



# Country Living

Provided to you by the  
**OSU Extension Service Columbia County**  
505 N. Columbia River Hwy, St. Helens OR 97051  
Phone: 503.397.3462 ▪ Fax: 503.397-3467  
Email: [chip.bubl@oregonstate.edu](mailto:chip.bubl@oregonstate.edu)  
Office hours: Monday-Friday, 8 a.m. to 5 p.m.  
The office will be closed Fridays from Noon to 1 p.m.  
Website: <http://extension.oregonstate.edu/columbia/>

## August 2015

### Programs for you . . .

Listen to the *Gardening Spot* on KOHI (1600 am) radio - Every Saturday, 8:05 to 8:15 a.m.

- Aug. 4..... Scappoose Bay Watershed Council. 7 p.m., Scappoose Bay Watershed Council's office, Warren
- Aug. 6..... Demonstration Garden and other MG Extension Projects Planning Meeting. 10 a.m., OSU Extension Classroom, St. Helens
- Aug. 6..... Master Gardener™ Board Meeting. 10:30 a.m., OSU Extension Classroom, St. Helens
- Aug. 6-8 ..... OMGA Mini-College, McMinnville OR
- Aug. 11 ..... Lower Columbia Watershed Council. 7 p.m., SWCD office-35285 Millard Rd., St. Helens
- Aug. 12..... Twilight Tour. Cooney Family Apiary Tree Farm, 6-8 p.m., 69301 Apiary Rd., Rainier. See and discuss interesting plantings of commercial trees grown in Oregon; there will be an easy 1.5 mile walk (shelter provided for those who do not wish to walk).
- Aug. 19..... Soil & Water Conservation District. 7:30 p.m., SWCD office-35285 Millard Rd., St. Helens
- Aug. 22 ..... Rural Living Field Day. 8:30 a.m.-2 p.m., Sauvie Island, Portland - see back page
- Aug. 22 ..... Scappoose GardenFest. 9 a.m. to 4 p.m., Scappoose Senior Center, Scappoose
- Aug. 27 ..... Upper Nehalem Watershed Council. 7 p.m., Vernonia Grange, <http://nehalem.org/> 503-429-0869
- Aug. 30 ..... Columbia County Master Gardener's Annual Picnic. Noon to 3 p.m., Scappoose Bay Marina, Old Portland Hwy, Warren. RSVP to Wes Bevans by August 28 at 503-543-3725
  
- Sept. 12..... 4<sup>th</sup> Annual Small Farm School. 8am-4:30pm, Clackamas Community College, register at website: <http://smallfarms.oregonstate.edu/node/175835> (by September 7 or until filled), see back page

*Chip Bubl*

Chip Bubl, OSU Extension Faculty, Agriculture



Agricultural Sciences & Natural Resources, Family and Community Health, 4-H Youth, Forestry & Natural Resources, and Extension Sea Grant programs. Oregon State University, United States Department of Agriculture, and Columbia County cooperating. The Extension Service offers its programs and materials equally to all people.

## In the garden

### 2015 OSU Extension Canning Classes

Come learn how to safely can foods from your garden this season! Participants will practice making and canning recipes in the kitchen, and will process a jar to take home. Space is limited, so call soon to reserve your spot! Pre-registration is required.

#### Where:

Columbia Soil and Water Conservation District Office  
35285 Millard Road, St. Helens, OR 97051

#### When:

Tuesday August 11<sup>th</sup> ~ [Pickling and Fermenting Vegetables](#)

Tuesday August 25<sup>th</sup> ~ [Canning Tomatoes and Salsa](#)

Tuesday September 8<sup>th</sup> ~ [Preserving Fall Fruits](#)

Tuesday September 22<sup>nd</sup> ~ [Pressure Canning Soups](#)

#### Time:

3:00 pm to 6:00 pm

#### Cost:

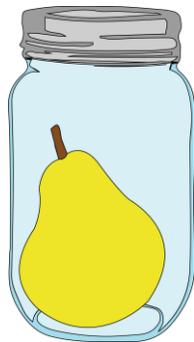
\$25 per class. Some scholarships are available. Call the Extension office to inquire.

#### Registration:

Call the OSU Extension Service: 503-397-3462

Or register online at:

<http://extension.oregonstate.edu/columbia>



## Heat and crop growth

Year	4/1-7/25	7/26-10/31	% 7/26-10/31 is of total	Total degree days
2015	1516	(1779)	(54%)	(3295)
2014	1281	1489	53%	2770
2013	1195	1202	50%	2397
2012	983	1184	55%	2167
2011	753	1090	59%	1843
2010	863	1053	55%	1916

*Note numbers for 2015 projected past 7/25/2015 based on pattern in 2015 to date for Scappoose. If based on the average heat units in the 7/25=10/31 time period (1203) the total would be 3032.*

Crops grow in response to temperature, water, fertilizer, and light. For irrigated crops like vegetables, we supply the water and fertilizer. We can marginally influence light captured by the leaves by when we plant, the pattern and spacing between plants we use, and the effectiveness of our weed control. We can influence temperature when plants are young by using row covers to capture heat around the seedlings and by planting in raised beds or locations that drain well to maximize soil warming. But ultimately, crop growth is spurred or slowed by the heat the crop gets.

This has been a very warm year. The table above compares the heat units (also called growing degree days) for Scappoose over the last six years. The numbers represent a “base heat accumulation between 50 and 85 degrees” calculation that tracks with the temperature “sweet spot” of sweet corn and a lot of other vegetables reasonably well. It is how the “days to harvest” on your seed packet are calculated for each vegetable.

You will note that we are significantly ahead of the average heat units (1015) from the last five years. We are also 18% ahead of the hottest April through July 25<sup>th</sup> period of all the previous five years. This explains why a farmer on Sauvie Island who planted sweet corn on March 31<sup>st</sup> harvested his first ears about July 20<sup>th</sup>.

Early heat is important for two reasons: First, it jumps starts germination and growth; second, it comes during the longest days of the year so the abundant sunlight augments the heat to produce rapid growth.

Commercial growers of “relay” crops like radishes, napa cabbage, bok choy, etc. may get a crop or two extra this year, assuming the temperature pattern holds and irrigation water supply doesn’t fall apart.

Heat is also important for maturing crops like grapes. Some of wine grapes are well-suited for 2200 heat units but others will not mature (“sugar”) well unless they receive 2900+ heat units. It is the difference between a Riesling and a Cabernet. We don’t plant much Cabernet in Oregon except from Roseburg south. Pinot noir is somewhere in the middle. Concord grapes are often not well flavored in low-heat unit summers. They should mature just fine this year.

You can track your own heat units by zip code by using the following calculator and picking corn as your base: <http://www.potashcorp-ekonomics.com/tools-to-calculate-fertilizer-needs/calculators/gdd/> . The further you are away from your town zip code and the higher elevation or more shaded you are (in a narrow valley), the more unreliable the results are. You can go back through past years as well for specific time intervals. You can make your own observations by using a maximum/minimum thermometer to capture

the high and low temperatures in a 24-hour period. Add them together, divide the answer by two and then subtract 50 from that answer. Note that for the day. So a 63° high and a 53° low would equal  $63+53/2 = 116$  divided by 2 = 58 minus 50 = 8 heat units for that day. Do that each day starting April 1 and you can compare your place to the “zip code” location.

## Radish revival

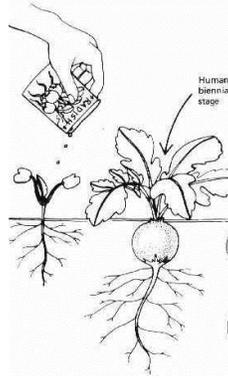
Radishes are hot this year. Europeans eat them sliced on buttered bread. Radishes are important bit players in summer salads. And the wonderful Vietnamese bahn mi sandwiches wouldn’t be nearly as interesting without pickled radishes. Radishes probably came from China originally and were cultivated there, in India, and in Southeast Asia for thousands of years. Some are grown just for the immature seed pods which are pickled or eaten fresh but most are grown

for the enlarged tap root. Radish tops are also edible but need cooking. Radish seed is germinated for fresh salad sprouts but the seed should be disinfected before sprouting.



I have gotten lots of questions about the various types and how best to grow them. There are lots of radish varieties ranging from the small quarter to fifty-cent piece sized “breakfast” radish to the 4-5 inches carrot shaped types and ultimately the large daikon varieties. All do well as the weather turns cooler. The largest types take the longest time to mature (50+ days). Radishes will store well (with their tops intact) in plastic bags if your refrigerator is set at 40 degrees or lower.

Radishes are fairly easy to grow and, because they mature quickly (25-50+ days depending on type), should be sown in small patches every week or so. They like good soil with lots of organic matter. Radishes need persistent even moisture to make a good flavored and well-shaped root.



The two biggest problems with radishes are harvesting them too late (they get fibrous and lose flavor) and the larvae of the cabbage maggot, which burrow into the root and make at least parts of it less appetizing. The first problem is managed by pulling a few radishes as they look like they are getting close and eating them to assess maturity. When ready, harvest them all and refrigerate or pickle them. The second problem is best managed by growing the radishes under a row cover. This excludes the fly and thus their maggoty offspring. Otherwise, cut around their feeding paths and eat the rest (of the radish, that is, not the tiny maggots). It is always good to rotate cabbage family areas around in the garden to reduce insect and disease problems.

## Stump removal

Landscapes change, stumps remain. The two most common questions are: When will this stump stop sending up suckers?!! And can I make it rot faster?

In answer to the sucker question, they will keep coming until you kill their growing points along the root system. Some trees are notorious for throwing suckers long after the

main trunk is gone. Treatments include painting an herbicide along the cambium inside the bark 20 minutes after cutting the tree (this assumes you were thinking about suckers when you cut the tree). Sometimes you can drill down into the living stump cambium months after cutting and pour some herbicide into the holes. Finally, you can try salt poured down holes or treat the suckers in the lawn with a lawn-labeled broadleaf herbicide that is active on woody perennial plants.

The trick to getting stumps to rot faster is to treat them like a compost pile. Add a nitrogen source (commercial fertilizer is the easiest), by drilling holes down into the stump about 6" apart, then pour some fertilizer down the holes and keep the stump watered. This will encourage the fungi that actually do the heavy lifting of rotting the stump. It won't be quick but it will go faster than rotting with no fertilizer. Alternatively, you can dig the whole mass out, have the stump ground down, burn it out (carefully), or blow it out (not for amateurs). Or you can let nature take its course and it will ultimately disappear.

## Dry wells

This has been an interesting year. I am concerned that some rural residents may have dry wells this summer. It is important to determine where, in general, the problems are and what options we may have going forward if this weather pattern continues. If your well has gone dry or you know of one in your area that has, please call our office (503 397-3462) and let us know. We will keep all information strictly confidential.



# *That's the Way it Grows*

## **Balancing Act**

Gardening is not an exact science. For sure, there is a *ton* of science involved in plants processing nutrients, converting sunlight into food, exchanging carbon dioxide for oxygen, and then using that carbon atom to build tissue. It's all very cool and amazing. But it's a delicate balance of many factors that determines how your plants will grow, whether they flourish, and if you get a good flush of flowers or a good crop.

That balance is all messed up with my peach tree this year. It is literally falling apart in front of me.

Branches are collapsing under the weight of the peach crop. This tree is my favorite because I love its peaches, it



shades the patio and cools that side of the yard and it feeds the bees all summer with 'honey' pads at the base of its leaves. I'm heartbroken.

I feel like the slow destruction of this tree is my fault. First, I did not prune the tree this year, and the branches are too long. Second, I was so excited about the fruit set this year that I did not thin the fruit. I was just so impressed with the work of my mason bees. All that weight of the growing fruit is out at the ends of those long branches, and they just can't hold up under that stress.

I watered the tree a couple of times, thinking it was dry, but that makes the peaches even heavier. I can't find the balance. All I can do at this point is pick the near-ripe peaches, remove all the small fruit to lessen the weight, and head back the branches. I have several limbs propped up as well.

The balance seems lacking in my vegetable garden too. I haven't harvested anything in nearly two weeks, and it's making me crazy. The tomatoes are putting on fruit, but taking forever to ripen. No green beans yet, no

cucumbers, no bell peppers. I wonder about my watering practices, soil fertility, seed source and myriad other things, trying to make sense of it.

Perhaps I worry about it too much. I know I am doing what I should, and should trust that the plants will do fine. As long as the deer quit nibbling at them.

## **My New Adventure**

I am entering the world of backyard chicken-keeping. In about a week, the first of my ten incubating eggs will start to hatch. I got the eggs from a local, reputable source—my good friend and her healthy hens. I'm lucky that I have the benefit of her knowledge and experience to help me.

I thought about starting with young hens, but the experience of watching the eggs develop is amazing. By candling the eggs, I am able to see how the chicks grow and develop day by day. They even move inside the eggs, and I can see eyes and feet. It only takes 21 days for a chick to develop and hatch, ready to run around and find its own food. It's really amazing, and I'm glad we started with eggs.

Obviously, the chicken poo will be used in my garden. It needs to be composted before applying to plants, so I will likely put it in my compost bins. I bet my compost will sure heat up! Maybe my vegetables will finally produce then.



I'd like to thank everyone who was a part of the county fair, whether you entered items, worked in the garden or in a booth, showed off your animals or simply attended. Keeping this 100-year tradition going means a lot to our community, and to me personally. The fair is always a highlight of my summer, and I thoroughly enjoyed it this year.

Happy summer!

—Lisa M. Long  
*Columbia County Master Gardener™*

Free gardening ebooks at:  
[Smashwords.com/profile/view/LisaMarieLong](http://Smashwords.com/profile/view/LisaMarieLong)

# AUGUST



## Garden hints from your OSU Extension Agent

Oregon State University Extension Service encourages sustainable gardening practices. Always identify and monitor problems before acting. First consider cultural controls; then physical, biological, and chemical controls (which include insecticidal soaps, horticultural oils, botanical insecticides, organic and synthetic pesticides). Always consider the least toxic approach first.

All recommendations in this calendar are not necessarily applicable to all areas of Oregon. For more information, contact your local office of the OSU Extension Service.

### Planning

- Dampwood termites begin flying late this month. Make sure your home is free of wet wood or places where wood and soil are in contact.
- All of Oregon: Optimal time for establishing a new lawn is August through Mid-September.

### Maintenance and Clean Up

- Make compost of lawn clippings and garden plants that are ready to be recycled. Don't use clippings if lawn has been treated with herbicide, including "weed-and-feed" products. Don't compost diseased plants unless you are using the "hot compost" method (120° to 150°F).
- Fertilize cucumbers, summer squash, and broccoli to maintain production while you continue harvesting.
- Clean and fertilize strawberry beds.
- Use mulch to protect ornamentals and garden plants from hot weather damage. If needed, provide temporary shade, especially for recent plantings.
- Camellias need deep watering to develop flower buds for next spring.
- Prune raspberries, boysenberries, and other caneberries after harvest. Check raspberries for holes made by crown borers, near the soil line, at base of plant. Remove infested wood before adults emerge (approximately mid-August).
- Monitor garden irrigation closely so crops and ornamentals don't dry out.
- If a green lawn is desired, make sure lawn areas are receiving adequate water (approximately 0.5 to 1.5 inches per week from June through August). Deep watering less often is more effective than frequent shallow watering.
- Prune out dead fruiting canes in trailing blackberry and train new primocanes prior to end of month

### Planting/Propagation

- Plant winter cover crops in vacant space in the vegetable garden.
- Plant winter kale, Brussels sprouts, turnips, parsnips, parsley, and Chinese cabbage.
- Mid-summer planting of peas; use enation-virus-resistant varieties, plant fall crops of cabbage, cauliflower, and broccoli.
- Plant cauliflower, broccoli, Brussels sprouts, spinach, turnips, and parsnips.

### Pest Monitoring and Management

- Continue monitoring peaches, plums, prunes, figs, fall-bearing raspberries and strawberries, and other plants that produce soft fruits and berries for Spotted Wing Drosophila (SWD).
- Check apple maggot traps; spray tree if needed.
- Control yellowjackets and wasps with traps and lures as necessary. Keep in mind they are beneficial insects and help control pest insects in the home garden.
- First week: if necessary second spray for peach tree borer and/or peach twig borer.
- First week: if necessary, spray for walnut husk fly.
- First week: if necessary, second spray of filbert trees for filbertworm.
- Check for root weevils in ornamental shrubs and flowers; codling moth and spider mite in apple trees; scale insects in camellias, holly, maples. Treat as necessary.
- Watch for corn earworm on early corn--treat as needed.
- Control caterpillars on leafy vegetables, as needed, with *Bt-k*, or by hand picking and removal.
- For mite control on ornamentals and most vegetables, hose off foliage, spray with approved miticide if necessary.
- Remove cankered limbs from fruit and nut trees for control of diseases such as apple anthracnose and bacterial canker of stone fruit. Sterilize tools before each new cut.
- Corn may need protection from earworm. Spray new silks with appropriate pesticides if necessary.
- Spray potatoes and tomatoes for early and late blight.



**The Grapevine**  
 News for Columbia County Master Gardeners™  
[www.columbiacountymastergardeners.org](http://www.columbiacountymastergardeners.org)  
**August 2015**



Deadline for THE GRAPEVINE - All materials will need to be into the OSU Extension office no later than the 20<sup>th</sup> of each month.

**President's Corner**

By the time this is published our Columbia County Fair and Rodeo will be just finished. Many of our members put in volunteer hours every Monday since April preparing our Demo Garden for presentation to visitors. This year's garden theme was to grow and extra row for the food banks. Additionally our Master Gardeners manned the garden during the fair to discuss gardening situations and problems with the public. Hopefully if your garden or orchard is overflowing you will be able to provide the extra produce to the food banks too. Thanks everyone who gave graciously of their time in the garden. As for volunteering during the fair, the bug folks put in a lot of time, a special thanks to them.

I trust you all got to enjoy the fair exhibits of plants and animals and partake of the entertainment and food.

We have continued to have our usual dry weather this summer with unusually high temperatures. Many of you may have experienced sunburned plants and fruit due to that situation. I hope you didn't experience too much damage.

*The success of my garden is built on the compost of my failures!* – Jimmy Turner  
 -- Wes Bevans

**Scappoose GardenFest**

The Scappoose Senior Center and Master Gardeners invite you to their GardenFest, **August 22** from 9 am to 4 pm. The garden will be open for harvest and garden arts and gardening tips and recipes will be available. If you would like to demonstrate a favorite gardening technique, call *Deb Brimacombe* at 503-543-3294. Vendor tables are available for \$15 - contact *Kay Stuck* at the Senior Center, 503-543-2047

**Calendar: At-A-Glance**

- Aug. 6 . Demonstration Garden and other MG Extension Projects Planning meeting, 10 a.m., Extension office
- Aug. 6 . Board Meeting, 10:30 a.m. Extension office
- Aug. 6-8 OMGA Mini-College, McMinnville OR
- Aug. 30. Chapter Annual Picnic, Scappoose Bay Marina, Scappoose Bay Marina, Noon to 3 pm – see article for details
- Demo garden work days each Monday from 10 a.m. to Noon.

**CCMG Annual Picnic-August 30th**

The Annual Picnic for Columbia County Master Gardeners and immediate family is August 30th at the Scappoose Bay Marina, Noon to 3 p.m. Hamburgers, buns, condiments, corn on the cob and water will be provided.



Please bring your own dish to share and your own eating utensils (plates, silverware, and glasses). Please RSVP to Wes Bevans at 503-543-3725 or weszig@centurytel.net by August 28 - so we know how many to plan for. Parking fee of \$3 at Marina.

**Master Gardeners Contacts  
Officers for 2015**

<u>Title</u>	<u>Name</u>
President .....	Wes Bevans
Vice President.....	Joe Crisp
Past President .....	Dennis Snyder
Secretary .....	Susan Snyder
Treasurer.....	Peg Crisp
Historian .....	Lavina Patterson
OMGA Rep .....	Chuck Petersen
OMGA Alt. Rep. ....	Deb Broberg
Demo Garden .....	Linda Bainbridge
.....	Mary Newell-Dickenson
Spring Fair .....	Kathy Johnson

**CCMG website:** [www.columbiacountymastergardeners.org](http://www.columbiacountymastergardeners.org)

Webmaster .....

**OSU Extension Service:**

Extension Faculty .....

Secretary .....

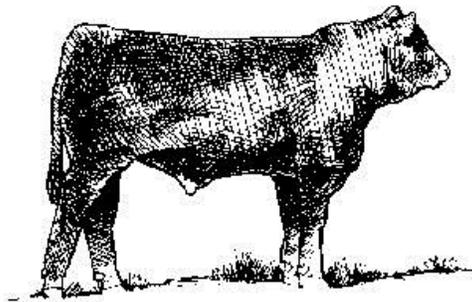
**Guide to Plant Disease Control:**

OSU..... <http://plant-disease.ipcc.orst.edu>

## Farm and livestock notes

### Dried grass and protein supplements

There are quite a few fields that have a fair stand of dry grass that grew after haymaking. There is significant useable nutrition left in that forage. But your livestock need extra protein to unlock it. Alfalfa hay provided at about 1% of your animals' body weights every other day could well be enough. What protein does is stimulate the growth and support the activities of the rumen microbes that do the heavy lifting in getting forage broken down into components the animal can use.



This extra protein feed should continue until the fall rains and grass growth kicks in. You will find your breeding animals will maintain condition and your feeders will put on more pounds. This will not work if you have no dried grass that stands 4 inches or more in height. In that case, you have to feed with the assumption that they aren't getting much from the field.

### Antibiotic rules changing

Our society has relied too much on antibiotics, both in human and animal health. We are paying the price. Most antibiotics on the shelf work on far fewer of the human diseases that they worked on when they were introduced. The same is true for livestock diseases. Bacteria have high reproductive rates and complex genetics that evolve resistance easily with repeated antibiotic exposure. Bacteria that become resistant to cattle diseases may develop

resistance to human pathogens that share some common gene-level functionality.

To slow the development of resistance, the Food and Drug Administration has implemented new rules on the dispensing and use of antibiotics in the livestock industry. The first change is to eliminate "over the counter" feeds that have an antibiotic in them. Those feeds will still be available (though more complex to get) but will need a "Veterinary Feed Directive" to purchase and use them. Prescribing veterinarians will need to work with producers to routinely manage without the antibiotic feed and to prescribe it only for "rescue" situations. So the veterinary relationships you have will be very important.

Other antibiotics that had been available "off the shelf" will have to come through the prescription process. Again, if you are in the livestock business, your veterinarian needs to know you before a crisis. That has always been true but it takes on more significance now.

These rules are unfolding slowly and Veterinarians will be receiving training on their responsibilities and how to write a "Veterinary Feed Directive". Your responsibility will be to hone your livestock management skills to reduce the need for antibiotic interventions.

### Anyone planting Festulolium?

Festuloliums are perennial ryegrass x fescue crosses. The fescue parent is either tall fescue or meadow fescue. The breeding lines are chosen for endophyte free or benign endophyte components. The grasses are supposed to combine the palatability of the ryegrasses with the growth and deep root systems of the fescue group.

If any of you have planted these varieties, I would be interested in your results. For more information from the breeders go to DLF Pickseed's web site: <http://www.pickseed.com/usa/> or Barenbrug at <http://www.barusa.com/forage/products/grasses>

## Food safety in commercial greenhouse produce

There is increasing use of greenhouses and hoop houses for direct food production in western Oregon, not just for starting transplants. As that happens, the farm culture has to change to keep up with the food safety risks inherent in "protected" food production. The warm and somewhat more humid environment in these facilities will both improve plant growth but will support more bacteria as well. The risks can basically be broken down into four categories:

- Worker health and sanitation: Attention to handwashing is a must during picking. If using gloves, make sure they are disposable and replaced as needed or are ones that can be sanitized for repeated use. Consider footbaths for boots entering the facility once harvesting has started.
- Water quality: This can be a big issue. Have your irrigation and produce wash water tested and treated, if necessary. Test all water sources repeatedly for several years to get baseline data. New FSMA rules will specify water testing protocols.

- Animals and birds: Keep them away from your produce as well as you can. Greenhouses are protectable spaces but producers have seen domestic animals, rodents, deer, raccoons, and birds in them. Do everything you can do to deter them. If using composted animal manure in a greenhouse, follow all guidelines



about intervals before harvest and compost times used prior to incorporation into your beds.

- Equipment, tools, and packing lines: Keep all equipment in either the production side or the post-harvest side as clean as possible. All food contact surfaces and equipment should be easy to clean (and should be cleaned often).

There will be food safety trainings in the Portland metropolitan area planned for the near future. I will post them in this newsletter as I hear about them. This article summarized a larger one by Sanja Ilic and Joy Waite-Cusic in the Digger magazine which you can read at <http://www.diggermagazine.com/food-safety-in-the-reenhouse/>

## Register Now for 2015 Rural Living Field Day!

August 22, from 8:30 a.m. to 2:00 p.m.

### Howell Territorial Park on Sauvie Island

Rural Living Field Day is a fun event for rural landowners and this year the event is sponsored by West Multnomah, Tualatin and Columbia Soil & Water Conservation Districts and the Organization of Small Woodland Owners. The event features speakers addressing a wide variety of issues that face rural homeowners, farmers, and land managers every day. Topics include wildlife, forests, pollinators, invasive weeds, streamside areas, orchards, crops and health soil, horse health and manure composting.

Rural Living Field Day is also a great time for landowners to meet each other and share concerns and ideas about their properties and operations, and make valuable professional and personal contacts. The cost is only \$15 per person/\$20 for two. Morning beverages and snacks will be served as well as a catered lunch! Visit the website to register: <http://www.wmswcd.org/content.cfm/Events/Rural-Living-Field-Day-2015>



## 4<sup>th</sup> Annual Small Farm School

September 12, 2015 from 8 a.m. – 4:30 p.m.

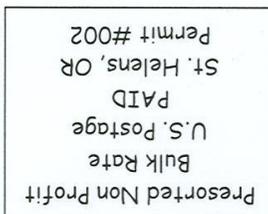
### Clackamas Community College in Oregon City

**Registration is open.** The program and complete registration information are available at:

<http://smallfarms.oregonstate.edu/node/175835> Cost: \$75 (adult); \$50 (youth 13-18 with adult). Small Farm School is an all-day event for beginning farmers and small acreage landowners. Field and classroom workshops will address small farm topics such as crop and livestock production, direct marketing, small-scale equipment, and soil and water conservation. Experienced farmers, Extension agents, Conservationists, and other agricultural professionals will teach the workshops. We'd love to see you there, please pass the word along to anyone you think would be interested. Check out the flyer on the website. *Small Farm School is presented by OSU Extension in cooperation with Clackamas County Soil and Water Conservation District and Clackamas Community College.*

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