

Experimental Cold Advisory for Newborn Livestock National Digital Forecast Database Grids

Product Description Document

Part I – Mission Connection

- a. Product Description** –The Cold Advisory for Newborn Livestock (CANL) product provides users with an index that shows the potential for weather related impact to newborn livestock. This decision support product could help reduce newborn livestock losses due to hazardous weather. The CANL graphic is operational at eight Weather Forecast Offices (WFOs), accessible from individual websites (see operational [Product Description Document](#) (PDD)).

As a result of customer satisfaction of the CANL at the eight locations, the livestock industry expressed an interest in expanding the CANL to cover more areas across the country. Adding CANL grids in the National Digital Forecast Database (NDFD) can best address this expansion request.

The Cold Advisory for Newborn Livestock is now available as an element in the NDFD experimentally. The CANL uses the current NDFD forecast grids for temperature and wind (wind chill/sometimes called “apparent temperature”), humidity, sky conditions and Quantitative Precipitation Forecasts (QPF) to create the CANL grids. Since the CANL grids are automatically generated using existing NDFD elements on the NDFD Central Server, there is no workload issue.

Graphical forecasts displaying the elements used to calculate the CANL risk factors are also available individually from the NDFD:

Apparent Temperature (°F) - Wind Chill Values
Amount of Precipitation (in) - Liquid Equivalent Precipitation
Sky Cover (%) - Average Sky Cover
Relative Humidity (%)

- b. Product Type** – Experimental gridded data.
- c. Purpose** – Adding CANL grids to the NDFD will make the CANL product (graphics and grids) available to users across the Conterminous U.S. (CONUS) for use as a decision support tool that could help reduce newborn livestock losses due to hazardous weather. At the end of the comment and review, if approved for operational implementation, the CANL in the NDFD will replace the operational CANL product currently being used at the eight forecast offices listed in the operational PDD.
- d. Audience** – The requesting NWS partners and the users of the product.
- e. Presentation Format** – The output will be in the form of graphics and GRIdded Binary (GRIB) files for forecast Days 1-3.

- f. **Feedback Method** – Feedback will be solicited through the following NWS Customer Survey link: <http://www.nws.noaa.gov/survey/nws-survey.php?code=GGW-CANL>

NWS is soliciting comments on the experimental Cold Advisory for Newborn Livestock NDFD grids through May 31, 2013.

Part II – Technical Description

- a. **Format and Science Basis** – The CANL is designed to produce an index to indicate conditions that are dangerous for newborn livestock. The criteria for the index were derived from interviews with ranchers and from scientific research on animal health.

The CANL grids show the risk of cold exposure to newborn livestock. The risk is related to wind chill temperature, precipitation, and humidity, and ranges from "NONE" (no risk) to "EXTREME" (very high risk of rare and particularly dangerous situations).

Putting the gridded forecast into the NDFD makes the CANL more accessible to the livestock industry and others.

NDFD CANL grids are derived for 6-hour periods through forecast day 3. They are only produced for the Conterminous United States (CONUS), not Alaska, Hawaii, Guam, or Puerto Rico. The grid values are encoded as follows:

0 = None	Wind Chill above 41 degrees
2 = Slight	Wind Chill less than 41 degrees for 2 or more hours
4 = Mild	Wind Chill less than 32 degrees for 2 or more hours
6 = Moderate	Wind Chill less than 0 degrees for 2 or more hours or Wind Chill less than 32 degrees and 0.02” precipitation.
8 = Severe	Wind Chill of -9 degrees or colder for two or more hours, or wind chill of less than 32 degrees and 0.05” of precipitation
10 = Extreme	Wind Chill of -18 or colder for two or more hours, or wind chill less than 32 degrees and 0.1” of precipitation
Sky Cover < 40%	Reduce Wind Chill thresholds by 10 degrees
Min RH > 95%	Increase Wind Chill thresholds by 10 degrees
Max Temp.< 26 degrees	Double the Precipitation thresholds for Moderate-Extreme

- b. **Availability** – The experimental CANL forecast grids are available for Days 1-3, and are accessible as:

- Graphics from the Experimental NDFD web map viewer (under “Severe Weather” drop-down menu):

<http://preview.weather.gov/graphical/>

- GRIdded Binary (GRIB) files via Hypertext Transfer Protocol (HTTP) or File Transfer Protocol (FTP):

<http://weather.noaa.gov/pub/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.conus/VP.001/ds.canl.bin>
<http://weather.noaa.gov/pub/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.conus/VP.002/ds.canl.bin>
<http://weather.noaa.gov/pub/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.conus/VP.003/ds.canl.bin>

<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.conus/VP.001/ds.canl.bin>
<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.conus/VP.002/ds.canl.bin>
<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.conus/VP.003/ds.canl.bin>

- c. Additional Information** – More information on the CANL product is online at:

<http://www.wrh.noaa.gov/ggw/canl/FactSheet.pdf>

For technical questions regarding the CANL product, please contact:

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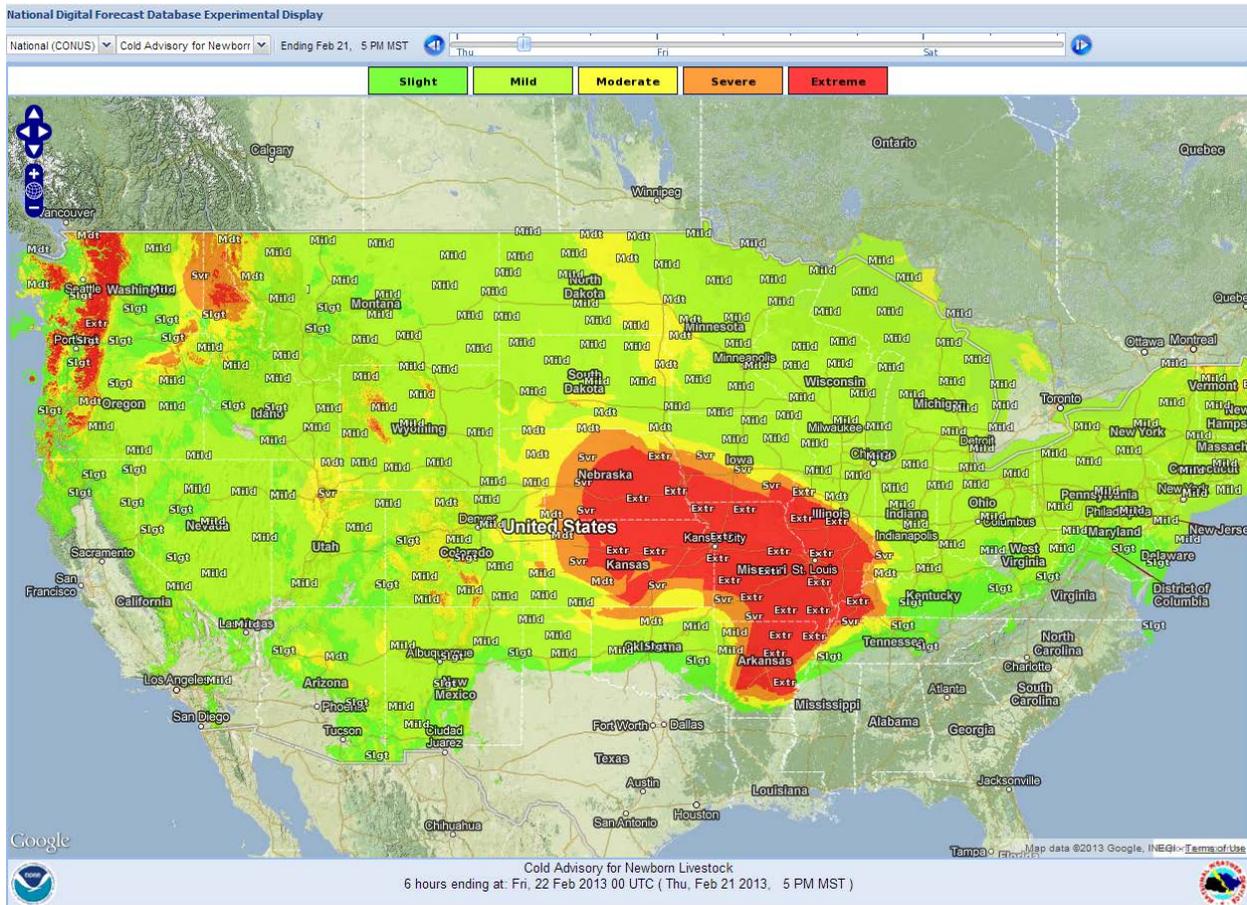
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An example of the CANL graphic:



Example of CANL Graphic