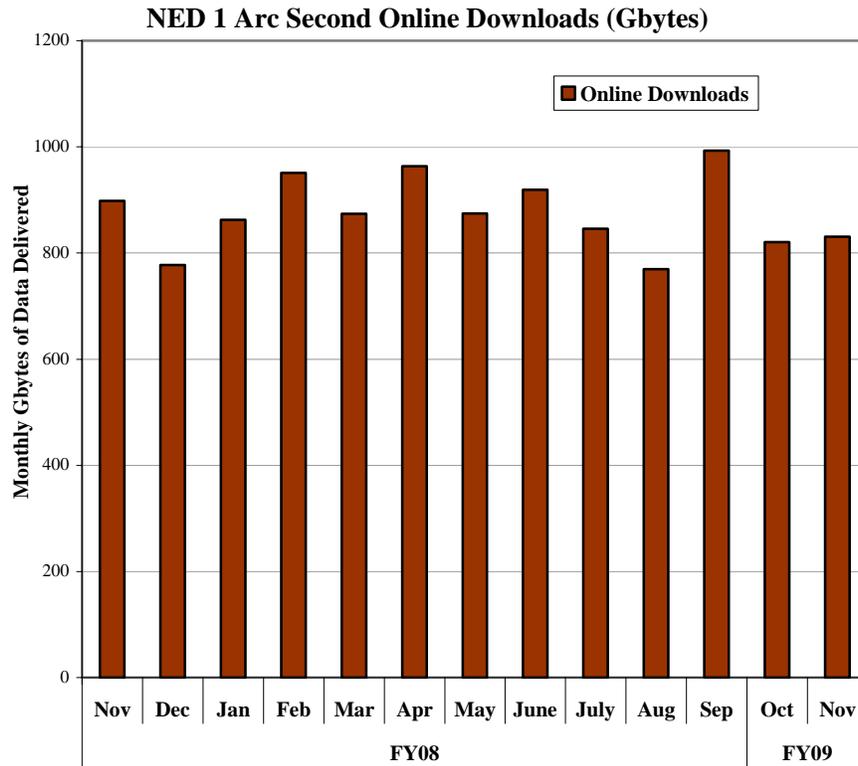


Figure 8. 1/9-arc-second NED available through SDDS

Notes

- The following are available from the NED Web site: the NED spatial metadata in Shapefile and Arc Export (.E00) format, the NED data dictionary with definitions of the attributes of the spatial metadata coverage, previous issues of the NED Release Notes, and Shapefiles that outline the areas updated in the December 2008 and previous releases. The URL for these items is <http://ned.usgs.gov/Ned/metadata.asp>
- No new information was added to the FAQ list on the NED home page (<http://ned.usgs.gov>)

Download Statistics



SDDS NED 1/9 Arc Second Online Downloads (Gbytes)

