NLDAS Views of North American 2011 Extreme Events

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Extreme Winter 2011

On January 19, 2012, NOAA announced two additional severe winter events. They reached the $1 billion damage threshold, raising 2011’s billion-dollar disaster count from 12 to 14 events, and classified 2011 as a year of climate extremes in the United States.

http://www.nanosaveww.nasa.gov/stories2012/20120119_global_stats.html

Billion-dollar Disasters of 2011

In 2011, the United States experienced 14 billion-dollar disasters, an all-time high, with total losses of $81 billion. Four ways to access the data

- Parameter and spatial subsetting
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NLDAS data are accessible from the Hydrology Data and Information Services Center (HDISC) at the NASA GES DISC.

http://disc.sci.gsfc.nasa.gov/hydrology/data-accessing

Forced by Blocking
• Temperature extremes in the large-scale circulations
• Precipitation extremes in the large-scale circulations

December 2011

Using NLDAS-2 data, we estimated the fraction of the total precipitation that was forced by blocking.

http://disc.sci.gsfc.nasa.gov/hydrology/data-accessing

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Summary

- To date, NLDAS has generated more than 33 (1979 – present) years of data. These quality-controlled, spatially and temporally consistent, terrestrial hydrological data could provide an important role in characterizing the spatial and temporal variability of water and energy cycles and, thereby, improve our understanding of the land-surface-weather interaction and the impact of land-surface processes on climate extremes.

- Using NLDAS-2 Primary Forcing and Mosaic model data, four of the 2011 billion-dollar weather/climate disasters are illustrated. NLDAS-2 data show very well the major characteristics of these extreme events, spatially and temporally.

- NLDAS data is an excellent data source for case studies of extreme events.

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NLDAS is a collaboration project among several groups (NOAA/NCEP/EMC, NASA/GSFC, Princeton University, University of Washington, NASA/GSFC, and NOAA/NCEP/CPC) and is a core project of NOAA/MAPP.