Fall 2014 Volume 18, No. 1

The Coastal Plainer

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Message from the SSRO–Leader's Desk

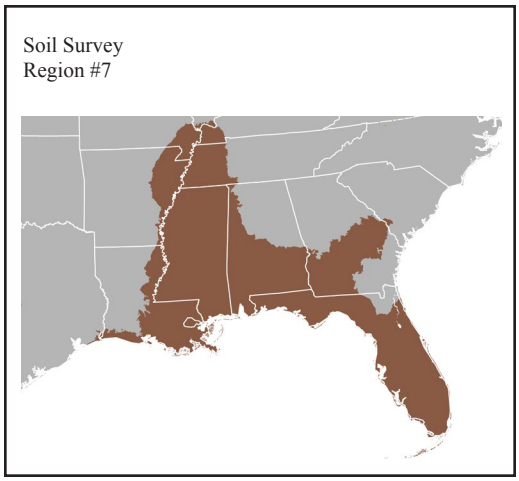
By Charles Love, Regional Director

Again, greetings everyone!

Thank you for another successful year. We met the challenges folks!

First, I want to take a moment on behalf of my family and myself to thank you for the cards, emails, and other support during my recovery following my medical procedure. I am slowly transitioning back to the work place.

This year, we had great collaboration from our technical and management teams as we carried out the activities of soil data join recorrelation (SDJR), initial soil survey, and MLRA soil survey. MLRA soil survey offices, ecological site specialists, and soil survey regional office team members developed and completed 325 projects for SDJR, initial soil survey, MLRA soil survey, and the ecological site inventory (ESI), totaling 4,323,228 acres. We provided soils data that is impacting over 40 strike-force counties, which are counties that have been identified as having over 20 percent poverty. USDA–NRCS is providing additional resources to better serve producers in these areas. The project data impacts five landscape conservation initiatives in Region 7: Gulf of Mexico Initiative (GoMI), Everglades Initiative (EI), Migratory Bird Habitat Initiative (MBHI), Longleaf Pine Initiative (LLPI), and Mississippi River Basin Healthy Watersheds Initiative (MRBI). The data also help establish a strong database for activities related to the Conservation Delivery Streamlining Initiative (CDSI) and modeling units.



SDJR

The Soil Science Division (SSD) leadership is asking the Soil Survey Regional Directors to make it a priority to accelerate SDJR for the next 2 years. We will evaluate all our data map units in the NASIS database. This new approach will surely help us provide soil survey information that is consistent across political boundaries, expedites the conservation planning process, supports CDSI, and provides consistent soils data for Conservation Effects

In This Issue:

Assessment Project (CEAP) analyses to help meet the agency overall priorities.

ESI

In FY–14, we established two ESI projects covering portions of MLRAs 151, 154, and 155. These projects allowed us to complete key fieldwork. We conducted two quality assurance field reviews to ensure we were meeting national standards for the ecological sites. These QA reviews enabled our ES quality assurance specialist to approve the sites.

The SSR–7 ES team also developed a strategic plan that identifies ES projects through 2018 in MLRAs 134, 151, 154, and 155. As we gain opportunities to increase our regional ES staff, we look forward to also establishing ES projects in MLRA 133A (the Coastal Plain area). MLRA 133A is one of the largest ES project areas in the region.

Four ES projects have been approved:

- MLRA 151A: Gulf Coast Marsh.—Lead by Charles Stemmans and Burnell Muse (A QA review was held in June, 2014.)
- MLRAs 154 and 155: Yellow Sands Xeric Uplands of Central Florida.—Lead by Susan Carr and Rachel Stout-Evans (A QA review was held in August 2014.)
- MLRAs 133A, 152A, and 138: Panhandle Xeric Longleaf Pine Sandhills.—Lead by Susan Carr and Rachel Stout-Evans
- MLRA 134: Deep Loess Backslopes Ecological Site Inventory, Southern Mississippi Valley Loess.—Lead by Barry Hart and Caleb Gulley

I want to give special thanks to those States that participated in the ESI quality assurance field reviews and express my hopes that they and other State staffs will have the opportunity to assist in future reviews. The technical engagement and insight from the State staff members at these field reviews was invaluable. I appreciate their efforts in enabling us to move forward to the next steps: final correlation, certification, and delivery of an ecological site description to our external and internal customers.

In FY–2015, the SSR–7 regional ecological site QA specialist, ecological site QC specialists, and MLRA soil survey office leaders will be developing projects that accelerate ES activities by MLRA throughout the region.

We also plan to identify “Provisional” ecological sites to meet the National ES Handbook instructions. All of the soil survey regions, including SSR–7, will be working in conjunction with National Headquarters staff, States, and cooperators to analyze named soil components and build provisional ecological site communities based on MLRAs and soil groups. The soils within each MLRA will be grouped into provisional ecological sites using soil taxonomy or specific soil properties that are relevant to vegetative species and performance. The provisional site descriptions will include draft site concepts, state-and-transition models, and state-and-transition narratives. Guidance regarding the provisional sites will be provided as it is received from headquarters.

Administrative Transformation

The Soil Survey Division is now responsible for support of the operating budget for soil survey regional offices and MLRA soil survey offices. A National Administrative Customer Support Team has been established to help the Soil Science Division with agency administrative transformation procedures. One job of the team will be to assist in transitioning the following activities to the 12 regional offices: travel, purchase cards, human resources, and AgLearn activities. Our regional administrative assistant and I will be working closely with the various teams to help SSD deploy these administrative transformation efforts as they come on board.

Just recently, the administrative assistants for the soil survey regional offices hosted a

teleconference to discuss key administrative tasks. This outstanding group deployed their problem solving skills to help the agency's efforts at administrative transformation. We are very pleased with the exceptional skill set the group has demonstrated in best serving soil survey offices and regional offices and in supporting the soil survey regional directors. The administrative assistants will continue to host a monthly teleconference to engage in the dialog needed to ensure continuity among the regional offices and thereby meet the overall agency goals.

This group is working closely with SSD staff and customer team members to develop support for use of GovTrip, Purchase Card Management, WebTCAS, and AgLearn systems. For example, we envision the administrative assistant at each regional office serving as regional custodian for AgLearn, ensuring enrollment, developing the annual training-needs inventory, and tracking the training for all staff members. This work will help us meet the overall agency training mission. The National Leader for AgLearn is implementing this procedure as part of the agency's efforts at administrative transformation.

I want to personally thank the SSR–7 State Conservationists, their administrative staffs, and the state soil scientists for all their outstanding support during our transitions.

Projects

NRCS has begun working with the Agricultural Research Service (ARS) to assist with the National Ecological Observatory Network (NEON), which is a major national research effort. Specific areas of interest for NEON are factors that cause ecosystem change (climate change, land use change, and invasive species) and parameters that respond to change (biodiversity, biogeochemistry, ecohydrology, and infectious diseases). Our contribution to this national project will involve collecting soils samples, preparing soil descriptions, and analyzing various pedons throughout the region. We are looking forward to working with SSD, the National Soil Survey Center, and state soil scientists on this important effort. I will keep you posted as the effort progresses.

In FY–14, the MLRA SSOs and SSR–7 team documented in NASIS 115 technical soil services support activities, totaling 3,936 hours. The SSR–7 team is glad to assist the state soil scientists as they empower technical soil services to support conservation program delivery throughout the region.

Some of the special projects supported and completed in SSR–7 in FY–14 include:

- Soil Monitoring Network study in conjunction with Colorado State University (Alabama, Georgia, and Mississippi)
- Order-one survey (~100 acres) in conjunction with North Carolina State University (Alabama and Mississippi)
- Soil sampling projects for "Soil Formation, Carbon Cycling, and Organo-mineral Interactions in Alabama Blackland Prairie Vertisols" working with Auburn University
- Lower Mississippi Valley soil moisture study in conjunction with University of Arkansas (Arkansas, Louisiana, Mississippi, and Tennessee)
- Initial mapping for water conservation district properties in conjunction with South Florida Water Conservation District (Florida)
- Update mapping in Ocala National Forest (MLRA 133A) in conjunction with U.S. Forest Service (Florida)
- Mapping and classifying of reclaimed coal mine soils (Choctaw County, Mississippi)
- Assistance with soils information for ecological demonstration sites at Tuskegee University Longleaf Pine Plantations in conjunction with various agencies and foundations across the southeast region

Personnel

FY–14 Summer Interns (Pathways)

Trey Allen Reich
- *Location:* MLRA Soil Survey Office, Denham Springs, Louisiana
- *Starting date:* 5/19/2014
- *College:* LSU

Gregory Reynolds
- *Location:* MLRA Soil Survey Office, Meridian, Mississippi
- *Starting date:* 7/25/2014
- *College:* Alcorn University

Jarmarius Reed
- *Location:* MLRA Soil Survey Office, Tifton, Georgia
- *Starting date:* 5/19/2014
- *College:* TSU

Delta Bell
- *Location:* MLRA Soil Survey Office, Tupelo, Mississippi
- *Starting date:* 5/19/2014
- *College:* UAPB

New Employees

Dr. Charlie Ogg
- *Position:* Modeling unit coordinator for SE Regional Conservationist Administrative Area
- *Location:* Auburn, Alabama

William Covington
- *Position:* Administrative support assistant
- *Location:* Auburn, Alabama

Aaron Friend
- *Position:* Soil data quality specialist
- *Location:* Auburn, Alabama

Retirement

Scott Anderson
- *Position:* Senior regional soil scientist
- *Location:* Auburn, Alabama
- *Date:* November 29th

Priorities

I am very excited to take this opportunity to share with you the Soil Science Division (SSD) priorities for FY–2015.

- Strengthen the National Cooperative Soil Survey (NCSS) through increased transparency in the strategic planning process and through collaboration in achieving NCSS goals.
- Strengthen technical soil services to support soil health initiatives, conservation planning, and program delivery.
- Increase integration of soil science with climate change initiatives.
- Accelerate the Soil Survey Data Join Recorrelation (SDJR) initiative with the overall goal of completing the initial phase in 3 years.
- Accelerate production of ecological site description products in collaboration with State technical staff and partners.
- Formulate a plan to accelerate the foundational (initial) soil inventory on all lands, including Federal lands.

Each of these priorities is equally important to achieving the goals of the Soil Science Division and the Natural Resources Conservation Service. Please look for more details about each priority in an upcoming national bulletin and help share the priorities with our State Conservationists, partners, and cooperators to help us meet our present and future priorities and support our mission.

In closing, FY–14 was an outstanding year for meeting our goal of providing high quality, science-based soils information through agency product delivery systems to serve our internal and external customers as they put conservation on the land. As we say, “Help People, Help the Land.” I feel FY–15 will be another exciting year for Soil Survey Region 7 and our MLRA soil survey offices as we meet Soil Science Division priorities and in turn support the agency priorities. Please join me in embracing these new opportunities!

As always, thank you for your support.

—*Charles*

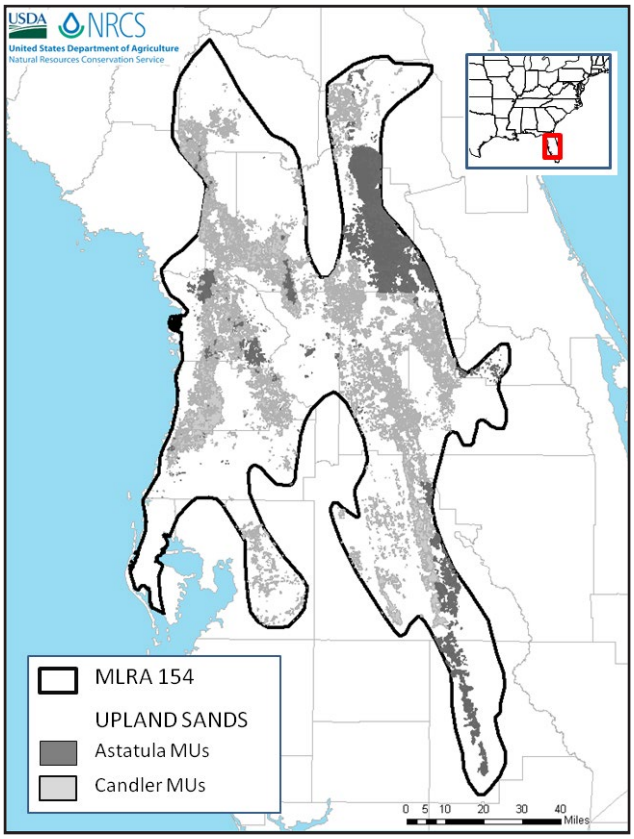
Earth, Wind, and Fire in Central Florida

A Field Review of Yellow Sands Xeric Uplands Ecological Site Project in MLRA 154

By Susan Carr, Ecological Site Inventory Specialist, Tavares, Florida

The first-ever quality assurance (QA) and field review of an ecological site inventory (ESI) project in Florida occurred at Tavares during the week of August 11, 2014. Specifically, participants gathered to review the "Yellow Sands Xeric Uplands" ecological site of central Florida. Members of the Florida ESI technical team were present, including soil scientists, biologists, range specialists, and others from Florida, Mississippi, and the soil survey regional offices in Auburn and Raleigh (SSRO–7 and SSRO–3). Also present for the 2-day field review were our partners with the USFS Ocala National Forest, The Nature Conservancy, and Florida Natural Areas Inventory.

Julie Ruh and Rachel Stout-Evans, NRCS soil scientists, dig a soil pit in the Ocala National Forest.



The extent of Astatula and Candler (yellow sands) map units in MLRA 154.

This ecological site occupies areas of droughty, excessively drained, deep sands in Florida's Ridge and Upland physiographic regions. The yellowish colored sands of the Astatula and Candler soil series occupy approximately 700,000 acres of MLRA 154, with a north to south distribution of over 200 miles in the Florida Peninsula. Natural vegetation communities in MLRA 154 on yellow sands includes Longleaf Pine Sandhills, Sand Pine Scrubs, and Xeric Hammocks. The two latter plant communities feature thick growths of evergreen oak species. The Yellow Sands Xeric Uplands ecological site is complex. The predominant ecological drivers for the structure and composition of native vegetation are fire, hurricanes, and climate. In fact, these drivers

Longleaf pine sandhills (left) and sand pine scrub (right) in the Ocala National Forest.

may surpass soil properties in influencing plant communities. Accordingly, the state-and-transition model for this humid-subtropic ecological site is so complex that the field review team had a lot to look at and consider.

In an attempt to see the geographic variation in native vegetation of the Yellow Sands Xeric Uplands site, the review team hit the road for 2 days of field trips. On the first day, the review team visited the Longleaf Pine Sandhills of Riverside Island in Ocala National Forest. These sandhills are not on a real island; rather, they are an "island" of longleaf pine in a sea of sand pine scrub! Also, these very different plant communities occur on identical soils. Interestingly, the fire regime determines the distribution and structure of sandhill vs. scrubs in Ocala National Forest. Carrie Sekerak, wildlife biologist at the Ocala National Forest, explained the specifics of fire management and ecology in the forest.

On the second day, the review team headed about 120 miles south to Tiger Creek Preserve in south-central Florida. Tiger Creek is owned and managed by The Nature Conservancy. It has been managed with fire for decades, making it an important site for observing naturally fire-maintained plant communities. Preserve managers Steve Morrison and Adam Peterson treated the group to a ride through the preserve on a swamp buggy (which has been "repurposed" as a scrub buggy). From this vantage, the group was able to really see the "lay of the land" and to understand how xeric uplands are managed and restored with prescribed fire.

On the final day of the field review, the group summed up issues and offered recommendations for implementation as Florida's ESI staff moves forward with the Yellow Sands Xeric Uplands project. The field review and the subsequent documentation mark a project milestone. The ESD has now reached "Approved" status, and acres will be reported to Congress. The next phase of the project includes correlation to specific SSURGO map units, inclusion in NASIS and ESIS databases, and eventual implementation in NRCS agency programs.

Thank you to all who participated and provided input in this large, multidisciplinary effort. ■

New to SSRO–7

Aaron Friend has joined Soil Survey Regional Office 7 at Auburn, Alabama. He comes to us from the soil survey office for MLRA 148 (Northern Piedmont) in Frederick, Maryland, where he had been since early 2010. In addition to working on the Soil Data Join Recorrelation (SDJR), he organized and maintained the NASIS database for MLRA 148. Aaron also worked on sampling for the Rapid Carbon Assessment as a field soil scientist. Another major focus of his activities in 2013 was coordination for the National Cooperative Soil Survey Conference, which was hosted by the State of Maryland.

Aaron started with NRCS in 1999 as a field soil scientist in Cumberland, Maryland, where he was supervised by Carl Robinette. Charged with updating the soil survey of Allegany County, Maryland, Aaron was heavily involved with GIS updates from across the State.

Prior to joining NRCS, Aaron managed the Soil Research Lab at West Virginia University.

Aaron was born and raised in Morgantown, West Virginia. He graduated from West Virginia University with a degree in Environmental Protection, and he continues to bleed gold and blue. Outside of the office, he is an avid road bicyclist and enjoys remodeling homes. His wife and infant son are excited to make Auburn home.

We are all looking forward to having Aaron as a part of the SSRO–7 team in Auburn. ■

Aaron Friend, new soil data quality specialist, at Soil Survey Regional Office 7 in Auburn.

Delta Bell, USDA–NRCS Pathways Intern

By Steve Depew, MLRA Soil Survey Office Leader, Tupelo, Mississippi

Delta Bell is a USDA–NRCS Pathways intern currently at the Pine Bluff, Arkansas, MLRA soil survey office, where she is training with soil scientist Willie Nelson. Delta has shown a great interest in soils and is eager to learn what she can. She was originally from Lonoke, Arkansas, where she graduated from Lonoke High School in 2011. She is a senior at the University of Arkansas, Pine Bluff, working on a comprehensive major in agronomy with an emphasis on soil science. During the 2013–2014 school year, her course work included soil fertility and chemistry.

Delta started her USDA–NRCS Pathways internship the summer of 2013 at the MLRA soil survey office in Normal, Alabama. While in Alabama, she trained with soil scientist Chris Ford. She spent the summer of 2014 with us at the MLRA soil survey office in Tupelo, Mississippi. While in Mississippi, she saw the Eutaw and Tuscaloosa formations, the Blackland Prairie, and the Ripley formation (Pontotoc Ridge). Among her other activities, she also attended an all-day teacher workshop at the Itawamba Community College at Beldon, Mississippi.

We are all looking forward to continuing to work with Delta and to providing her with more field mapping exercises and other educational opportunities. ■

Delta Bell being presented a Certificate of Appreciation for her service in Mississippi to the Region 7 MLRA Soil Survey Office in Tupelo. Presenting the certificate is Mississippi State Soil Scientist Delaney Johnson.

Mapping and Classifying Reclaimed Coal Mine Soils in Choctaw County, Mississippi

By Chris Hatcher, MLRA Soil Survey Office Leader, Meridian, Mississippi

NRCS has started a long-term project with the objectives of mapping, classifying, and delineating soils in reclaimed areas of the Red Hills Coal Mine in Choctaw County, Mississippi. The project includes an evaluation of soils on reconstructed landscapes within the boundary of the mine property. The project area is in Major Land Resource Area 133A, the Southern Coastal Plain.

The soil survey of Choctaw County was completed in 1986. The Red Hills Mine began production in 2000, approximately 14 years after the survey was completed. The mine covers a permitted area of 5,809 acres and delivers approximately 3.25 million tons of coal per year. Examination of the soil survey indicates that much of the area that has been reclaimed consisted primarily of Smithdale, Sweatman, and Providence soils in the uplands and, to a lesser extent, Chenneby, Oaklimeter, and Tippah soils along flood plains and on stream terraces. Much of the natural soil and landscape have been removed during mining operations. All of these areas have been reconstructed and restored to "approximate original contours." In most cases, these areas were improved in regards to land use efficiency. In many cases, reclamation was done in a repetitive and consistent pattern, causing some uniformity throughout the reclamation process.

"Ultimately, this project will provide the documentation and baseline data to complete the soil mapping of other reclaimed mining areas in Mississippi and beyond."

Several soil series has been established on reconstructed, oxidized materials resulting from lignite mining in Mississippi and other States. Although these series are on geological formations similar to those of the project area, initial studies indicate a distinct contrast between these established series and the soils of the Red Hills Mine area. This project will establish and examine baseline data to define the composition of the soils in the project area and to establish series and mapping units that adequately reflect their taxonomy and interpretations.

To date, approximately 1,200 acres have been reclaimed and remapped. Annually, 200 to 250 acres are being reclaimed. Current evaluations of the soils indicate several significant soil types that can be identified at the soil series level of classification. The Redhills soil series was established in the Red Hills Mine area.

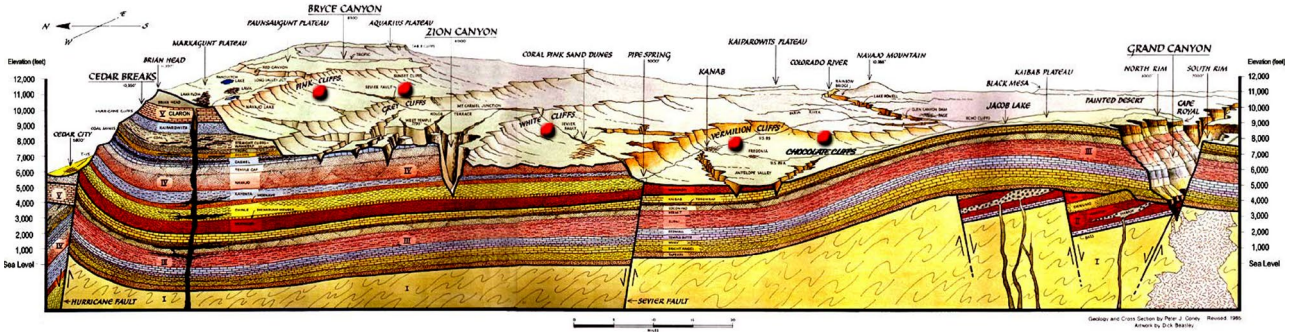
Prior to mining, the mining company was required to provide a detailed inventory of natural resources and detailed descriptions of how those resources would be effected or protected during mining, how the mining would be conducted, and how the land and other natural resources would be restored or reclaimed to productive and useable conditions after mining was completed. The mine is required to operate in compliance with many local, State, and federal laws and regulations, including those related to county road closures and relocations, surface- and ground-water quality and use, archeological and historical resources, wetlands, rare and endangered plants and animals, radio transmissions, solid waste disposal, and dam design.

Most of the mined land at the Red Hills Mine is being restored to loblolly pine forest, as requested by area landowners. The restoration includes small wildlife food plots in the upland forested areas. In the drainage bottoms, the restoration includes hardwood plantings, enhanced stream channels, small wetland areas, and ponds, which are important for local fish and wildlife resources. The mine company

has planted over 200,000 trees as part of the reclamation process. The removed soil materials are stored until the excavation of the lignite is complete and then are re-spread and contoured for reclamation purposes. The mine manages reclaimed land until it can be returned to the owner's care, generally at least 7 years after all mining and reclamation is complete, as required by mining regulations. Approximately 6,000 acres will be reclaimed during the lifetime of the Red Hills Mine, and more than 30,000 will be reclaimed in the Kemper County Mine, which is in the initial stages of development.

Information from this project will assist in the mapping and reclassification of reclaimed areas. It will also aid in establishing guidelines for interpretations of these sites in the future. Ultimately, this project will provide the documentation and baseline data to complete the soil mapping of other reclaimed mining areas in Mississippi and beyond. ■

The Grand Staircase



Overview of the Grand Staircase, showing locations of National Parks.

Bucket List Trip 2014: Zion and Grand Canyon National Parks

By Gregory R. Brannon, Soil Data Quality Specialist, Soil Survey Regional Office 7, Auburn Alabama; Sandy Page, Soil Scientist, Soil Survey Field Office 7–LOX, Loxley, Alabama; Jerome Langlinais, MLRA Soil Survey Project Leader, Soil Survey Field Office 7–LOX, Loxley, Alabama; and Joey Koptis, District Conservationist, Baldwin County, Alabama

On or around the last week of July, three soil scientists and a district conservationist from Soil Survey Region 7, accompanied by family members, embarked on a self-guided field trip of Zion National Park and the Grand Canyon, which they hiked from rim-to-rim. They studied soils, geomorphology, and vegetation patterns and relationships as they hiked the parks.

Zion National Park, Utah

The first part of this trip was spent in Zion National Park (NP), Utah. Zion NP and Grand Canyon NP are located on the western edge of the Colorado Plateau. Geologic erosion and uplift have created a regional feature called the Grand Staircase. The bottom layer of Zion, the Kaibab Formation, is the top layer of the Grand Canyon.

Most areas of Zion NP are sedimentary in nature, being formed during periods of deposition by water and wind. Uplift and erosion allowed the Virgin River and its tributaries to carve valleys and narrow canyons.

Navajo Sandstone is a geologic formation in the Glen Canyon Group. It is part of the Colorado Plateau province of the United States and is spread across southern Nevada, northern Arizona, northwestern Colorado, and Utah.

Tortuous bedding planes of Navaho Sandstone. They show the eolian character of one of the largest desert sand dune complexes in the history of the planet. The desert existed from the late Triassic to early Jurassic. This picture was taken from the trail up to Angels Landing, a popular hiking destination at Zion National Park.

The trail up to Angel's Landing. The lower part of the trail is in the Chinle Formation. A series of 21 switchbacks, known as "Walter's Wiggles," are cut into the Moenave and Kayenta formations leading up to the Navaho Sandstone.

Navigating the last part of the trail to Angel's Landing in Zion NP. Six people have died on this part of the trail since 2004. This part of the trail is on the Carmel Formation. The summit is 5,790 feet above sea level.

Grand Canyon National Park, Arizona

The Grand Canyon was formed by downcutting by the Colorado River, which exposed the sedimentary layers that were earlier deposited on the Grand Canyon Supergroup. The downcutting occurred simultaneously with uplift of the Colorado Plateau, increasing the erosive power of the river and contributing greatly to the magnitude and grandeur of this natural wonder.

The Grand Canyon exposes one of the world's most complete records of geologic time, ranging in age from the 270 million year old caprock on the rims to the 1.84 billion year old rocks within the Inner Gorge at the bottom. Nearly 40 rock layers have been identified in the Canyon walls. The Canyon is 277 river-miles long, up to 18 miles wide, and a mile deep.

Our group hiked the Bright Angel Trail from the North Rim to the South Rim in 2 days for a total journey of over 25 miles. We had so much fun, we now hope to explore Yosemite National Park in 2015. ■

Hiking down the North Rim.

The Grand Canyon looking south from the North Rim.

From the Field

By Caleb Gulley, MLRA Soil Survey Office Leader, Milan, Tennessee

MLRA Soil Survey Office 7-MIL stayed busy this past year. Two of our more unique activities were our extensive involvement with the 2014 NCSS Southern Regional Conference and our sampling of a Histosol.

The 2014 Southern Regional Conference of the National Cooperative Soil Survey was hosted at Jackson, Tennessee. About 70 people were in attendance, representing multiple State and federal agencies and universities. All staff members from MLRA Soil Survey Office 7–MIL in Milan, Tennessee, served as planning committee members, field tour developers, and support staff for the conference. The planning committee met several times throughout the year in an attempt to develop an agenda and field tour that were both appropriate and interesting. The theme for this year's conference was "PEDS: Partnerships for Ecological Deliverables and Sustainability." The field tour highlighted the ecological site inventory in the work area, research at the University of Tennessee's Milan Experiment Station, and sand blows and fissures at the Tennessee Wildlife Resource Agency's (TWRA) Bogota Wildlife Management Area. The features at the management area were caused by earthquakes at Reelfoot Lake in 1811–1812. The trip culminated in a boat tour of Reelfoot Lake.

The 7-MIL Soil Survey Office had the opportunity to sample a Histosol in Henry County, Tennessee. The area is located on property owned by the Tennessee Valley Authority (TVA). The site has been submitted by TVA for enrollment in their Natural Area Program. Due to the rarity of the site's characteristics, it may be placed in their Habitat Protection Program. The study of the site is a collaborative effort between NRCS, TVA, and the University of Tennessee—Knoxville. Ecologists from NRCS and TVA have assessed the site, and soil scientists from NRCS have collected and submitted soil samples to the Kellogg Soil Survey Laboratory. Core samples are scheduled to be collected by a paleo-ecologist from the University of Tennessee later in the year. ■

Participants of the 2014 Southern Regional Cooperative Soil Survey Conference at Reelfoot Lake.

Lower Mississippi Valley Water Table Study

By Burnell Muse, MLRA Soil Survey Office Leader, Denham Springs, Louisiana

In the shadow of SDJR, we are in the second phase of the Lower Mississippi Valley (LMV) water table study. The study is being conducted by NRCS with the intent of more accurately measuring the water table of loamy textured soils within the meander belts along the Mississippi River and determining if the redoximorphic features associated with these soils are the effect of the water table or are relic.

Phase one of the study focused mainly on the fine-silty Dundee soil series. Monitoring of these soils was completed in 2008 and 2009. Phase two of the study began in the fall of 2010 as a collaborative effort between the MLRA soil survey offices at Denham Springs, Louisiana; Metcalfe, Mississippi; and Milan, Tennessee. Phase two is focused on four states: Arkansas, Louisiana, Mississippi, and Tennessee. The-fine silty Commerce series is the main focus of phase two. A small percentage of Amagon series is being evaluated as well.

The study procedure consists of inserting automatic water data loggers (piezometers) at various depths in the soil. The depths are mainly at the contact to the argillic horizon, within the argillic horizon, and at 2 meters. More tubes are added in soils that have restricted layers. The Denham Springs MLRA soil survey office monitors three sites in West Baton Rouge and Pointe Coupee Parishes. Two or three piezometers are installed at each site. Data collected from the data loggers are uploaded to the SSRO–7 SharePoint site. The data will be used to refine NASIS interpretations for water depth and water movement. ■

From left, Rolong Nelson, assistant state soil scientist, Arkansas; Burnell Muse, MLRA soil survey office leader, Denham Springs, LA; Brandon Waltman, soil scientist, Denham Springs, LA; and Dr. Kristofor Brye, professor, University of Arkansas.

USDA United States Department of Agriculture

Regional Modeling Unit

Fact Sheet

- **Four NRCS Regional Modeling Units established in 2014**
- **Aligned with NRCS Regional Conservationist areas**

Coordinators		*Supervision*
Northeast:	Glenn Stanisewski, Amherst, MA (SSR-12)	**Soil Survey Regional Director (SSRD)** at respective Soil Survey Regional Offices (SSRO) and **Lee Norfleet,** Modeling Unit Team Leader, Resource Assessment Division (RAD), Temple, TX
Central:	Drew Kinney, Temple, TX (SSR-9)	
West:	Carrie-Ann Houdeshell, Davis, CA (SSR-2)	
Southeast:	Charlie Ogg, Auburn, AL (SSR-7)	

History and Development

- Modeling began in Temple, TX in the 1960s with Dr. Jimmy Williams (USDA-ARS) in association with Texas A&M Agri-Life, Blackland Research and Extension Center.
- Modeling program designed to answer the question "What are the effects of soil erosion on crop productivity?"
- Temple modeling group has supplied information to Farm Bills and RCAs since the early 1980s.
- APEX (**A**gricultural **P**olicy **E**nvironmental E**x**tender) is a cropland model and is built on the earlier model EPIC (**E**rosion and **P**roductivity **I**mpact **C**alculator).
  - Capable of simulating land management practices, cropping systems, grazing systems, and the effects of conservation decisions.
  - Works at a broad landscape scale; and at field, farm, and small watershed scales.
- APEX has evolved into a tool for hydrology, sediment yield, storm and flood routing, crop growth and yield, nutrient routing, water yield, and other functions. In addition, APEX capabilities are able to predict the impact of conservation practices on grazing lands.

Major Applications

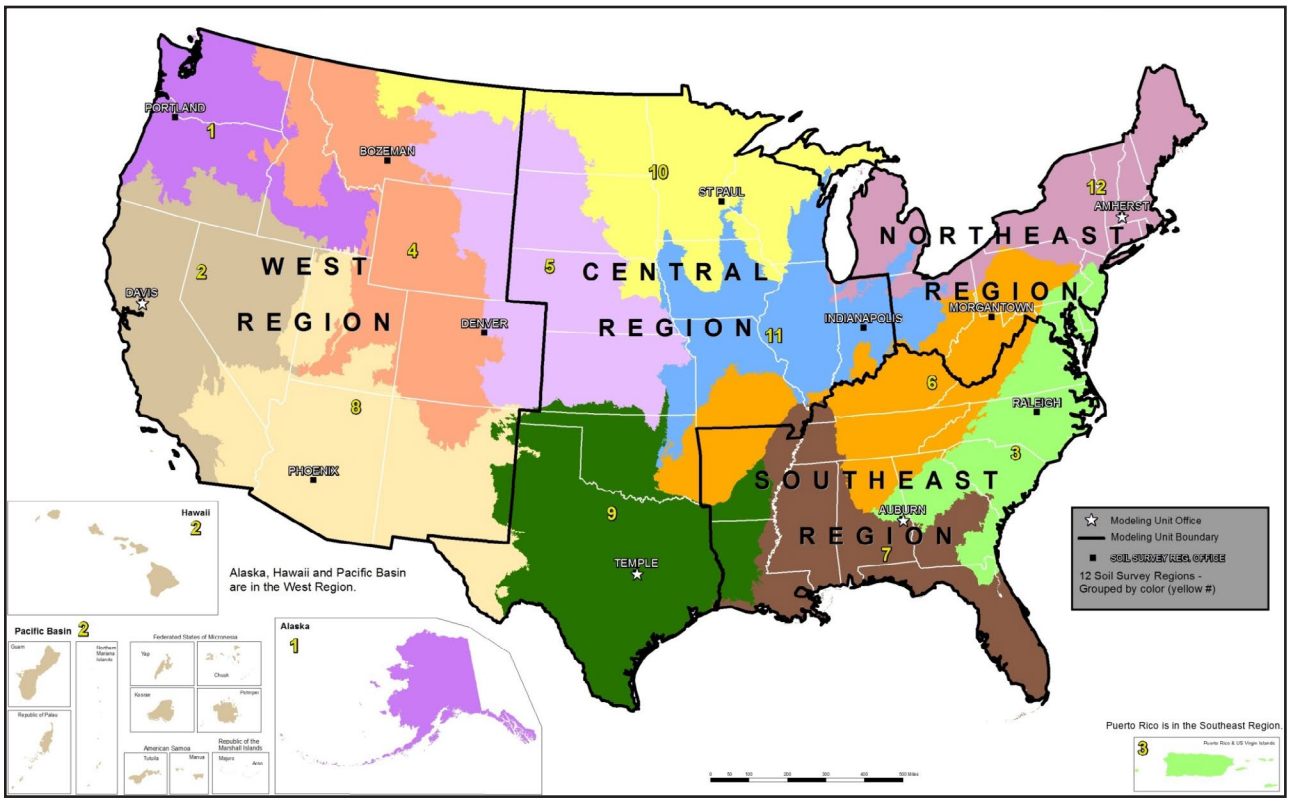
- CEAP (**C**onservation **E**ffects **A**ssessment **P**roject). Quantifies the environmental effects of conservation practices and programs, and develops the science base for managing the agricultural landscape for environmental quality. (http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/ceap/)
- State Resource Assessments. Documents the effects of conservation practices and systems at various geographic levels so that better decisions can be made up front and risk is managed more effectively. (http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/)

Modeling Units—Current Activities

- APEX output relies on a number of soil properties via soil map unit input. For the model to make the best predictions and assessments, soils data are obtained from NASIS. Modeling Unit Coordinators are currently working on importing KSSL lab characterization pedons as model input.
- Regional expertise is developed as Modelers participate on MLRA Soil Survey Office Technical Teams within their assigned region.
- Presently the two priority areas for CEAP Cropland Assessment Studies using the APEX model are the California Bay Delta and the Northeast Arkansas/Southeast Missouri St. Francis River basin.

Modeling Units—Future Activities and Goals

- Emphasize the importance of Soils information to achieve best conservation practices agency-wide.
- Attain full staff of three full-time employees per location. Future staff may come from all technical fields.
- Develop input databases and modeling techniques for multiple land uses.
- Work with Technical Centers and State Technical staff to:
  - Tailor conservation practices and systems to soil landscapes.
  - Develop cost effective practice suites that can be used at field level for program application.
  - Develop benefit estimates for performance reporting.



Map showing the soil survey regions and regional offices and the modeling unit regions and modeling unit offices.

Nondiscrimination Statement

Nondiscrimination Policy

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To File a Program Complaint

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at http://www.ascr.usda.gov/complaint_filing_cust.html or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your

completed complaint form or letter by mail to U.S. Department of Agriculture; Director, Office of Adjudication; 1400 Independence Avenue, S.W.; Washington, D.C. 20250-9419; by fax to (202) 690-7442; or by email to program.intake@usda.gov.

Persons with Disabilities

If you are deaf, are hard of hearing, or have speech disabilities and you wish to file either an EEO or program complaint, please contact USDA through the Federal Relay Service at (800) 877-8339 or (800) 845-6136 (in Spanish).

If you have other disabilities and wish to file a program complaint, please see the contact information above. If you require alternative means of communication for program information (e.g., Braille, large print, audiotape, etc.), please contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). ■

And One from the Past

The picture below was taken 16 years ago at a soil survey workshop hosted by the MLRA Regional Office in Auburn, Alabama (MO–15).

How many of these NRCS heros do you recognize? ■

Participants at the MO–15 soil survey workshop held May 18–21, 1998.