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PRESIDENT'S MESSAGE

by *Teresa Mattson*



Teresa Matteson, shown here sampling acid soils for John Baham in a Tolovana-Reedsport complex near Otter Crest.

I feel that I'm flying close to the edge of a hurricane; certainly not in the peaceful eye of the soil science storm. The current energy around Oregon soil science must charge some isomorphic shift in the spring collection of soil under my finger nails. My personal expectations are grand as I shoulder the 2013-14 OSSS presidential role.

I searched for a noun to describe a population of underground creatures, colony came to mind: ants, termites, bacteria, and even pitch fork revolutionaries. I suggest a quick colony count to explain some infectious symptoms Oregon soil science has experienced in recent times.

- Colony #1: The 107 Winter Meeting registrations included 42 students—that faction of society that garners the utmost attention of OSSS Past President, James Cassidy, who preaches soil science to record numbers of malleable minds each year.
- Colony #2: Collaboration with the Oregon Branch of the Soil and Water Conservation Society and the Soil Quality Network drew a diverse group of professionals to the Winter Meeting. These seasoned pros were inspired to think beyond their established boundaries and try their hand at new tools. Allen Makinson emailed his epiphany from the combination of Scott Burns' talk on Subduction Zone Earthquakes (every 300 to 500 years) and Adam Lindsley's poster titled Mapping Soil Properties: Correlates of Soil Liquefaction in the Historical Record. Graham Shepherd, New Zealand agronomy consultant, shared his Visual Soil Assessment (VSA) technique and a group effort is brewing to master the use of VSA in Oregon. To join the VSA user colony, email Teresa at tmatteson@bentonswcd.org.
- Colony #3: Soil Quality Network sessions encouraged volunteer hosts for the next two SQN events: Caitlin Price Youngquist, Washington State University PhD Candidate, is eager to get SQN 2014 plans underway. Jeff Mitchell, Vegetable Crops Specialist, Kearney Agricultural Center, UC Davis, was inspired by Winter Meeting student engagement and wants to host SQN 2015.
- Colony #4: The Natural Resources Conservation Service's Soil Health Initiative will encourage and support soil awareness through research, outreach, and on-the-ground efforts.

OSSS could be described as a cult of dirt loving, profile seekers. The truth is this—it takes a dedicated colony of volunteers to keep this society alive and thriving. Alicia Leytem, Secretary and exemplary note-taker, tracks decisions and empowers board members with well-organized action items. Ryan Stewart is Treasurer and a super juggler of books and budgets. Mark Fery, Westside Director, and Meghan Krueger, Eastside Director, have their radar on for members to interview and stories to report. Please, share your leads with Mark and Meghan to help showcase soil work across the state! Student liaisons, Gabriella Coughlin (OSU) and Kat Barnard (PSU), help sustain the Cassidy campaign to engage the next generation. Vice President Markus Kleber, of OSU Soil

Science, and I plan to organize a 2014 Winter Meeting and subsequent Summer Tour for members' edification and enjoyment.

To conclude this inaugural note, please join me in three resounding cheers to Ed Horn, Sharpshooter Editor since 2008 and past Eastside Director and ex-President. Ed, THANKS A TON, for each and every word, photo, caption, deadline reminder, and issue you have ushered to our email and postal mailboxes. After completion of this issue, Ed will pass the baton to Andy Gallagher. Much thanks to Andy for accepting the Sharpshooter editor duty!

Soil ROCKS and so do all of you dues-paying soil enthusiasts!!! Carry on!

OSSS 2013 WINTER MEETING SUMMARY

by Teresa Matteson, Mark Keller, and Ed Horn

Year 2 of the Soil Quality Network Sessions occurred at the McMenamins Edgefield in Troutdale, Oregon, and proved a rousing success. The Oregon Society of Soil Scientists teamed up with the Soil Quality Network for the second year running. There were complaints that the 2012 SQN theme for Winter Meeting did not gratify the OSSS members' hunger for pure soil science. As a result, two tracks were developed for this year's meeting—the SQN track and the OSSS track with lectures and field trips geared accordingly. Many of the presentations are available on the SQN webpage. Visit <http://smallfarms.oregonstate.edu/soil-quality-network/2013-sqn-and-oss-winter-meeting>

The meeting started out Thursday, February 28, with Keynote Speaker Dr. Greg Retallack, a fossil soil specialist in the University of Oregon's geology department. His topic was global cooling by grassland soils in the geologic past and near future. He says that plants cool and animals warm and calls it the Proserpina principle. He calls it a principle instead of a hypothesis or theory because it is proven. Plants take in carbon dioxide and give off oxygen (cool the atmosphere) while animals take in oxygen and give off carbon dioxide (warm the atmosphere). In the past when plants were dominant the earth was cooler and then came the plant-eating animals to shift the balance the other way. The albedo or reflective capacity from the earth's surface should be taken into account. Ice sheets and glaciers reflect a lot of sunlight back into space. With massive ice sheets global cooling is accelerated. With vegetation, yellow dry grassland reflects more light than a green forest but less light than a sandy desert. There are certainly other theories and cycles that need to be considered for global cooling and warming but the underlying plant animal cycles should not be ignored.



Next were the field tours: The OSSS geomorphic soil tour led by Scott Burns and the SQN tour led by Teresa Matteson.

Floods and Other Calamities The Soils Geomorphology Tour led by Scott Burns February 28, 2013 OSSS Annual Meeting *by Mark Keller*

Examples from the floods and cataclysms converging on the Portland, Oregon area, a favorite topic for Portland State University professor Scott Burns, was the main subject of the Thursday afternoon geomorphology tour.

Despite a cold rain, the inveterate soil science enthusiasts stood on the banks of what Lewis and Clark called the Quick Sand River. Those prepared had umbrellas, and those scientists really prepared had full rain suits! Scott Burns expounded on the turbulent natural history of the river evident there.



Scott Burns talking about Missoula Floods at Chanticleer Point above the Columbia River.

The present stream terraces at the Lewis and Clark State Park were created by the Old Maid Flat Lehar (1782). The Old Maid Flat Lehar was a hyper concentrated flow. This event overlies an older lehar, the Timberline Lehar (1500 ya). Ninety percent of the Sandy River Delta is material from the Timberline Lehar. The Sandy, White and Hood rivers all had these debris flow events. One Hood River debris flow had enough energy to actually cross the Columbia River! Deposits from that cataclysmic event are found on the White Salmon side.

In an aside, Allen Makinson told us about the bridge rebuild there. It is the second most expensive seismic upgrade project on I-84. The reason: they had to engineer it with anadromous fish and smelt runs in mind. Instead of regular concrete piers they are using steel beams construction. This was, unfortunately, a second iteration from the original design.

In the flood of winter 1996, 8 inches of rain fell at Portland in a 4 day period. Scott's students identified 710 landslides activated those 4 days. The one fatality from the flooding was a person inside a house which had slid into the Sandy River.

At stop 2 we observed an amazingly vertical exposure of the 14 to 16 million year old Troutdale Formation. Comprised of alluvium from the ancestral Columbia, Clackamas and Sandy rivers, the Troutdale Formation is sandstone and conglomerate weakly cemented by iron. Ancestral Columbia deposits are identified over a 50 mile wide swath. The Columbia is an antecedent stream. It retained its route from before the Cascade Mountains uplift.

At our next stop we looked at soil pits on a traverse of three terrace surfaces. We discussed the seminal work of Balster and Parsons (1968). The floodplain (Horseshoe surface, a Psamment), the first terrace (Ingram surface, a Psamment), and finally on the next terrace a soil with more character (an Inceptisol on a contested name surface). [Editorial note: We on the "eastside" like to view the more assertive profiles found in the desert.] The Edgefield campus is on the Winkle surface. (See: Geomorphology and Soils Willamette Valley, Oregon; Balster and Parsons 1968.)

After lunch we scrambled to an escarpment view of yet another cataclysm. Fifty feet above the Columbia River and overlying the Timberline Lehar material is a quartz sand deposit – material from the Bridge of the Gods dam breach. Charcoal ages it at 300 y.a. That date would correspond roughly with the latest subduction zone earthquake.



Mark Keller, 2nd from left, listens to Scott Burns talking about the light quartz sand deposit from the Bridge of the Gods dam breach.

James Cassidy found a beautifully preserved fossil leaf, declared from the Rhododendron Formation at the site too!



Soil Geomorphology Tour, Stop 2 - Scott Burns and Russ Langridge talk in the rain about the 15M-year-old Troutdale Formation in background.

An additional stop up the grade was allowed by the graciousness of Jorje, the bus driver. At Chanticleer Point (Women's Forum State Park), we had a surprisingly good view up the Columbia Gorge. There are 40 ice age Lake Missoula Floods (Bretz Floods) identified. The biggest lake was 530 cubic miles, ½ the size of Lake Michigan. The ice dam backing up the glacial melt water was 1700 feet high. The violence of the Missoula Floods is evident in many features

observed from Chanticleer Point. The deluge filled the gorge up to Crown Point in 20 minutes time, and lasted for 3 weeks! At this point, an 800 foot high wall of water was approaching at 50 mph. You can imagine where Rooster Rock originally fit into the Crown Point escarpment and slid down slope still upright during the undercutting by the flood waters. The slumping on the Washington side of the gorge is due to the toe slope being undercut by the floods. The flanking slopes of the volcano at Beacon Rock were washed away leaving the landmark promontory. Similar floods originated from the Purcell Trench, the Kootenai River and a third tributary drainage of the Columbia- the Ice Age Floods, 15 to 18 thousand years ago. There are 770 cubic kilometers of sediment at the mouth of the Columbia River from these cataclysmic events.

All that natural history was viewed and expounded on, and we still made it back 15 minutes ahead of schedule!

2013 OSSS Winter Meeting Soil Quality Network Field Tour

by Ed Horn



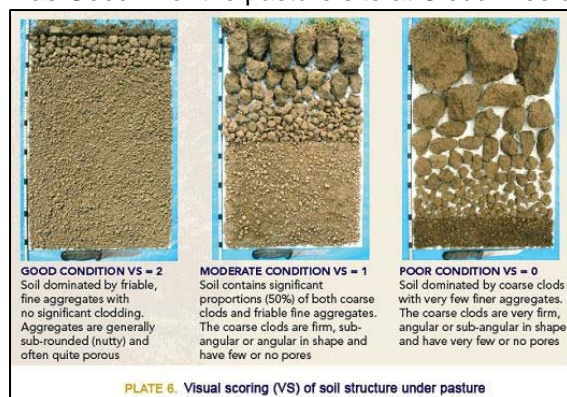
Graham Shepherd talking about visual soil assessment at the 2013 SQN field demonstration.

We walked down the road from McMenamins Blackberry Hall toward the busses in a cold sporadic rain. Cloud Tree and Sun Farm on SE Henkle Road near Corbett was our destination for the soil quality network field tour scheduled for the 2013 Soil Quality Network/OSSS Winter Meeting. This field trip was all about using sensory methods to evaluate soil and plant conditions. Graham Shepherd, Ron Raney, and Jeff Mitchell would be teaching rotating sessions to our group, which was split into thirds. We had the advantage of a covered shed and barn at the farm, helping us avoid the cold rain and drizzle. The first session for our group was with Graham Shepherd. Graham is a soil scientist, agricultural consultant and director of BioAgriNomics, an independent agricultural and fertilizer advisory company out of New Zealand. Graham developed a field methods manual and score card for visually evaluating physical

and biological characteristics of both soil and plant quality. His methods have been adapted by the Food and Agriculture Organization of the United Nations. Key indicators are compared with three diagnostic photographs showing examples of good, moderate, and poor condition. The visual indicators he uses for soil quality include soil texture, soil structure, soil porosity, number and color of soil mottles, soil color, earthworm number and size, soil smell, potential rooting depth, surface ponding, and surface relief. Each visual indicator was ranked on a scorecard with a number rating of 2-good, 1-moderate or 0-poor and multiplied by a weighting factor of 1, 2 or 3 to define the indicator ranking. The indicator rankings were totaled to give the Soil Quality Index of the site. A similar ranking and methodology was developed for assessing plant performance. Visual plant performance indicators included: pasture quality, clover nodules, weeds, pasture growth, pasture color and growth relative to urine patches, pasture utilization, root length and root density, area of bare ground, drought stress, and production costs to maintain stock carrying capacity. The totaled soil and plant performance rankings were placed into the following rating groups <20 was Poor; 20 – 35 was Moderate; and >35 was Good. For the pasture site at Cloud Tree and Sun Farm, the soil quality index totaled 37 or good and the plant performance index was 14 or poor. This showed us that plant quality compared to the soil quality could be improved upon. Looking at the low plant and soil indicator rankings, management options were discussed as to how to improve the soil and plant indicators in moderate or poor condition. Visual Soil Assessments may be useful for extension agents, conservationists, farmers and other agricultural professionals who evaluate soil quality in the field and develop educational programs. Graham Shepherd explains the methodology in his book entitled, *Visual Soil Assessment: Field Guide*, 2nd Edition. For more information on the assessment methods and how to purchase the field guide visit the BioAgriNomics web site at:



Graham Shepherd teasing apart soil structure from a block soil sample at the 2013 SQN field tour with Alicia Leytem watching from the side.



For more information on the assessment methods and how to purchase the field guide visit the BioAgriNomics web site at: <http://www.bioagrinomics.com/>



Ron Raney talking about soil moisture by feel on the 2013 SQN field tour.

Our next session was with Ron Raney, the Natural Resources Conservation Service Soil Data Quality Specialist out of the Portland Office. Ron demonstrated methods of determining soil moisture by feel using known moisture samples of a given texture group. Estimating soil moisture by feel provides irrigators with a straight forward and quick means of moisture monitoring for a local site to help determine when, how much, and how long to irrigate. Ron provided us handouts of soil technical note 1 – “Procedure for making known moisture soil samples for irrigation water management purposes” from US Department of Agriculture, Portland, Oregon, Natural Resources Conservation Service. You can find it online at: ftp://ftp-fc.sc.egov.usda.gov/OR/Technical_Notes/Soil/Soil%2001.pdf

Known soil moisture samples can be prepared from a determined soil texture to define field capacity and wilting point. There is a chart illustrating how field capacity and wilting point relate to soil texture and percent volumetric soil water content. Knowing the soil texture and percent water content of an onsite sample, and using the chart as a guide, a determination can be made where the site is at on the field capacity/wilting point scale. This document has links to the online color brochure, Estimating Soil Moisture by Feel and Appearance: <http://www.mt.nrcs.usda.gov/technical/ecs/agronomy/soilmoisture/index.html>

Our final session was with Jeff Mitchell. Dr. Mitchell is a Cooperative Extension Specialist in the Department of Plant Sciences at the University California at Davis. Jeff kept us entertained with numerous graphs and charts blowing in the wind, showing us how different tillage systems affect plant growth and soil characteristics. One of his messages was that conventional agriculture has less crop rotation, higher intensity of disturbance, and less surface crop retention as opposed to conservation agriculture which has more crop rotation, lower intensity of disturbance and greater surface crop retention. Jeff’s main focus of research is conducting on-farm demonstrations and evaluations of soil building practices including cover cropping and organic soil amendment inputs of annual cropping systems. He also looks at integrated pest management practices to help reduce the reliance of agrichemical inputs. An important component of his research is evaluating surface mulches in no till vegetable production systems. He looks at these practices for: suppressing weeds, improving production efficiencies in terms of nutrient inputs and water irrigation, and providing optimal soil temperatures for crop growth.



Jeff Mitchell talking about conservation agriculture on the 2013 SQN field tour.

It was then back on the bus and back to McMenemy to dry out and warm up. Thanks to Teresa Matteson for arranging this interesting and informative field trip and, of course, the box lunch that kept us fat and happy!

After the field tours, Phil Scoles launched the evening activities with a valuable soil ethics presentation. Phil’s good ethics policy includes the following components: truthfulness, honesty, being straightforward with clients, know your limits, and back recommendations up with facts.



The Toasting and Postering session at the 2013 OSSS SQN conference.

Meanwhile in Blackberry Hall, the students set up posters that inspired enthralling conversations during the no-host bar “Toasting and Postering” session. The poster session allies were crowded and the soil-based tete-a-tetes were fueled by the beverages of the hour. The joviality did not cease, but eventually transitioned into the OSSS business meeting. Among announcements and membership discussions was the installation of new officers: President-Teresa Matteson, Vice President-Markus Kleber, Eastside Director-Meghan Krueger, Student Liaison-Kathryn Barnard, and Newsletter Editor-Andy Gallagher. A good time was had by all! (For proof, see the picture of Teresa Matteson and James Cassidy on the next page!)



New OSSS President Teresa Matteson and James Cassidy (ex-President) doing the power-transfer hug at the OSSS business meeting.

Friday morning, March 1, started with a full slate of lectures. Carrie Sanneman (pictured on the right), Willamette Partnership, spoke to the combined tracks about a model, Nutrient Tracking Tool, designed to track changes in nitrogen, phosphorus, sediment loss, and crop yield for the comparison of different cropping systems. Next up, Teresa Matteson and Amy Garrett encouraged attendees to use two new tools, the SQN Website and the SQN Database, and debuted their plan for a map of all things soil quality. After that the group split into two tracks. The SQN track was in Blackberry Hall and the OSSS Winter Meeting track was in the Ballroom.



Carrie Sanneman, Willamette Partnership, described the Nutrient Tracking Tool that will be used in the Willamette Valley.

OSSS Track: James Cassidy moderated the OSSS session in the Ballroom. The idea was to have talks by students, or the young folks just starting their careers, followed up by talks from older more mature folks, i.e. the people with experience and knowhow. During the morning session, the young professionals and graduate students and their topics included:

- **Meghan Krueger** - Flexibility and communication balance technically sound
- **John R. Yeo** - Phytophthora root rot disease of blueberry
- **Shannon B. Andrews** - Fertilizer Value of Algae Meal
- **Myles Gray** - Biochars for Filtration and Water Retention

The morning “Experience speaks” presentation was by **Allen Makinson**. Allen talked about the history of soil survey looking back at the old ways and soil survey methods. It brought back memories of the use of stereoscopes and rapidograph pens to ink soil lines on aerial photographs. Allen could have talked a lot longer but hunger got the best of us.

SQN Track: Friday’s formal presentations for the Soil Quality Network track expanded on Thursday’s field demo topics: soil quality assessment and effecting agricultural practice to build soil, reduce costs, and protect the environment.



During **Jeff Mitchell’s** presentation, *Soil quality initiatives of California’s Conservation Agriculture Systems Innovation Center: motivations, goals, and adoption campaigns*, we were introduced to global soil quality movement leaders and learned of efforts to encourage reduced tillage in California’s Central Valley. In Jeff’s home territory, nine of the nation’s top ten agricultural producing counties boast significant yield increases over the past nine decades. Conservation tillage and cover cropping are two of the recommended soil building practices at the UC Davis Conservation Agriculture Systems Innovation Center. Jeff stressed the importance of an outreach terminology transition to highlight solutions instead of focus on problems. For example, an effective campaign strategy will emphasize crop residue management and de-emphasize soil disturbance. As mentioned in the President’s Message, Jeff was so inspired by the Winter Meeting’s student engagement that he plans to host SQN 2015 at UC Davis.

Jeff Mitchell, UC Davis, described the campaign to promote Conservation Management at the Conservation Agriculture Systems Innovation Center



Panel discussion by Rick Fasching, Daniel Moreno, Brian Rabe, and Todd Jarvis at the 2013 SQN conference.

To close the meeting, all attendees assembled for a culminating panel discussion on Soil Quality Related to Water Quality and Quantity. The panelists included Rick Fasching, NRCS, Todd Jarvis, OSU Institute for Water and Watersheds, Brian Rabe, Cascade Earth Sciences, and Daniel Moreno, Oregon State University – Water Resources Engineering. Rick Fasching opened the panel by defining soil quality and described how the recent NRCS emphasis on Soil Health

Management builds on traditional conservation practices aimed at healing the land. Rick shared an example of cover crop use in Montana to improve soil health and control erosion. Todd Jarvis introduced an OSU proposal to fund the Willamette Valley Critical Zone Observatory, an exciting intention to marry research with on-the-ground monitoring. Daniel Moreno discussed a TMDL-inspired pilot study on high rate poplar irrigation as a natural wastewater treatment to mitigate the City of Woodburn's temperature impact on the Pudding River. Brian Rabe discussed impacts of soil management on water quality, including: permeable driving surfaces, urban impacts on surface and subsurface hydrology and agriculture-related salt issues.

A sincere THANK YOU is extended to all of the dynamic and informative speakers, including the students who shared their research topics. Thanks to Teresa Matteson, Amy Garrett of OSU Small Farms, James Cassidy and all their helpers who made this successful conference so enjoyable.

2013 OSSS SUMMER TOUR

~ Secrets of the Soil – Southern Oregon Coast ~

August 1-3, 2013

We will depart Corvallis early Thursday, August 1, to head southwest to Florence, then down the coast. Tentative plans include numerous soil-related attractions including a cranberry bog, fossil hunt near Bandon, the Bullards Beach State Park water treatment system, and dispersed camping at Blacklock Point, a forested Pleistocene Terrace north of Cape Blanco.

On Friday, August 2, we will continue south to Gold Beach, then east up the south bank of the Rogue River to stake basecamp at Quosatana Campground. We'll explore this region of rich soil diversity and discover pedogenesis from the likes of Dothan Formation sandstones, amphibolite schists, Colebrooke Formation phyllites, peridotite and serpentine. Nearby, Hunter Creek Bog displays *the serpentine syndrome*, a phrase coined by Hans Jenny in 1980 to explain the survival of plants such as *Darlingtonia californica*, a rare carnivorous plant of serpentine wetland communities. Additional fascinations include massive earthflows underlain by siltstones and mudstones of the Otter Point Formation, and the Frances Shrader Memorial Trail, a 1-mile Ancient Forest Loop through Douglas-fir, Port-Orford-cedar, Tanoak, Maple, and Myrtlewood. What we can't squeeze in before Happy Hour Friday, we'll investigate Saturday morning, August 3, before the journey home.

These southern Oregon soils were mapped, researched and documented by several of our own distinguished OSSS members! If any of you renowned members plan to join the tour and share your expertise, please contact Teresa at 541-840-3616 or email tmatt0@rtdata.com.

The tour registration form and final details will follow in the summer Sharpshooter issue!

Save the dates on your calendar NOW, August 1 -3, 2013!

2013 WSPSS Summer Tour

~ Low Impact Development (LID) techniques and technologies ~

July 25-26, 2013

The Washington Society of Professional Soil Scientists finalized the dates for their Summer Tour. We wanted to announce it so you can put it on your calendar.

This year we will be working on a tour focused on Low Impact Development (LID) techniques and technologies, based out of the WSU Research facility in Puyallup. We are developing the agenda at the moment but here's the basic plan.

- Thursday July 25th, meet at the WSU Research facility in Puyallup (noon)
- Technical presentations on LID, wrap up by 5pm
- Friday July 26th, field tour (full day) of LID installations in areas near Puyallup

As usual, with the registration fee (TBD) it will be our plan to provide you with a dinner on Thursday and lunch on Friday, as well as transportation on Friday for the tour.

Looking forward to a great tour and topic this year and hope to see many of you there!

Regards,
Toby Rodgers - President WSPSS

EASTSIDE NOTES

by Meghan Krueger



New Eastside Director, **Meghan Krueger**, sporting her dusty, black soil hat!

Greetings from Malheur County—field season is here! For those of you who missed out on the exceptional winter meeting, I'll be holding down the East Side Director seat. Along my path, I obtained a bachelor's degree in Soil Science from Oregon State University, worked as an intern for the Natural Resources Conservation Service (NRCS), and upon graduation landed in Malheur County working with a team of driven individuals on Bureau of Land Management (BLM) land. NRCS and BLM collaborate to complete a survey of the land in southeast Oregon. The Ecological Site Inventory/Soil Survey crew (that's us) is jazzed to continue observing nature, and six months of data collection is as exciting as Monarch Butterflies! Here is a word from Bureau of Land Management Ecological Site Specialist and Mentor, Charlie Tackman!

~ WORKING RELATIONSHIPS BETWEEN SOIL AND VEGETATION SPECIALISTS ~

Ecological communities can't be determined without the associated knowledge of precipitation, soil type, and land form. In turn the proper choice for soil profile is dependent on vegetation, precipitation, and land form. Critical map unit errors can be eliminated if information between the specialists is shared.

A plant ecologist who tries to establish ecological communities without understanding the information sets of climate (precipitation, temperature, and prevailing wind direction), topography (landform, aspect, and elevation), parent material (alluvium, eolian sand, ash, and/or bedrock type, etc.), and soil characteristics listed below, will fail even with a superior understanding of plant relationships. A mapping ecologist needs the following information to help predict the ecological community:

- ✓ Precipitation range of area in question helps predict soil moisture regimes.
- ✓ Aspect relationship of site helps predict effective precipitation North vs. South.
- ✓ Elevation range helps predict soil temperature and moisture regimes.
- ✓ Surface horizon texture and its thickness help predict sandy, loamy or clayey sites.
- ✓ Clay content % in the surface horizon as above help predict sandy, loamy or clayey sites.
- ✓ Depth to a restrictive layer: is it bedrock, duripan, or a claypan (heavy argillic), helps predict soil site productivity of plant community.
- ✓ Present or absent of an argillic: If an argillic is present, what is the transition thickness and clay increase from the overlying horizon—is it abrupt or gradual? Helps predict drainage characteristics of the site and indicates a relatively stable landform.
- ✓ The organic matter content in the surface layers of soil – is it a Mollisol, Aridisol or Histosol? Helps predict moisture holding and drainage characteristics of the site.
- ✓ Textures in the soil textural control section. Helps predict subsoil drainage characteristics.
- ✓ Any other information Soil Scientists consider important like pH, drainage class, depth to wetness mottles or a water table, sodium or salt content.

For ecological communities in poor or low serial condition (over grazed or burned), key plant community species are often lacking. As a result, the above information supplied by the soil scientist is critical and often the key in determining the plant community. Soil diagnostic features often help me make the call on ecological sites. The key to the whole concept of ecological mapping is being able to interpret and understand what the information means. For known plant communities with key plant indicators, it is important to use the soil scientist to help identify key soil characteristics that drive the site. Understanding the relationships between plants and the diagnostic properties takes perseverance, experience and time.

I'm convinced it takes two disciplines—Soil Scientists and Range Ecologist—working together to create more functional map units. I could not do my job correctly without the Soil Scientists and, in turn, I help Soil Scientists avoid vegetation inclusions that would not represent the area in question.

A concern I have as I near retirement is: Will the knowledge and understanding of soil/plant relationships going to be lost to new employees coming into the agencies? I hope not, and I hope new employees that I have worked with have gained an appreciation of ecological dynamics as I did from those that helped me when I started out.

WESTSIDE NOTES

by Corey Owens

~ State Certifying Boards: The Ohio and Florida Examples ~

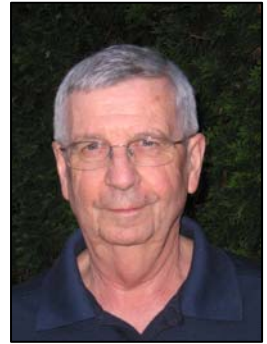
At the OSSS annual meeting there was a lot of interest in exploring an Oregon Certification Board. This board would be responsible for reviewing applications for Certified Professional Soil Scientist (CPSS) and could serve as a recognized entity operating in the state that could actively represent the profession of Soil Science. To find out more about how other states have gone before us, I contacted Matt Deaton in Ohio and Oren Reedy in Florida, both of which I know through my work on the Soil Science Society of America's (SSSA) National Certifying Board. Ohio and Florida both have State Certifying Boards that operate under a memorandum of understanding with SSSA. Below is a side by side comparison of how it works for each state. I promise to continue the conversation in the months ahead!

Question	Ohio	Florida
How long have you had a certifying board?	A signed agreement with SSSA in 2008, and about a year to get it up and going.	A signed agreement with SSSA in 2009, and still working out the last of the kinks.
What prompted folks to start a state certification board?	Ohio state agencies began drafting rules requiring credentials for Soil Scientists. The Ohio Association of Pedologists had an existing independent, state certification program but the agencies felt better about using it with national backing. So they teamed up with SSSA.	The state of Florida began making changes to its Administrative Code in regards to on-site sewage disposal. In order for folks to be able to complete work under the new rules they had to be certified. Florida's Association of Environmental Soil Scientists (FAESS) stepped up and joined SSSA to create a certification program that involves meeting requirements for CPSS and completing a "calibration" short-course designed and delivered by FAESS.
How many people are on the board, how long are the terms, what are the requirements?	Currently there are seven board members. The MOU states there can be between five and seven. Terms are three years with the option to renew. Right now there are five CPSS's on the board and two agency representatives.	Currently there are six board members. The MOU states there can be between five and seven. Terms are three years with the option to renew. At least four board participants need to be CPSS members and others can represent folks from agencies, academia, and the private sector, etc.
Is the board organized legally as a 5013c or LLC?	No legal organization, though they are protected under the SSSA for liability.	The board works under FAESS, which is a 5013c. They are protected under the SSSA for liability.
Approximately how many hours a week do board members spend on activities?	Minimal time commitment. It just depends if there is an upcoming event or how many applications need to be reviewed.	Not much time commitment, except as they prepare for the calibration short-course.
How often does the board meet?	Typically they have a teleconference scheduled every other month, but they cancel those quite often. It depends on the workload and number of applications.	No set time, just meet loosely as the need arises typically in conjunction with FAESS activities.
What other activities besides reviewing applications does the board get involved with?	The board gets involved with planning trainings. At least once a year they design an event to help others get relevant training.	Since the board pretty much operates under the umbrella of FAESS, it is involved with all of their activities. It also hosts the calibration short-course required for certification.
For More Information	http://ohiopedologist.com/	http://faess.org/

MEMBER SPOTLIGHT

by Jaimee Davis and Chad McGrath

~ Chad McGrath ~



Hello, my name is Chad McGrath and some of you will recognize me as the former State Soil Scientist for the Natural Resources Conservation Service (NRCS) here in Oregon. Besides being State Soil Scientist for Oregon my position also included Leader for the Pacific Northwest Soil Survey Region, which covered most of Oregon, Washington, and Idaho. I retired from that position on December 31, 2011.

I was born in Marysville, a small town in northeastern Kansas. I grew up on a farm where we raised corn, soybeans, and wheat. During unusually dry periods, which were fairly common in that part of Kansas, we would switch from soybeans to grain sorghum (milo) as it withstood the dry weather better than soybeans. We also had a small herd of Hereford cows for our cow – calf operation.

I am probably one of the few people that you will ever meet that attended a one-room school for my eight-year elementary education. They closed all of these one-room schools shortly after I started high school. After graduating from Marysville High School, I entered Kansas State University in Manhattan, Kansas. I majored in general agriculture and played baseball for KSU. At this point in my life academics sort of took a backseat to baseball. I did decide during my time at KSU that, because of my size, my chances of becoming a big league baseball player were pretty slim. I decided that I wanted to major in Forestry so I transferred to the University of Idaho and graduated with a degree in Forest Resource Management.

When I graduated, it was during the height of the Vietnam War so rather than wait to get drafted I took the examination for Navy Officer Candidate School and was accepted. During my time in the Navy, I served in several positions on ships that were home ported on the east and west coasts.

After completing my tour of duty in the Navy, I decided to teach school and coach baseball. I taught junior high and high school mathematics and science, and was head baseball coach for three years but then decided I really wanted to get back into the natural resources field of work. I returned to the University of Idaho and completed my Master's Degree in Forest Soils.

The last sentence in the above paragraph gives a hint into how I became interested in the study of soils. My research for my Master's Degree was a study of the relationship of soils and soil properties to the quality of sites for timber production. My research and course work really piqued my interest in soil genesis and classification, geomorphology, and how that all relates to plant community distribution and composition. The soil survey program was a natural fit for those interests.

Upon completion of my M.S., I started work for the Idaho Soil Conservation Commission doing soil survey work. Nine months later, I accepted a position with the Soil Conservation Service (later to become the Natural Resources Conservation Service) as a soil scientist. I worked approximately ten years in eastern Idaho serving as a soil survey project member, soil survey project leader, and area resource soil scientist. In 1985, I applied for and was selected as the State Soil Correlator for the soil survey program within the state of Idaho. In this position I was responsible for the classification and the mapping of all soils within the state of Idaho.

In 1995, I applied for the State Soil Scientist/Leader for the Pacific Northwest Soil Survey Region position in Portland, OR. I was selected for that position and that is how I ended up in Oregon. To better explain the role of this position, I should first elaborate on the role that the NRCS plays in what is called the National Cooperative Soil Survey Program (NCSS). The NCSS is made up of federal agencies such as NRCS, U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, and others, plus state agencies and universities. The major role of the NCSS is to promote and complete soil survey activities including the mapping or inventory of the soils of the US, the analysis of soil properties, and properly interpreting the soils and the properties for their use and management.

My duties as State Soil Scientist mainly included the management of the soil survey program within Oregon. This included working with the NCSS partnership to work toward completing the initial soil survey of the state and to ensure that the information was used and interpreted correctly. This also included the incorporation of soil survey information into the resource planning and application of conservation practices within the scope of work of the NRCS. My duties in my role as Leader for the Pacific Northwest Soil Survey Region mainly involved leading a team whose primary responsibility was ensuring the quality of the soil survey work that was completed within our area of responsibility, which included most of Oregon, Washington, and Idaho.

Since I have retired my wife Agnes and I have been to Stockholm, Sweden, to visit our new granddaughter, Violet. Our daughter Monika and son-in-law Beau are currently living in Stockholm as Beau works for an international consulting company. Agnes and I plan to go back to visit them in Stockholm this summer plus we are going to take a cruise in the Baltic Sea area and then a short tour of the Fjords area of Norway. We also take many shorter trips to Seattle to see our son Matthew who lives there and works for Amazon. We also generally try to spend several weeks during the summer at a family cabin on Payette Lake near McCall, Idaho. In the winter I have tried to get in a few days of skiing. It doesn't seem that I have left much time to complete all of the odd jobs around home that I had planned to do.

I thoroughly enjoyed my 36 years working for the NRCS and can't think of a career that I would have enjoyed more but I must admit that retirement is great. I do plan to stay active in the soil science profession by participating in Soil Science Society of America (SSSA), Oregon Society of Soil Scientists (OSSS), volunteering to help at the NRCS State Office in Portland, and maintaining my Professional Soil Scientist certification. I hope to see you at one of the next OSSS meetings.

STUDENTS' CORNER

by Gabby Coughlin

~ The OSU Soil Judging Team in Platteville, Wisconsin ~

The Oregon State University Soil Judging Team visited Platteville, Wisconsin, for the Collegiate Soil Judging Nationals from April 21-26. Nationals were held in what is known as the driftless area of Wisconsin, which refers to land not covered by ice during the most recent glaciation.



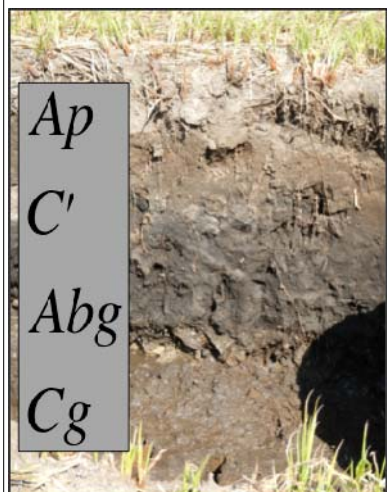
Julie wades through the floodplain of an old lake bed formed from the slackwater of the most recent glaciations. The geogenic structure of the upper horizons classified this soil as having no diagnostic epipedon.

The first four days of the trip consisted of visiting 4-6 practice pits per day all with a variety of soil types and various landscape positions. The first few days were extremely challenging as the team attempted to tackle new vocabulary, visualize new landscape positions, and calibrate two soils unlike ones we have textured and seen in Oregon. Those initial practice pits were the first opportunity the team had to practice individual trials in Wisconsin and gain experience working together in a competitive environment.

New soils vocabulary, such as exotic *lamellae* and fan-favorite *rock controlled fabric*, had been discussed during preparations for the trip but never seen until landing in Wisconsin. Likewise, texturing soils with high silt content due to the amount of loess present in this part of the country required significant recalibration. Needing to memorize the textural triangle and other diagnostic materials not provided in the contest was a huge surprise for the team and not one we had mentally prepared for. In the competition, as in life, the textural class of each horizon was used to determine hydraulic conductivity, onsite wastewater treatment, local roads and construction, soil erosion potential, wastewater



Top: Pretty blue shale produced out-of-this-world clay-silt ribbons.
Bottom: Clay films peel off Rountree formation pedisegment



Top: Curious spectators
Middle: Our first glimpse at lamellae
Bottom: The team judging eliminator round

loading rate and available water holding capacity. Any error made when determining textural classes caused an unfortunate and costly landslide of errors to occur. Falling back on educated guesses due to the lack of certain reference materials that as students we all know and love was an eye opening experience. None of us will take our beloved red field book for granted again!

In four days we visited 21 soil pits, which was an outstanding opportunity to receive more pit-time than many students in the OSU Crop and Soil Science department will have in their entire school career. The variety of new soils, landscapes, and perspectives we were exposed to day in and day out was truly amazing. Huge differences between soil textures, parent materials and landscape positions challenged our brains and calloused our hands while the cold, harrowing winds attempted to wear out our souls. Nice try, Wisconsin, but we vacation at the Oregon coast.

Despite many challenging moments, one bright side of our trip was the opportunity to practice and adapt concepts and field techniques learned in the classroom to a decidedly non-classroom situation. Even though we ended up taking last place in the competition it was still one of the very best field experiences any soils student at OSU could ask for. We all walked away from this experience thankful for our time spent in the pits and with a newfound knowledge and appreciation for the diversity and beauty of soils.

Overall, we had a fantastic adventure in Wisconsin and could not have done it without the positive encouragement of our advisors, Will Austin and Ron Reuter—who are, hands down, two of the bravest and most knowledgeable mentors we could have hoped for. We'd also like to extend a huge thank you to all of the OSSS members that generously contributed to the team this year.

Until next time,

*The OSU Soil
Judgers*



Front row (from right to left): Will Austin, Roslyn Albee, Rocket (Team Volunteer), Julie Stewart
Second Row: Ron Reuter, Aimee Clark, Leanna VanSlambrook, Gabriella Coughlin

DATES TO REMEMBER



June 3-6, 2013: International Union of Soil Sciences, Global Soil Carbon Conference, Madison, WI; Group conference that focuses on soil C in space and time, soil C properties and processes, soil C in relation to soil use and management, and the role of soil C in sustaining society and the environment. Visit their web page for more information: <http://iuss-c-conference.org/>

July 21-24, 2013: SWCS 68th International Annual Conference, Reno, NV. Resilient Landscapes Planning for Flood, Drought, & Fire. At the Peppermill Resort Hotel Spa & Casino. For additional information click here: www.swcs.org/13AC

July 25-26, 2013: Washington Society of Professional Soil Scientists Summer Tour, WSU Research facility in Puyallup, WA. Low Impact Development Techniques and Technologies. Check out their events page for the latest information: http://www.ieway.com/wspss/wspss_events.html

August 1-3, 2013: Oregon Society of Soil Scientists, Secrets of the Soil - Southern Oregon Coast, 2013 Summer Tour. Bandon Fossil Hunt, Cranberry Bogs, Old Growth and Sand Traps! More information to come. http://www.oregonsoils.org/?page_id=5

November 3-6, 2013: ASA-CSSA-SSA International Annual Meeting, Tampa, FL, *"Water, Food, Energy & Innovation for a Sustainable World"*. The latest information is available on their events page at: <https://www.acsmeetings.org/>

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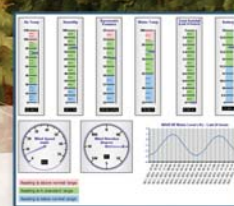
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