National Soil Moisture Network: Vision and Opportunities

Who is the NSMN?



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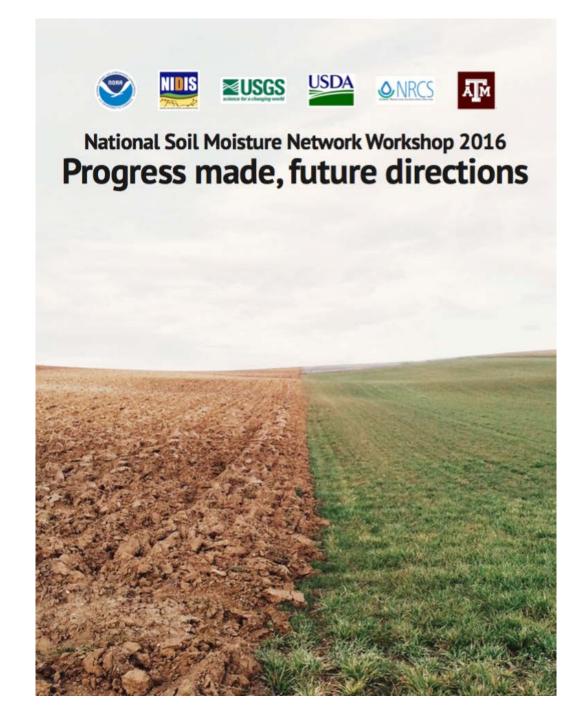
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NSMN Leadership

Vision

Where do we want to be in 5 years?



Vision

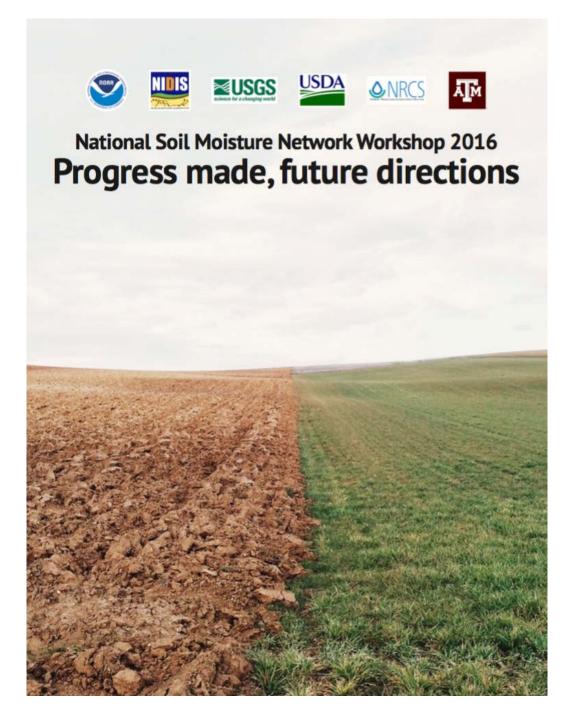
Table 2: Soil moisture products

Possible requirements and examples of products discussed during the 2016 workshop. Requirements:

- Temporal scales: Weekly, monthly, daily
- Spatial scales: Hydrologic Unit Code, census, state/county
- In situ Depths (cm): 2,5,10, 20,50,100
- Contextual data: SSURGO points, land cover, bench mark soils, National Hydrography Dataset, state, county
- All raw data behind maps should be available: time series, water year, etc.
- Data search features: state, basin, station, time periods, network, format

Monitoring and Forecast Products:

- ♦ Volumetric water content
- Percent saturation
- Soil temperature daily average max, min
- Station map using U.S.
 Drought Monitor color scheme (e.g. weekly averaged percentiles)
- Percent of normal gridded and point product
- Probabilistic gridded product (e.g. non-exceedance probability)



How do we get there?

- Leadership
- Funding
- Coordination and communication
- Logistics

Possible Approaches: Lessons from the past

• 1) PRISM: "Build it and they will come"



• 2) CoCoRAHS: "Grass roots"



• 3) Oklahoma Mesonet: "Strong ground game"

Next Steps

Get involved!

- Take small steps
 - What can we do this year with the resources that we already have (expertise, time, technical capabilities)?

- Build momentum
 - Develop a short-term and long-term plan

Possible Next Steps

- Develop a soil moisture community of practice (CoP) that includes soil moisture data
 providers, groups that are developing products and tools, and users of the data and
 information. The CoP would include citizen science initiatives and the private sector.
 Specific activities could include a "sensor challenge" for developing low-cost soil moisture/
 soil temperature probe alternatives, and developing case studies that highlight different
 approaches for integrating multiple sources of soil moisture data for specific issues and
 sectors.
- Establish a working group to begin the process of developing a strategic framework
 for building an integrated national network. The framework would consider issues around
 standardizing soil moisture measurements and metadata requirements, scale and spatial
 distribution for monitoring in observing networks, remote sensing platforms, and modeling
 efforts.
- Develop a nationwide product from existing soil moisture data to demonstrate the
 potential usefulness of a coordinated effort. The product and the investment of time by
 individuals who collect, process and store these data would guide how the process could be
 integrated on a broad spatial and temporal scale.

What do you think?