The Sharpshooter

Oregon Society of Soil Scientists Quarterly Newsletter

Summer, 2022

Happy summer to all of you soil enthusiasts in Oregon and elsewhere! Summer is here - and I'm feeling the pressure to get out there and do all of the things the very long, wet spring kept us from. I hope that you're finding time to explore, have adventures, and catch up with dear friends.

Speaking of, if you're still looking for ways to connect with friends (or make new ones), look no further than our upcoming OSSS Summer Tour! We are all so eager for this tour which we've been planning since before the covid shutdowns began. Sarah Hash (previous Eastside Director) has put together an amazing agenda full of great speakers, awesome stops, and lots of volcanic soils. We'll be camping in a rustic old Forest Service campground, which means there will be limited services available - but we've also got it all to ourselves!

Childcare? One of my presidential goals this year is to start offering childcare at OSSS events. I have had to miss many past meetings due to the fact that I couldn't leave my daughters behind or bring them with me. I would love to lower the barrier for parents to attend our events by trying to find ways to organize and subsidize childcare for them. The summer tour will be the first event where we are asking in your registration form whether or not you have children you're considering bringing. For this event it would include us hiring a care provider to stay at the campground with the children while the rest of the group goes on the two days of tours. Due to the nature of this tour (and most summer tours) - it may still be hard to have very young children attend if they are dependent on regular contact from their parents (for feeding, naps, etc) since we have long days in the field planned. But if you are interested in this option - please let us know when you register so we can work on sorting out the details.

Alicia backpacking in the Cascades with her partner Tucker and daughters Finley and Rye.

Enjoy the rest of this edition of the OSSS Sharpshooter! -Alicia

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Visit the Oregon Society of Soil Scientists @ https://www.oregonsoils.org/contact/

2022 OSSS Summer Tour Newberry Volcano: Exploring Recent Eruptive History Through Tephra Soils - September 8-9th!

We've got an exciting two-day tour planned that will introduce you to Newberry Volcano's complex volcanic history and its geologic significance on the central Oregon landscape. We'll see some beautiful soil profiles formed in numerous tephras from eruptions that have occurred between 80,000 and 1,200 years before present, and will discuss the unique management implications of these individual deposits. We'll also see and discuss evidence of other large-scale geomorphic processes (Flooding! Glaciation! Landslides!).

REGISTRATION: GROUP SIZE WILL BE LIMITED TO THE FIRST 30 REGISTRANTS! SECURE YOUR SPOT TODAY!

Register at: Event Registration – Oregon Society of Soil Scientists (oregonsoils.org)

We have two registration levels for this event, regular and student/volunteer. The regular registration is $95/person, and will cover your meals, give you access to the campground and carpooling opportunities. The student/volunteer registration is $55/person, it will include everything included in the regular registration but will come with some added responsibilities during the event. We will be contacting the volunteers and students to sign up for shifts such as helping to set up or break down camp, assisting with meal prep and cleanup, and helping maintain the shared camp facilities such as the toilets and handwashing stations. When you register be sure to fill out the registration form with details such as dietary restrictions, an emergency contact, and whether you would be interested in carpooling to the event (we will do our best to connect folks interested in carpooling).

CAMPING: Our base camp will be at the Hot Springs Administrative Campground in the Newberry Caldera. This campground is no longer open to the general public and is NOT signed. When you pass the entrance to East Lake Campground (which will be on your left, lakeside), the Hot Springs Campground will be immediately on your right. We'll have a sign to point the way. There will be potable water and primitive pit toilets available, but there are no picnic tables or other facilities. There is no electricity or other hook-ups. NO FIRES WILL BE PERMITTED. Small- to mid-size camping trailers can be accommodated (and perhaps smaller RVs), but larger RV's are not recommended. This will be a primitive camping experience—please bring everything you'd normally bring for car camping in an undeveloped area. Also, I'm sorry to report that there are no hot springs anywhere near the Hot Springs Campground. More details will follow for those who register.

MEALS: Breakfast, lunch, and dinner will be provided on Thursday and Friday, and we'll be providing Wednesday night dinner for those who arrive in time (seven meals total included in your registration). We strongly encourage you to

arrive on Wednesday night to simplify logistics and carpools. This year, we're asking everyone to bring a set of dishes and silverware to use for your provided meals. This will simplify clean-up for the organizers, and reduce the amount of waste we generate. Bring your dishes to each meal and take them with you and clean them afterward. Thanks for your help with this! If you plan to bring a family member who's not attending the tour itself, we can include them in our meal planning. Just plan to bring a few bucks to contribute to the food fund, and let us know when you register.

TRANSPORTATION AND ACCESS: We'll have two 12-person vans available for transport. If you're comfortable riding in the van with others, PLEASE DO SO. Minimizing the number of vehicles we take will ease our logistics considerably. MASKS WILL BE REQUIRED FOR ALL VAN PASSENGERS. If you're not comfortable van-pooling due to COVID concerns, we'll arrange a limited number of additional carpools to accommodate folks' needs.

A Northwest Forest Pass or $5 fee will be required at the Newberry National Volcanic Monument entry station when you arrive. Please be prepared to cover this cost. The same will likely be required for any personal vehicles taken to the Lava Butte site on Thursday.

COVID PRECAUTIONS: COVID mitigations may change as community levels fluctuate and the pandemic evolves. The board will decide if additional measures are needed as we get closer. Please be respectful of your colleagues and friends and adhere to what's asked of you. We're all in different places with our own personal comfort levels and health concerns, as well as those of family members in our care. Be prepared to wear a mask when carpooling. Respect personal space. Wash your hands (we'll have handwashing stations available).

If you have any questions that aren't addressed here, please reach out to Sarah Hash at sarahjanehash@gmail.com or (276) 356-8335. We'll share more detailed information and last-minute reminders about a week ahead of time.

Registration is Live!

REGISTER HERE: https://www.oregonsoils.org/events/event-registration/

Andisols in Oregon

Markus Kleber

Soils in the vicinity of volcanoes are distinct in ways that can be easily observed in the field and readily demonstrated in the laboratory. Given the extent of volcanic systems around the globe, it made sense to recognize and represent the uniqueness of these soils in soil classification systems, giving rise to the Andisols of Soil Taxonomy and to the Andosols of the World Reference Base for Soil Resources. To do so it was necessary to develop criteria that can effectively separate Andi/Ando- sols from other soils that may also be associated with volcanic systems, but lack the special "andic" properties that make the "Andisols" distinct from their taxonomic siblings.

When we look at the definition of andic properties in US Soil Taxonomy (Box 1), we first (**item 1 in Box 1,** *next page*) find that the initial concern is to keep the often very organic matter rich Andisols separate from soils whose properties are entirely determined by their high organic matter content (such as Histosols). Consequently, a soil whose organic C exceeds 25% (equivalent to 50% of organic matter) can not be placed in the Andisol category.

We then notice two sets of conditions that will lead to identification as an Andisol. **Item 2** lists a

- physical (low bulk density), a
- chemical (high positive charge, determined by the retention of the phosphate anion) and a
- mineralogical (the presence of short range ordered minerals, tested through the ability of the organic complexing agent oxalate to extract Al and Fe from those minerals) requirement,

all of which have to be met to satisfy andic properties. For the purpose of the brief discussion presented here, we will call these the "true" andic properties.

Item 3, however, seems to use these same parameters in a much less rigorous manner. Lesser chemical reactivity (phosphate retention) and lower proportions of short range ordered minerals now suffice, if the fraction of sand and silt-sized mineral particles is larger than 30 % and if the soil contains at least 5% of volcanic glass.

At first sight, this approach seems quite inconsequent. Why define a set of straightforward, rigorous criteria (low bulk density, high P-retention and high abundance of poorly crystalline minerals) only to abandon that rigor immediately and create another requirement that seems to have the same parameters at a significantly less rigorous level? The answer is reflective of an issue common to all forms of science. In the beginning (say first half of the 20th century), a certain concept regarding the nature and properties of the object of interest (in this case, soils of volcanic systems) emerged. As soon as research activities to understand and constrain the properties of these soils got underway, a broad realization of the complexity of the challenge emerged and made a more differentiated view of the matter necessary. A good place to start here is an essay by Simonson (1979) on the origin of the name "ando soils". Simonson reports:

> The name "Ando soils" originated as a result of reconnaissance soil surveys made in Japan by American soil scientists between 1945 and 1949, inclusive. Mapping units in those surveys were associations of phases of great soil groups as the latter had been defined in *Soils and Men* (Baldwin et al., 1938). From the beginning of the program, however, it was recognized that soils derived from volcanic ash fit poorly into any of the great soil groups in the current American system. Such soils had been called Brown forest soils, Black forest soils, prairie-like Brown forest soils, Black soils, Onji soils, and volcanic ash soils in Japan. In their morphology, the soils were most like those of the Prairi (Hapludoll) and Brown Forest (Eutrochrept) groups recognized at the time in the United States. In their composition and chemistry, however, the soils were markedly different from the Prairie and Brown Forest groups and were closer kin to Podzols.

A decision was made to propose a new great soil group in the American system. In 1947, W.S. Ligon, in Japan at the time as the principal soil scientist , wrote a memorandum recommending that these unusual soils should be set apart as a new great group in the intrazonal order. This recommendation was approved by the USDA in the same year and the soils were subsequently identified as "Ando soils" (still with an "o" at that

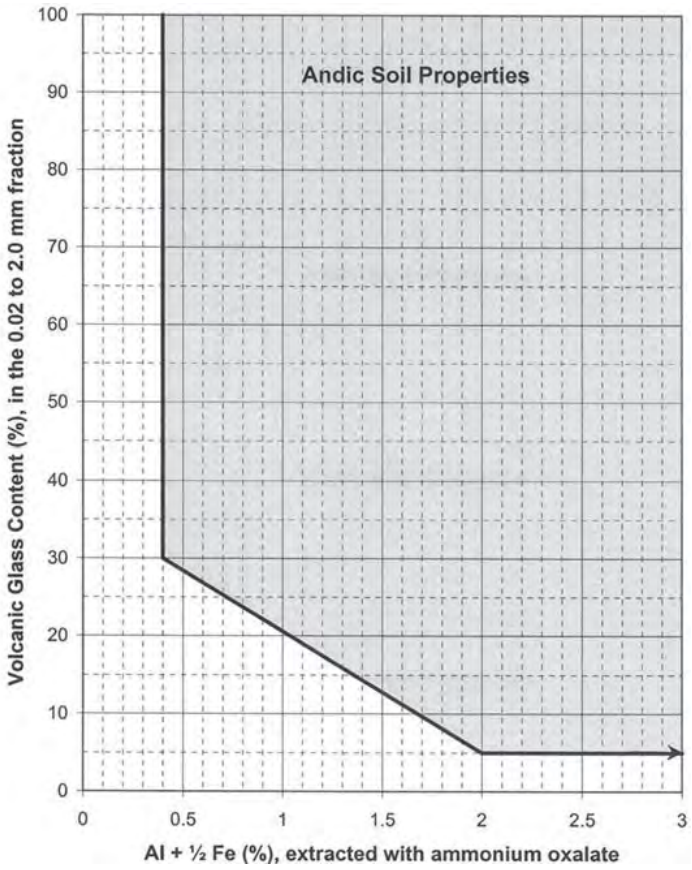
Box 1: Andic Properties

Soil materials with andic soil properties must have a fine- earth fraction that meets the following requirements:

1. Less than 25 percent organic carbon (by weight) and *one or both of the following:*

2. *All of the following:*
a. Bulk density, measured at 33 kPa water retention, of 0.90 g/cm³ or less; and
b. Phosphate retention of 85 percent or more; and
c. Al plus 1/2 Fe content (by ammonium oxalate) equal to 2.0 percent or more; or

3. *All of the following:*
a. 30 percent or more of the fine-earth fraction is 0.02 to 2.0 mm in size; and
b. Phosphate retention of 25 percent or more; and
c. Al plus 1/2 Fe content (by ammonium oxalate) equal to 0.4 percent or more; and
d. Volcanic glass content of 5 percent or more; and
e. [(Al plus 1/2 Fe content, percent) times (15.625)] + [volcanic glass content, percent] = 36.25 or more.



Soils that are plotted in the shaded area meet the andic soil properties criteria c, d, and e under **item 3** of the required characteristics. To qualify as soils with andic properties, the soils must also meet the listed requirements for organic-carbon content, phosphate retention, and particle-size distribution.

time) in the initial report of the reconnaissance soil survey of Japan (Austin 1948).

The criteria used to identify those soils were

- soil is derived from volcanic ash

- high in organic carbon (commonly around 7.5 % and reaching up to 15%, hence the dark color), with C/N ratios between 13 and 25

- moderately to strongly acidic

- low levels of exchangeable bases (Ca,Mg,K,Na) but high levels of exchangeable Al

- a high silica to sesquioxide ratio (i.e., SiO2/Al2O3+ Fe2O3 close to or greater than 1)

Both major soil classification communities, the FAO (Unesco Soil Map of the World, now called the World Reference Base of Soil Resources) and the USDA (US Soil Taxonomy) subsequently began the work to define the criteria that would allow for the Ando soils to be properly distinguished from other soils. The respective FAO working group created the major soil group of Andosols for the 1974 Soil Map of the World, while US Soil Taxonomy initially treated the Ando soils as a suborder among the Inceptisols until their elevation to full soil order in 1990 (Soil Survey Staff, 1990).

The process of clearly distinguishing Andisols (as per US Soil Taxonomy) and Andosols (as per FAO/UNESCO Soil Map of the World) from other soil orders had to resolve several issues. First, a more refined, quantitative understanding of the properties that qualify a soil as an Andi-/Andosol needed to be developed. The second challenge then was the decision where to draw the boundaries to adjacent soil orders. The latter also reflects the desire for classification to ideally identify and emphasize the pedogenetic principles responsible for the development of the soil order in question. The first major milestone towards a central concept of what an Andisol is or should be was the Andisol proposal by Smith (1978), who proposed that "*the central concept of Andisols is that of a soil developing in volcanic ash, pumice, cinders, and other volcanic ejecta and in volcaniclastic materials, with an exchange complex that is dominated by X-ray amorphous compounds of Al, Si, and humus, or a matrix dominated by glass, and having one or more diagnostic horizons other than an ochric epipedon*".

Figure 1: Mazama ash (far right, towards fingertips) and beginning pedogenesis from a shallow soil north of Crater Lake, OR.

This original concept focused on parent materials with a volcanic origin but did not define a central concept in terms of soil development as it included, on the one hand, soils with dominant amounts of "amorphous compounds" and humus and, on the other, soils with a matrix dominated by volcanic glass (Parfitt and Clayden 1991). The matter was made even more difficult when it became clear that the precise conditions required for "true " andic properties (low bulk density, high P-retention, presence of a highly reactive mineral matrix) may arise from soils that have developed from non-volcanic parent materials. The resulting conflict involved the reconciliation of multiple challenges. These can be listed as:

- separate out soils with unique chemical and physical properties, to make the new Andisol soil order a distinctive category

- account for soils that meet the requirements of "true" andic properties, but developed from non-

volcanic parent materials (the non-allophanic or alu-andic Andisols)

- find a taxonomic home for soils that derive from pyroclastics but have not quite developed the above mentioned, "true" andic properties to their full extent (the soils with vitric properties)

- try to define a pedogenetic process regime that is shared by all of the soils included and

- express all this in a set of taxonomic requirements that are logical and comprehensive.

The ensuing process to achieve this goal is documented in the final report of the ICOMAND Committee (Leamy et al 1990) and led to the 1990 revision of US Soil Taxonomy. However, the two major global soil taxonomy systems chose slightly different approaches to implement taxonomic change. The World Reference Base (former Soil Map of the World) distinguishes between vitric properties (soils that are considered andisols because they have so much volcanic glass) and "true" andic properties (soils that are considered andisols because they are so reactive) to highlight the quite different characteristics between these types of Andisols. Among the soils having "true" andic properties, the WRB also distinguishes between between those whose reactivity is based on the presence of allophane and imogolite (the silandic Andosols) and those whose reactivity is based on the dominance of Al-humus complexes (the alu-andic). Soil Taxonomy opted not to introduce separate "vitric" soil properties and proceeded with a joint definition of andic soil properties as shown in Box 1

Figure 2: Non-allophanic Andisol (Klootchie soil series: Medial, ferrihydritic, isomesic Typic Fulvudand) visited at Oswald State Park, OR, during 2015 OSSS Winter Meeting

Takeaway for the Oregon-based soil aficionado

Oregon (and Washington State) are probably the only states of the US that can boast all three genetic types of Andisols:

1. the High Cascades (Tombstone Pass if you are looking for an easily accessible location) have the classic allophanic Andisols, i.e. the ones that owe their high reactivity to the presence of short range ordered aluminosilicates such as allophane and imogolite
2. At the Oregon/Washington coast (Tillamook forest), we find soils that meet the criteria for "true" andic properties but owe their characteristics to the presence of Al/Fe-humus complexes (Figure 2)
3. On the eastern slopes of the Cascades (Major Land Resource Area 6) we have the Andisols that are included in the Andisol order because their matrix is dominated by volcanic glass (Figure 3)

Accordingly, it is not surprising that Oregon soil scientists played important roles in identifying and lobbying for the inclusion of these soils in taxonomy. John Baham (Baham and Simonson 1985) of Oregon State University published the first paper demonstrating the existence of non-allophanic Andisols at the Oregon Coast (also among the very first reports of the existence of such soils worldwide), while Oregon NRCS soil scientist Thor Thorsen was among the organizers of the First International Soil Correlation Meeting (Kimble and Nettleton, 1987) in 1986. During the latter meeting and associated field trips, the rationale for in-

Figure 3: "vitric" Andisol (Wanoga soil series: Ashy, glassy, frigid Humic Vitrixerand) visited at Five Kingdom Farms near Sisters, OR,

cluding the coarse textured, pumice and ash dominated "vitric" soils into the Andisol order was convincingly demonstrated.

—Markus Kleber (OSSS Member and field trip pitmaster)

Photo Credits: Markus Kleber

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Markus introducing and protecting the pit face at the 2022 OSSS Winter Meeting
Photo credit: Marissa Theve

2022 Oregon Envirothon Live and Hands On!

The 2022 Oregon Envirothon hosted about 140 students this May in person at the Oregon Garden. 28 teams competed in aquatics, forestry, wildlife, soil and land use, and the special topic: waste to resources. Congratulations to Logos Charter School's team The Rogue Pack for winning overall and qualifying for the international competition, followed by Churchill High School's Sustainable Salamanders and Sutherlin High School's FFA team. The best score for the soils and land use portion was also the Rogue Pack! Way to go! Participating students enjoyed hands-on interactions with natural resources this year including a soil texturing station, soil tool identification, map reading, and questions about a Jory soil monolith. For folks looking for soil education resources, you can find past years' tests and the manual here. The Oregon Society for Soil Scientists proudly sponsors the event each year with a small donation, thanks to our members. - *Marissa T.*

2022 Oregon Envirothon soil station volunteers Julie, Marissa, Kaitie, Heidi, and Sienna

2022 Oregon Envirothon soil station participants

Message from Your Interim Editor

There's been a change up!

I'd love to take a moment to recognize the great work that Katie Chambers did in her role as the OSSS *Sharpshooter* editor. Sadly for us, she has moved on to work for the Bridger-Teton National Forest in Montana. Congratulations Katie! Until we meet again for the annual membership meeting this winter, I've agreed to step into the editor role.

Got some writing, events, or images to share with your fellow Oregon soil nerds? Please send them my way at mtheve@blm.gov. Cheers!

—Marissa Theve

Empower Yourself with NCSS Soil Laboratory Data

Data from the National Cooperative Soil Survey (NCSS) Laboratory are readily available online. Also called characterization data, each data set results from a battery of physical and chemical analyses that provide a complete picture of a soil profile, horizon by horizon. Such data is useful for studying pedogenesis within individual soil profiles and for taxonomic classification. Methods and units used on lab data sheets conveniently correspond with those in *Soil Taxonomy*.

Samples come from thousands of locations across the United States, and a smattering of international locations. About 1,500 are from Oregon. Many were collected while making and updating soil surveys. Others were collected for special studies by university or other partners. The earliest samples date from the 1930s, and the Kellogg Soil Lab continues to analyze new samples today. The Kellogg Soil Lab is located in the National Soil Survey Center in Lincoln, Nebraska.

You can search for characterization data by soil series name, location, or other attributes from the Lab Data Mart. Lab reports display as a web page or can be downloaded in aggregate to .csv format. A script for working with lab data in R software environment is also available.

I usually browse the data through the webmap because soil locations display over a base map. Whether you are "desktop sightseeing" or doing serious research, the webmap's geographic element makes browsing lab data just plain fun. Several lab reports for each location are available with a single click.

The **Pedon Description Report** can be a good place to start since it begins with a field description (without lab data). This can provide a feel for the soil profile. It also gives information on geomorphic setting, soil parent material, and vegetation.

Most of the data resides in the **Primary Lab Report**, which is a collection of tables consisting of soil horizons (table rows) and names of analyses (columns). The **Supplementary Lab Report** is based on the same data, except it has been recalculated for engineers. Finally, the **Water Retention Report** contains moisture retention curves for soil clods.

If you're new to reading data sheets from the Kellogg Soil Lab, the following table explains a few key data fields. You can also refer to the Soil Survey Laboratory Information Manual for more detailed information about the significance of each analysis. The Soil Survey Laboratory Methods Manual records step-by-step lab procedures.

Below the table are several primary lab reports exemplifying a few distinctive Oregon soils, including representatives of the Andisols categories in the article by Markus.

Happy lab data browsing! -*David Rand*

Data Sheet Tier	Key Field	Tips/Remarks
CONSIDER READING THESE FIELDS FIRST		
Bulk Density & Moisture	Ratio/Clay - 1500 kPa	Before taking sand, silt, and clay at face value, check the 1500 kPa water:clay ratio. Values >0.6 can mean clay-sized particles failed to disperse during particle-size analysis, making sand, silt, and clay values less meaningful. Andisols that contain poorly-crystalline clays have values much greater than 0.6, giving lab-measured sand, silt, and clay little correspondence to field estimates. On the other hand, values 0.4 to 0.6 usually mean sand, silt, and clay measurements should align with field estimates.
PSDA & Rock Fragments	Rock fragments - (all fields)	Most field soil descriptions estimate fragment VOLUME, so be aware these fields display fragment WEIGHT.
PSDA & Rock Fragments (and subsequent tiers)	Prep	The "Prep" column tells you whether results came from samples that were air-dried (S) or field-moist (M). "S" is the standard preparation.
pH & Carbonates	pH - H2O 1:1	The lab uses several pH methods. This one equates to what most people call "soil pH."
FERTILITY		
Carbon Extractions	Total C, Est OC	Total carbon (TC) and estimated organic carbon (Est OC) should display nearly the same value unless the soil contains calcium carbonate. Willamette Valley soils such as Woodburn often have 1.5 to 4 percent OC in A horizons. Histosols have at least 12 to 18 percent OC. *Organic matter* is always greater than OC. Multiplying OC by 1.7 approximates organic matter content.
CEC & Bases	CEC7 NH4 OAC	Cation exchange capacity (CEC) at pH 7 is the most common measure of nutrient-holding capacity. Clay quantity, kind, and organic matter content contribute to this figure. The lab adjusts the sample to pH 7 to facilitate comparisons between soils. However, if the soil is naturally acidic this figure will not provide the actual CEC.
	Base Saturation - NH4 OAC	Percent base saturation by ammonium acetate tells you what proportion of the soil's nutrient-holding capacity (CEC7) is truly occupied by positively-charged plant nutrients (H+ and Al3+ are excluded). According to Soil *Taxonomy*, mollic epipedons must have values of 50 percent or more. Acidic soils tend to have low base saturation.
	Base Saturation - Sum	*Soil Taxonomy* uses this type of base saturation to define Alfisol and Ultisol soil orders.
Clay Mineralogy (<.002 mm)	X-Ray - peak size	This is a qualitative interpretation of clay mineralogy from X-ray diffraction. Crystalline clay minerals produce distinctive "peaks" which lab staff identifies with a two-letter code. The number following the code indicates magnitude. Multiple peaks can occur within a single sample.

Data Sheet Tier	Key Field	Tips/Remarks
ARID and SEMIARID SOILS		
Salt	Elec Cond	Electrical conductivity (EC) measures soil salinity. Salt-sensitive plants show signs of stress when EC is 2 dS/m or more.
	Exch Na, SAR	Exchangeable sodium percent (ESP) and sodium adsorption ratio (SAR) can indicate situations where sodium is agronomically detrimental. Natric horizons have ESP of 15 or more or a SAR of 13 or more. Sodic soils also usually have pH>8.5. The highest values occur where plant roots access shallow groundwater, translocating and concentrating salts near the soil surface.
pH & Carbonates	Carbonate as CaCO3	Calcic horizons require at least 5 percent. Calcium carbonate is usually absent when pH<7.
ANDIC SOIL PROPERTIES		
Sand -Silt Mineralogy	Optical Grain Count	This field is used to approximate percentage of volcanic glass in Soil *Taxonomy*. In the lab, minerals are identified with a petrographic microscope and reported as a percent of the total grains counted. Grain counts are commonly extrapolated to the entire soil layer, even though only one or two sand or silt fractions are analyzed (coarse silt to fine sand). Five percent volcanic glass (including "glass," "glass-coated aggregates," and "glass-coated grains") is an important threshold for andic soil properties.
Phosphorous	Phosphorous - NZ	Phosphate retention, New Zealand method.
Bulk Density & Moisture	Bulk Density - 33 kPa	This is the oven-dry weight of the soil divided by its volume when moist (33 kPa tension). Rock fragments are excluded from the calculation. Soils with low values are light, fluffy, and easy to excavate. The lab performs this analysis on natural clods. Sometimes this field is null because clods can't be extracted from sandy or very rocky horizons.
Carbon & Extractions	Ammonium Oxalate Extraction - Al+1/2 Fe	Ammonium oxalate extraction removes aluminum from poorly crystalline minerals such as allophane (see Box 1 in Kleber article in this issue).
	Na Pyro-Phosphate - Al	Sodium (Na) pyrophosphate extraction measures aluminum chemically bound with humus. The ratio of this value to ammonium *oxalate*-extractable aluminum can indicate whether andic soil properties arise from Al/Fe-humus complexes (when the ratio approaches or exceeds 1) or from poorly-crystalline minerals such as allophane (ratio approaches 0) (Kleber, 2019).

Lab Report Examples

Non-allophanic, non-volcanic Andisol. Located in Oregon Coast Range near field trip stop #1, 2019 OSSS Winter Meeting.

Allophanic Andisol with volcanic ash influence. Located in H.J. Andrews Experimental Forest, west slope Oregon Cascades.

Andisol dominated by volcanic glass (LaPine series). Located at Chemult, OR.

Missoula Flood deposits (Woodburn series). Located near McMinnville, OR.

Loess soil with salts. Located in Malheur County, Oregon.

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Pedology at OSU: You may have heard that OSU advertised to hire a Pedology professor last Spring? After a full interview process, the search got canceled by the Dean of the college due to a letter of concern she received about the process. The faculty was told that the position would be reposted, but that hasn't occurred yet. If you have an opinion on whether or not it is important for the Soil Science Department at OSU to have a pedologist on faculty, please contact the Department head, Tom Chastain, and let him know. - *Alicia*

We need support to continue Service Learning @ OSU!

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OSU Crop and Soil Science has led the way for STUDENTS! – The Future, OUR Future…REALLY!!!

Please contribute – ANY AMOUNT will help us keep our program alive – FOR THE STUDENTS!!!

For the last 10+ years, our introductory Soil Science class (SOIL 205 – typically 30+ majors!) has included Service Learning Projects as part of the class. EVERY STUDENT participates in MEANINGFUL soils-related Service Learning (teams of 6 for 4 hours) through literally HUNDREDS of community projects – making REAL impact, providing CONTEXT, creating life-long INTERESTS/ RELATIONSHIPS/OPPORTUNITIES – to our undergraduate students. Projects range from community gardens, riparian restoration, trail building, local and county parks plantings and clean-ups, tree plantings, pioneer cemeteries, vineyards and berry farms, the student farm, and MUCH MUCH MORE!!!

For many students this has been THE TRANSFORMATIVE experience that truly jumpstarted their learning, their interests, their passion - and some have even made education/career changes! Some even credit their hands-on experience with KEEPING THEM IN SCHOOL!!! I can think of literally DOZENS of students who now credit their one Service Learning Project as the thing that lit that fire, that changed what they wanted to do - and are now DOING IT!!!

Students are Struggling to Connect - With these past years of significant loss of connection for students in classes and with each other, Service Learning provides a REAL opportunity to connect with their peers, their interests, and THEMSELVES in a way that cannot happen in the classroom (let alone on-line)…

- **15,424 hours of service**
- **3,856 students**
- **659 different projects**
- **49 community organizations**

Service Learning: Support Hands-On, Community-Based | Beavs Give

-James Cassidy

End of Year Treasurer's Report
Fiscal Year 2021, 7/1/21 – 6/30/22

Income for FY21 totaled **$ 9,378** as follows:

$ 3,710 for memberships (50 regular, 7 student, 2 lifetime)

$ 100 for a Sharpshooter advertisement

$ 793 for OSSS merchandise (caps, puzzles, Tshirts, stickers, and patches)

$ 4,775 for winter meeting registrations (26 regular, 23 student)

Expenses for FY21 totaled **$ 11,504.09** as follows:

$ 1,500 two scholarships (1000 and 500)

$ 300 for 3 student poster prizes at winter meeting

$ 2,670.18 board retreats for two years (overlapped in this FY, will only be one next year)

$ 919.60 purchase of caps, puzzles, stickers, patches and an OSSS banner

$ 395 liability insurance

$ 279.23 fees for online transaction processing

$ 166 mailbox rental and postage

$ 21.17 GoDaddy domain renewal

$ 70 annual State of Oregon (SOS and DOJ) reporting fees

$ 55.92 masks and nametags

$ 4,597.81 catering at winter meeting (Worthy Brewing)

$ 529.18 winter meeting speaker travel reimbursement

Umpqua Bank Balance **$ 12,723.30**

Notes:

We spent $ 2,126 more than we brought in last year. The doubling up of board retreat, which won't happen again, added over $1,000 in expenses. However, we received two new lifetime members which is a one-time boost of $1,000. Last year was a successful year for membership renewal and we need to continue that trend.

Your OSSS board has prepared a FY22 budget (7/1/22 – 6/30/23) that keeps us in the black except for scholarships. Each year the board decides how many (if any) scholarships to offer based on special fundraisers, donations, and overall bank balance. In 2023 OSSS will again give two scholarships - 3rd year in a row! We have other potential educational mission projects including Envirothon, Soil Judging and outreach talks. OSSS serves the very important function of providing soils expertise to a wide range of audiences. We never know what might come our way each year! Fortunately, thanks to our dedicated members and board leadership, I'm happy to report we still have a solid bank balance that allows us to respond to worthy opportunities.

- Pam Keller

OREGON SOCIETY OF Soil Scientists

The Sharpshooter is the official quarterly newsletter distributed to the members of the Oregon Society of Soil Scientists. Send address changes or inquiries about membership to: osss.pres@gmail.com or OSSS | P.O. Box 391 | Corvallis, OR 97339

Membership Rates:

$50.00 Regular Member

$30.00 Student Member

$500.00 Lifetime Member

OSSS Webpage: www.oregonsoils.org

We always welcome article submissions and news from soil scientists near and far!

Advertisements

The Sharpshooter newsletter is digital and emailed to over 500 soil science professionals and is also published on the OSSS website, www.oregonsoils.org

Whole page—$100 1/2 page—$50

Please provide a digital file (min. size of 300 DPI) by 5th of the month—February, July, and October. Email the file to osss.pres@gmail.com and to osss.treasurer@gmail.com If no confirmation is received, call Pam Keller at (503) 334-7345.

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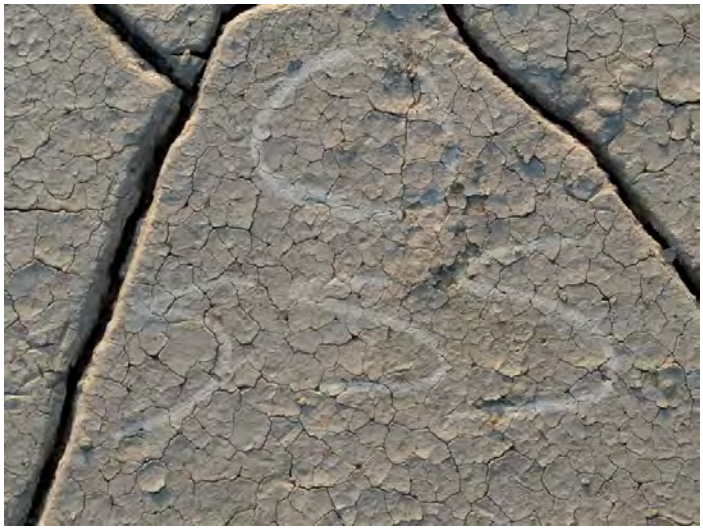

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