

SNOHOMISH CONSERVATION DISTRICT

The NEXUS



Center-Pivot System First in County

By Lois Ruskell, Information/Education Coordinator

Almost anyone who has lived and farmed in Snohomish County long knows the Bartelheimer name. The family has farmed near the City of Snohomish for several generations. They are known to be innovative and hard working, and the current generation is no different. Many tour groups have stopped at their farm to check out the state-of-the-art milking parlor. Father Dale and son Jason were one of the first dairy farmers to try sand as bedding for cows. They also have one of the few round manure lagoons that I've seen in Western Washington, or anywhere for that matter. Most lagoons are square.

Recently, Dairy Planner Alan Shank and I visited with Jason Bartelheimer to learn how their newly installed center-pivot irrigation system is working. If you've ever flown over or traveled through Eastern Washington or the Midwest, you've probably seen center-pivot irrigation systems – those long-armed pipes on wheels spraying water on huge circles of farmland.

What's so innovative about trying center-pivot systems here in Western Washington? Typically, this type of system is used to sprinkle water on crops in dryland areas, where hot, dry summers can cripple yields or kill crops entirely. Also, center-pivots are used on very large fields, typically hundreds of acres, to help lesson the per acre cost of such an investment. Fields in Western Washington are usually broken up in 40, 60, or 80-acre tracts. Many have ditches, creeks, or roads running through them. Fortunately, Jason and Dale have a 130-acre field where this type of system could be easily installed, with the economic scale needed to make things pencil out.

Jason explained that there were three main reasons they decided to try the new system – labor, fuel, and capacity. First, the labor costs of running big reels (their old system) were significant. "To apply manure after just one cutting of hay, the big guns need 18 runs across the field, at 45 minutes a run," said Jason. "With five cuttings of hay a year, this adds up to 90 runs – for just one field." When you see how many fields this large dairy has, and factor in the costs of moving the reel around so much, you can easily see labor costs skyrocket. Farmer's Equipment sales representative Steve Wright, who was also at the farm during our interview, said, "The center-pivot system can cover in two days what would take two weeks with a reel and gun system."

The second factor was fuel. Because the center-pivot system can run on lower pressure, less pump time is required, and thus much less fuel needed to pump the manure on the field. Jason added, "We're working on getting permits to switch to an hydraulic pump that runs on electricity instead of diesel." This will require some additional power poles so Jason's brother Ryan, an engineer for Snohomish Conservation District, is working out those details. Even with the current pump, Jason is pretty happy about the decrease in diesel that the farm needs to irrigate this 130-acre field.



This center-pivot irrigation system on the Bartelheimer farm is helping Jason Bartelheimer reduce costs and increase yields of his corn crop.

The third benefit was the amount of manure water the new system is able to handle. According to Jason, "The center-pivot system can handle between 800 and 900 gallons per minute – the same as three reel systems." This is not only timesaving, but labor-saving as well. And it allows for a more uniform application of manure.

You may be thinking - and rightly so - that sprinkling manure-water would tend to plug irrigation nozzles and become a big headache. However, the nozzles are all self-draining. Once sprinkling stops, the fines settle out in the pipes, and that's a bigger problem than the manure-laden water running through the nozzles and plugging them. Luckily for Jason, the Bartelheimer's have two lagoons and can pump out of whichever one has fewer solids. They also have access to fresh water to clean out the irrigation system. Jason plans to follow manure applications with fresh water a week later to improve yields of both corn and grass silage.

Steve Wright, along with Jim Nygren from T & L Irrigation, were both at the dairy checking out the new system the day we visited. They did all the engineering work and initially came out with Geographic Positioning System (GPS) units to help size the system and work out logistics. Steve told us that the Bartelheimers were innovators in the area, and mentioned that a hay farmer on Whidbey had recently installed a center-pivot system as well.

According to Jason, "The appeal of a center-pivot system is that I can use it for both irrigation and manure application. I don't think it would have penciled out if it was just for manure or just for irrigation." Jason expects the more uniform manure application and increased moisture to substantially increase his yields.

The biggest concern for the Bartelheimers with this system was the ruts left in the field. They are solving this by using the largest flotation tires available and sprinkling behind the tires to decrease compaction.

Another issue was flooding and the potential losses associated with equipment being under water.

Fall 2008

Serving Snohomish County
and Camano Island

Assessment Update

The Snohomish County Council recently held a public meeting to take citizen input on the assessment. They are moving forward with plans to draft the ordinance. A public meeting will follow to hear more of your comments. Check the District website at www.snohomishcd.org for the date and time of this important meeting.

Opportunity To Make a Difference

If you've been thinking about how you can make a difference and gain experience on a Board of Directors, we have a job for you! Snohomish Conservation District has an appointed volunteer position open for a three-year term on its Board. To be eligible, you must be a registered voter and own or occupy land within the Conservation District boundary, which includes most of Snohomish County and Camano Island.

If you are interested in serving on the Board, please contact the District at 425-335-5634, ext.102 or the Washington State Conservation Commission at 360-407-6200 for a nomination petition and information.

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Gardening for the Future of the Earth

by Lois Ruskell, SCD Public Outreach Coordinator



The book *Gardening for the Future of the Earth*, by Howard-Yana Shapiro, PH.D and John Harrison, highlights seven of the world's most remarkable garden/permaculture practitioners and outlines actions that you can take in your own garden, yard, or even windowsill, to effect positive change. This book illustrates how we can preserve the bounty of our planet while creating our own version of paradise in our backyards, gardens, and neighborhoods. Highlighted master gardeners include:

John Jeavons is a master in 'growing soil'. He thoroughly researched the smallest practical area for growing enough food for one person. Jeavons began in the 1970's, determined to grow all of his food, clothing and building materials, and produce an income, on a small amount of ground. He called it the 'miniaturization of agriculture', developed by the Chinese thousands of years ago.

His system, if used properly, has the capacity to build soil up sixty times faster than occurs naturally. He typically has yields two to six times the US average while using 67 – 88 percent less water, 50 percent less organic fertilizer, and 99 percent less energy per pound of food produced. Jeavons also wrote the book 'How to Grow More Fruit and Vegetables'.

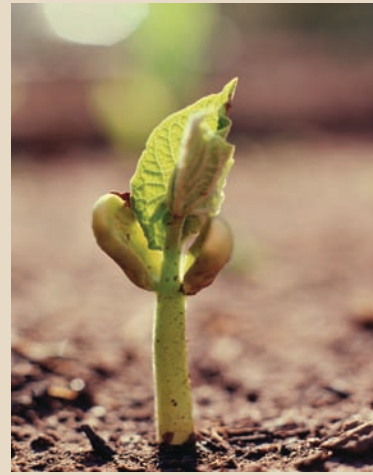
“Building soil is the foundation to sustainable gardening, as opposed to gardening nutrients from the soil that are never replaced.”

Bill Mollison is widely regarded as the creator of 'Permaculture', or 'permanent agriculture'. He was born and raised in Tasmania and began developing permaculture when he started to see key elements of the ecosystem around him disappearing. At the heart of the permaculture system is the strategic placement of trees, crops, plants, and livestock, carefully designed building layout, and effective water catchment and irrigation systems.

“Permaculture is predicated on working with nature rather than trying to subjugate it, and the key to achieving this is to observe the way in which nature works.”

Alan York is a viniculturist, orchard farmer, and former president of the Biodynamic Farming and Gardening Association. His philosophy is based on simplicity: Understand the growth habits of trees and vines and then do the minimum necessary to help them maximize production.

York studied under Alan Chadwick, the legendary British guru of biodynamic agriculture who was responsible for developing the well-known student garden at the University of California campus at Santa Cruz. The UC gardens had once been four acres of poor clay soil. Using bio-intensive organic techniques, these four acres became a miniature paradise producing four times the yields of commercial agriculture. York developed a 21-acre northern California property into an extraordinary fruit orchard and vineyard. His techniques have been widely adopted by grape producers.



“Sustainable gardening must regenerate and nurture the soil, and healthy bodies, minds, and spirits depend on healthy soils for sustenance and well-being. York's view is that we as individuals must take it upon ourselves to achieve this balance.”

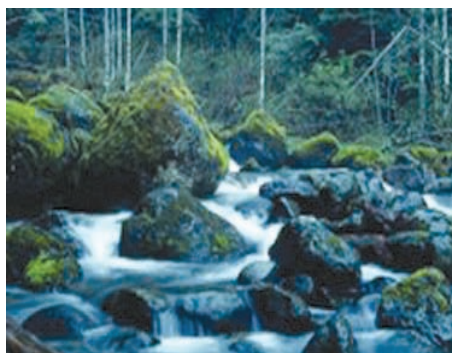
February Course for Forest Landowners

If you've been waiting for the Forest Stewardship Coached Planning course to come to Snohomish County, you're in luck. This popular course, sponsored by Washington State University Extension and the Washington Department of Natural Resources, is designed to equip forest owners with the tools and resources to manage for a broad variety of objectives, including a stewardship plan. It offers evening presentations, a field day, a comprehensive notebook and other reference materials. Also included are maps and aerial photos of your property and an on-site consultation from a forester or wildlife biologist.

With an approved stewardship plan also comes coveted recognition as a Stewardship Forest, eligibility for forest certification under the American Tree Farm System, and eligibility for state cost-share assistance. Many participants use their plans to significantly reduce "current use" property taxes. There are acreage limitations for forest certification (10) and for property tax breaks (5 or 6 depending on whether you live on the property or not). Any size ownership can participate in the class.

Course topics include:

- Forest ecology and silviculture
- Forest health
- Reforestation
- Forest soils
- Fish and wildlife habitat
- Sustainable timber harvesting
- Non-timber forest products
- Forest recreation



The class will run Tuesday evenings February 24 - April 23, 2009. For complete details see <http://snohomish.wsu.edu/forestry/CP09Everett.htm>. Early-bird registration (before February 1) is \$150 per family or ownership and includes all course materials. The cost increases to \$175 after February 1. Class size is limited and registration is first-come, first-served. For more information or to register, contact WSU forester Kevin Zobrist at 425-357-6017.

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Center-Pivot Irrigation

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The new system is designed so that the power unit is on skids and can be moved to high ground before major flooding. The center-pivot system also uses enclosed hydraulic units versus electric motors, so flooding won't damage them. Plus, no labor-intensive winterization is required because the system drains itself.



Left to right, Jim Nygren, Steve Wright, and Jason Bartelheimer are all smiles after viewing the corn crop that has resulted from Jason's switch to center-pivot irrigation.

Jason seems happy with the system and, after only a few months of operation, the corn crop looked amazingly healthy. "It's easy to add arms for bigger fields and spread the cost over more land", he added. It works out to about the same cost as two big guns.

“To be economical, you really need fields over 80 acres, with no ditches or other obstructions.”

Jason Bartelheimer

Over time, Jason would like to add an additional pump just for fresh water but for now, he sees decreases in costs and a potential for more yield, and that always brings a smile to a dairy farmer's face!

The Do's and Don'ts for Winter Pastures

by Amanda Ruzicka, SCD Farm Planner



Winter is slowly but surely creeping up on us and that means it's time to get your pastures ready for the rains. If you don't maintain your pastures throughout the winter, you will end up paying for it in the springtime. To help you get started, here are some important Do's and Don'ts to guide you, based on proven Best Management Practices.

DO's to Remember:

- ❖ Know when to STOP grazing. Your pastures must have a periodic rest from grazing, so the plants can recuperate. Plants are growing very little in the winter and shouldn't be grazed. Grazing time in Western Washington is generally April through October. This is when plants are actively growing and respond well to grazing. Grasses should be at least three to four inches tall heading into October.

- ❖ When soils are saturated, restrict your livestock from pastures using a sacrifice area. This is an area that you 'sacrifice' to save your other pastures from damage. Often they are armored with gravel and geo-textile, or it may be a pasture that you wanted to till up in the Spring, thus you don't mind the over-winter wear and tear. This will improve the grass in the rest of your pastures and reduce on compaction of the soils.

- ❖ Drag your pastures to distribute manure before winter rains start, but while grass is still growing. This helps get essential nutrients to grasses with less chance of them leaching into groundwater, rivers and lakes.

- ❖ Cut blackberries now to prevent nutrient storage in their roots over winter and to protect your fences.

- ❖ Seeding can be done before October. But don't wait too long, our window for seeding usually only lasts until mid-October, depending on the year. Your best option is a certified seed mix designed for our area and suited to your site characteristics.

- ❖ Store your manure covered. Collect manure at least twice a week to prevent nutrient runoff into nearby streams and lakes, and to prevent mud problems.

- ❖ Check gutters and downspouts on your buildings. Having a working gutter and downspout system goes a long way towards stopping mud from becoming an issue.

- ❖ When you notice uneven grazing patterns, consider dividing your pasture into more units or additional paddocks to reduce the amount of selective grazing that is occurring. This way you can graze your animals on smaller areas. This is a more intensive management system but works well for a more uniform grass level.

- ❖ Make sure your animals have a reliable source of water. It may freeze, so look at where you are putting this water (is it in the barn?). Perhaps you need a water tank heater which would also cut down on your labor – no more breaking ice on cold winter days.

Forage-use will increase, manure will be more uniformly distributed and pasture clipping can be reduced, all positives given the high cost of forages, fertilizer and fuel.

Do NOT's to Live By:

- ❖ Do not allow livestock to graze grasses below three inches in height. This destroys the plant's ability to take up nutrients and grow, and can weaken the plant.

- ❖ Do not allow livestock on saturated pastures. This causes compaction, erosion, a lot more mud as well as weeds in the spring.

- ❖ Do not leave piles of manure uncovered. Uncovered manure can leach excess nutrients and bacteria into groundwater, rivers and lakes.

- ❖ Don't ignore uneven grazing patterns in your pastures. This means your animals are selectively grazing, which gives weeds the benefit (they can mature and produce seeds) while tender, more palatable grasses get repeatedly eaten. In this situation, you are not getting the most out of your pastures.

- ❖ Don't ignore the economics of your pasture management decisions. Do take the time to analyze the costs and benefits of each potential decision. If you can't take advantage of the extra forage and increase in production by mowing a pasture or by putting in more pasture divisions, then these may not be good decisions for you at this time.



Following these tips will insure a safe and healthy environment for your animals, reduce your time and energy spent on pasture chores, and help jump-start your pastures for next spring.

Get the Kids Outside - Make Tracks!



When was the last time you and your family stretched your legs and enjoyed some time in the great outdoors? Well, now is the time! Exploring a trail is a great way to spend time together while discovering the wonder of nature and getting some exercise to boot. It's also a great way to explore your community resources and discover new green spaces near you.



The National Wildlife Federation is sponsoring a fun, family event called **Make Tracks!** It's easy to participate — anytime on (Saturday, Sunday, Monday) October 11, 12, and 13— grab your kids, family members, and friends and **Make Tracks!** Have a favorite trail — great, you are all set. Or, take this time to discover a new trail with a new window on the world.

Be part of the national movement to get kids outside again. Give your kids (and you!) a Green Hour — a daily dose of the great outdoors. Find out more about the Federation's mission to connect the child in all of us to nature again at <http://www.nwf.org/maketracks/index.cfm>.

Announcements

Keep Your Forestland in the Family

Many family forest owners want to keep their forest property in the family, but face challenges engaging family members in ownership and operations. Learn how to keep your family forest *in* the family with an award-winning succession-planning seminar called **Ties to the Land**.

Ties to the Land is a two-part seminar that explores succession planning - the human side of estate planning - which focuses on ways to maintain family ties to the land from generation to generation, builds awareness of key challenges facing family forest owners, and motivates families to address those challenges. This award-winning curriculum was developed by leading estate planning experts at Oregon State University Extension and the Austin Family Business Program. It features DVD-based presentations coupled with classroom exercises facilitated by local WSU Extension faculty.

When: Thursdays, Nov. 20 and Dec. 11, 2008, 6 PM – 9 PM
Where: WSU Extension (McCullum Park), Everett, WA
Cost: \$75/family
Registration and additional information: Contact Kevin Zobrist at 425-357-6017 or visit <http://snohomish.wsu.edu/forestry/Ties08Fall.htm>

Visit Sheep Farm & Wool Mill

Learn what you can do with five acres and a small flock of sheep! Gretchen and Rob Wilson nurture a small flock of rare Cotswold and Friesian sheep. They use the wool for several value-add products including homespun yarn and wool rugs. Besides processing their own fiber, their wool mill also custom-processes fiber from other farms. In addition, Friesian sheep, (known world-wide for their milk production) provide the Wilson family with great milk, wonderful cheese, soap, and even meat for the freezer. Join WSU Extension for a visit to Gretchen's Wool Mill. You'll meet the Wilson flock and see how they are providing milk, wool, and meat in a subsistence farm system.

When: Monday, Oct. 6, 10:00 AM
Where: Gretchen's Wool Mill at Quiet Waters Farm near Monroe
Cost: \$15 per person
Pre-registration required, space is limited. To register, download the form at www.snohomish.wsu.edu/ag/workshops/workshops08.pdf and mail with your check. For more information on the series, contact Kate Halstead at 425-357-6024 or e-mail khalstead@wsu.edu.

Port Susan Bay is a North County Treasure

We have a gem here in our own backyard called the Port Susan Bay Preserve, located southwest of Stanwood. In 2001, after 11 years of negotiations, The Nature Conservancy bought this large tract of intertidal land at the mouth of the Stillaguamish River.



The 4,122-acre Preserve encompasses much of the Stillaguamish River Estuary, including 166 acres of artificially diked uplands. Purchased from the Menno Groeneveld estate, the property is managed to benefit the vibrant estuary and its salmon, birds and other wildlife. The Stillaguamish River spills into the bay, mixing freshwater and saltwater to create extensive estuarine marshes. This rich mix produces a vast quantity of decaying organic matter, which feeds the abundant invertebrates living in the tide flats. These tiny creatures, in turn, feed the shorebirds and waterfowl that make Port Susan Bay and adjacent Skagit Bay important stops for migratory birds traveling along the Pacific Flyway.



Port Susan Bay's marshes, vast mudflats and tidally influenced channels support hundreds of thousands of birds, several species of salmon, smelt, English sole and clams. Western sandpipers, dunlins and dowitchers swoop over the mudflats. Wrangel Island snow geese gather by the thousands in tidal marshes and on nearby farm fields. Hundreds of raptors, from peregrine falcons to short-eared owls, add to the drama.

Visiting the Preserve is allowed, and must be scheduled with the Nature Conservancy. Check their website for details at www.nature.org. Type Port Susan Bay in the box.



What's New at the March Plant Sale!

The good news is - the sale is still on and hasn't become a victim of 'budget cuts' - yet! The bad news is that prices increases are a reality, especially for the conifers our customers wish to buy. As always, we will be looking for volunteers to package plants the week before the sale. Volunteers will be especially crucial this year as the District has fewer staff. Keeping costs down by using our generous and dedicated volunteers, and foregoing the use of credit and debit machines, has long been our goal.

This year we hope to have more of the Good Nature Publishing posters, including a brand new one on Rain Gardens, (see photo above). These posters look great anywhere and help illustrate some of the beautiful native plants we are fortunate to have here in the Pacific Northwest.

If you do not get the plant sale brochure, please sign up on our website by November 17 to receive your brochure and order form. As always, plants are sold on a first-come, first-served basis to the public, and some sell out quickly! The 2009 sale dates and times are:

Friday, March 6 and Saturday, March 7
10:00 AM - 4:30 PM both days

Certify Your Backyard

The National Wildlife Federation has certified their 100,000th garden this month as a Certified Wildlife Habitat™. The U.S. Botanic Garden's National Garden, in our nation's capital, was the special honoree. This garden showcases native plants from the Piedmont and Atlantic Coastal Plain areas, and places great emphasis on "right plant, right place," to reduce the need for supplemental irrigation.



If you're not familiar with the Federation, check out their website to learn about certifying your yard as a Backyard Wildlife Habitat at: <http://www.nwf.org/gardenforwildlife>. It's easy and fun!

Five things your yard needs to be wildlife friendly:

1. **Food** - native plants, seeds, fruits, nuts, berries, nectar
2. **Water** - birdbath, pond, water garden, stream
3. **Places for Cover** - thicket, rockpile, birdhouse
4. **Places to Raise Young** - dense shrubs, nesting box, pond
5. **Sustainable Gardening** - mulch, compost, and organic fertilizer

On Camano Island, almost 700 yards have been certified. The cities of Tukwila and Lake Forest Park are now certified as well. Other Washington cities working to become registered include: Alki, Bellingham, Edmonds, Shoreline, Fidalgo Island, Bainbridge, Poulsbo, NE Seattle and the Skagit Valley.

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The NEXUS is published quarterly and distributed free of charge to residents of the District. Funding provided by Snohomish County Surface Water Management, Washington Department of Ecology, and the Washington State Conservation Commission.