Office of the Chief
Weekly Report

Soil Science and Resource Assessment
Soil Science Division

February 12, 2013

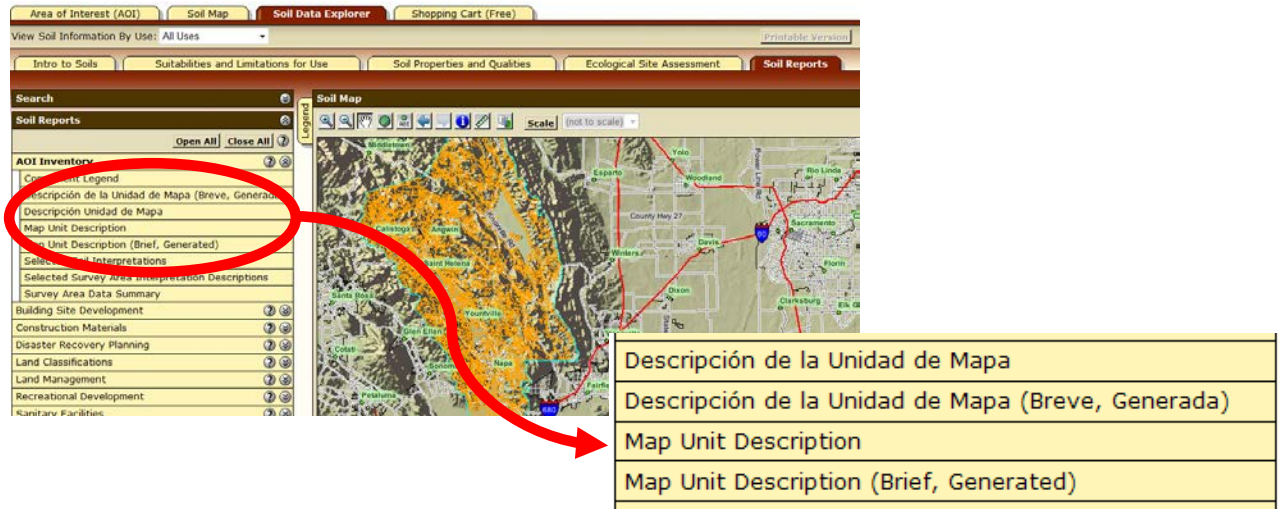
Deadline Reminders - None

Upcoming Meetings/Conferences - None

Soil Science Division Update -

<u>Web Soil Survey Serves Bilingual Information</u>

The Web Soil Survey is the main information site for the public to access soil survey data. It now has reports in Spanish! Beginning in November of 2012, a project was launched to deliver soils information in Spanish to the large segment of Hispanic farmers, ranchers and other producers and land managers in the country. Within just a few months, the Web Soil Survey reports were produced and now the soil map unit descriptions are available in Spanish! These translations are produced through scripted programming in Web Soil Survey and are available for every USDA certified soil survey in the United States.



Translations of the reports were conducted by bilingual soil scientists across the country. The database elements, as well as Spanish sentence structure, were translated for both map unit description reports. This project was coordinated through the National Soil Survey Center.

Report — Descripción Unidad de Mapa

Napa County, California

100—Aiken loam, 2 to 15 percent slopes

Descripción Unidad de Mapa

Elevación: 91 a 914 metros
Precipitación media anual: 762 a 1270 mm
Temperatura media anual del aire: 12 a 13 grados C
Días sin heladas: 200 a 250 días

Composición Unidad de Mapa

Aiken y suelos similares: 85 por ciento

Descripción de los Suelos Aiken

Geomorfología del Terreno

Forma del terreno: Hillslopes
Posiciones geomórficas bidimensionales: Footslope
Posiciones geomórficas tridimensionales: Side slope
Forma de la pendiente perpendicular al contorno: Linear
Forma de la pendiente paralela al contorno: Linear
Material parental: Residuum weathered from volcanic rock

Propiedades y Cualidades

Pendiente: 2 a 15 por ciento
Profundidad de la primera capa restrictiva: 102 a 152 cm

Report — Descripción de la Unidad de Mapa (Breve, Gene

Minor map unit components are excluded from this report.

Napa County, California

Map Unit: 100—Aiken loam, 2 to 15 percent slopes

Component: Aiken (85%)

El componente Aiken constituye 85 por ciento de la unid
en hillslopes. El material parental consiste de residuum w
raíces , Lithic bedrock, es 102 a 152 cm. La clase de dre
restrictiva es muy baja. El agua disponible a una profund
no se inundada. No se empoza. No existe una zona de s
orgánica en el horizonte superficial es de aproximadamen
sin riego es 3e. La clasificación de la capacidad product
hídricos. No hay horizontes salinos dentro de las primera

Map Unit: 101—Aiken loam, 15 to 30 percent slopes

Component: Aiken (85%)

El componente Aiken constituye 85 por ciento de la unid
está en hillsides. El material parental consiste de residuu
raíces , Lithic bedrock, es 102 a 152 cm. La clase de dre
restrictiva es muy baja. El agua disponible a una profund

The Web Soil Survey is the largest USDA web outreach site. It receives over 100,000 unique visitors a month and over 190,000 custom soil survey reports were prepared in 2012. It continues to grow in popularity and demand due to its high responsiveness to customer needs. Web Soil Survey is now prepared to serve even a larger audience through this bilingual effort!

Soil Health Initiative and Conservation Practice Standards - On February 4th, the National Conservation Practice Standards Committee (NCPSS) met, including Michael Robotham, Acting National Leader for Technical Soil Services, and Mike Kucera, Agronomist, National Soil Quality and Ecosystems Branch (SQE). A question was posed about how soil health/quality relates to conservation practice standards, and whether someone from the new Soil Health Division should be on the NCPSS committee. It was agreed that a representative from the new Soil Health Division be included in the NCPSS committee because of the direct tie-in of soil health to many conservation practice standards. Norm Widman, National Agronomist, stated that many agronomy practice standards incorporate soil health/quality, including conservation practices as cover crops, residue management, crop rotations and others that promote carbon sequestration. Many of these standards already have soil quality purposes, added first by the former Soil Quality National Technology Development Team and continued by the Soil Health and Sustainability Team. Robotham discussed the involvement of the Soil Science Division in the soil health effort including development of a rapid assessment tool for soil health assessments by the SQE at the NSSC. Kucera also reported on the topic of assessing soil health and estimating potentially mineralizable nitrogen, through use of Solvita Tests. Solvita's use by major soil testing laboratories and new potential for more quantitative assessments was also discussed.

Ground-Penetrating Radar (GPR) and Electromagnetic Induction (EMI) Training and Investigations in Mississippi - During the week of January 28 - February 1, Wes Tuttle, Geophysical Soil Scientist, NSSC provided training to MLRA Soil Survey Office staffs from Mississippi and Arkansas. Training included both ground-penetrating radar (GPR) and electromagnetic induction (EMI) operations and post-data processing. Training and technical assistance was provided at the Lake George/Holy Bluff archaeological site located just southeast of the community of Rolling Fork, MS. In excess of 25 mounds have been identified at the site with the largest about 55 feet above the surrounding landscape. The mounds have been extensively damaged by looting, erosion and cultivation, but archaeological investigations in recent years have unearthed and documented numerous burials. EMI surveys were completed at the site to help identify additional areas potentially containing subsurface artifacts, burials and relict structures as well as gain a better understanding of how the tool works. In addition to potential archaeological sites, the investigations revealed subsurface variation in soil

properties suggestive of a ridge and swale topography that was not evident in this planar landscape. Observations from auger borings in the area indicated highly variable clay content that were related to the EMI spatial patterns observed. GPR and EMI can be extremely important tools in soils investigations and continue to be used in this area to enhance quality of the soil survey and aid identification of cultural resource sites.

Left: An EMI survey is being completed by Rachel Stout Evans, MLRA Soil Survey Project Leader, Metcalfe, MS.

Seminar Presentation on Ground Penetrating Radar to Temple University - On February 1, 2013, Jim Doolittle, Research Soil Scientist with the Soil Survey Research and Laboratory Staff of the NSSC presented a Seminar entitled "*Use of Ground-Penetrating Radar in Soil Investigations*" to the Temple University Department of Earth & Environmental Science. About 40 students and faculty attended the seminar. Participants were interested in the expanding role that is being played by ground-penetrating radar in earth science, especially its use in hydrogeology and addressing environmental and engineering problems. Doolittle latter met with faculty and students involved in geophysical research at the Christiana River Basin (Northern Piedmont into Atlantic Coastal Plain) and Shale Hills (Northern Appalachian Ridges and Valley) Critical Zone Observatories in Pennsylvania and discussed possible collaboration on future research projects. Interactions and research collaborations with NCSS cooperating universities help expand our understanding of soil distribution, processes, and behavior that can be applied to improve the quality of the soil survey.

Ecological Site Description Workshops at the Society for Range Management Meeting - Joel Brown and Curtis Talbot, NSSC staff, attended and participated in the 66th Annual Meeting, Technical Training, & Trade Show of the Society for Range Management on February 2-8, 2013 in Oklahoma City, OK. A highlight of the meeting included five ecological site workshops covering the topics of Collaborative ESD Development Training (an 8-hour workshop); Moving Forward with Common ESD Standards and Procedures (a 16-hour workshop) including: 1) Concepts, Classification, Differentiation, & Description of Ecological Sites, 2) Data Mining – Locating and Analyzing Vegetation Data and 3) Ecological Site Descriptions – Uses and Benefits. An additional 4-hour ecological site workshop was held specifically for undergraduate students. In all, 28 hours of Ecological Site training and workshops were held. All workshops were developed and led by members of the SRM Ecological Site Training Committee most of who are either current or former employees of NRCS including Brown and Talbot. Even though the number of federal employees approved for travel was significantly reduced from previous years, the workshops were all well attended. Additional ecological site workshops will likely be continued at future SRM venues to promote development, understanding, and use of ESDs for conservation planning and other natural resource applications.

Spatial Analysis Workshop – Sixteen soil scientists representing 9 states successfully completed the online training, Spatial Analysis Workshop, February 4th and 6th. Dwain Daniels, GIS specialist at the CNTSC and Tom D'Avello, soil scientist (GIS) at the NSSC GRU served as the online, distance learning instructors. This workshop trains participants to work with digital elevation data and use various tools to derive new soil survey products. In all, 3 sessions of the workshop were held this fiscal year with 26 participants from 14 states taking the training. The workshop is the first in a 3-part training series on digital soil mapping techniques.

Webinar on Spatial Disaggregation – The ability to determine the spatial distribution of individual soil components within SSURGO map units is what spatial disaggregation is all about and represents the future of digital soil mapping. Tom D'Avello, soil scientist (GIS) at NSSC-GRU, and Travis Nauman, PhD candidate and NRCS Pathways employee at the NSSC-GRU presented *Spatial Disaggregation – A Primer* as a webinar February 7th to over 200 NRCS employees and partners. The techniques presented utilize data in raster format, which provides the opportunity for value added data and increased resolution that is not feasible with current polygon based soil survey products. The webinar was recorded and is now available online at http://soils.usda.gov/education/resources/videos.html and select 'Webinars - presentations and training sessions'.

Texas Soil Survey and Land Resource Workshop – Jon Hempel, Acting Soil Science Division Program Manager, attended the Texas Soil Survey and Land Resource Workshop at Texas A&M University. The workshop is attended by many of the Texas National Cooperative Soil Survey partners including Texas A&M, Tarlton State University, Baylor University, Stephen F. Austin University, Louisiana State University and Texas Tech University. Hempel gave two presentations; Soil Science Division Restructure Plan and Global Soil Partnership international project. This meeting is an excellent opportunity to interface with the NCSS partnership in Texas and learn of their research and support of the National Cooperative Soil Survey Program and also to discuss new needs for research and development projects as the soil survey program moves forward.

Personnel Highlights - None