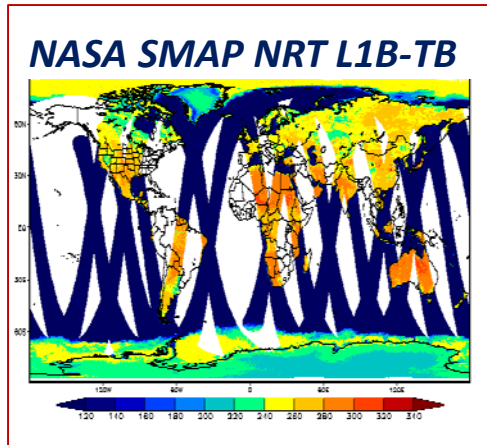
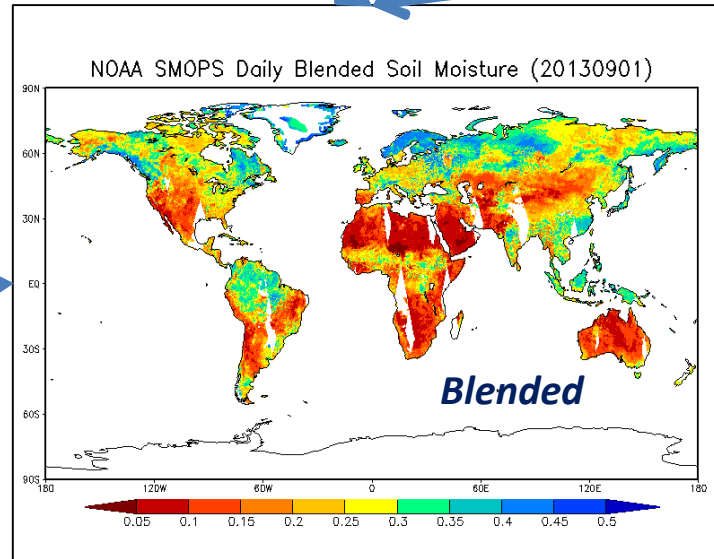
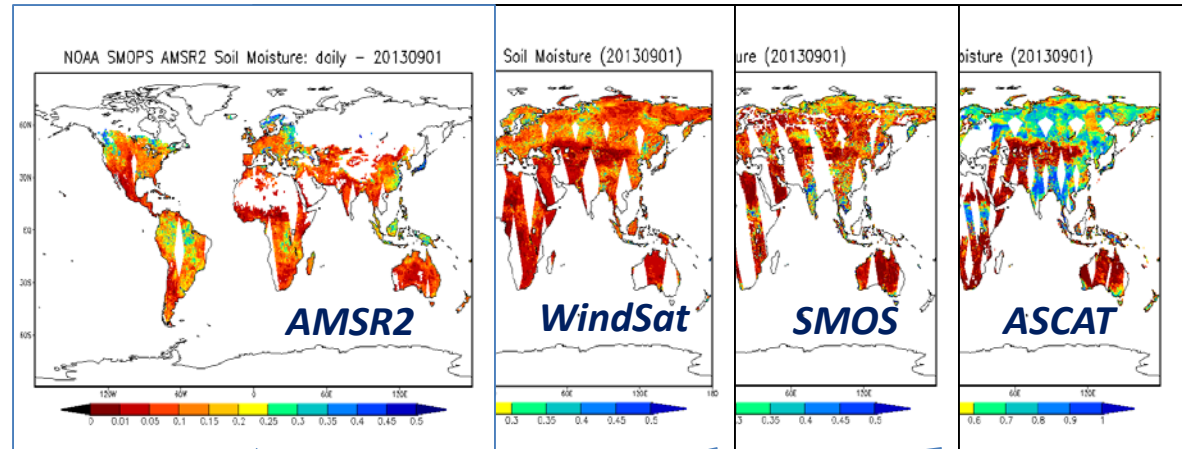
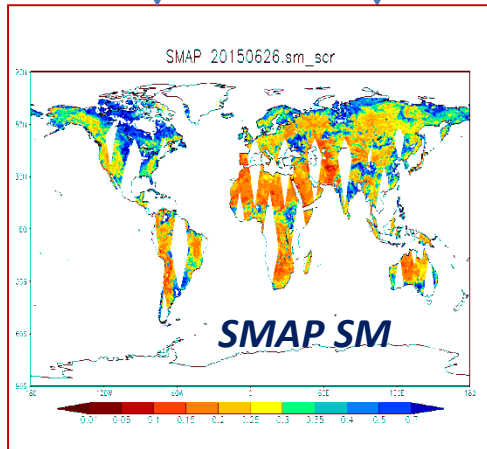


Soil Moisture Operational Product System (SMOPS)



NOAA Ancillary Data



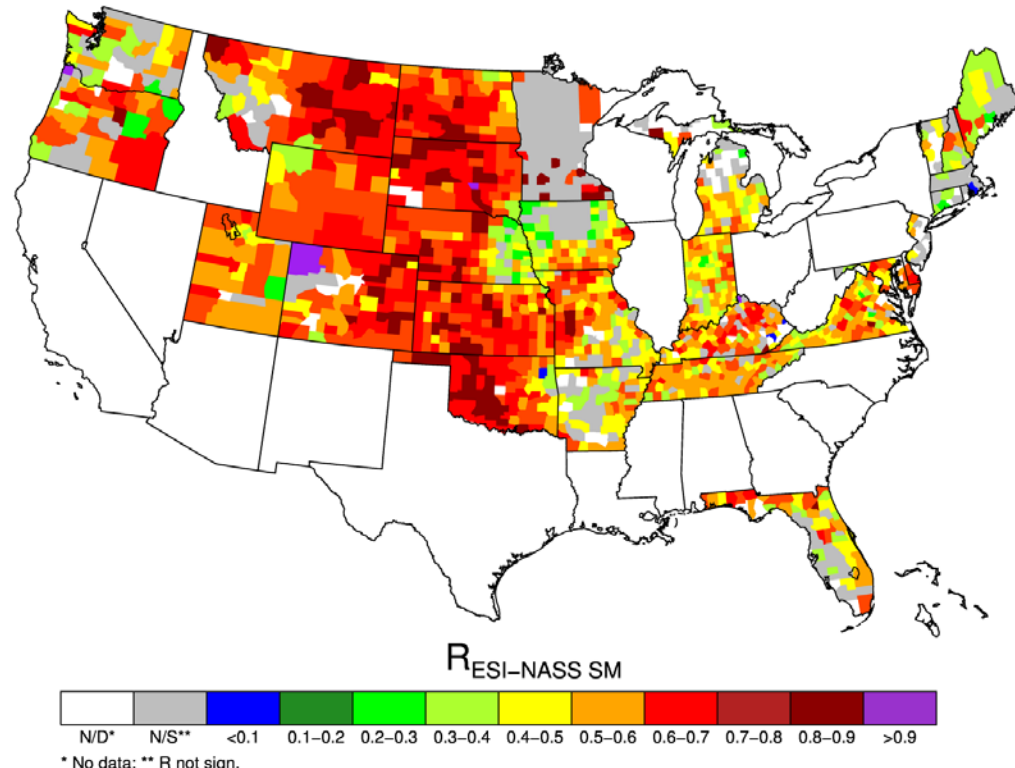
Daily temporal
resolution at 0.25
deg spatial
resolution

NESDIS SMOPS Ingests NASA SMAP NRT Data to retrieve global soil moisture with NOAA ancillary Data and blends them with other satellite observations for NCEP use

Soil Moisture from Thermal Methods (ALEXI)

The ALEXI SM proxy represents temporal anomalies in the ratio of actual to potential ET.

- ESI does not require precipitation data, ***the current surface moisture state is deduced directly from the remotely sensed LST***, therefore it may be more robust in regions with minimal in-situ monitoring.
- Signatures of vegetation and/or soil moisture stress are manifested in the LST signal before any deterioration of vegetation cover occurs.
- ALEXI inherently includes non-precipitation related moisture signals (such as irrigation; vegetation rooted to groundwater; lateral flows) that need to be modeled a priori in LSMs.
- ALEXI information is available at much higher spatial resolution than MW (375-m to 8-km)
- ALEXI is now operational over all of North America at NOAA.

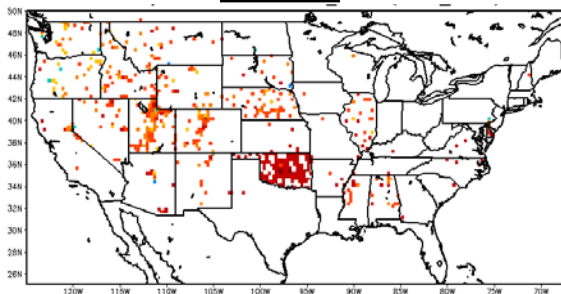


In-situ SM Observations (top-layer SM)

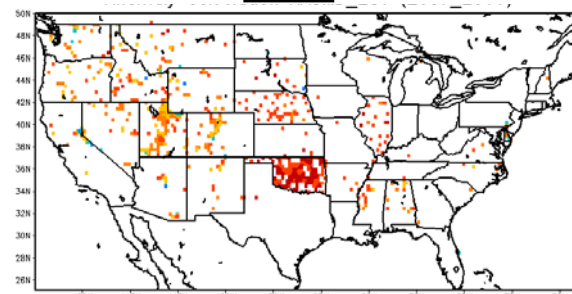
Source: North American Soil Moisture Database

N (sites): 459

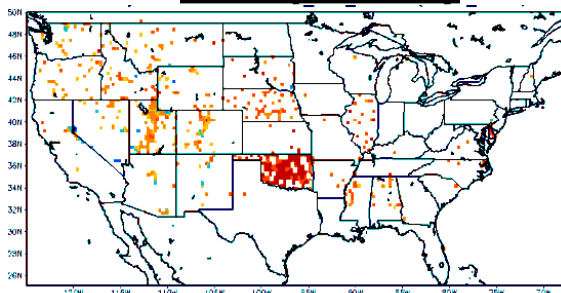
Noah



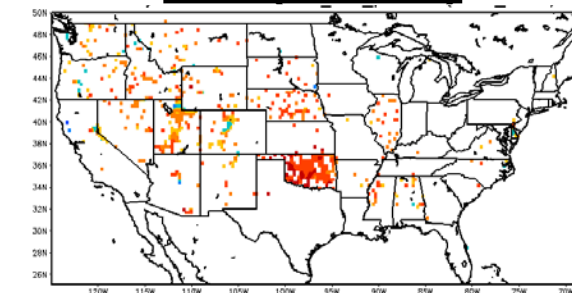
ECV



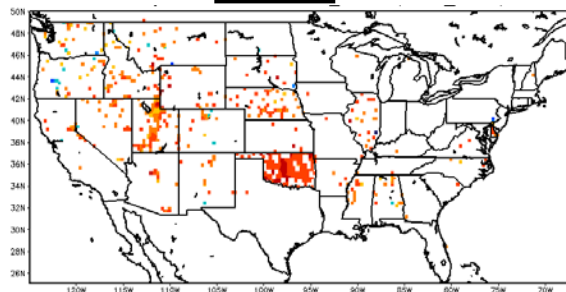
ECV (Active)



ECV (Passive)



ALEXI

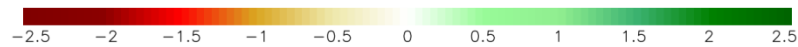
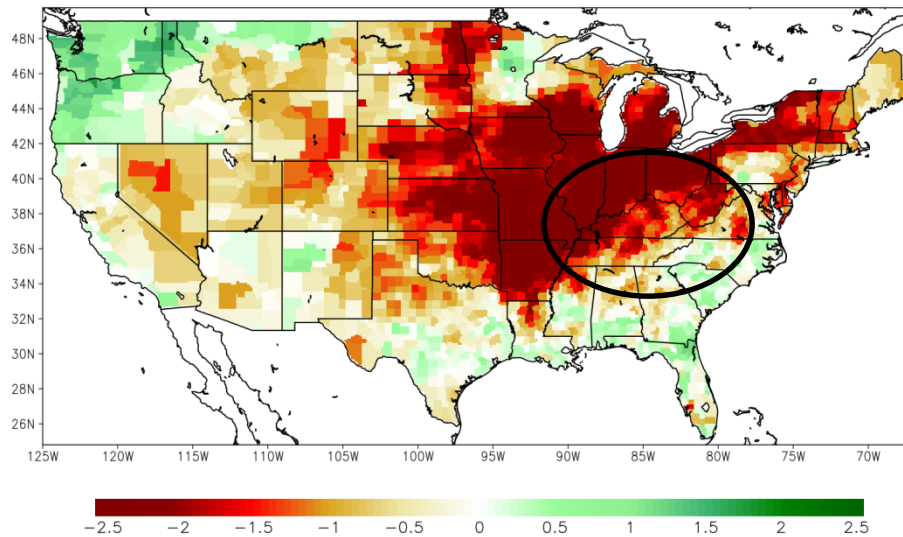


SM product	r (anomaly)
Noah	0.51
ECV	0.40
ECV/active	0.40
ECV/passive	0.37
ALEXI	0.40

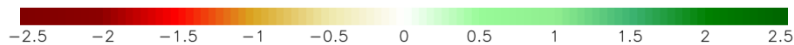
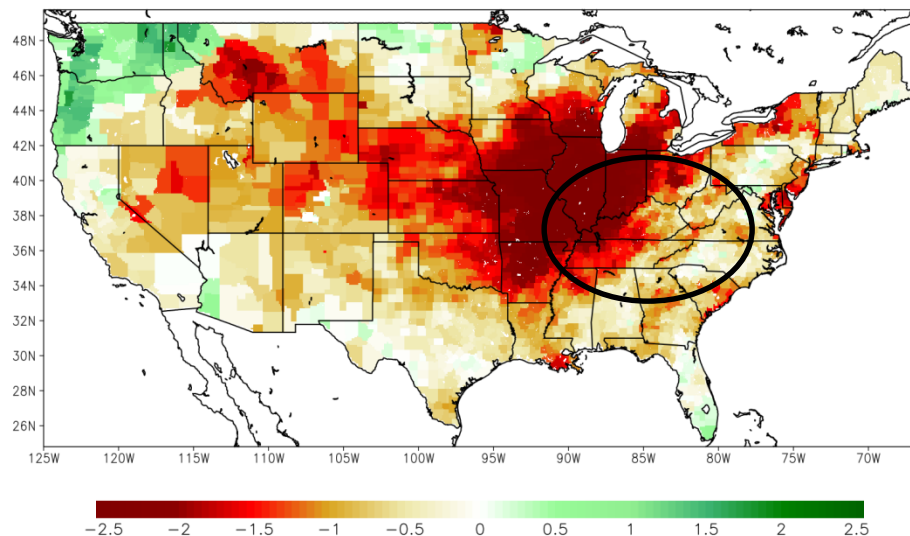


5 August 2012

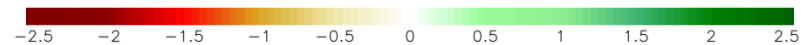
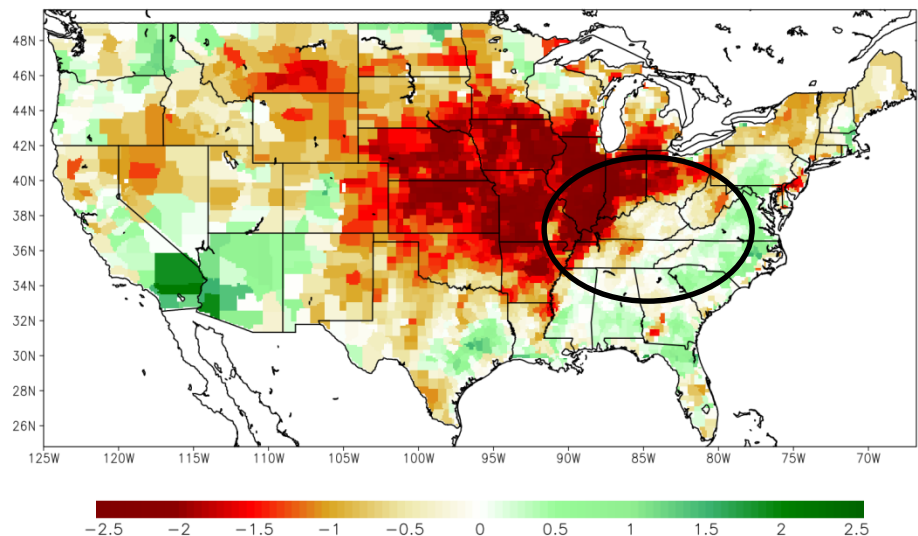
a) Noah LSM 0-10 cm Soil Moisture



b) ALEXI TIR Soil Moisture



c) MW Soil Moisture



Contact Info:

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Christopher Hain(chris.hain@noaa.gov)

Website: <http://www.ospo.noaa.gov/Products/land/smops/>

ALEXI:

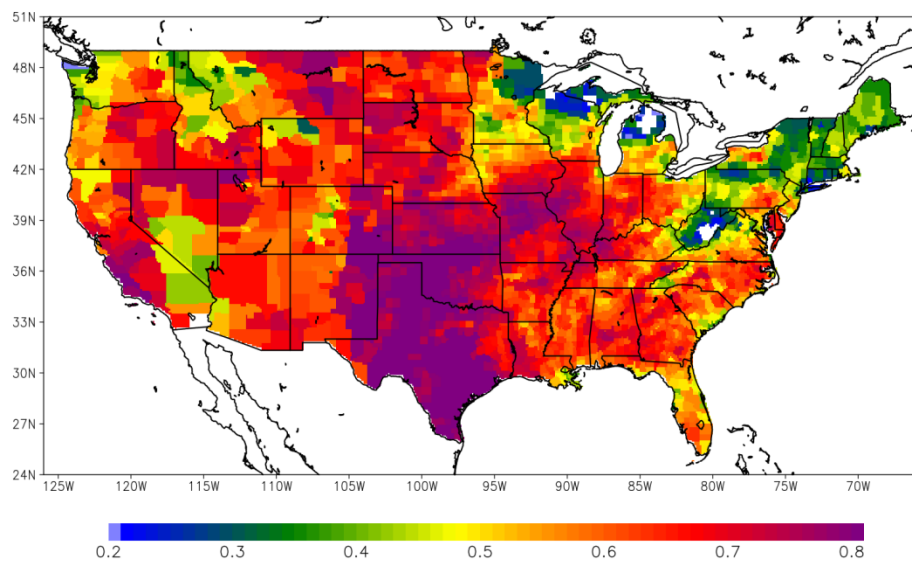
Christopher Hain (chris.hain@noaa.gov)

Martha Anderson (martha.anderson@ars.usda.gov)

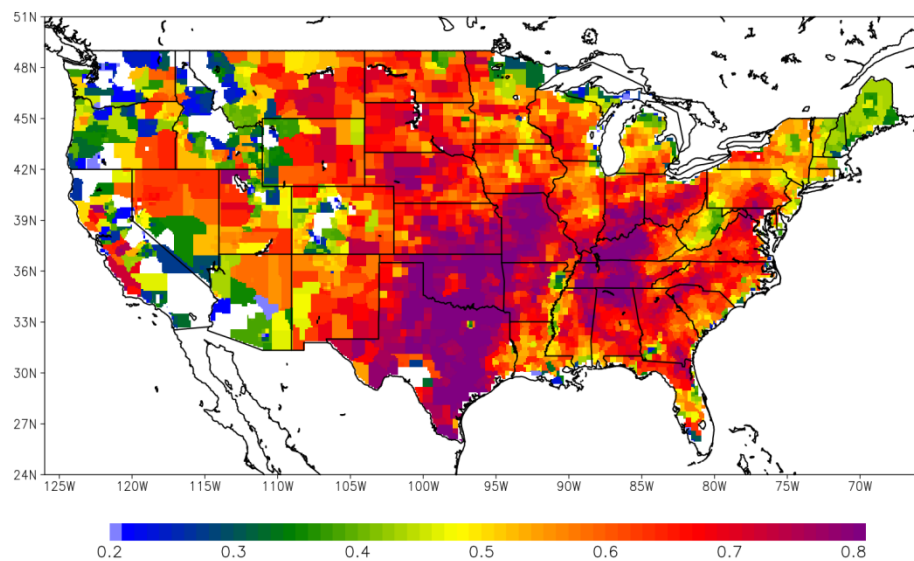
Website: <http://hrsl.ba.ars.usda.gov/drought/>
*<http://www.ospo.noaa.gov/Products/land/getd/>

*(still provisional – official website will be ready in June 2016)

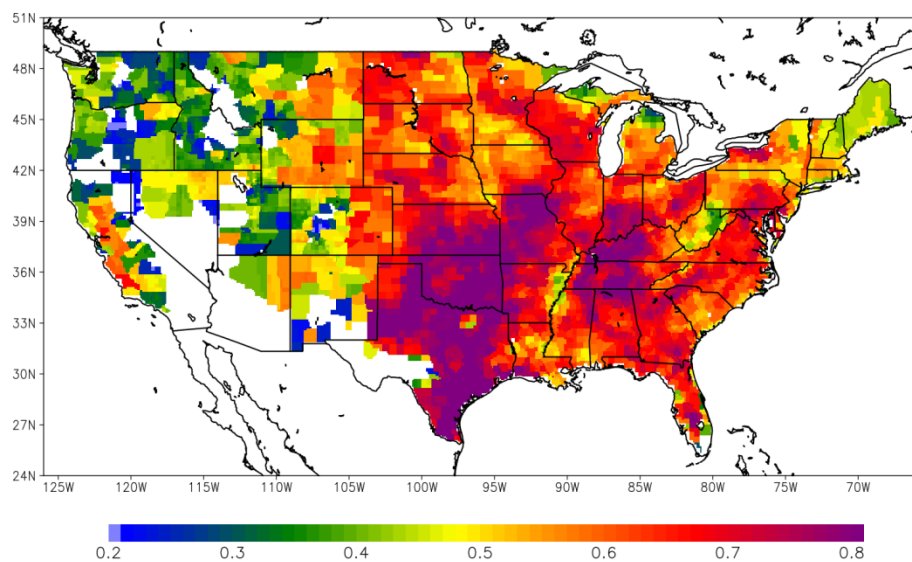
a) Noah Sfc / ALEXI ($r = 0.62$)



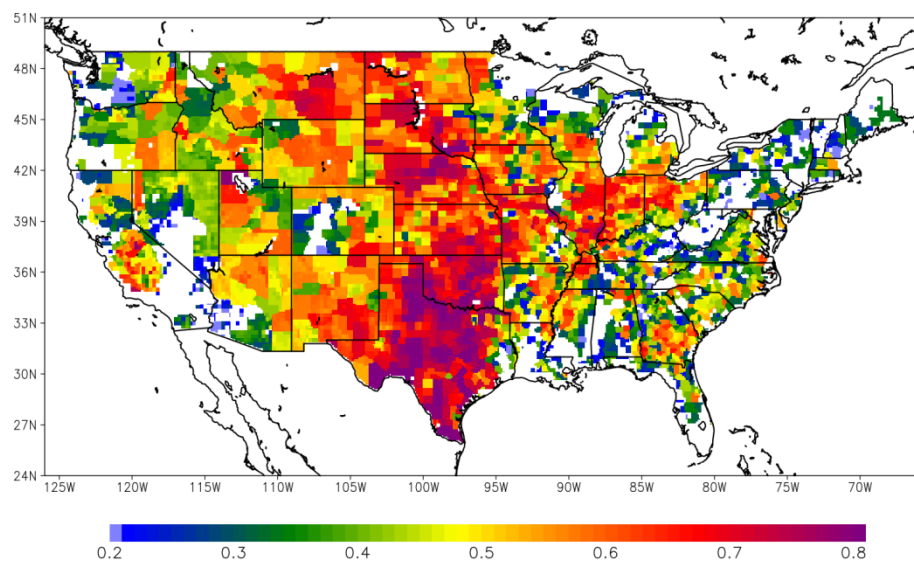
b) Noah Sfc / ECV Combined ($r = 0.57$)



c) Noah Sfc / ECV Active ($r = 0.51$)



d) Noah Sfc / ECV Passive ($r = 0.46$)



*Anomaly correlations computed with 2-week composites over May – October, 2000-2014