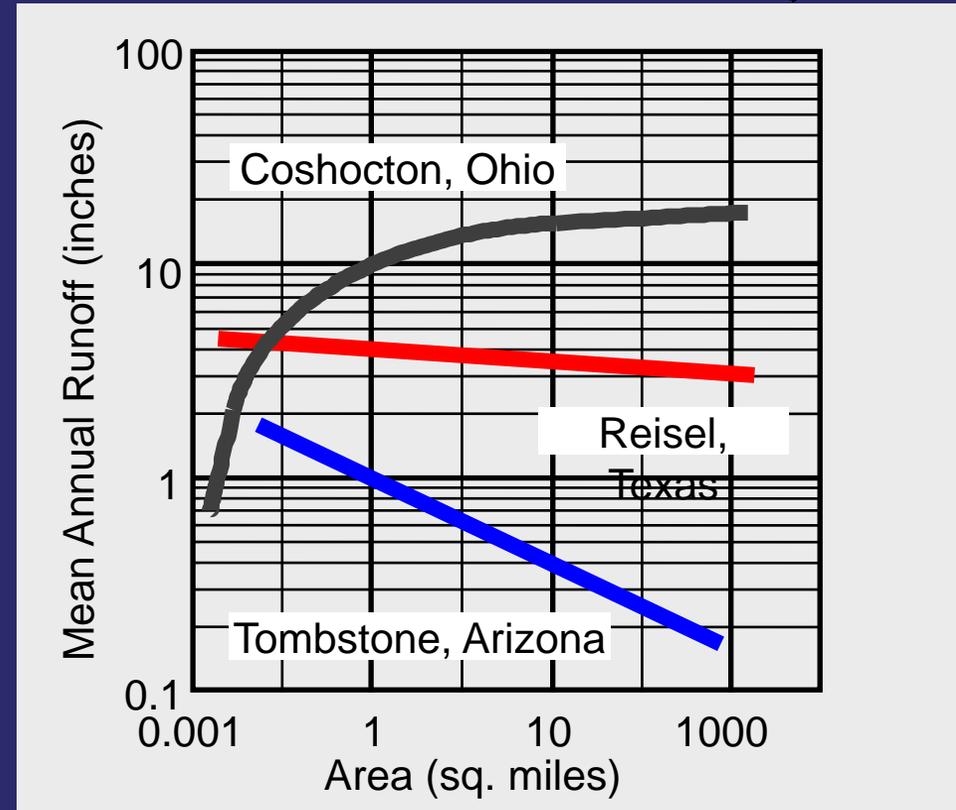


# ARS Experimental Watershed Network

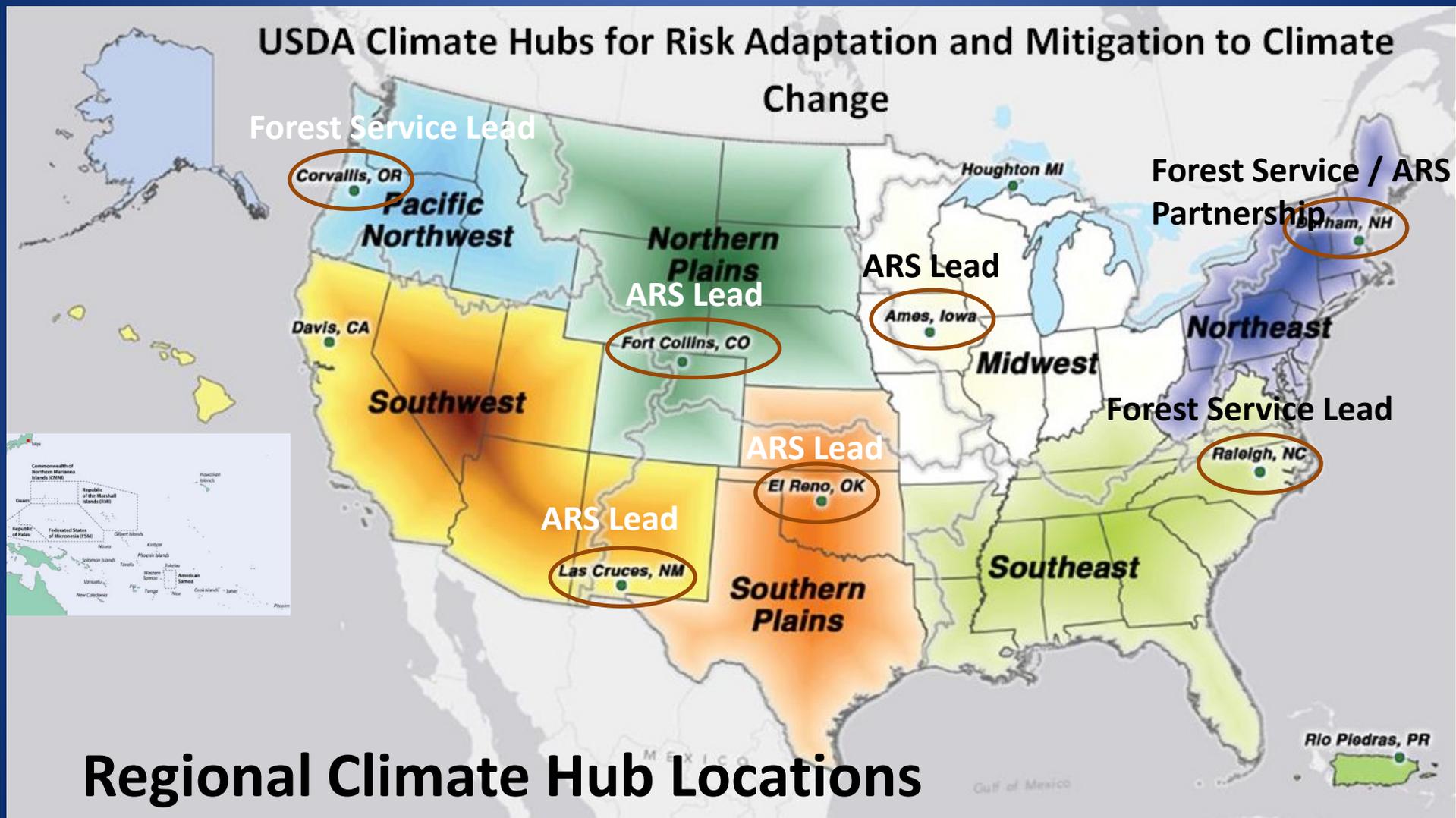
- Network of stable, high-quality research platforms (42 to 87 years)
- Covers a range of hydro-climates
- Dense observations in time & space
- 11 long-term locations with nested watersheds (~100: 25 ha to 610 km<sup>2</sup>)
- Long-term knowledge & data base
- Process-based understanding
- Magnets for collaboration leading to interdisciplinary field campaigns
- NASA satellite validation
- Special Journal Sections: WRR, Ecohydrology, JSWC
- Most privately owned



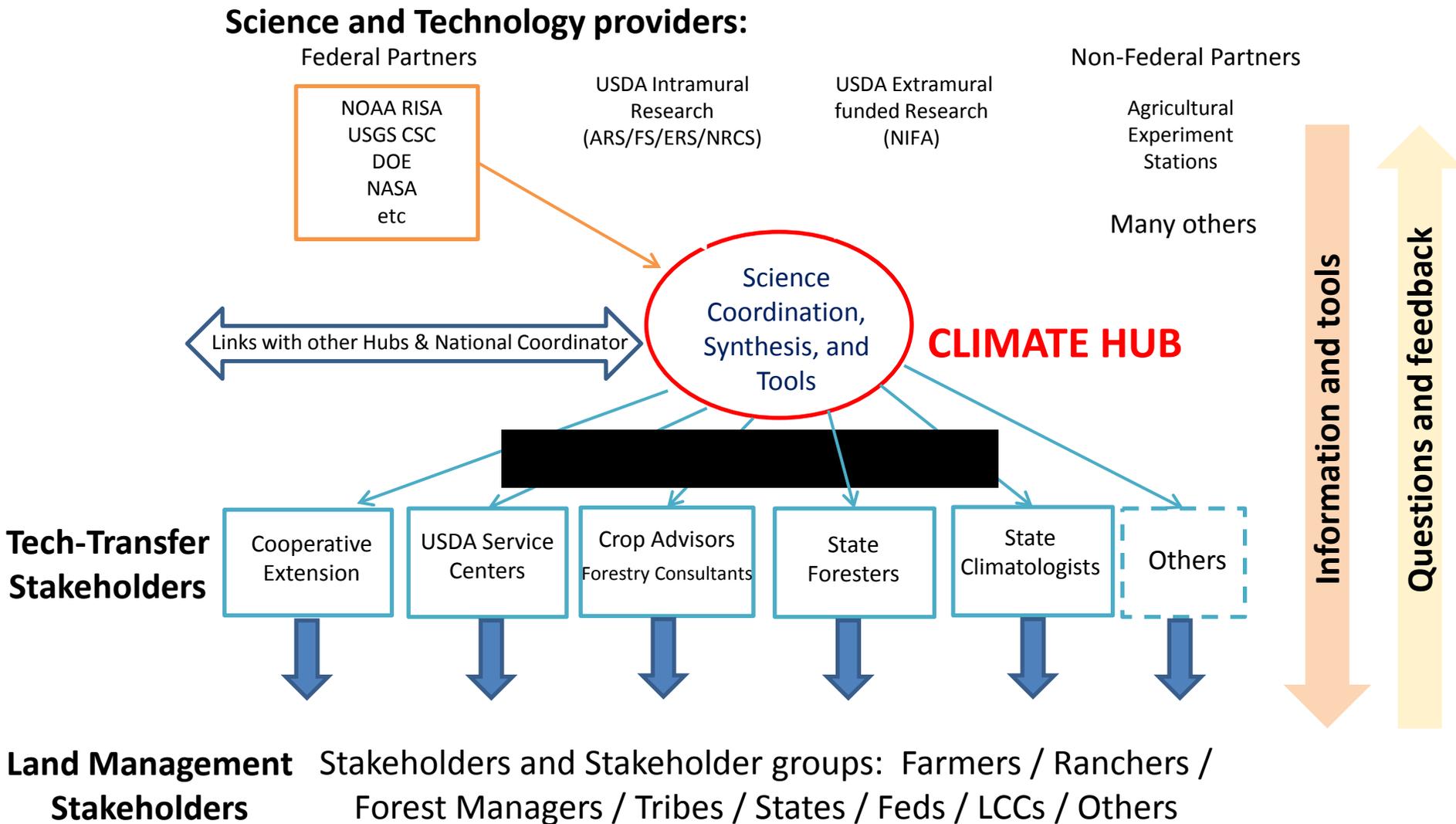
# *Current Multi-Location Research in Progress*

- Utility of Remote Sensing (RS) for ET and Drought Monitoring and Assimilation into ARS Models.
- Remotely-Derived Estimates of NPP using RS Data Across Precipitation Regimes.
- Hydro-Climatic Trends Across North America—A comparative analysis of historical soil water trends in US agricultural lands.
- Continental-Scale Synthesis of High-Resolution Observations from ARS & USDA Experimental Watersheds & Ranges.
- Comparison Of Eddy Covariance Flux Measurements Of H<sub>2</sub>O vapor & CO<sub>2</sub> In Different Environments.
- Estimating the Impacts of Projected Climate Change On Regional Water Availability & Quality Across Diverse Physiographic Regions of the US.
- Test hypothesis of precipitation intensification with sub-daily and sub-hourly observations

# USDA Climate Hub Regions

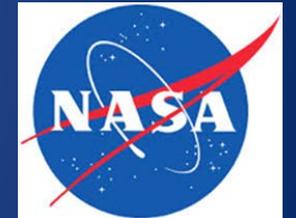
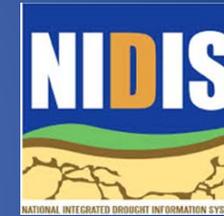
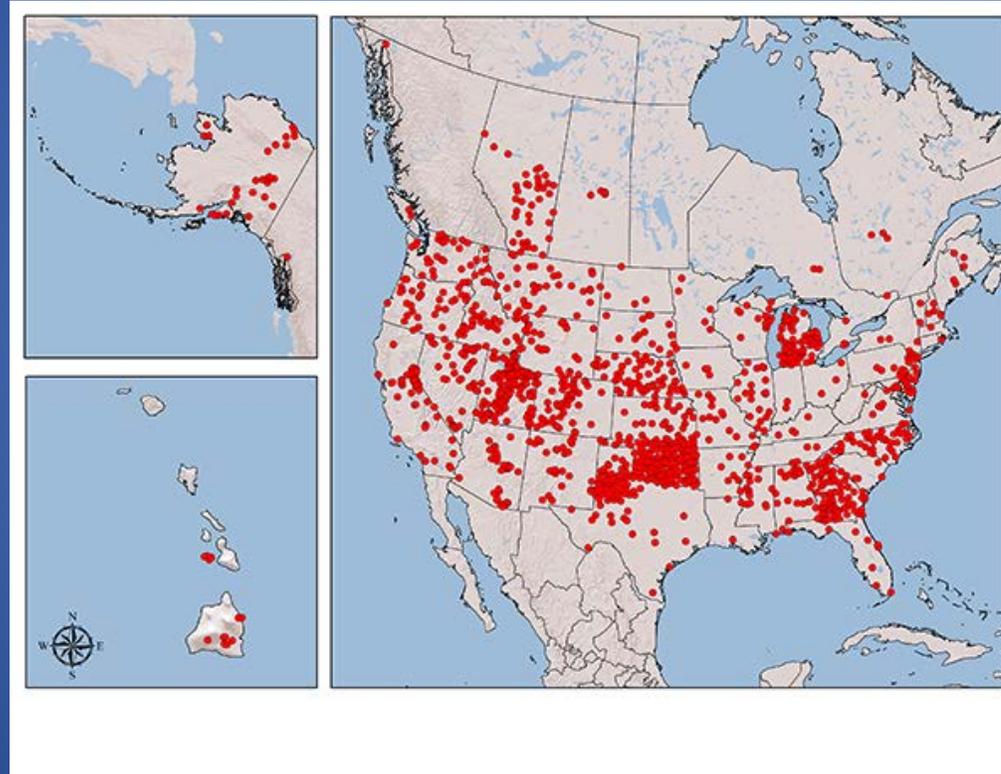


# Conceptual Framework for a USDA Regional Hub



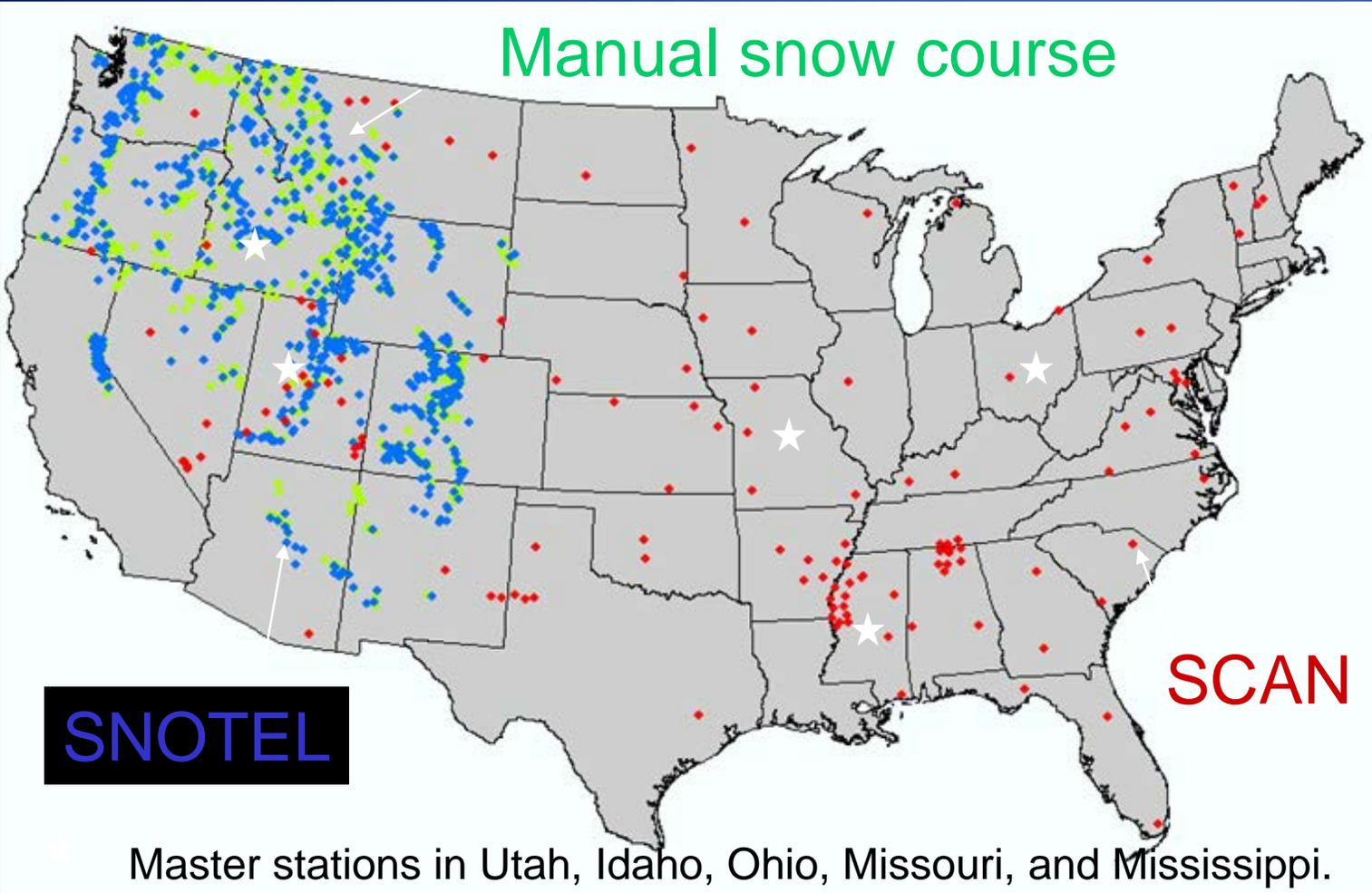
# Developing a Coordinated National Soil Moisture Network in the United States

- In situ stations collecting point data
- Remote sensing at various scales
- Models



# NRCS Snow Survey and Water Supply Forecasting Program and Soil Climate Analysis Network

## Manual snow course



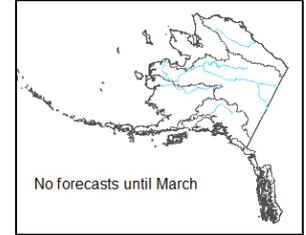
## Spring and Summer Streamflow Forecasts as of February 1, 2015

Percent of 1981-2010 Average

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25

50% exceedance probability forecasts shown. For forecasts at other exceedance probabilities, see individual state reports.

Prepared by:  
USDA Natural Resources Conservation Service  
National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>  
Created: 6 Feb 2015 13:50



# USDA-NRCS Climate Change Assessments, Tools and Plan

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/climatechange/>

**COMET-FARM** is a whole farm and ranch carbon and greenhouse gas accounting system. The tool guides you through describing your farm and ranch management practices including alternative future management scenarios. Once complete, a report is generated comparing the carbon changes and greenhouse gas emissions between your current management practices and future scenarios.

The **Rapid Carbon Assessment** (RaCA) is an extensive database on soil carbon. Three years ago, NRCS embarked on the largest concentrated soil sampling effort in the history of soil survey to build the most extensive database on soil organic and inorganic carbon in the US.

The **GHG and Carbon Sequestration Ranking Tool** is a qualitative ranking of NRCS Conservation Practice Standards that can be applied effectively to the Greenhouse Gas and Carbon Sequestration Resource Concern.

**Soil Health** is the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. A healthy soil performs several functions: regulating water, sustaining plant and animal life, filtering and buffering potential pollutants, cycling nutrients, and physical stability and support.

**Climate Change Vulnerability Assessment and Adaptation Plan 2014** is designed to help NRCS management and employees understand and better prepare for current and future changes in the climate that impact all aspects of the environment and day-to-day operations.

