Review and document progress on recommendations from 2013 report and 2014 Regional Conference reports

Integrating GIS, remote sensing, landscape modeling, and other similar technologies into Soil Mapping and Interpretations program, create a priority list of National Interpretations as a research agenda need for the next 2 years. Evaluate potential for continuous and raster based interpretations.

Brief discussion of approach planned for 5 year revision of Ag Handbook 295.

Identify Outstanding New National Interpretation Projects within the NCSS partnership to present at the Regional NCSS Conferences

Strengthen the National Cooperative Soil Survey.
2013-2014 Update from Committee reports

– Collaboration with Amir Hass of West Virginia State University regarding the land application of drilling materials referred to as “coproduct” from hydro fracturing operations

– Training has continued as a priority to foster a de-centralization of interpretation creation, both the science and mechanics, in order to grow the pool of criteria writers
2013-2014 Update from Committee reports

• Revision of the data and urban interpretations account for storm surge flooding is under development, as is revision spatial data as needed to reflect new shorelines as a result of Hurricane Sandy

• Keeping yield data current (or create ways to estimate yields) is progressing through the coordination of productivity indices (NCCPI and others)
2013-2014 Update from Committee reports

• Habitat for Cheat Mountain Salamander is pending
• Accounting for acid sulfate weathering of dredged materials is progressing (8th International Acid Sulfate meeting College Park MD in 2016)
• Development of criteria for predicting soils prone to methyl mercury production
2013-2014 Update from Committee reports

• Color IR as a background option for Web Soil Survey which will allow much better identification of where hydric soils exist on the landscape may happen
• Deepening the frame of inference of soil data to 5 meters is still problematic
• Develop tools for interpreting a pedon in the field is under consideration- Jason Nemecek, SSS WI and others working on problem
SWOT Analysis

**STRENGTHS**
areas in which you excel or advantages of your organization

**OPPORTUNITIES**
external factors that may contribute to your organization and can build up your strengths

**WEAKNESSES**
areas to be improved

**THREATS**
potential problems/risks caused by external factors that your organization may face
SOILS AND A CHANGING CLIMATE: FUTURE OF THE NCSS

Establishment of the Soil Survey Program

Initial Soil Surveys

18 MLRA Soil Survey Regions

Realigned into 12 Regional Offices
124 Soil Survey Offices

Official Realignment approved by USDA and Congress

1899 1953 2013

1999 1995

147 MLRA Soil Survey Offices

future

POLITICAL BOUNDARIES

GEOGRAPHIC REGIONS
Create continuous and joined coverage within the attribute database through a process of disaggregation and field validation.

Regional Workshops Concerns and Strategic Planning.

Can it expedite the conservation planning process, provide consistent data for the Nation?

Multiyear initiative When will we start?
### A WORKFLOW FOR Raster Conversion

<table>
<thead>
<tr>
<th>SCALE</th>
<th>ACTIONS</th>
<th>PRODUCTS</th>
<th>TIMEFRAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLRA</td>
<td>Observations, concepts, rules, keys, collaborations, coordination, analysis</td>
<td>Provisional standards</td>
<td>5 years</td>
</tr>
<tr>
<td>SITE</td>
<td>Disaggregation, validation, documentation, refinement, tests, process x practice links</td>
<td>Approved raster based Update</td>
<td>10 years</td>
</tr>
<tr>
<td>MLRA</td>
<td>Correlations, Interpretation, refinement, updates, distribution</td>
<td>Standards-Data Model Distribution</td>
<td>?</td>
</tr>
</tbody>
</table>

**Updated Soil Survey**
Must Collaborate Agency wide with SSS, StCs RCs SRCs

Electronic Database- Potential for scaling and Interpretations.

Handbook Definitions and standards

Target CY2016.
CLIMATE CHANGE ADAPTATION INTERPRETATIONS
PARTNERSHIPS

Partners in the Development of Science and Technology:
- NOAA
- Department of Interior
- Department of Energy
- NASA
- Agricultural Experiment Stations
- Private sector

Partners in Technology Transfer:
- Cooperative Extension
- USDA Service Centers
- Forest Service Threat Centers
- Certified Crop Consultants
- Nutrient Management Consultants
- Seed dealers

http://climatehubs.oe.usda.gov/
Before - Interpretive Results

National Commodity Crop Productivity Index (NCCPI)

NCCPI Interpretive Results

Fuzzy Value (Weighted Average)

- .700 and less: 0.781 - 0.800
- 0.701 - 0.720: 0.801 - 0.820
- 0.721 - 0.740: 0.821 - 0.840
- 0.741 - 0.760: 0.841 - 0.860
- 0.761 - 0.780

Variability in NCCPI fuzzy values between the two Clarion MLRA map units displayed in the map on the right relate directly to differences in depth to saturation, as well as soil physical and chemical properties (substantiated through laboratory data analysis). Additionally, the unique composition of soils in each map unit impacts weighted average values.
ECOLOGICAL SITE INVENTORY INTERPRETIVE ANALYSIS

National Ecological Site Handbook

Provisional Ecological Sites

Ecological Site Descriptions

Conservation Planning

Climate Change
2015 Recommendations

• Develop tools and methodologies for generating soil survey interpretations on raster-based data from digital soil mapping and other, such as PRISM and LIDAR as data sources
• Develop risk indices to identify soils that are at risk of developing alkalinity or acidity problems if mismanaged
• Develop a suite of interpretations for soil-borne diseases
• Develop interpretations for specialty crops, such as hops
• Develop a model to identify recharge versus discharge wetlands
• Continue to work on interpretations for suitability of species, soil health, and planting suitability in context with climate change (multiple scenarios)
2015 Recommendations

• Create a manual or published index of soil interpretations for reference (technical soil services, consultants)

• Expand training of “triple crown” interpretations to NCSS cooperators

• Improve the process for addressing requests for assistance
NCSS Support Specialized Meetings With Interpretation topics

7th IASSC
26 August - 1 September 2012
Vaasa, Finland

First Circular

Welcome to the
7th International Acid Sulfate Soil Conference
in Vaasa, Finland 2012
Conference August 26 - 30
Excursions August 31 – September 1

Towards Harmony between Land Use and Environment

Söderjärden. Site for the mid-conference tour. Vaasa is located in the upper-right corner.
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Acid Sulfate Soil Working Group
International Union of Soil Sciences
CONCLUSION-NCSS STRATEGIC PLAN

SUPPORT THE NCSS VISION AND PLAN

VISION

A world that supports the wise use and management of soil as a natural resource.

MISSION

Investigate and evaluate soil function and soil ecosystems across landscapes and deliver this knowledge for diverse public and private management needs.