Spring 2011 Volume 15, No. 1

The Coastal Plainer

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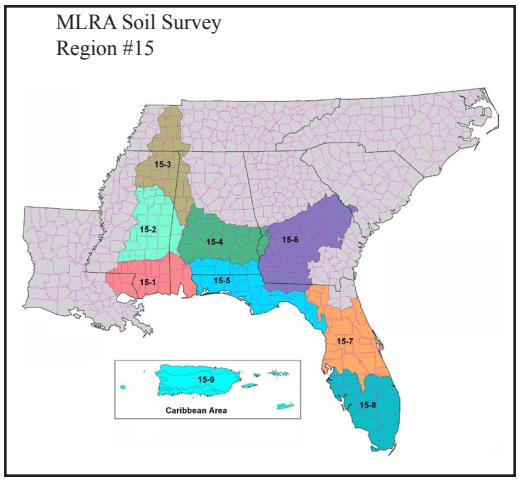
Message from the MO–Leader's Desk

By Charles Love, MO–15 Team Leader

Again, greetings everyone!

Our two main soil survey priorities that we have been focusing on for the last 6 months have been the rapid carbon assessment project (RaCA) and completing the initial soil survey mapping. We have completed 72 percent of the RaCA soil sampling for the region and are on schedule to meet the national soil survey deadline for completing our initial soil survey mapping.



As you know, the rapid carbon assessment project is a big priority for the soil survey program. MLRA soil survey offices across the MO–15 region are spending about 80 percent of their time collecting soil samples for the project. Our states and MLRA soil survey offices are doing an outstanding job coordinating RaCA soil sampling activities across the region. We are receiving help from resource soil scientists, retired soil scientists, soil conservation technicians, soil conservations, and others. We also had six detailees from other parts of the country assisting us with the soil sampling. They worked in Alabama, Florida, Georgia, and Mississippi. I want to take this opportunity to personally thank the state soil scientists and detailees for helping us with our RaCA project over the last 3 months. We are so glad to have had those soil scientists from various states help us accelerate RaCA soil sampling for the region. You did a great job!

We want to thank James Mason for initiating the first phase of our RaCA soil sampling across the region. James was our first RaCA coordinator but has taken a position as a resource soil scientist. He will continue to provide about 20 percent of his time supporting RaCA activities in Alabama.

Sylvia Long is our new RaCA coordinator for MLRA Region 15. Sylvia is a soil scientist on the staff of MLRA Soil Survey Office 15–4 in Auburn. She is doing a great job coordinating the collection of soil samples for the region, and she recently started cataloging and inventorying all the RaCA soil samples as they arrive here

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at the office. Greg Brannon, soil data quality specialist, is helping Sylvia with the RaCA effort as needed.

We are very excited here at the MLRA Region 15 Office to have the opportunity to work with Auburn and Tuskegee Universities on the RaCA project. They will be providing support by processing about 5,100 soil samples at their laboratories. The two universities will provide laboratory staff to conduct sample preparation, including weighting, drying, grinding, and sieving. Because of this cooperative effort, we have the opportunity to provide soil training to university and high school students, NRCS staff, cooperators, and others throughout the region.

Again, thank you for all of your hard work and great accomplishments for meeting present and future MLRA Region 15 RaCA goals. Please keep up the good work.

As always, thank you for your support. ■

—Charles

Collecting Rapid Carbon Data in Mississippi

By Delaney B. Johnson, State Soil Scientist

Since the calendar year 2011 came in, we have been overwhelmed with collecting data for the Rapid Carbon Assessment (RaCA). Although we had other MLRA project work that was being completed, National Headquarters tasked the MLRA offices nation-wide to begin work on the RaCA. The soils staff in Mississippi rose to the occasion and has already completed the sampling of 70 percent of the sites in Mississippi.

The data collection has been a cooperative effort of NRCS soils personnel in Mississippi, University personnel, and an NRCS soil scientist on detail from Wisconsin. The soils staff involved in data collection in Mississippi include Steve Depew, soil survey leader, and Michael Williams, soil scientist, at MLRA 15–1 in Tupelo; Chris Hatcher, soil survey leader, at MLRA 15–2 in Meridian; and Rachel Stout-

Field data collection for the RaCA project in Mississippi. Left to right: Mike Lilly, soil scientist, ACES, Pearl, Mississippi; Chris Hatcher, MLRA SSO 15–2 leader, Meridian, Mississippi; and Mike England, soil scientist on detail from Onalaska, Wisconsin.

Evans, soil survey leader, and Willie Terry, soil scientist, at MLRA 16–8 in Metcalf. We also received help from our Soil Survey Liaison, Dr. William (Billy) Kingery, Mississippi State University, and from Mike Lilly, soil scientist, ACES. We are also very appreciative of the valuable assistance we received in February at MLRA 15–2 in Meridian from a staff person on detail from Wisconsin. Michael England assisted for 4 weeks. During this time, he and Chris Hatcher assessed and sampled 21 sites.

We estimate that the sampling will be completed in Mississippi by June. The samples and field data will be delivered to the responsible MLRA regional offices in Auburn, Alabama, and Little Rock, Arkansas, for further processing before eventual delivery to the National Soil Survey Laboratory in Lincoln, Nebraska. ■

2010 Southeast Regional Collegiate Soil Judging Contest at the University of Georgia

University of Georgia professors Dr. Bill Miller from Crop and Soil Sciences and Dr. Larry Morris from Forestry and Natural Resources, along with other UGA staff and students, hosted about 60 students from 12 universities around the southeast for the 2010 Southeast Regional Soil Judging contest in Athens, Georgia, last October. Contestants spent 3 days looking at soils in Clarke, Oconee, and Putnam Counties in preparation for the soil judging contest, which was held at the Whitehall Forest in southern Clarke County. The competition involved describing soil

Students participating in the 2010 Southeast Regional Collegiate Soil Judging Contest.

properties and features, classifying soils, and interpreting soil properties to determine their influence on various land uses.

Soil scientists from the Natural Resources Conservation Service (NRCS) were asked to assist with the competition. Greg Clark and Dee Pederson, who were both soil scientists in Greensboro, Georgia, at the time, served as the judges. They developed the official descriptions for each of the 12 practice sites and 8 competition sites. Jim Lathem and Steve Lawrence assisted with some of the sites.

As part of the National Cooperative Soil Survey, NRCS and the University of Georgia have worked together over the years to conduct and support the soil survey program in the State.

Collegiate soil judging contests exemplify this cooperative effort. NRCS soil scientists provide technical expertise and knowledge as standards by which to judge the competition. In turn, the competition exposes the students to some of the work NRCS does and promotes an appreciation for the diversity and importance of soil resources. Many current NRCS employees, including soil scientists, soil conservationists, and others, participated in soil judging contests during their college years. No doubt there were some outstanding future NRCS employees competing in Athens in October as well.

And the results of the competition were: Virginia Tech placed first, followed by West Virginia, North Carolina State, Auburn, and Clemson. As the host team, Georgia did not compete. ■

The Florida RaCA Detail

By Howard Yamataki, MLRA Leader, MLRA SSO 15–8, Fort Myers, Florida

The word “Detail” is one which all soil scientists understand as having a special meaning within the context of soil survey. In December 2010, the term referred to an opportunity for soil scientists to be part of soil sample collection for the Rapid Carbon Assessment (RaCA) project. In Florida, progressive soil surveys are conducted within the counties, but the RaCA project is composed of collecting soil samples from sites over a large area. MLRA Soil Survey Office (SSO) 15–8 at Fort Myers was charged with collecting samples on 66 sites in 17 counties.

On January 3, 2011, I requested two soil scientists be assigned from northern states for winter detail. Later that month, I was notified that two would arrive for duty on February 28 and conduct fieldwork until March 25. The goal for the detailed scientists was to collect samples from 19 sites across St. Lucy, Martin, and Palm Beach Counties in southeastern Florida. David Breker, resource soil scientist from Forman, North Dakota, and Janella Cruz, soil scientist from Rapid City, South Dakota, were chosen to assist me with collecting soil samples.

East coast RaCA team.—Kevin Sullivan, Area 4 resource soil scientist; Howard Yamataki, MLRA leader; Janella Cruz, detailed soil scientist; and David Breker, detailed soil scientist.

Distance between the assigned sites required David and Janella to live out of two different motels during their 4 week tour. During that time, they worked with me out of the Fort Pierce and Royal Palm NRCS Field Offices. I referred to us as the east coast RaCA team. I also designated Martin Figueroa, senior soil scientist, and Sherlynette Perez-Castro, soil scientist, at the Fort Myers SSO as the west coast RaCA team. Communication and coordination between the teams was an important part of maintaining consistency in processing documentation of each site, which was composed of at least 20 samples per site.

Janella had limited experience in sampling of sites, but she adapted quickly and provided the team with her skills in use of the geographic positioning system (GPS) device. David had no experience in sampling of sites. He had, however, received in-house training from North Dakota staff prior to his detail and applied it in the field in Florida. He also had skill with and knowledge of the new Trimble GXT, which was an important part of navigating to various map units. Each of these field tools also required access to the geographic information system (GIS) within the local field offices. The east coast team sampled 21 RaCA sites, which was two more than the project goal.

One of the initial steps for collecting samples, as for production soil surveys, was gaining permission to enter private and public lands. Because of the nature of the RaCA, local NRCS field offices were an extremely important part of sample collection and permit processing. No less than seven people were involved in this process, which began weeks before the tour by the east coast team. During sample collection, staff members also served as guides, introduced collectors to land owners, and provided sampling assistance.

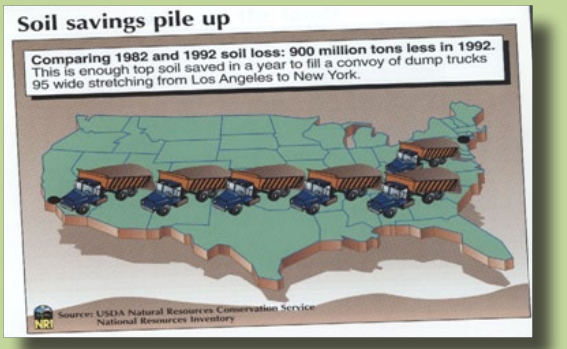
In the field, assistance from the local area resource soil scientist, Kevin Sullivan, was important. Kevin provided technical assistance to the sampling team and helped coordinate key personnel from the field office. Other soil scientists assisting in the field collection were James Mason, MO–15 RaCA coordinator from Soil Survey Office 15–4 at Auburn, Alabama, and Greg Brannon, data quality specialist from the regional office, MO–15. They supplemented or stood in for Howard.

West coast RaCA team.—Sherlynette Perez-Castro, soil scientist; Martin Figueroa, senior soil scientist; and Dr. James Burch, supervisory botanist (assisting) of the Big Cypress National Preserve.

This detail had many variables proceeding and during actual field collection, but somehow everything worked out. I often refer to myself as a “Lucky Guy” because many new programs, events, and initiatives have worked out for the best in my career of nearly 40 years. RaCA is another. ■

Class Presentation at Beauregard Elementary School

November 13, 2010



Soils Outreach

By Joe Norris

I am the geographer/geographic information systems specialist on the soils staff of the Natural Resources Conservation Service (NRCS) MLRA regional office located in Auburn, Alabama.

On November 13, 2010, I was invited by my daughter's teacher, Mrs. Becky Funderburk, to come and speak to her and Mrs. Betty Blanton's 3rd grade class. I was asked to speak about soils and my career at USDA. I presented a PowerPoint presentation with an animated video of GIS capabilities and a link to our interactive questions-and-answers Web site featuring S.K. Worm. I enjoyed presenting to the students and exploring their connections with natural resources, the environment, conservation, and particularly the soils. The teachers presented each child with an S.K. Worm certificate of completion with their name on it signed by the state soil scientist.

I would like to acknowledge other personnel on our staff for their support and contributions to the program. They include Herbert L. Ross, SRIC immediate supervisor; Lawrence McGhee, soil scientist; Alice Love, outreach liaison; Fay Garner, communications specialist; and Charles Love, state soil scientist. Additionally, I would like to thank Mrs. Funderburk and Mrs. Blanton of Beauregard Elementary School for extending me the invitation to speak with the students about our natural resources. ■

Trip Report: Meeting of the Digital Soil Mapping Training Team Cadre

By Eddie Davis Jr., Soil Scientist, Huntsville, Alabama

A meeting of the Digital Soil Mapping Training Team Cadre was held November 18th and 19th, 2010, in Indianapolis, Indiana. The participants were Eddie Davis, Jr., soil scientist, Huntsville, Alabama; Jessica Philippe, soil scientist, St. Johnsbury, Vermont; Dr. Xun Shi, professor and ArcSIE programmer, Dartmouth University; Fred Young, soil scientist, Colombia, Missouri; Phillip Owens, assistant professor, Purdue University; Tom D'Avello, GIS specialist, Morgantown, West Virginia; Zamir Libohova, research soil scientist, Lincoln, Nebraska; Travis Neely, MO–11 leader, Indianapolis, Indiana; Kevin Norwood, MLRA project leader, Indianapolis, Indiana; and Dwain Daniels, GIS Specialist, Central National Technology Support Center, Fort Worth, Texas. Also participating, via teleconference, were Marc Crouch, training coordinator, NSSC, Lincoln, Nebraska, and Lynn Loomis, soil scientist, Marfa, Texas.

The primary purpose of the gathering was to bring together NRCS soil scientists from MLRA offices and service centers with experts from academia. Together we collaborated on a host of ideas and concepts concerning the needs of the soil survey program regarding our process for digital soil mapping. We discussed critically how polygons (SSURGO) are our main deliverable product to represent our knowledge of soils across landscapes. With that being a fact, there are many areas within these polygons that are not captured simply because there is no way to show them spatially. Currently, we rely on inclusions, phases, complexes, and map unit descriptions to describe soil-landscape phenomenal occurrences within different landform segments, but there has been no way to depict them in our maps consistently. ArcSIE is a raster-based inference extension that has been used successfully to produce a soil survey for a project area, specifically, for St. Johnsbury, Vermont.

The cadre is planning to have two-part digital soil mapping training for soil scientists, project leaders, and GIS specialists. The training will introduce digital soil mapping techniques. ArcGIS and ArcSIE will be the primary tools to introduce a raster-based approach to soil mapping.

- Part one will be virtual training through AgLearn. It will be developed by Dr. Phillip Owens of Purdue University. The course will be a basic introduction to raster-based inference modeling and general utilization of ArcSIE.
- Part two will be instructor-led training taught by professor Dr. Xun Shi of Dartmouth University. This portion of the training will involve a deeper exposure to raster mapping. Modules will include inference modeling, algorithms, post processing features, etc. The training will provide exposure to fully apply raster methods in your survey area.

It was suggested by the instructors that all participants take both parts in prompt succession. Marc Crouch, Tom D'Avello, and the instructors are working on the details of the logistics, which are yet to be finalized.

Over all, I felt that the meeting was a success. It is my opinion that, in this technological era, there is and will be an increasing need for our soil information and possibly for us to deliver a more precise or more detailed product than what we were asked to provide in the past. The functionality of ArcSIE could make it the premier application for raster processing that will assist future soil scientists in delivering information in years to come. ■

Alabama Civil Rights Advisory Committee: Who We Are—What We Do

By Gwen Lewis, Chair, Alabama Civil Rights Advisory Committee, and NRCS District Conservationist, Tuskegee, Alabama

The Alabama NRCS Civil Rights Advisory Committee (CRAC) meets regularly to discuss issues concerning the fair and equitable treatment of USDA customers and employees while ensuring the delivery and enforcement of civil rights programs and activities. Committee responsibilities include:

- Advise and assist the state conservationist in carrying out the objectives of the civil rights program.
- Provide management with feedback on performance of the civil rights program through results of field office reviews.
- Support and promote the plan of operations for equal opportunity, workforce diversity, and civil rights.
- Identify weaknesses in the civil rights program and recommend ways to improve.
- Meet in culturally diverse areas to learn about different cultures and become aware of possible future concerns.
- Coordinate cultural diversity events.
- Communicate progress and civil rights information at area meetings.
- Host training of summer interns to encourage students from Alabama's three agricultural universities to work with NRCS.
- Make recommendations to the state conservationist to see that all minority groups are represented in the workforce. Outreach efforts will be made to assure that objectives are reached.
- Advise state conservationist on suggested courses of action in order to prevent problems from occurring.

There are 16 representatives on the Civil Rights Advisory Committee: 6 special emphasis program managers, 2 representatives from each team area, and 2 representatives from the

Alabama NRCS all-employee meeting sponsored by the Alabama Civil Rights Advisory Committee in November 2010.

Gwen Lewis, chair, Alabama NRCS Civil Rights Advisory Committee speaking at the NRCS all-employee meeting about the committee and its members.

state office. Members are active in field office reviews, area meetings, training, and discussion groups.

As mentioned, one of the responsibilities of the committee is to plan civil rights and cultural diversity meetings. Last November, the members helped plan the Alabama NRCS all-employees meeting at Orange Beach, Alabama, in conjunction with the annual meeting of the Alabama Association of Conservation Districts.

The NRCS meetings began on Monday afternoon with a welcome from State Conservationist Dr. William Puckett and a national leadership report from NRCS Regional Conservationist Leonard Jordan.

After the evening meal, Dr. Puckett honored the Alabama Civil Rights Advisory Committee members. Later, attendees interacted with speaker David Weber during his presentation "Life's Goliaths." Weber gave each person a black, smooth stone to remind them that the challenges of "Life's Goliaths," could be conquered.

As chair of the Alabama CRAC, I welcomed everyone on Tuesday with a civil rights update and introductions of the FY–2011 members of CRAC.

After my presentation, other guests speaking to the group included:

- Dr. Samuel Betances, who gave information on "Cultural Competencies."
- Dr. Walter Hill, Dean of Agricultural, Environmental, and Natural Sciences from Tuskegee University, who gave a presentation about the importance of "Outreach."
- Greg Dansby, Ala-Tom RC&D Coordinator, who gave a report on the "Alabama Outreach Commitment."
- Steve Musser and John Curtis, who presented updates on USDA/NRCS programs.

For more information about the Alabama NRCS CRAC, visit our website at http://www.al.nrcs.usda.gov/about/crights/index.html. ■

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MLRA Connection: Rethinking the Evaluation Process

By Scott Anderson, Soil Data Quality Specialist, MO–15

NHQ has requested that all MLRA long-range plans be completed by the end of FY–2011 and posted to the NSSC SharePoint site at: https://nrcs.sc.egov.usda.gov/ssra/nssc/MLRA%20Long%20Range%20Plans/Forms/AllItems.aspx. In order to get this done, we are backing off from our MO–15 policy requiring the completion of detailed soil survey evaluations prior to development of the long-range plans. With all the additional workload this fiscal year, it will not be possible for most of our soil survey office leaders to complete this task unless we make adjustments.

We now recommend that a "general" evaluation of each published survey within the soil survey office area be completed and included as an appendix to the long-range plan. These general evaluations can be done quickly and provide sufficient documentation to justify workload priorities listed in the long-range plans. The detailed, comprehensive evaluations will now be conducted as part of MLRA projects.

Following is a suggested format for general soil survey evaluations.

General Evaluation Worksheet for Published County Soil Surveys MO–15 Region

General Information

1) County name:
2) County soil survey area ID:
3) Soil survey area status (as in NASIS):

4) Publication date:
5) Correlation date:
6) Fieldwork completed date:

7) Percent of county within SSO 15– ____:
8) Acres within SSO 15– ____:

9) MLRAs covered:
10) Acres within each MLRA:

11) Published base map scale:
12) Order (intensity) of mapping:

13) DEMs available:
14) Is lidar available?:
15) Other spatial data layers available:

16) List changes to major land use since publication of current soil survey:

17) Is any original field data available from this county (transects, pedon descriptions, field notes, lab data, etc.)?

Quality of Current "Land Category" Acres in NASIS

1) Verify if NASIS acreage figures are current, or need adjusting, for:

i) Census water:
ii) Native American land:
iii) U.S. Forest Service:
iv) National Park Service:
v) Bureau of Land Management:
vi) Other federal land:
vii) Other non-federal land:

Quality of Current Legend (from NASIS)

1) List MU names and acreage that will require minor revision:
2) List MU names and acreage that will require extensive revision:
3) Other legend problems:

Quality of Current Correlation, OSDs, and Benchmark Soils

1) Typifying pedons for OSDs located within this county:
2) Benchmark soils located within this county:
3) Problems identified with OSD/series correlation:

Quality of Current NASIS and Interpretations

1) Are there data gaps in NASIS?
2) Evaluation of general quality of NASIS data:
3) Problems with major interpretation ratings:
4) Other problems with NASIS or interpretations:

Quality of Current Spatial Data

1) Are there edge-matching problems?
2) Are there any common soil lines?
3) Are there any null polygon values?
4) How many polygons are smaller in size than required by MLRA MOU?
5) Other spatial data problems:

Plans to Improve the Soil Survey

1) Estimated acres needing extensive revision (re-mapping):
2) Estimated time required to correct deficiencies identified with the following.

i) Legend and mapping units:
ii) Joins with adjacent counties (tabular & spatial):
iii) Map unit design & composition:
iv) Correlation:
v) OSDs & benchmark soils:
vi) Gaps in data (transects, pedons, lab data):
vii) NASIS data:
viii) NASIS interpretation ratings and reports:
ix) Spatial data (SSURGO):
x) Extensive revision mapping:

3) Estimated office time required to update this county soil survey:
4) Estimated field time required to update this county soil survey:

5) Total estimated time required to update this county soil survey:
6) Total estimated staff years required to update this county soil survey: ■

National Cooperative Soil Survey Project—Remote Sensing Supported Digital Soil Mapping in South Florida

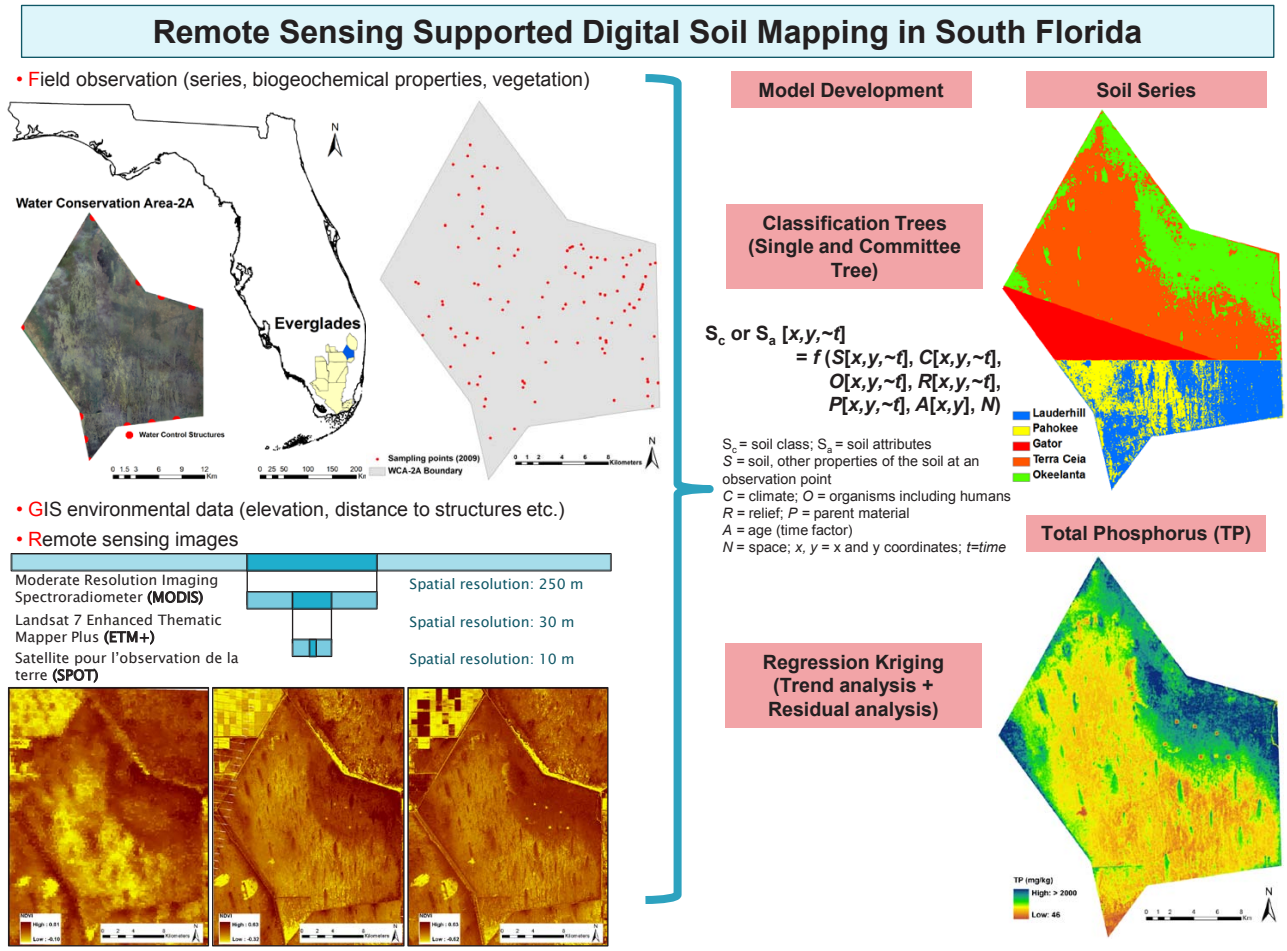
A joint soil mapping project by the University of Florida, Soil and Water Science Department, (Sabine Grunwald, Project Principal Investigator; Todd Z. Osborne, Co-Principal Investigator; and Jongsung Kim, Graduate Student) and NRCS (Rick Robins, Soils Specialist; Howard Yamataki, MLRA Soil Survey Leader; and Tom Weber, State Soil Scientist)

Digital soil mapping techniques have shown much promise to reduce soil mapping costs and produce raster-based soil maps for large regions.

We developed prediction models for soil series and various soil properties (e.g. total carbon, nitrogen, and phosphorus) utilizing soil survey, multi-resolution remote sensing images and environmental data (e.g. GIS layers describing vegetation or a digital elevation model) in Water Conservation Area–2A, Everglades, Florida. The digital soil maps were created by combining:

Soil data (soil survey) + GIS environmental data (e.g. satellite images to describe vegetation and water patterns) + quantitative methods → Soil maps (consisting of raster cells).

We used GIS and modern quantitative methods (e.g. classification tree and regression kriging) to develop soil prediction models. These models use spectral data and derived indices from different remote sensing images, which have different spatial resolutions, including MODIS (raster cell size: 250 m), Landsat ETM+ (30 m), and SPOT (10 m). Our project demonstrated that digital soil mapping has value to produce soil maps, specifically in a wetland system that is difficult to sample. Airboats were used to drive to sampling locations; however, not all sites were accessible due to dense vegetation. Our digital soil maps provide soil taxonomic and soil property data at high spatial resolution in raster format.



Poster describing remote sensing supported digital soil mapping in South Florida.

Field observations in the Everglades.

An area of periphyton observed during field sampling.

An area of cattail observed during field sampling.

An area of sawgrass observed during field sampling. ■

Upcoming Events

Mississippi Soil Survey Work Planning Conference: May 3rd

2011 National Cooperative Soil Survey National Conference; Ashville, North Carolina: May 22–26

MLRA Region 15 Board of Directors Teleconference: June 15th

Florida Soil Survey Work Planning Conference: June ■

Retirements

The following soil scientists and support team members retired in 2010.

Alabama

Herbert Ross, NRI Specialist

Richard Zellmer, GIS Specialist

Florida

Dave Howell, Resource Soil Scientist

Mississippi

Ken Murphy, Soil Scientist

Tom Kilpatrick, Soil Scientist ■

Editor's Note

Issues of this newsletter are available from the MO–15 Web site (http://www.mo15.nrcs.usda.gov/). Click on "News" and then on "The Coastal Plainer."

You are invited to submit articles for future issues to Aaron Achen, editor, MO–15, Auburn, Alabama. Voice—(402) 437–4157; FAX—(402) 437–5336; e-mail—Aaron.Achen@al.usda.gov.■

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