

**National Digital Forecast Database (NDFD)  
Fine Resolution NDFD  
NWS Product Description  
Document (PDD)  
August 28, 2012**

**Part 1 - Mission Connection**

- a. Product Description – The [National Digital Forecast Database \(NDFD\)](#) contains a seamless mosaic of digital weather forecasts from National Weather Service (NWS) field offices and the National Centers for Environmental Prediction (NCEP).

Effective August 28, 2012, the resolution will be increased in the National Digital Forecast Database. The NDFD spatial resolution will be available in experimental status at 2.5km resolution for all forecast times. The NDFD temporal resolution will be available in experimental status at one hour resolution for the first 36 hours from NDFD issuance time. These are the finest spatial and temporal resolutions at which Weather Forecast Offices in the Conterminous United States /CONUS/ provide forecasts. Forecasts from NWS offices and centers employing coarser resolutions will be mapped onto the finer resolution NDFD grid.

This change will affect files which contain data for the entire CONUS, but will not include Alaska, Hawaii, Guam, Puerto Rico and the Virgin Islands, or the 16 CONUS subsectors which will remain at their current operational resolutions.

Specifications for operational and experimental NDFD grids can be viewed at the following URL:

<http://graphical.weather.gov/docs/ndfdSRS.htm>

The NDFD will continue in parallel in operational phase at current spatial and temporal resolutions throughout the experimental 120 day period.

NDFD graphics and SOAP/REST/XML services will continue to be provided from operational NDFD grids during the experimental 120 day period.

- b. Purpose – In support of the mission described in the *National Weather Service Strategic Plan for FY2005 - FY 2020*, "expanded digital services allow communication of forecast information with greater resolution in time and space and facilitates the integration of data in all service program areas." The NDFD is the primary means by which digital information is available to customers and partners. As part of this digital database, an increase in both spatial and temporal resolution is necessary to support NOAA's National Weather Service Strategic Plan: "*Building a Weather-Ready Nation*". Timely, fine resolution data provides critical Decision

Support Services to our users during high impact events. Future digital datasets will continue to be developed in accordance with growing user needs.

- c. Audience - The audience for fine resolution includes large volume users of forecast information, emergency managers, the media, numerous local, state, and federal government agencies (including NWS field offices), academia, and many other users. They are also for anyone who wishes to decode and explore various potential applications of the data.
- d. Presentation Format – As with all NDFD elements, these elements are available in Gridded Binary Data Edition 2 (GRIB2) via file transfer protocol (ftp) or hypertext transfer protocol (http). The fine resolution elements are only available for the CONUS. They will be routinely updated approximately 15 minutes after the operational NDFD grids.

To access experimental fine resolution grids use the following URLs:

<ftp://tgftp.nws.noaa.gov/sl.us008001/st.expr/df.gr2/dc.ndfd/ar.conus/>

or

<http://weather.noaa.gov/pub/sl.us008001/st.expr/df.gr2/dc.ndfd/ar.conus>

Experimental grids for forecast days 1 through 3 will be provided in individual files for each day in order to limit file sizes. Experimental grids for selected elements will be more tightly packed in GRIB format with both decimal and binary scaling applied. GRIB encoding characteristics for each NDFD element can be viewed at the following URL:

[http://graphical.weather.gov/docs/grib\\_design.html#element\\_encoding\\_lo](http://graphical.weather.gov/docs/grib_design.html#element_encoding_lo)

File structures and GRIB packing for operational NDFD files will remain unchanged during the experimental period. WMO headers and file structures for current operational and experimental NDFD files can be viewed at:

[http://www.nws.noaa.gov/ndfd/resources/NDFDelem\\_current.xls](http://www.nws.noaa.gov/ndfd/resources/NDFDelem_current.xls)

WMO headers and files structure for the new experimental fine resolution files can be viewed at:

[http://www.nws.noaa.gov/ndfd/resources/NDFDelem\\_fullres.xls](http://www.nws.noaa.gov/ndfd/resources/NDFDelem_fullres.xls)

- e. Feedback Method – The comment period for these experimental NDFD elements will extend through at least December 1, 2012. Fine resolution grids will remain experimental until all feedback is assessed and a technical analysis is completed. At the conclusion of the 120 day period, we will announce a scheduled implementation to

transition the experimental fine resolution to operational status for the entire CONUS. Current operational resolutions will continue for Alaska, Hawaii, Guam, Puerto Rico and the Virgin Islands, and the 16 CONUS subsectors.

Links to surveys are online at:

<http://www.nws.noaaa.gov/survey/NWS-survey.php?code=ndfd-grids25>

General information on accessing and using NDFD elements is online at:

<http://ndfd.weather.gov/technical.htm>

For general questions regarding NDFD data, please email:

[nws.ndfd@noaa.gov](mailto:nws.ndfd@noaa.gov)

At that time, the NWS will determine whether to transition these experimental elements to operational status, discontinue them, or revise and retain them as experimental elements.

## **Part II – Technical Description**

### **a. Format and Science:**

See the following link for a complete description for each forecast element available at fine resolution.

[http://www.nws.noaa.gov/ndfd/resources/NDFDelem\\_fullres.xls](http://www.nws.noaa.gov/ndfd/resources/NDFDelem_fullres.xls) .

### **b. Product Availability – See Part 2, Section A for details.**

### **c. Additional Information – Detailed information about the NDFD is also [available online](#).**