

NED Release Notes

June 2008

The June 2008 release of the National Elevation Dataset (NED) represents the 45th 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 April 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 as shapefiles or as an ESRI Interchange file are available for download at:

<http://ned.usgs.gov/Ned/metadata.asp>

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

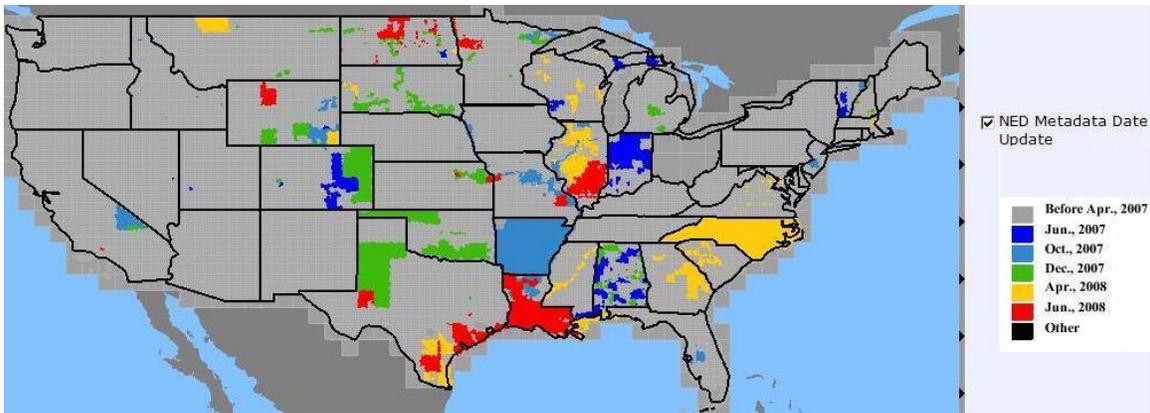


Figure 1. 1-arc-second NED update areas, by release date.

The following Figures 2 and 3 are examples of additional information that is available in the spatial metadata.

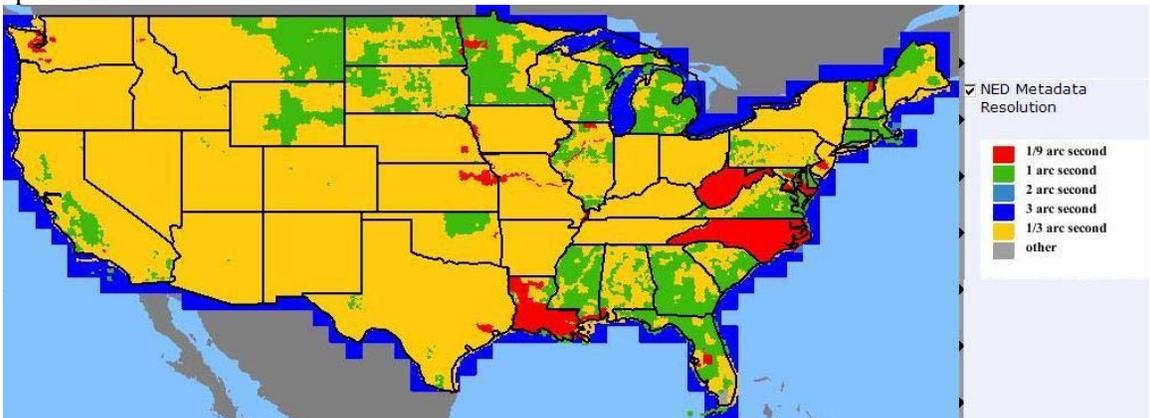


Figure 2. Resolution of the NED source data from the spatial metadata

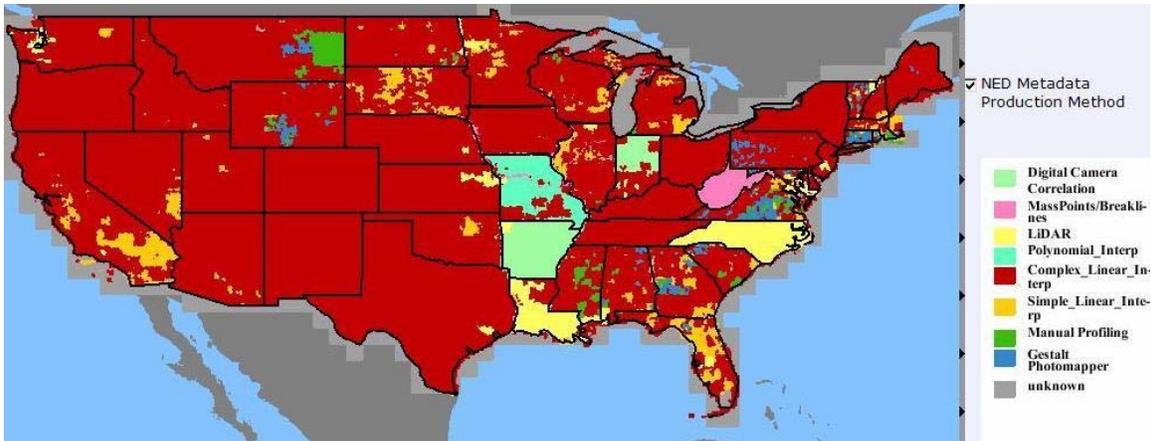


Figure 3. Production of the NED Source data from the spatial metadata

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

NED is processed and stored internally as 1°x1° tiles. 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
June 2008	1,392	

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

For the current release, 98 tiles were updated, which represents 10% of NED (not including Alaska tiles). The number of NED tiles processed for each of the 45 releases is shown in Figure 4.

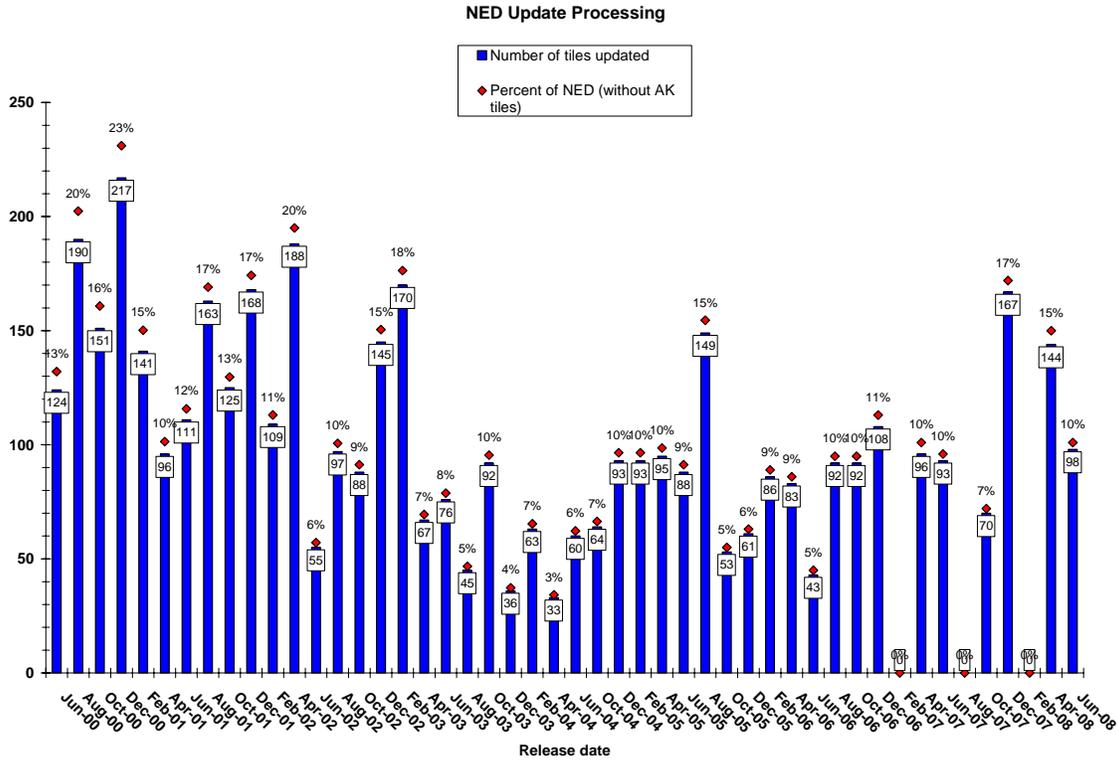


Figure 4. Number (and percentage) of NED tiles processed, by release date.

Source Data for the NED

Source data for the NED are selected from the 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, 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 NED continued the trend seen in previous releases with 10-meter and 1/3-arc-second DEMs increasing and the 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 45 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.

The Alaska DEMs were reprocessed during this period. 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 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 the entirety of the Aleutian Islands) will consist of radar-derived

elevation rasters, obtained either from airborne interferometric synthetic aperture radar (IFSAR) or high resolution Shuttle Radar Topography Mission (SRTM) data. The inclusion of the SRTM data in the Aleutian chain is particularly significant, as it allows us to retire old 3-arc-second Digital Terrain Elevation Data (DTED), which is of generally poor quality and is cast rather intractably in the WGS72 datum.

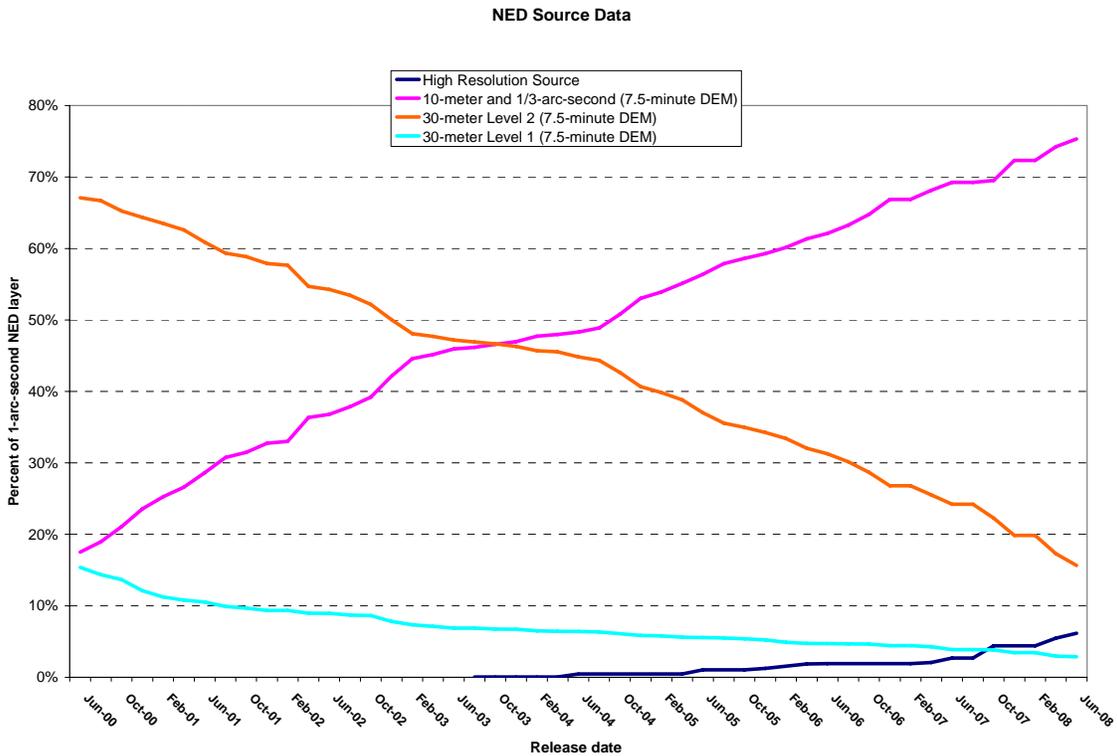


Figure 5. Source data (by DEM type) for 1-arc-second NED releases.

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 (June 2008) includes all USGS 10-meter and 1/3-arc-second DEMs produced as of April 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).

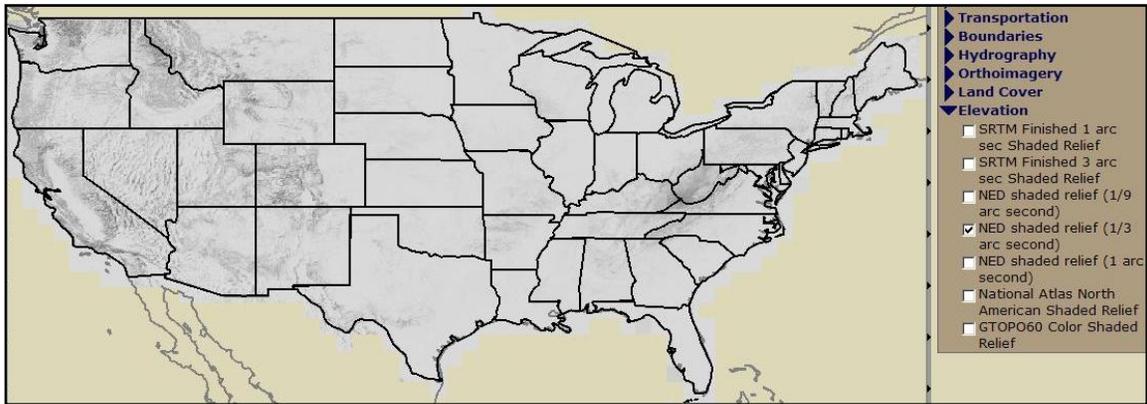


Figure 6. 1/3-arc-second NED available for distribution through the SDDS.

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 81% 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 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.

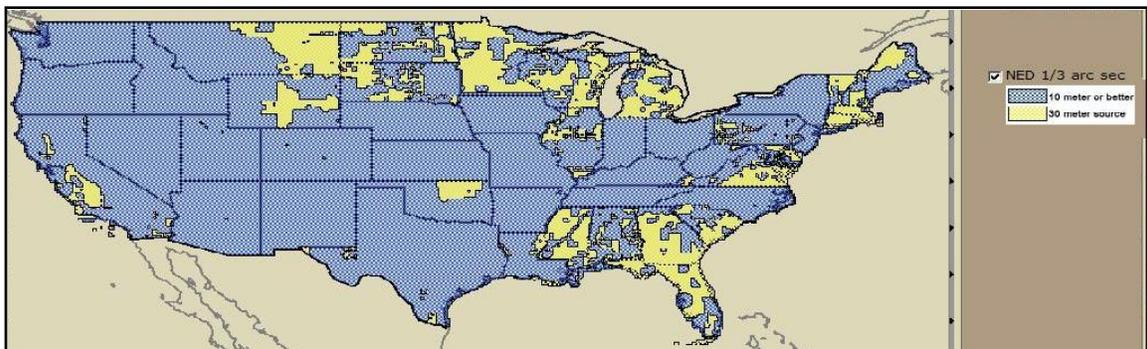


Figure 7. Source data used in the June 2008 release of 1/3-arc-second NED

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 to 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.

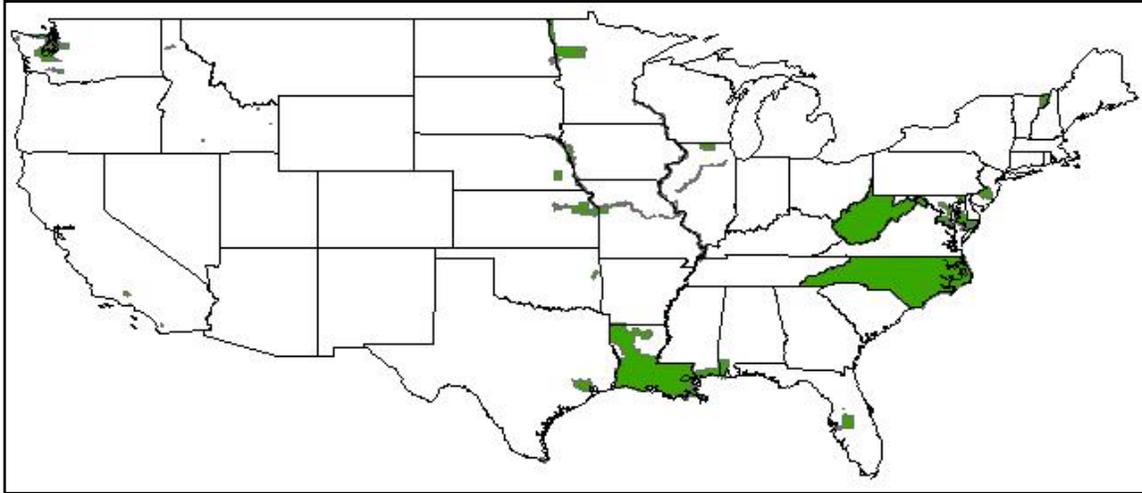


Figure 8. 1/9-arc-second NED viewable and downloadable from SDDS

NED Data Distribution Statistics

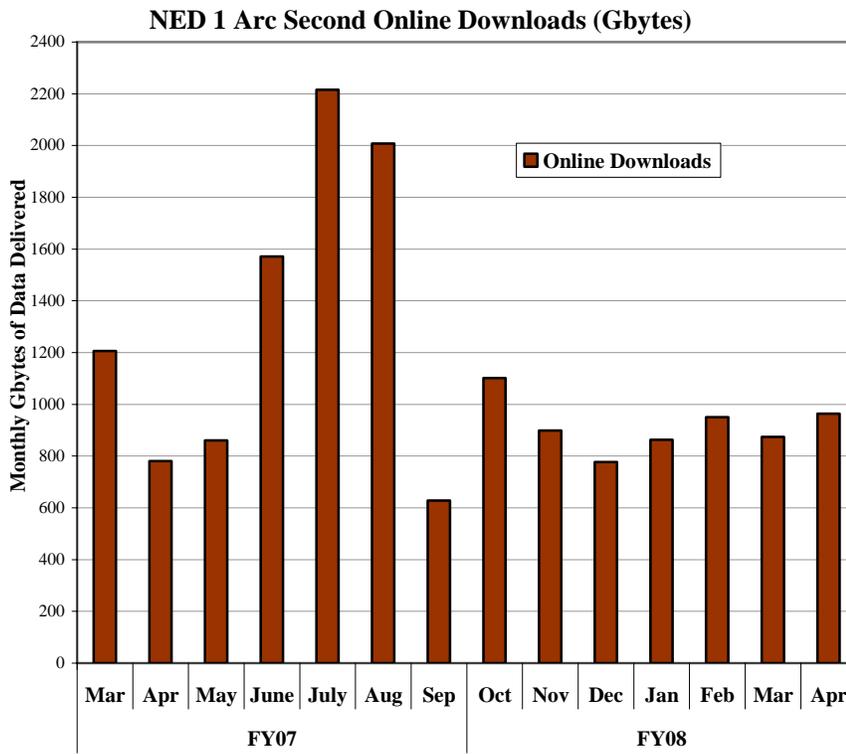


Figure 9. 1-arc-second NED downloads from SDDS

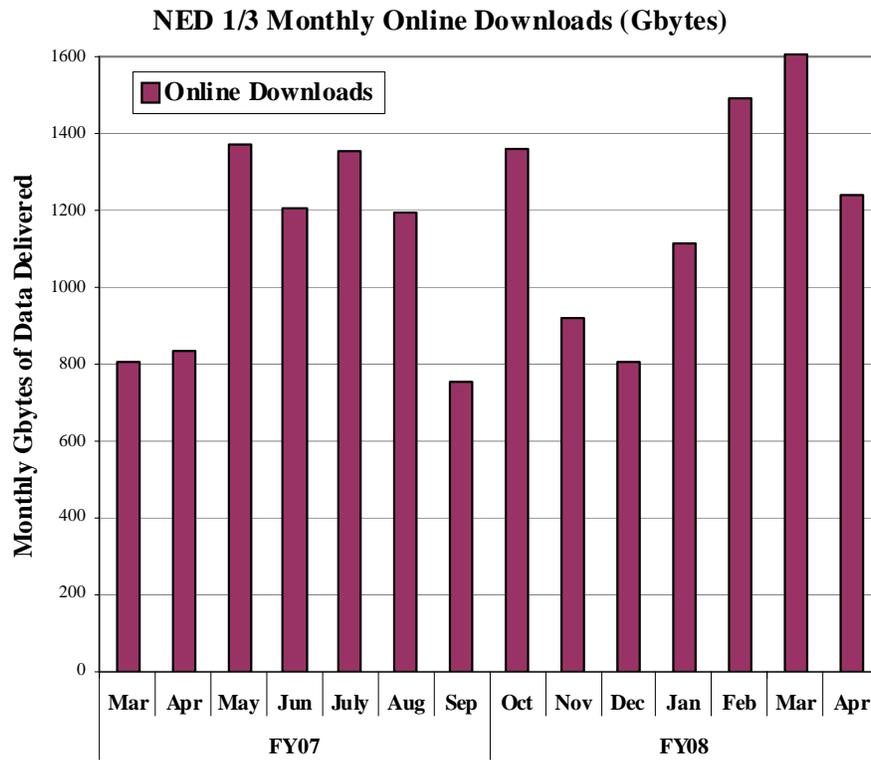


Figure 10. 1/3-arc-second NED downloads from SDDS

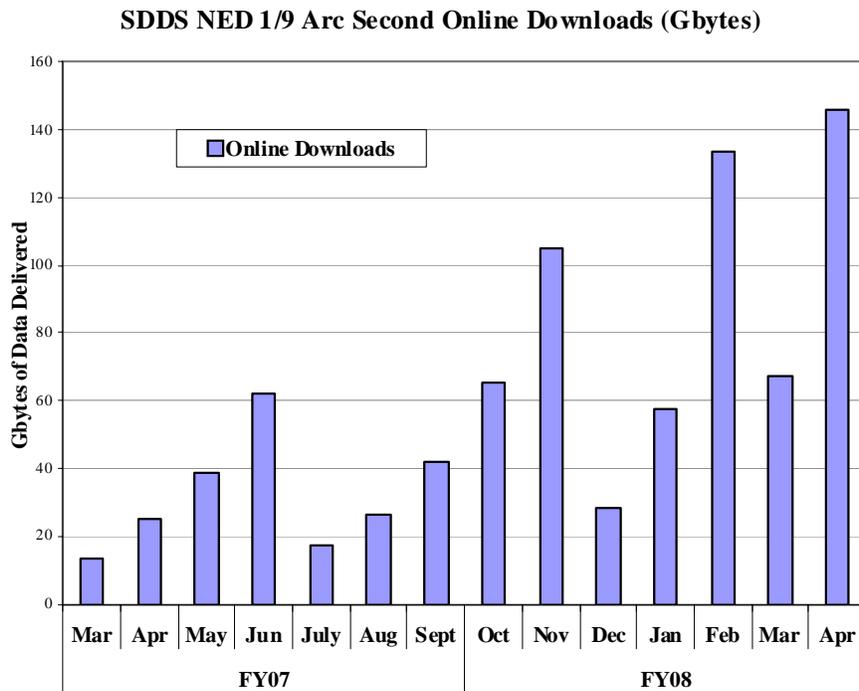


Figure 11. 1/9-arc-second NED downloads from SDDS

Notes

- The following are available from the NED Internet page: 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 June 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>)