



VOL. XXI, NO. 4  
FALL 2008

What's Inside This Issue:

- President's Message
- Summer Tour Report
- Westside Notes
- Soil Consultants
- Dates to Remember
- Student Internship Opportunity

## President's Message

by James Cassidy



Hello OSSS members! Hope you are having a wonderful fall. The weather has been absolutely amazing here on the west side and I am in full swing teaching our Introduction to Soils classes here on the OSU Main Campus in Corvallis. I have been teaching these courses now for over four years and I see a steady increase in students who "get it" more and more all the time, and that is very encouraging. These introduction classes continue to have maximum enrollment and I am energized by the level of interest in soil. It really gives me hope for the future. I have a very diverse group of students and I am always happy to pass on to them any internships, special projects, natural resource-related conferences, or jobs you might know of that might be appropriate. Please forward on to me anything you think might be of interest to my students as I connect with about 300 students per year!

On another note, the OSSS Winter Meeting is fast approaching - the dates are February 19-21, 2009 and will be held near the PSU Campus at the University Place Hotel and Conference Center. I chose this location due to its central location to downtown Portland and its proximity to Scott Burns! Seriously, I looked into a number of locations that would be fun but for the money and location, it was simply impossible to beat. The theme for this winter's conference is the **Soil/Human Interface** and we have many opportunities for good speakers and a tour or two. I have not completely booked the speakers and am open to suggestions. Please contact me if you would like to speak or have ideas for speakers. More information on the Winter Meeting will be coming your way soon.

Finally, I wanted to thank all of you who were able to make the Summer Tour. As you may recall the theme was **Alternative Agriculture: Sustainable, Organic, Biodynamic** and the tour really was a great success. We had over 40 people attend and we visited a number of Willamette Valley farms, had a great lunch (and beverages!) at Airlee Winery and finished up at Gathering Together Farms for a very nice dinner - thanks again everyone who attended, it was really fun.

OK then, please enjoy the awesome fall weather, get out there and experience reality! See you this winter in Portland!

### **Hey folks – read this!!!**

**Our membership database is being updated and we are asking for you to take a minute to get current on your dues! Please note that only current, paid-up members will receive the biannual hardcopy of the Sharpshooter. The hardcopy Sharpshooter has important information regarding upcoming OSSS events, meeting registration forms, address/email correction request forms and much, much more. So if you are not up-to-date, you're not getting the half of it!**

**Please pay your dues TODAY!!!**

# OSSS 2008 SUMMER TOUR

by Ed Horn

James Cassidy put together a great summer tour looking at alternative agriculture in the Willamette Valley. The theme was **Alternative Agriculture: Sustainable, Organic, Biodynamic**. We started from the Oregon State University campus Agriculture & Life Sciences Building next to the compost observatory and outdoor teaching laboratory. Students run experiments here on different composting methods, looking at plant decomposition rates throughout the school year. We boarded a 30-passenger air-conditioned bus and drove to our first stop at the **OSU Organic Growers Club Farm**. This is a student-run organic farm that lets students try their hand at growing food using organic farming methods. Students work at the farm during breaks in their schedules and James lures them out for weekly work outings by cooking them dinner. We looked at the new drip irrigation system that was installed at the farm and also got to poke around in a pre-dug soil pit, which contained a plow pan produced through continuous conventional tillage.



Markus Kleber shows us a plow pan at the Organic Growers Club Farm.

The second stop was **Stahlbush Island Farms**. Tracey Miedema explained the workings of the farm to us. This is a large, corporate, environmentally-friendly farm and food processor committed to sustainable agriculture and to delivering high quality food products. They process their vegetable products through a patented IQF (Individually Quick Frozen Foods) process to retain the maximum nutrient value. We got a chance to sample some of the organic vegetables, berries, grains, and puréed products that Stahlbush produces. Stahlbush is the largest producer of marionberries in the world and we were told that the marionberry was named after Marion County and is a cross between a wild blackberry and a boysenberry. Stahlbush uses a



Dan Cressy sampling IQF vegetables at Stahlbush Island Farms.

skilled labor force and state-of-the-art technology such as GPS and EcoDan camera tracking systems to increase tillage accuracy and to be able to reduce the row width between plants. Reducing the row width translates over time to big savings in weed eradication, which means fewer tillage operations, reduced fuel consumption, and less chemical herbicide use. Stahlbush also has modified a foliar sprayer to reduce spray waste from spraying plants. The sprayer has pans that capture the excess spray to recycle it back for re-spray. Traditional spray systems waste 50 percent of the spray. Stahlbush uses other sustainable farming practices such as conservation tillage, crop rotation, cover crops, and computerized irrigation systems that use less water, along with an intensive monitoring program for increasing efficiency. Solar power is being developed for their irrigation systems.

The third stop was **Wilt's Blueberry Farm**. Bob Wilt, until about four years ago, was applying conventional agricultural practices. He noticed a reduced trend in plant vigor and yield, and knew he could not continue this path and remain in business for long. He consulted a soil biologist and found that his soil was almost completely sterile from using pesticides and inorganic fertilizers. The solution was to restore the soil biology by switching to organic farming methods, using composts and compost teas. He now studies the science involved and applies what he learns to his blueberry operation. Wilt started with a modest composting program, yielding 1000 cubic yards of compost per year. This was not nearly enough to meet his needs. Now he composts big time and sells the excess at \$50 per cubic yard. Wilt's wind-rowed compost piles are sixteen feet wide and seven feet high. There are multiple piles in different stages of decomposition. All of the organic material comes from local farms (vegetative residue like mint straw and horse, chicken and cow manures). Composting can be manipulated so it is dominated by bacteria or fungi. Bacteria dominated compost is best for applying to the soil for growing vegetables and herbs. Fungi dominated composts are best for mulching around berries and fruit trees.



Mr. Compost himself—James Cassidy on his element—at Wilt's Blueberry Farm.

For a bacteria dominated compost you need 25% high nitrogen source such as animal manure, alfalfa, peas or clover, 45% green vegetation, and 30% high carbon material such as wood chips, sawdust, straw, etc. These ingredients are mixed and brought to the correct moisture content, and piled into compost piles. The composting cycle takes about 14 weeks to complete. Compost piles need to reach temperatures in the 135 to 160 degree F range to kill weed seeds, human pathogens, most plant pathogens, and most root feeding nematodes. Piles need to be turned often enough to keep the temperatures within this range to avoid killing the beneficial microorganisms and to keep the pile aerated. It is important for the composting operation to be complete as with unfinished compost; soil organisms compete with plants for available nitrogen. The aged compost is used the following year and has 67% less volume than the original material. It is 47% carbon and has good mineral and nutrient content. Lime is added for calcium. Sometimes gypsum is substituted for lime yielding calcium and sulfur. Gypsum increases humate leaching from the compost into the soil. Humate is desirable for improving soil aggregate structure and nutrient holding capacity. Before Wilt began composting, his soil pH was 4.2. Now it is 6.2. Contrary to popular belief, blueberries are not acid loving. They are acid tolerant. Raising the pH was positive for his blueberries. Before composting, his soil was very hard. After composting, the soil is more friable or as Wilt puts it more “crunchy.” Healthier soil translates into healthier plants and less damage from insects and weeds.

Some of the compost is used to make compost tea. Compost tea is made by combining a mixture of bacterial compost and water, vigorously aerating the mixture for a couple of days, straining the liquid and immediately applying it to the soil or to the plant as a foliar spray. Wilt has four different tea recipes that he uses on his blueberries. Compost tea mixtures help reduce disease and provide nutrients to the plants. Wilt tests his soil biology—bacteria and fungal counts, for example. He said you have to have bacteria first to build the house for fungi to move into.

Starting an organic farming and composting operation requires a big capital investment. Wilt felt it was the way to go for long term benefits of soil health, sustainability, and increased yields. Advantages of organic berries for the consumer are longer shelf life, and higher nutrient and antioxidant content. Wilt is counting on having a niche market of consumers who are willing to pay a higher price for these berry qualities and for the environmental benefits of organic growing.

We loaded back onto the bus and drove out to the **Airlee Winery** for Stop #4, which was our lunch stop. Will Austin and Judy Haney set out a tasty lunch and we enjoyed a wine tasting offered by Airlee.



Bees pollinating berries at Hoskins Biodynamic Berry Farm.

Just down the road was our fifth stop at **Hoskins Biodynamic Berry Farm**. Jim Fullmer guided us on a walking tour of the farm. Biodynamics is a self contained method of agriculture where no outside source of nutrient input is needed for sustaining healthy soil and productive plant yields. It mimics the way agriculture was done in past times using simpler farming methods.

A big component of biodynamics is reintegrating livestock with agricultural systems. Not only is urine and manure adding organic matter and nutrients to the soil but it also fertilizes the grass that feeds the cattle. The crop land is farmed by using no-till methods to keep the soil covered. The livestock use the grass that grows between the crop rows. During the wet season livestock are moved to a barnyard to concentrate



Reintegrating livestock such as these Scottish Highland Cattle with agricultural systems at Hoskins.

effects of soil compaction in wet soils to a smaller area. The manure produced in the barnyard is collected, composted, and transferred to the crop land. Composting is also an important part of biodynamic farming. Compost materials are found from organic residues and livestock waste from the farm. No compost materials are brought in from the outside. In order for a farm to be certified as biodynamic, at least ten percent of its area must be set aside for the native ecology. Within the portions being farmed, the farmer must leave some native species interspersed with the crops. This will draw in native birds, insects, and wildlife that also are

important for sustaining the ecology of the farm. Biodynamic farms are generally around 40 to 80 acres. It is hard for a farm to be totally self-contained if it becomes too large. Hoskins produces cane and Chester berries and medicinal herbs, including red clover and yarrow.

The sixth stop was **Sunbow Farms**. Harry MacCormack was our tour guide. Sunbow Farms is an interesting place with many different ongoing experiments in sustainable living and farming. They constructed a building using clay, sand, straw, and manure similar to adobe. This building is used as a teaching center. We saw people separating grain seeds the old fashion way, by hand.

Sunbow Farms is looking for and experimenting with grain varieties from around the world that have the potential to be high producers on small farms for local markets. One of these plants is from South America, is related to the sunflower, and is very frost intolerant. The Japanese are big users of medicinal teas. Medicinal tea grown at Sunbow Farms has a long growing season. Leaf mulch and fish fertilizer is being used for these plants. Later on, the plant residues from these teas are added to potting soil mixtures. The tea plants are rotated with other crops. Last year it was with potatoes. Sunbow Farms is growing a plant from South America that is a combination of cucumber and squash. They are also growing Ameranth. Ameranth resists heat and drought, has no major disease problems, and is an easy plant to grow. It is high in protein and can be added to granola, bread, and to soups. Pigweed and lambsquarter are grown for green manure crops. They pull nutrients from below. The lambsquarter seed has a seed coating that protects it from birds. They do not like the taste. Perennial rye may be a food source when conventional energy for plowing becomes scarce. Farms may be going back to horse plowing if energy costs become too high. Harry showed us a spader with harrow on back that is adapted to planting in wetter conditions.



House wall made of clay, sand, straw, and manure at Sunbow Farms.



Spader tillage implement at Sunbow Farms.

They plant cold weather varieties of tomatoes that can survive with the existing precipitation and do not have to be irrigated. They are growing a potato that does not need irrigation also. Mulch is applied deep where the potato is planted. This effectively mulches in the moisture and keeps the soil cool even during the hottest weather. The mulch is brought in by a spreader.

Harry made the comment that farm land prices and equipment have become prohibitively expensive for young people to get into farming. We as a society need to come up with creative ways to allow young people to farm. One way is to create a fund that all members of a community contribute to. The fund is used to purchase lands that are placed under a trust for the young farmers to farm. Later, after a farmer becomes established, he or she can purchase the land from the community. This has been done in Minnesota. The benefit to the local community is that food does not have to be shipped long distances and the nutritional quality is better.

Our seventh and final stop was **Gathering Together Farms**. John Eveland was our tour guide and chauffeur, driving us around on the bed of an old flat bed truck, dog and all. Afterward we had a delicious salmon dinner seated outside on a covered porch. Sampling organic produce fresh from the farm was a highlight of this stop.

When Gathering Together Farms began, much of the land was in pasture. The pH needed to be raised. You cannot put too much lime on these soils for raising the pH. Gypsum was added to soils high in magnesium. The silty clay loam soils get too wet for equipment to work in the spring. Applying compost mulch helps. Whenever the land is tilled, ten tons per acre of compost is applied. This high compost application brought abused pasture land that was low in nutrients back into production. When compost is being created, water is applied and the piles are turned. The piles need to reach a core temperature between 140 to 160 degrees F before they are turned. They are turned a total of five times in two weeks and then less thereafter. In one pile there is rabbit manure and leaf mulch. In another, horse and chicken manure is used. The compost is allowed to cure just long enough to be legally called and marketed as compost. It is important that there will be enough nitrogen conserved for a top

dressing. Gathering Together Farms used to have a downy mildew problem. After they started using a compost tea foliar spray, the downy mildew problem disappeared.



Hoop greenhouse growing tomatoes at Gathering Together Farms.

Gathering Together Farms uses hoop greenhouses with durable plastic covers that can be raised from the bottom upwards for ventilation. The plastic lasts for five years. We saw Beef-steak tomatoes being grown in one of the greenhouses on trellises. Crops are rotated in the greenhouses to reduce the occurrence of pests and disease. Tomatoes grown in the winter require using smaller hoop houses within larger hoop greenhouses for frost protection.

There are crops covered with floating row covers for insect protection. These covers let water and air through and are particularly useful for mustard and arugula. Arugula is a spicy little leaf lettuce, which some describe as bitter and others characterize as having a "peppery-mustardy" flavor.



Cover crops are used to keep the land protected and are used in compost mixtures. The cover crop is allowed to get six feet high and then cut with a silage cutter to be brought to composting. Potatoes are mulched with leaves and covered with plastic. According to John, that was working well.

On the part of the farm where crops are grown for their seed, a drip irrigation system is used. A swimming pool filter works best for preventing river water sediment from blocking the drip lines.

The produce grown at Gathering Together Farms is sold at local farmers markets and at high end restaurants in Portland. It was a treat for us to get to eat at their high end restaurant right on the farm.

Thanks goes to James Cassidy for setting up this enjoyable tour and to our hard working and informative tour guides—Tracey Miedema from Stahlbush Island Farms, Bob Wilt from Wilt's Blueberry Farm, Jim Fullmer from Hoskins Biodynamic Berry Farm, Harry MacCormack from Sunbow Farms, and John Eveland and his exceptional staff at Gathering Together Farms. We also want to thank Will Austin and Judy Haney for providing us lunch, and finally to Dan Cressy for taking all the notes for this article.

## WESTSIDE NOTES

*by Steve Campbell*

New enhancements have been recently added to the Web Soil Survey. When this web site was launched a few years ago, the only aerial imagery available for soil maps was black and white, generally from the early 1990s. Now true color imagery is available for all of the Pacific Northwest. There is also an option to use USGS topographic map imagery for soil maps. Check it out at [websoilsurvey.nrcs.usda.gov](http://websoilsurvey.nrcs.usda.gov).

Long time OSSS member Matthew Fillmore was recently selected for the new MLRA (Major Land Resource Area) Soil Survey Project leader position in Salem. Matthew is responsible for all soil survey activities in most of western Oregon. Congratulations, Matthew!

The new Benton County, Oregon, soil survey report with digital maps is now available in PDF format on the web. Most other Oregon soil survey reports are also available as electronic files. You can view or download them at [soils.usda.gov/survey/online\\_surveys/oregon/](http://soils.usda.gov/survey/online_surveys/oregon/).

The Bureau of Land Management (BLM) and Natural Resources Conservation Service (NRCS) have been working together to develop soil survey interpretations (ratings) for rangeland management practices that include:

Chaining  
Compaction Resistance  
Fencing  
Fire Damage Vulnerability  
Fugitive Dust Resistance  
Medusahead Invasion Vulnerability  
Pygmy Rabbit Habitat

Rangeland Drill  
Rangeland Tillage  
Restoration Opportunity  
Rolling Drum Mechanical Treatment  
Shredder  
Site Degradation Vulnerability  
Yellow Starthistle Invasion Vulnerability

These interpretations will be added to the online soil survey database for Oregon soil survey areas that include rangeland in the next update to the data. This update will occur in December 2008. These rangeland interpretations will then be available on the Web Soil Survey and Soil Data Mart web sites ([soildatamart.nrcs.usda.gov/](http://soildatamart.nrcs.usda.gov/)).

West-siders, if you're involved with an interesting soils related activity that you'd like to share with OSSS members please contact me at 503-414-3009 or [steve.campbell@or.usda.gov](mailto:steve.campbell@or.usda.gov). We'll get your story in the next Sharpshooter. Thanks.

## CONSULTANTS' CORNER

*by Will Austin*

### **Will Austin, CPSS/SC**

1574 ILER Str. S.  
Salem, OR 97302  
Phone: 541-737-5731  
E-mail: [will.austin@oregonstate.edu](mailto:will.austin@oregonstate.edu)

### **Robert T Meurisse**

14145 SW 164th Avenue  
Tigard, OR 97224  
Phone: 503-590-5582  
E-mail: [meurisse@verizon.net](mailto:meurisse@verizon.net)

### **Joel A Norgren**

3655 NW Van Buren  
Corvallis, OR 97330  
Phone: 541-753-6064

### **Brian Rabe, CPSS/SC**

Cascade Earth Sciences, Ltd.  
3496 NW Scenic Drive  
Albany, OR 97321-9338  
Phone: 541-812-6639  
E-mail: [dbrabe1@email.msn.com](mailto:dbrabe1@email.msn.com)

### **Philip Small**

1412 W 7th Ave  
Spokane, WA 99204  
Phone: 509-838-4996  
E-mail: [psmall2008@landprofile.com](mailto:psmall2008@landprofile.com)

### **Dennis E Hutchison, CPSS/SC**

1578 Joelson Road  
Umpqua, OR 97486  
Phone: 541-673-9783  
E-mail: [pjhdeh@wizzards.net](mailto:pjhdeh@wizzards.net)

### **Roy C Meyer**

Trinity Consulting Service  
1515 NW Hawthorne Ave  
Grants Pass, OR 97526  
Phone: 541-476-9406  
E-mail: [roynbarbi@msn.com](mailto:roynbarbi@msn.com)

### **Richard L Polson**

4026 NE Davis St.  
Portland, OR 97232-3443  
Phone: 503-804-7614  
E-mail: [dirtclod1@mac.com](mailto:dirtclod1@mac.com)

### **Frank F Reckendorf**

950 Market St NE  
Salem, OR 97301-1130  
Phone: 503-364-6681  
E-mail: [frecken@mac.com](mailto:frecken@mac.com)

### **Steve Wert, CPSS/SC**

Wert & Associates  
2590 NE Courtney Drive #1  
Bend, OR 97701-7640  
Phone: 541-617-9100  
E-mail: [swert@bendbroadband.com](mailto:swert@bendbroadband.com)

# OSSS Student Internship Opportunity

Oregon Society of Soil Scientists is happy to announce the application for student volunteer internships. The OSSS board will offer 3 student volunteer internships for the 2009 society year from February 2009 to February 2010. The selected candidates for the internships will be awarded a one year student membership to the OSSS and will receive free full registration to the OSSS annual Winter and Summer meetings. Internship duties will include attending OSSS board meetings (4+ per year) and writing articles for the OSSS SharpShooter publication (4 per year) and be invited for presentations at meetings. Student interns will be expected to act as liaison to student members and attendees at the annual meeting and will help the OSSS board facilitate student activities at the annual meeting. Creativity and self motivation are a plus for these intern positions.

The OSSS board has agreed to accept one student intern from each of the interested Oregon universities with an organized student group (currently recognized are Portland State University, Oregon State University, and OSU Cascades).

## OSSS Internship Application

### Contact Information

Name	
Street Address	
City ST ZIP Code	
Home Phone	
Work Phone	
E-Mail Address	

### Affiliation

Name of University	
Class Standing	
Major	
Interests/Hobbies	
Reference	
Reference	

## Special Skills or Qualifications

Summarize special skills and qualifications you have acquired from employment, previous internship/volunteer work, or through other activities, including hobbies or sports.

--

## Previous Internship/Volunteer Experience

Summarize your previous experience.

--

## Person to Notify in Case of Emergency

Name	
Street Address	
City ST ZIP Code	
Home Phone	
Work Phone	
E-Mail Address	

## Agreement and Signature

By submitting this application, I affirm that the facts set forth in it are true and complete. I understand that if I am accepted as a intern/volunteer, any false statements, omissions, or other misrepresentations made by me on this application may result in my immediate dismissal.

Name (printed)	
Signature	
Date	



## Our Policy

It is the policy of this organization to provide equal opportunities without regard to race, color, religion, national origin, gender, sexual preference, age, or disability.

Thank you for completing this application form and for your interest in volunteering with us.

## DATES TO REMEMBER



**February 18-20, 2009:** Oregon Society of Soil Scientists Winter Meeting; Portland, Oregon.  
For more information: <http://osss.peak.org/>

**July 19, 2008 – January 3, 2010:** Smithsonian Soil Exhibit is Open, Washington, DC.  
Information available at <http://forces.si.edu/soils/>

**February 26-29, 2009:** Organicology Workshops, Networking and Trade Show, Portland, OR (Doubletree/Lloyd Center). For more information: <http://www.tilth.org/files/organicology/OrganicologyWebAgenda.pdf>

## Sharpshooter

The *Sharpshooter* is the official newsletter distributed to the members of the Oregon Society of Soil Scientists. Published quarterly by the Oregon Society of Soil Scientists. Address changes or inquiries about membership to:

OSSS  
Box 2382  
Corvallis, OR 97339

### Website and email address:

<http://osss.peak.org>  
email: [osss@peak.org](mailto:osss@peak.org)

## Advertisements

Reach more than a hundred soil science professionals with an advertisement in the *Sharpshooter*. And the price is right—whole page \$45, 1/2 page \$25, 1/4 page \$15, or 1/6 page \$10. All you need to do is provide a disk and hard copy to the *Sharpshooter* editor by the deadline (first of the month – January, March, June, and November).

All articles and advertisements submitted are subject to room available basis.

## News items

Remember all articles submitted to the *Sharpshooter* can be sent on 3-1/2" disk in most any DOS, MAC or ASCII format, along with a hard copy. In doing so, the *Sharpshooter* can get to you faster.

### Member rates

\$ 30.00	Regular member
18.00	Associate member
35.00	Sustaining member
10.00	Student member
300.00	Lifetime member

E  
X  
E  
C  
U  
T  
I  
V  
E  
  
B  
O  
A  
R  
D

### President: James Cassidy

ph: (541) 737-6810  
email: [james.cassidy@oregonstate.edu](mailto:james.cassidy@oregonstate.edu)

### Vice President: Daniel Moreno

ph: (541) 737-3217  
email: [daniel.moreno@oregonstate.edu](mailto:daniel.moreno@oregonstate.edu)

### Past President: Will Austin

ph: (541) 737-5731  
email: [will.austin@oregonstate.edu](mailto:will.austin@oregonstate.edu)

### Secretary: Kurt Moffitt

ph: (541) 923-4358 x 118  
email: [kurt.moffitt@or.usda.gov](mailto:kurt.moffitt@or.usda.gov)

### Treasurer: Ron Reuter

ph: (541) 322-3109  
email: [ron.reuter@oregonstate.edu](mailto:ron.reuter@oregonstate.edu)

### Westside Director: Steve Campbell

ph: (503) 414-3009  
email: [steve.campbell@or.usda.gov](mailto:steve.campbell@or.usda.gov)

### Eastside Director: Jenni Moffitt

ph: (541) 416-6700  
email: [jennifer\\_moffitt@blm.gov](mailto:jennifer_moffitt@blm.gov)

### Editor: Ed Horn

ph: (541) 416-2645  
email: [ehorn@aaahawk.com](mailto:ehorn@aaahawk.com)

### Membership Director: Will Austin

ph: (541) 737-5731  
email: [will.austin@oregonstate.edu](mailto:will.austin@oregonstate.edu)

### Publication Layout and Design: Tracy Mitzel

ph: (541) 737-5712  
email: [tracy.mitzel@oregonstate.edu](mailto:tracy.mitzel@oregonstate.edu)



OREGON SOCIETY OF SOIL SCIENTISTS  
P.O. Box 2382 • Corvallis, OR 97339