

April 24, 2014

MEMORANDUM FOR: NCEP Model Implementation Scientific Review Team

FROM: Chris Caruso Magee, Team Lead, Production Control
Production Management Branch, NCEP Central Operations

SUBJECT: Proposed Implementation of North American Land Data Assimilation
System v2.0.0

The Environmental Modeling Center (EMC) has proposed implementation of the North American Land Data Assimilation System (NLDAS) v2.0.0.

NLDAS is being implemented to provide land states (e.g. soil moisture) to support the U.S. National Integrated Drought Information System (NIDIS; www.drought.gov), U.S. drought monitor (droughtmonitor.unl.edu), NCEP Climate Prediction Center (CPC) drought interests (www.cpc.ncep.noaa.gov/products/Drought) and CPC monthly drought briefings. NLDAS, an uncoupled land system, uses the NCEP Regional Climate Data Assimilation System (R-CDAS; the operational extension of the NCEP North American Regional Reanalysis, NARR) and observed precipitation as surface forcing to drive four land surface models, to produce a 29-year (1979-2007) retrospective, and produce more than 5-year (2008-present) real-time hydrometeorological products in the form of anomalies compared to a land model climatology. NLDAS is comprised of six components: NLDAS atmospheric forcing generation, Noah land model run, Mosaic land model run, SAC-SMA land model run, VIC4.0.3 land model run, and River Routing model run.

Expected Benefits of NLDAS include:

1. Reliable and stable products to significantly improve US operational drought monitoring and prediction.
2. Significantly improved products to speed up land/hydrological model development and application.
3. Guidance for future research-to-operation NLDAS stages.
4. Future: provide initial land states to regional weather and climate models (with future extension to global).

Real time parallel data:

Beginning day, April 25, 2014 and starting with the 1200Z cycle, a consistent parallel feed of data will be available at:

HTTP:
<http://www.ftp.ncep.noaa.gov/data/nccf/com/nldas/para/nldas.YYYYMMDD>

FTP:
<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/nldas/para/nldas.YYYYMMDD>

where YYYYMMDD is the year, month, day. Note that the NLDAS run for the current day is producing output valid for 3 and 4 days ago, so expect to see this reflected in the above

directories (i.e. if today is April 24, you will see nldas.20140421 and nldas.20140420 directories in the above websites).

EMC also has websites set up to view the NLDAS output. The addresses for these are:

<http://www.emc.ncep.noaa.gov/mmb/nldas/>
<http://www.emc.ncep.noaa.gov/mmb/nldas/drought>

Questions regarding these two EMC websites should be sent to Mike Ek or Youlong Xiao (see below for their email addresses).

Request for Evaluation

CPC, NASA-GSFC, USDA, the University of Nebraska-Lincoln, Michigan State University, and Climate Corporation are listed as being primarily responsible for this evaluation. All other Service Centers, government agencies, or private companies not listed above are optional.

The evaluation period will start at 12Z on Friday, April 25, 2014 and run through May 24, 2014. Participants need to complete the attached "Model Implementation Subjective Evaluation Report" form and return to Chris.Caruso.Magee@noaa.gov no later than May 30, 2014. Please indicate the overall performance of the product, with any additional comments on specific cases with noteworthy positive or negative performance. Please note that NCO requires evaluators to specifically address the benefits stated in the attached form as to whether those benefits were observed or not. Any feedback you wish to provide during the evaluation period should be emailed to Chris.Caruso.Magee@noaa.gov.

A final coordination teleconference will be scheduled to review the evaluation and address any outstanding issues. Based on the outcome of that teleconference, EMC and NCO will prepare a recommendation for the NCEP Director. This teleconference has not yet been scheduled.

Points of Contact

Chris.Caruso.Magee@noaa.gov (NCO)

Michael.Ek@noaa.gov (EMC)

Youlong.Xia@noaa.gov (EMC)

Model Implementation Subjective Evaluation Report

Scientific Review Team Member: _____

Region/Service Center/Company Representing: _____

Proposed Change: NLDAS v2.0.0

Model Developer: Michael Ek and Youlong Xia (EMC)

Real-Time Parallel Runs:

General comments: _____

Evaluation of expected benefits:

Please respond to the following questions and note if they are beneficial to you?

1. Does NLDAS provide reliable and stable products to significantly improve US operational drought monitoring and prediction?

2. Does NLDAS provide initial land states to regional weather and climate models for use by research community, and are these of use to you?

3. Does NLDAS provide significantly improved products to speed up land/hydrological model development and application?

Recommendation:

Implement as proposed ____

Reevaluate after changes ____

Do not implement ____