

NOUS41 KWBC 261420 AAA  
PNSWSH

Technical Implementation Notice 16-22 Amended  
National Weather Service Headquarters Washington DC  
1020 AM EDT Mon Sep 26 2016

To:           Subscribers:  
              -NOAA Weather Wire Service  
              -Emergency Managers Weather Information Network  
              -NOAAPort  
              Other NWS Partners, Users and Employees

From:         Tim McClung, Portfolio Manager  
              Office of Science and Technology Integration

Subject: Amended: The Nearshore Wave Prediction System (NWPS) Data Will be Provided over the Satellite Broadcast Network (SBN) and NOAAPort on or about October 25, 2016, for Western, Pacific and Alaska Region WFOs

Amended to reflect gridded binary version two (GRIB2) file packing modifications and update parallel data availability.

Effective on or about Tuesday, October 25, 2016, additional NWPS data will be added to the SBN and NOAAPort. The NWPS is run two to four times per day, on-demand, depending on the coastal Weather Forecast Office (WFO). On or about October 25, 2016, data for 13 additional coastal WFO domains (Western, Pacific and Alaska Regions) will be available. This addition will append the data from the 23 Eastern and Southern Region WFOs implemented in February 2016, bringing the total to 36 coastal WFO domains. The 3-hourly grids will be disseminated in GRIB2 format. Grid resolutions will be dependent upon individual coastal WFO. This upgrade also features minor modifications to the GRIB2 file encoding and to the output directory structure of all 36 domains.

The parameters associated with the messages at these resolutions are:

- Q - Wind Speed
- R - Wind Direction
- Z - Current speed
- Z - Current direction
- Z - Water level
- C - Wave Height
- D - Water Depth
- J - Peak Frequency/Period
- K - Peak Direction
- Z - Wave Length
- O - Wave height of swell waves
- O - Partitioned swell wave height
- Y - Partitioned swell peak period
- P - Partitioned swell mean direction

Data volume will vary depending on coastal WFO. The average total data volume is approximately 65 MB per cycle, two times per day, for each of

the remaining 13 coastal WFO domains.

CG grids are described as follows:

CG0 grid: partition output on overall computational domain (low-resolution) for a given WFO.

CG1 grid: integral output on overall computational grid for a given WFO.

CG2 grid: integral output on first nested grid where applicable.

CG3 grid: integral output on second nested grid where applicable.

CG4 grid: integral output on third nested grid where applicable.

CG5 grid: integral output on fourth nested grid where applicable.

Each WFO may produce up to five grids. Not all WFOs are producing all five grids for their County Warning Area (CWA).

CG0 grid messages are approximately eight MB per WFO. The total volume (13 coastal WFOs) is 104 MB per cycle, two times per day.

CG1 grid messages are approximately 29 MB per WFO. The total volume is 377 MB per cycle, two times per day.

CG2 grid messages are approximately seven MB per WFO. The total volume is 91 MB per cycle, two times per day.

CG3 grid messages are approximately seven MB per WFO. The total volume is 91 MB per cycle, two times per day.

CG4 grid messages are approximately seven MB per WFO. The total volume is 91 MB per cycle, two times per day.

CG5 grid messages are seven MB per WFO. The total volume is 91 MB per cycle, two times per day.

The total volume (13 coastal WFOs) for all resolution files is approximately 845 MB per cycle, two times per day.

The following summarizes the generic World Meteorological Organization (WMO) Headers for the NWPS data:

T1T2A1A2iiCCCC, where:

T1 = E

T2 specifies the parameters (stated above)

A1 = A for CG0 grid; B for CG1 grid; C for CG2 grid; D for CG3 grid; E for CG4 grid, and F for CG5 grid

A2 specifies forecast hours: A=00, B=03, C=06, D=09, E=12, F=15, G=18, H=21, I=24 and 27, J=30 and 33, K=36 and 39, L=42 and 45, M=48 and 51, X=54 and 57, N=60 and 63, Y=66 and 69, O=72, 75, 78 and 81, P=84, 87, 90 and 93, Q=96, 99, 102

ii = 88 (specifies surface)

CCCC corresponds to K, appended by the 3-letter Advanced Weather Interactive Processing System (AWIPS) code for the generating the 13

coastal WFO domains:

SEW - Seattle, Washington  
PQR - Portland, Oregon  
MFR - Medford, Oregon  
EKA - Eureka, California  
MTR - Monterey, California  
LOX - Los Angeles, California  
SGX - San Diego, California  
HFO - Honolulu, Hawaii  
GUM - Tiyan, Guam  
AJK - Juneau, Alaska  
AER - Anchorage, Alaska  
ALU - Anchorage (Aleutian Islands), Alaska  
AFG - Fairbanks, Alaska

Output Data:

In addition to NOAAPort, data will be available through the NCEP ftp/http services:

<http://nomads.ncep.noaa.gov>  
<ftp://ftp.ncep.noaa.gov>

On implementation day, the data for the new domains will be available at:

/pub/data/nccf/com/nwps/prod

The modified file format is the following:

For each of the 2-character regional codes (sr, er, wr, pr, ar), the GRIB2 files are listed under date (YYYYMMDD), 3-character WFO code (listed above, in lower case), run cycle (CC) and model domain (CG = CG1, CG2, CG3, CG4, CG5; or CG0). The run cycle always corresponds to the analysis time of the run (HH). All output variables pertaining to the run domain are stored in a single GRIB2 file. Note that since the runs are on demand, not all CC cycles will be produced during a given YYYYMMDD.

REGION.YYYYMMDD/WFO/CC/CG/WFO\_nwps\_CG\_YYYYMMDD\_HH00.grib2  
REGION.YYYYMMDD/WFO/CC/CG0/WFO\_nwps\_CG0\_Trkng\_YYYYMMDD\_HH00.grib2

GRIB2 Encoding Changes:

The encoding of exception values has been changed from various codes (-9.0, -99.0, -999.0) to a consistent value of 9.999e+20, covering the full domain, which is interpreted as "NO DATA" values by the AWIPS2 Grib2Decoder. For the CG0 GRIB2 files, this results in a switch from the use of "NO BIT-MAP" to "with BIT- MAP 0" in the encoding (see GRIB2 - Section 6). Furthermore, the decimal precision at which the CG0 GRIB2 files are packed have been increased.

The NWPS website is located at:

<http://polar.ncep.noaa.gov/nwps/>

For additional information regarding GRIB2 files, visit:

<http://www.nco.ncep.noaa.gov/pmb/docs/grib2/>

For questions pertaining to NWPS data, please contact:

Nicole P. Kurkowski  
NWS STI Modeling Lead  
NOAA/NWS/Office of Science and Technology Integration  
Silver Spring, MD  
[nicole.kurkowski@noaa.gov](mailto:nicole.kurkowski@noaa.gov)

For questions regarding the model, please contact:

Michael Farrar  
NCEP/Director, Environmental Modeling Center  
College Park, MD  
301-683-3748  
[michael.farrar@noaa.gov](mailto:michael.farrar@noaa.gov)

For questions regarding data flow aspects, please contact:

Carissa Klemmer  
NCEP/NCO Dataflow Team  
College Park, MD  
301-683-0567  
[ncep.list.pmb-dataflow@noaa.gov](mailto:ncep.list.pmb-dataflow@noaa.gov)

National Technical Implementation Notices are online at:

<https://www.weather.gov/notification/archive>

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