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PNSWSH

Service Change Notice 20-116
National Weather Service Headquarters Silver Spring, MD
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To: Subscribers:
 -NOAA Weather Wire Service
 -Emergency Managers Weather Information Network
 -NOAAPort
 -Other NWS Partners, Users and Employees

From: David Myrick
 Office of Science and Technology Integration

Subject: The Nearshore Wave Prediction System (NWPS)
 Update v1.3
 Effective on or about January 13, 2021.

Effective on or about January 13, 2021, the Nearshore Wave Prediction System (NWPS) will be upgraded to v1.3.

A. Changes to the NWPS model

- Improved algorithm for wave system tracking guidance (all 36 WFO domains). Resolved low-frequency limit lowered to 0.035 Hz.

- For 12 WFO domains (HGX, MOB, TAE, KEY, MLB, JAX, CHS, ILM, PHI, GYX, ALU, GUM), computation on unstructured domain meshes with variable resolution of 5 km to 200 m. (These are, however, interpolated onto existing regular CG1-CG5 output grids for AWIPS ingest.)

- For 9 WFO domains (HGX, MOB, TAE, MLB, JAX, CHS, ILM, PHI, GYX), the addition of rip current and runup (erosion/overwash) guidance. For WFOs KEY and GUM, only rip current guidance is added.

- Improved blending of P-Surge (Probabilistic Storm Surge) and ESTOFS (Extratropical Surge and Tide Operational Forecast System) water level inputs.

- Inclusion of wave field transect output graphics.

B. Expected benefits of the above changes

- Improved quality of wave system tracking guidance to aid in the production of separate wind sea and swell forecasts
- For 12 unstructured WFO domains: Higher nearshore grid resolution improves representation of the coastal geography and nearshore wave growth and propagation
- For 12 unstructured WFO domains: High resolution enables the computation of rip current and erosion/overwash guidance to aid in the production of coastal hazard forecasts
- Transect output provides improved view on the wave guidance along high-impact tracks.

C. Product Additions and Changes for NCEP Web Services

The following products will be added to the NCEP Web Services at <https://nomads.ncep.noaa.gov/pub/data/nccf/com/nwps/prod> and

<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/nwps/prod>

The field:

- Rip Current Occurrence Probability (RIPCOP)

will be added to the following file:

wfo_nwps_CG_YYYYMMDD_hhmm.grib2

Where wfo = HGX, MOB, TAE, TBW, KEY, MFL, SJU, MLB, JAX, CHS, ILM, MHX, AKQ, PHI, OKX, BOX, GYX, CAR, SGX, HFO, GUM.
and CG = CG1

The fields:

- Erosion Occurrence Probability (EROSNP)
- Overwash Occurrence Probability (OWASHP)
- Total Water Level Accounting for Tide, Wind and Waves (TWLWAV)
- Total Water Level Increase due to Waves (RUNUP)
- Mean Increase in Water Level due to Waves (SETUP)

- Time-varying Increase in Water Level due to Waves (SWASH)
- Total Water Level Above Dune Toe (TWLDT)
- Total Water Level Above Dune Crest (TWLDC)

will be added to the following file:

wfo_nwps_CG_YYYYMMDD_hhmm.grib2

Where wfo = HGX, MOB, TAE, TBW, MFL, MLB, JAX, CHS, ILM, MHX, AKQ, PHI, OKX, BOX, GYX, CAR.

and CG = CG1

The fields:

- Significant Height of Combined Wind Waves and Swell (HTSGW)
- Primary Wave Direction (DIRPW)
- Primary Wave Mean Period (PERPW)
- Significant Height of Swell Waves (SWELL)
- Wind Direction (from which blowing) (WDIR)
- Wind Speed (WIND)
- Deviation of Sea Level from Mean (DSLM)
- Current Direction (DIRC)
- Current Speed (SPC)

will be added to the following file:

wfo_nwps_CG_YYYYMMDD_hhmm.grib2

Where wfo = ALU.

and CG = CG2, CG3.

The fields:

- Significant Height of Swell Waves (SWELL) (Wave systems in sequence)
- Direction of Swell Waves (SWDIR) (Wave systems in sequence)
- Mean Period of Swell Waves (SWPER) (Wave systems in sequence)

will be added to the following file:

wfo_nwps_CG_Trkng_YYYYMMDD_hhmm.grib2

Where wfo = LWX.

and CG = CG0.

D. Product Removals for NCEP Web Services

The following products will be removed from NCEP web services, including NOMADS and ftpprd:

The fields:

- Water Depth (WDEPTH)

- Wave Length (WLENG)

will be removed from the following files:

wfo_nwps_CG_YYYYMMDD_hhmm.grib2

Where wfo = BRO, CRP, HGX, LCH, LIX, MOB, TAE, TBW, KEY, MFL, MLB, JAX, SJU, CHS, ILM, MHX, AKQ, LWX, PHI, OKX, BOX, GYX, CAR, SGX, LOX, MTR, EKA, MFR, PQR, SEW, AJK, AER, ALU, AFG, HFO, GUM.

and CG = CG1, CG2, CG3, CG4, CG5

E. Product Changes for SBN/NOAAPort

Headers for the following new products will be added to SBN/NOAAPort:

The fields:

HTSGW, DIRPW, PERPW, SWELL, WDIR, WIND, DSLM, DIRC, and SPC

for WFO = ALU

and CG = CG2, CG3

The fields:

SWELL, SWDIR, and SWPER

for WFO = LWX

and CG = CG0

A complete list of new WMO headers can be found at

www.nco.ncep.noaa.gov/pmb/changes/NWPSv1.3_WMO_Headers_new.pdf

Headers for the following products will be removed from NOAAPort:

The fields:

WDEPTH and WLENG

for WFO = BRO, CRP, HGX, LCH, LIX, MOB, TAE, TBW, KEY, MFL, MLB, JAX, SJU, CHS, ILM, MHX, AKQ, LWX, PHI, OKX, BOX, GYX, CAR, SGX, LOX, MTR, EKA, MFR, PQR, SEW, AJK, AER, ALU, AFG, HFO, GUM

and CG = CG1, CG2, CG3, CG4, CG5

A complete list of removed WMO headers can be found at

www.nco.ncep.noaa.gov/pmb/changes/NWPSv1.3_WMO_Headers_removed.pdf

F. Timing Changes

NWPS v1.3 has some product delays relative to the current v1.2. The table below summarizes all delays >5 min by product, relative to the run initiation time. Note that new products in v1.3 are indicated by "new":

	CG1	CG0	CG2	CG3	CG4	CG5
bro	-	-				
crp	-	-				
hgx	-	6	-			
lch	-	-				
lix	-	-	-			
mob	-	9	-	-	-	-
tae	12	18	-	-	-	-
tbw	-	-	-			
key	44	51	-			
mfl	-	-	-	-	-	-
mlb	29	32	7			
jax	14	16	-	-	-	-
sju	13	10	-	-		
chs	10	14	-	-		
ilm	17	24				
mhx	-	-	-	-	-	-
akq	-	-				
lwx	-	new				
phi	11	13	-	-		
okx	6	6	-	-	-	
box	-	-	-			
gyx	18	21	-	-		
car	-	-	-	-		
sgx	-	-	-	-		
lox	-	7	-	-		
mtr	-	13	-	-	-	
eka	-	-	-			
mfr	-	-	-	-	-	-
pqr	-	-	-	-	-	-
sew	-	-	-			
ajk	-	6	-	-		
aer	-	-	-	-		
alu	20	26	new	new		
afg	-		-	-		
hfo	-	-	-	-	-	-
gum	15	19	-	-	-	

The NWPS website is located at:

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

For additional information regarding GRIB2 files, visit:

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

NCEP encourages users to ensure their decoders are flexible and are able to adequately handle changes in content order, changes in the scaling factor component within the product definition section (PDS) of the GRIB files, and any volume changes which may be forthcoming. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes prior to any implementations.

Any questions, comments or requests regarding this implementation should be directed to the contacts below. We will review any feedback and decide whether to proceed.

For questions pertaining to NWPS data, please contact:

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For questions regarding the model, please contact:

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For questions regarding data flow aspects, please contact:

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NWS Service Change Notices are online at:

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

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