

SMAP Science Product Validation With U.S. Climate Reference Network In Situ Observations

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Site Description

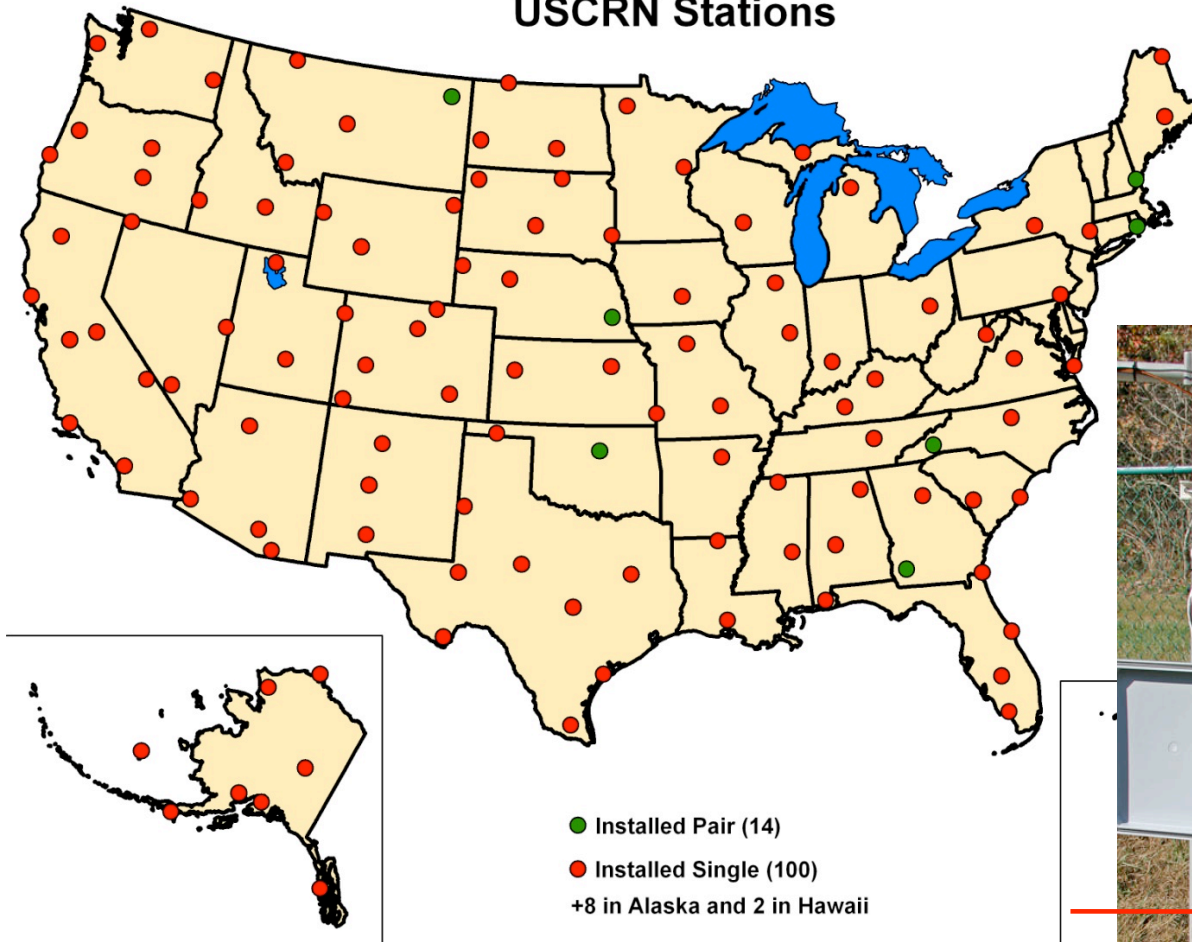
- Type of site – Sparse Network
 - Approximately 106 locations, each sampled with triple redundancy point measurements
 - Seven are paired sites, with two triple sets within a few kilometers
 - Pristine natural settings are sampled
- Measurements provided
 - Stevens Hydra Probe II: 5, 10, 20, 50 100 cm
 - Temperatures are also taken at these depths
 - Air temperature, precipitation, global solar radiation, surface IR temperature, 1.5 m wind

U.S. Climate Reference Network

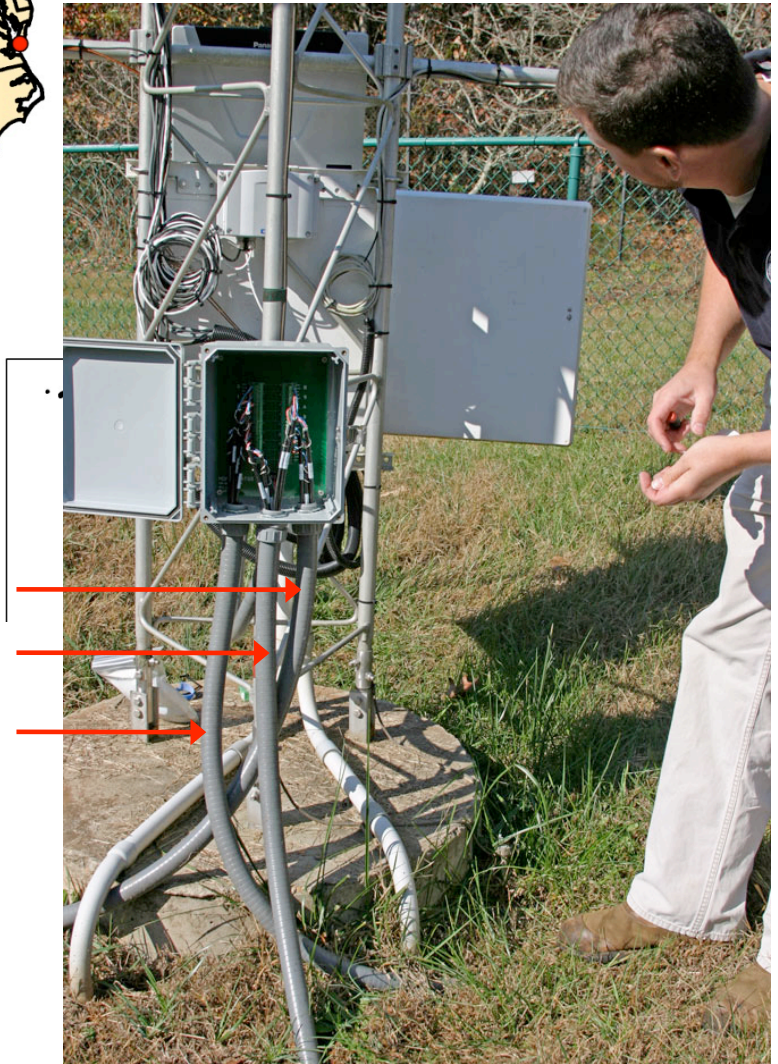
Mission

- To provide long term, high quality climate observations at representative locations across the U.S., in accordance with the GCOS Climate Monitoring Principles
- Act as a Reference network
- Fulfill additional missions as needs arise:
 - Soil climate measurements for drought monitoring
 - Soil and IR surface temperature measurements for satellite verification/validation
- Network is 3-10 years old, SM/ST starts 2009

USCRN Stations



- Conduit running from soil probes to connector
- 3 sets of probes at 120° separation 3 m from tower



Issues

- USCRN soil moisture/temperature network will be completed in Sept 2011
- Observations are currently hourly averages transmitted hourly
- It is feasible to increase sampling to 5 min
- A plan for GSM has not yet been developed
- At one location (Millbrook, NY), USCRN will participate with a footprint study
- We would like early access to SMAP data