

Digital Soil Mapping Initiatives in NRCS and the NCSS

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Digital Soil Mapping Activities

- Funded Research with University Cooperators
- Applied Field Trials with NRCS Soil Scientists
- Institutional Framework for DSM Implementation

Institutional Framework for DSM Implementation

- Digital Soil Mapping Challenge
 - Promote and guide the progressive development and implementation of Digital Soil Mapping (DSM) using predictive soil modeling and other methods within the National Cooperative Soil Survey system with respect to the production, delivery, and use of soil survey information.

Digital Soil Mapping Challenge: Discussion and Workshop

1. **Managing Organizational Change** – including issues relating to training and personnel, work flows, computer and technology requirements, and general acceptance of DSM procedures and products.
2. **Maintaining Scientific Integrity** – including issues relating to map assessment and accuracy, model assessment and accuracy, prediction uncertainty, and accurate and appropriate landscape representation.
3. **Building a Business Case** – including the need to quantify DSM costs and benefits, objectively measure map accuracy, and ascertain customer needs.

Digital Soil Mapping Challenge: Discussion and Workshop

4. **Being Adaptive to Project and Customer Needs** – including issues related to DSM methods, tools, guidelines, and products to avoid establishing a system that is too narrowly defined or that will be resistant to further evolution and improvement.”
5. **Developing Soil Information Products** – including issues related to completing and maintaining the SSURGO database, providing alternative soil map and interpretive products, assessing prediction uncertainty, and enabling development of user-defined information products.
6. **Crafting an Implementation Plan** – including issues related to personnel management, organizational change, accessing appropriate data, hardware, and software, testing and evaluating DSM methods, developing new DSM methods, training, and establishing DSM guidelines.

Digital Soil Mapping Challenge: Action Items

- Planning – Working Definition of DSM, Integration with existing and future Soil Information Systems Developmet
- Products – Identify new products, Establish minimum accuracy standards
- Business Case – Determine customer needs, Develop value propositions, Cost-benefit analysis
- Technology – National Hierarchy for landscape stratification, Clearinghouse for DSM tools/methods, Modular vs Integrated applications

Digital Soil Mapping Challenge: Action Items

- Assessment – Map accuracy assessment methods, DSM tool/ method evaluation, Benchmark DSM areas
- Training – User Support, Core Competencies, DSM training classes
- Communication – Discussion Forums, User groups, “Branding”, Technical Workshops
- Operational Initiatives

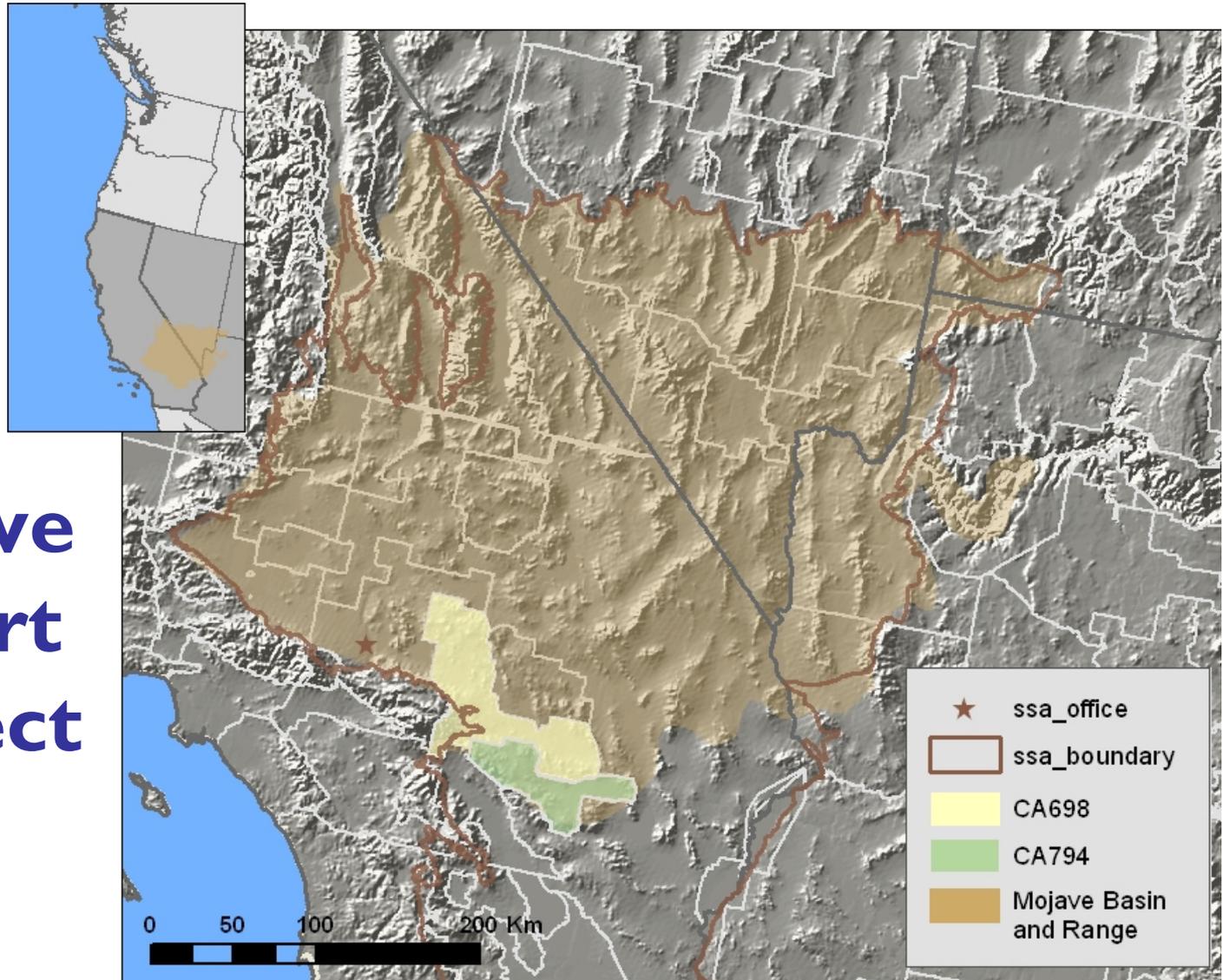
Digital Soil Mapping Challenge: Mojave Desert Project

- “Operational Initiative” – A collaborative project designed to explore and address DSM issues in the context of active soil surveys
- Purposes include comparing and contrasting DSM methods and understanding and addressing barriers to DSM use in a production setting
- These projects should contribute to completion of the initial soil survey and to the institutionalization of the MLRA soil survey model.

Digital Soil Mapping Challenge: Mojave Desert Project

- Criteria for Potential Project Sites
 - Include a variety of landscapes;
 - Include unmapped areas;
 - Include previously mapped areas;
 - Cross ownership boundaries;
 - Cross political boundaries;
 - Be large (e.g. MLRA or subset of a MLRA);
 - Have a soil survey team with diverse skills;
 - Have soil survey team members who are willing and able to learn;
 - Have willing managers;
 - Have necessary spatial data;
 - Have georeferenced pedon data (or plans to collect additional data);

Mojave Desert Project Area



Communication

- DSM ListServ
 - Send an e-mail message to listserv@listserv.wvu.edu with the text subscribe DSM in the body
- [DSM SharePoint Site](#)
 - Sign up for an account this week, or send an email message to amanda.moore@wv.usda.gov to request access
- DSM Working Group
 - Membership open to everyone
 - Technology transfer will be a major focus
 - Will utilize the ListServ and SharePoint site for communication