

# SNOHOMISH CONSERVATION DISTRICT

## The Nexus



## Worms on 'The Hill' ~ Monroe's Best Kept Secret

by Lois Ruskell, Information and Education Coordinator

Touring an impressive, commercial-sized worm composting operation in Monroe might seem pretty ordinary, but it wasn't for two other District staff and myself. Had it not been for the background checks, metal detectors, and multiple locked gates, we might have thought we were in a technical college's horticulture building. Not so; this is what's required to get into the worm composting facility at the Monroe Correctional Complex (aka 'the Hill') in Monroe.

The Monroe Correctional Complex has, through the extensive efforts of one officer and several inmates, started a worm composting (or vermiculture) operation to reduce costs in disposing of the prison's kitchen wastes, and to produce compost for the prison's vegetable and flower gardens. Worm compost and worm tea enrich the soil, ward off plant pests, and provide a rich organic fertilizer – all from kitchen scraps.

The Monroe prison facility contains four units: the Washington State Reformatory, the Twin Rivers Unit, the Special Offenders Unit, and the Minimum Security Unit. Now over 100 years old, the complex (built in 1910) has been added to over the years. It sits on a hill above the City of Monroe, and is known by locals as 'the Hill'. Four kitchens serve all the units, cooking for nearly 7,400 inmates daily. One garden currently supplements the kitchen's produce needs, another will begin producing next spring.

### From Waste to Waste Not

So how did worms come into the picture? The Monroe Correctional Complex was spending more than \$64,000 a year to dispose of their kitchen food waste. To help reduce costs, in 2010 they contracted with Cedar Grove Recycling, a food and yard waste pickup service. This has cut their annual food waste disposal bill nearly in half - a 49 percent reduction! Corrections Officer Art King, a 30-year prison system veteran who spearheaded the vermiculture program, felt that worm composting could not only further reduce the remaining disposal costs, but also reduce the prison's overall fertilizer bill.



A walkway in the main garden at the Monroe Correctional Complex.



**Above** - the deep purple dahlias growing in a garden at the Monroe Correctional Complex are a stark contrast to the razor wire surrounding the exercise yard.

**Left** - an inmate shows off the worms in one of the breeding boxes in the composting unit.

**More** - see more photos on our Flickr page under 'Extended Nexus' - [www.flickr.com/snohomishcd](http://www.flickr.com/snohomishcd)

King also believes that this program, and others like it, create a bond between prisoners and improve the overall safety of the prison community. According to King, "Once you have a person plant a seed, they want to see it grow. They may not have talked to each other before, but you put them in a greenhouse together and they have something in common."

### The Wormery

Talking to the two inmates working in the old prison laundry, now the worm factory, it's easy to see not only their passion and pride, but also the knowledge they have about their operation.

Inmate Nick Hacheny was taking a course in Permaculture (an ecological design system focused on sustainability for yards, farms and gardens) when he heard about the worm composting program being started. Since volunteering for it, Nick has read books and articles and communicated with university specialists and others around the country to get the latest information and designs they needed to effectively create compost with worms. "I have a stack of letters," Hacheny says. "People sent instructions and magazine articles. The scientific community has been really supportive."

Inmate Will Camarata is equally passionate about the culture of worms as well as producing worm teas and castings.

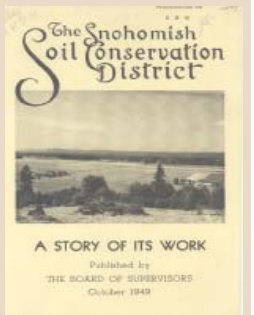
### Fall 2011 Serving Snohomish County and Camano Island

#### 70 Years and Counting!

It's been 70 years since a group of devoted citizens filed the paperwork to create the Snohomish Soil Conservation District in 1941. The intent at that time was to "provide an organized body for control of soil erosion and elimination of bad land use."

Conservation Districts began soon after the Dust Bowl disaster that literally wiped farmers and their families off farms in Texas, Oklahoma, Nebraska, Kansas and neighboring states. The Snohomish Conservation District consisted of most of Snohomish County until 1961, when Camano Island was added.

For seven decades, Snohomish Conservation District has served farmers, rural landowners, municipalities and urban and suburban landowners.



Millions of dollars have been secured through grants from state, federal and local governments to help landowners solve critical resource issues. The District works hand-in-hand with many partner agencies as well to leverage the limited funds available to improve water quality, restore habitat, and recover salmon. Read more on pages 3-5 to see where we've been and how far we've come.

### Inside

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This flower cart inside the Monroe Correctional Complex benefits from worm tea produced on-site.

# Worms on 'The Hill' ~ Continued

What is truly amazing is how the two men have taken prison cast-offs -- old laundry tubs, detergent tanks, mattress-making frames, and food carts -- and refabricated them into effective worm breeding bins, tea brewing vats, and raised garden bins. King estimates that if they had to purchase a unit similar to what they house worms in, it would cost around \$5,000.

## Growing Worm Population Helps Save Money

The Monroe prison's worm composting program started with 200 donated red wiggler worms in 2010. The inmates now estimate more than 1.5 million worms live in their worm factory. The program's goal is to further reduce the \$30,000 annual cost of kitchen waste removal by expanding 'Hill-wide', through all four Monroe correctional units. Currently, a 30-gallon sized container of food scraps is removed from the Washington State Reformatory kitchen daily to feed the ever-increasing population of worms.



Officer King shows off a new, large-capacity worm bin, one of several recently built to facilitate expansion of the program.

The worm castings, which don't smell (but look a lot like very rich soil), are used as potting soil. They act as an organic fertilizer and out-perform traditional compost. More than 100 gallons of worm tea is produced every week. That rich liquid is poured directly on the flowers and vegetables as a natural fertilizer, or sprayed on leaves as a pesticide. King feels they are capable of producing 50,000 pounds of fertilizer annually, further reducing the Correctional Complex's costs for chemical fertilizers.

## Food Production Gears Up

In 2010, inmates working in the gardens grew seven tons of food, including 6,000 garlic plants that now sit drying in a dark, cool room off the gardens. All food is used on-site. Plus, inmates recently won an impressive 23 blue ribbons at the Evergreen State Fair with their produce and flowers.

King has hopes that the horticulture and vermiculture programs can transition from being therapeutic in nature to providing all produce needed for the prison complex. During our visit, we saw long rows of strawberries, onions, beans, squash, cabbage and tomatoes. Rows of sunflowers edged raised beds teaming with more vegetables, flowers and herbs. Birds, butterflies, bees and hummingbirds constantly buzzed around us.



Officer Art King shows off a portable chicken tractor designed and built by inmates at the Monroe complex using recycled materials.

Officer King is also trying to demonstrate how the inmates can grow crops in castoff plastic frames from the prison's mattress production unit, all on top of cement. He would like to see these productive bins line the prison walkways, all fertilized with worm tea and compost.

## Adding Chickens to the Mix

One of the most amazing creations we saw was a chicken tractor (a moveable chicken coop) complete with a small red barn on top. It was designed by Nick and other inmates to be highly portable with easy access for clean-



Inmates help with weed control on a restoration site.

## Serving Their Communities

Sustainability and environmental awareness are a focal point of the Washington State Correctional system. The Sustainable Prisons Project is a statewide program involving the Washington State Department of Corrections and Evergreen State College.

Their mission is to bring science and nature into prisons. To do that, they conduct ecological research and conserve biodiversity, partnering with scientists, offenders, prison staff, students, and community organizations. Their award-winning program helps reduce the environmental, economic, and human costs of prisons by inspiring and informing sustainable practices.

## Inmates in Action

Prisoners at the Cedar Creek Corrections Center, south of Olympia, raise bees and produce their own honey, lotions and lip balm. Other inmates there are raising endangered Oregon Spotted frogs until they get big enough to no longer be snacks for natural predators. Then the frogs will be reintroduced to their native habitat in the Fort Lewis area. Other inmates are hand planting thousands of seedlings in prison green-houses for stream restoration projects. Last year, the Monroe inmates potted more than 4,000 tree seedlings left over from our annual plant sale.

For many years, Monroe inmates grew thousands of impatiens that were planted annually in the median of Monroe's streets, providing the City a huge savings in plant costs. Last year however, that program was suspended, along with many others, due in part to a recent tragic incident at the facility as well as on-going state budget cuts. Like the worm composting operation, all programs have to be sustainable with little or no financial outlay.

ing waste and collecting eggs. There are no chickens yet, but eventually they would like to conduct research using worms as a high protein food source for chickens. That project will involve offenders, local farmers, veterinarians, a farm supply store, and high school and college educators. The chicken tractor can be moved to different garden areas where the chickens can dig for grubs while fertilizing the ground before the next planting.

The gardens are a huge part of the Monroe prison's sustainability program, as well as a job-training opportunity. One garden is maintained through a program with Edmonds Community College's horticulture program. College instructors teach horticulture classes in classrooms which open out to two greenhouses and another highly productive garden. Offenders learn how to properly take cuttings, grow plants from seeds, collect and store seeds, and other technical aspects of horticulture. One offender told us the greenhouses are new and will help them save seeds and produce more cuttings.

With Corrections Department approval, Officer King plans to expand the gardens and worm composting program to provide most of the vegetables for the complex. To do that, they will need large donations of seeds, cuttings and tools. King feels that they might even be able to produce enough food for community food banks, senior citizens or other local programs.



A sign in the Correctional Complex garden made by the inmates.

For more information on sustainability at the Monroe Corrections Complex, visit: <http://www.doc.wa.gov/sustainability/docs/FactSheetMCC.pdf>. To contact Officer King, find out more about the prison vermiculture program, schedule a tour or to donate seeds or supplies, contact Donna Simpson at the Monroe Correctional Complex at 360-794-2606. Portions of this article are from an article by Maria Peterson, in 'The Daily Communique'.

# District Celebrates 70 Years, Plans for Future

## Past, Present, Future – We'll Be There for You!

by Monte Marti, District Manager



I have been actively involved with the Snohomish Conservation District for more than 29 years – first as a volunteer and now as District Manager. I am amazed and impressed with the positive impact the District has made and the support we have provided to private landowners and partners over the past 70 years. And I'm excited about future opportunities the District will have to help and support landowners and partners.

In the early years, the District primarily worked with landowners who managed larger tracts of land – either commercial agriculture land or forest land. The District worked with the many cropland farmers, dairymen, and foresters who dominated the landscape.

However, as the landscape changed and landownership evolved, the District responded by providing support to our current even more diverse set of landowners. Additionally, as the list of landowners has diversified over time, so has the list of our partners.

Throughout the years, the District's primary goal has been doing on-the-ground projects to address specific natural resource concerns. Our suite of projects and technical skills has evolved and will continue to evolve to stay meaningful and proactive. No matter what, the bottom line is that we work with private landowners and partners to implement these projects on a voluntary, non-regulatory basis. This will continue to be a primary goal in the future as well.

Looking back, feel the passion of those who managed and protected our natural resources before us. Feel their desire to provide us with a future based upon a rich array of healthy natural resources. As we reflect on the legacy that we want to leave for future generations, please understand and appreciate the importance of our natural resources, and the key role the District has in the wise and proper management of these resources. We have and will continue to find solutions that are beneficial for both private landowners and our natural resources.



The District offices have occupied three corners in the Frontier Village area of Lake Stevens.



The location above is where Safeway is located.

Left is where the Lake Stevens Everett Clinic is now housed.



Below is the present site, on a third corner across from Jack in the Box.

## Flooding

Flooding, and the damage it causes, has been a concern for the agricultural community since the first settlers arrived. The District office has file drawers full of photos like the ones below, taken near Stanwood.



Photo from the old Mark Clark bridge looking east into Stanwood.



West Stanwood, looking toward Our Saviors Lutheran Church.

## Dairy Highlights



The Stanwood Cooperative Creamery building started operating in May, 1895 with equipment from the failed Snohomish Creamery. By that June it was producing 250 pounds of butter daily.

### Local Dairy Highlights - Compiled by Shannon Rodeffer

**1936:** Carnation Farms produces world record-holding Holstein cow. Carnation cows held the world milk production record for 32 consecutive years.

**1983:** Snohomish County ranks first in the nation in milk production per cow.

**1990:** Thomas Dairy of Snohomish is the highest producing herd in the nation.

**1999:** A cow owned by the Rodeffer family of Snohomish, WA sets the world record for milk production by a Jersey cow, producing more than 40,000 pounds of milk in one year.

For more on the history of dairy farming in this area, go to our newsletter page at [www.snohomishcd.org](http://www.snohomishcd.org) and look for an article by Ned Zaugg under Fall 2011.

# A Rich History - Those Who Guided Us

## Past District Supervisors

District Supervisors are the backbone of a healthy, vibrant conservation district. Snohomish Conservation District has been lucky to have been guided by a steady line of excellent men and women who volunteered their time, energy, and practical knowledge to keep the district focused on its mission of serving the public and protecting and restoring critical resources. Below are stories from a few past supervisors, including memories of their time with the District.

### George Stocker

George Stocker served many years as a District Supervisor. He has a wealth of knowledge about farming and is always happy to share stories. George remembers when every farm in the neighborhood (the Snohomish Valley south of the town of Snohomish) was a dairy farm and when the French Slough pump station fell in the river. He says it was “like the Fourth of July”! The noise and sparks from the event were heard by neighbors all around. The pump plant was later rebuilt.



To the right is a photo of George as a young man surveying flood damage. Below is a photo of the first edition of the District newsletter with George on the front page.



It has been 100 years since George Stocker's family settled on a farm near Blackman's Lake. George lived on that farm until he was 11 when his family moved to a farm south of Snohomish. That farm is now run by his son, Tim Stocker, as a wedding site and turf farm. Other family members operate businesses focused on wine and beer distribution, indoor soccer and landscaping. After retiring from farming, George and his wife Marion moved to Monroe. He was a superintendent at the Evergreen State Fair in Monroe for eleven years.

George became a District Supervisor when the Conservation District had only one employee. Income was derived from the rental of big equipment that farmers needed for ditching, dredging and land clearing. The used machinery was World War II surplus. Snohomish Conservation District no longer owns any field equipment, but may soon purchase a manure spreader that small farm operators can rent.

George and Marion took advantage of many opportunities to meet other District Supervisors by attending state and national association meetings, including one in Hawaii. George was always a calm, considerate voice on the Board of Supervisors. Thank you George for your many years of service!

### Duane Weston

Duane Weston served as the Chair of the Board of Supervisors during the recent transition from relying on grant funding to a consistent assessment to fund Conservation District programs. He retired from the Board in 2010. Duane was a very hands-on supervisor, often visiting District project sites, talking with staff, and attending District events. He and his wife Anna Marie were often seen greeting customers at the annual conservation plant sales in Monroe.

Duane retired as chief forester and president of Pilchuck Tree Farm in 2001. The Weston family also owns a tree farm where the District has hosted small forest landowner events and office picnics. Duane, keenly aware of the pressures on small family foresters and agricultural producers, brought a unique prospective to the Board.

He was instrumental in spearheading efforts to help Snohomish Conservation District obtain stable funding in both Snohomish County and on Camano Island. Working with his fellow supervisors and District staff, Duane attended many meetings and public presentations, always offering sage advice in a calm, respectful voice. He helped the District through several difficult years of management changes and upgrades by taking positive, effective steps to help place the agency in a better position to meet the needs of a quickly changing county. Thanks Duane and Anna Marie for your many years of service and for being part of the District family!



Viewing a project site near Bryant are several former District Supervisors including, left to right: Cam Allen, Mark Winterhalter, Jenny Baker (former employee), Wiard Groeneveld, and Duane Weston.

### Dick Barr

Two generations of the Barr family of Monroe have served on the Snohomish Conservation District Board of Supervisors. Duncan Barr was one of the first supervisors and served during the busy post-war years when equipment rental was a large part of the services that the District provided. According to his son, Dick Barr, the District bought used equipment (World War II surplus), some for as little as \$1. The equipment included D-7 Caterpillar bulldozers, a trencher, and a dragline.

Much of the Barr Farm was swampy and dynamite had to be used to blast out stumps to create usable farm ground. Trenches were dug using a dragline with mats that could maneuver on the wet ground. There was even a custom operator to run the equipment. Duncan did most of the dynamite work himself. According to Dick, when the dynamite blew, there were “mud and sticks everywhere.” This was a common practice up and down the valleys of Western Washington to turn forested (logged) flat land into useable farmland.

Dick remembers when Conservation District board meetings were held in the morning at a restaurant in Frontier Village. There were two employees then, Manager Jim Michaels and a secretary. Later, the staff grew to three: Nathan Jacobsen, Kathy McEachern and Christine McLees. Nathan and Christine did the field work which involved a lot of technical work as well as farm planning for area dairy farms. The District had one vehicle at the time, which was later stolen.

The Barr Farm is no longer a dairy, which frees Dick up for some serious hunting. About eight years ago he began planting trees on some of his farm (most of the rest was sold to neighbors). Forester and former District Supervisor Duane Weston was Dick's advisor on planting trees, informing Dick about the correct spacing and how to prevent beaver damage. Although Dick lost about 200 trees to beavers, he would have lost a lot more without the fencing that Duane suggested. Between cultivating his trees, helping neighbors put up silage, and hunting, Dick stays busy. Thank you Dick for your steady presence on the District Board!

# A Rich History ~ Dairies and Farming

## The Life of Dairy Farmer Don Tillman

by Lois Ruskell, Information and Education Coordinator

Dairy farmers are some of the most interesting people you would ever want to meet. Having been a dairy farmer for twelve years, a Conservation District dairy technician/planner for four years, and a dairyman's wife, granddaughter and niece, I feel a kinship to these folks. Dairy farmers are a unique, hard-working, loyal bunch who will drop everything to help a neighbor in need. I recently had the pleasure of sitting down with Don Tillman, his wife Anna and Alan Shank, our long-time dairy planner, on the Tillman Farm in the Arlington Heights area.

Don began working on the family farm at the tender age of eight. Little did he know that by age 15 he would be running the farm, after his father's death. Don's father, Carl, came over from Sweden with the Bob Byrd family. After traveling through Boston, he wintered in Minnesota and then followed the Byrd family to Washington. Don's father originally rented a farm in Mt Vernon. However, there were no dikes then and land had to be reclaimed from the river every spring. Mr. Tillman wanted to get away from the river and found a farm more to his liking in Arlington Heights.



Building the garage on the Tillman Farm.

Don's dad traded work to build his barn in 1934, followed by a cabin in 1936. He worked at the Bear Creek Mill in exchange for lumber, which explains why the barn boasts 36-foot long beams with no knots in them. The Tillmans had two daughters and a son, Don. Don was born in the original cabin.

When Don was young, there were 73 working dairies in the area. The Pacific Coast Condensed Milk Company in Kent (makers of Carnation evaporated milk) picked up milk from cans put alongside the road, but pickup was sporadic.

In response, area dairymen formed the Snohomish County Dairymen's Association, which later became Darigold. This cooperative, run by dairy members, provided a stable outlet for their milk.



Putting up hay in the early years.

After Don's dad passed away from cancer, the banks wanted to settle the debt by selling the farm. There were lots of medical bills to pay, but 15-year old Don convinced the banks he could work off the debt and immediately went to work six days a week at Valley Gem Farms in Arlington. He worked there for three years to pay off the family debt.

In the morning and evening, he would tend to his own farm and cows. Don says, "The soil was so bad you couldn't grow a decent weed." A local agronomist visited and said, "This soil is so poor, just put it back into trees." Don was not deterred, and has spent his life seeking balance for his land. According to Don, "The cows feed the grass, and the grass feeds the cows."

Early on, Don needed advice, and lots of it. With no formal education to speak of, he relied on county extension agents and conservation district staff to deal with his poor soils. Ed Stevens, from the Arlington Conservation District office, gave Don advice on fields, soils, rotational grazing, and seed variety. "I depended on them all," said Don. "I like to get information and stay on course." The Tillman Farm has a farm plan dating back to the 1950's.

At 18, Don began working nights at Pilchuck Plywood so he could farm during the day.

In 1966, Don started attending Skagit Valley College's Agriculture Program. The instructor was Ed Burgstrom, a Surge milk equipment dealer.

Don began looking at milking parlors and considering his options for expanding. That same year he installed his first milking parlor. His first lagoon for dairy wastes was designed by long-time Soil Conservation Service technician Jim Spada.

Later, Don enrolled in the military and spent time in Korea. In the service, he found other ways to make extra money. He would loan money to his bunk mates who couldn't quite make it to the next payday. Alan Shank joked that, "Don was PayPal before there was PayPal". While at Fort Ord for basic training, Don also found extra work setting pins in the local bowling alley. According to Don, he had never even seen a bowling alley before! He sent all his pay home to his mother and sisters. When Don returned from the service, his farm renter had kept the cows alive but not much more. Don had a lot of work to do, so he logged and farmed after his return to make extra money. He also married Anna, a nurse from Baltimore, whom he met when he was being released from the service. He pauses frequently to offer thanks to his lovely wife and life-partner!

Snohomish Conservation District continued to be a good match for Don. He can't say enough about how important the District and USDA staff have been to his farm's survival. His second lagoon was designed by former District engineer Ryan Bartelheimer, and Jim Spada designed many of the field drainage systems. Don has worked with Alan Shank to upgrade his farm plan and is still involved in the day-to-day decisions on the farm. According to Don, "You can chase every new idea, but you just end up going in circles." He feels his partnership with the local agencies has helped keep him up to speed with what he should be doing on his farm.



The Tillman children, John, Diane and Carol, by one of the old family cars.

Don and Anna have two daughters and a son. They also have three grandsons. No one in the family is prepared to take over the farm, so Don is weighing his options. Time will tell, but for now, Don is content to be surrounded by his loving family and new puppy, and to visit with and tell stories to all who will listen.



Don and his son John, and Don's new puppy.

# Cover Up With a Winter Cover Crop

By Megan O'Brian, Certified Farm Planner

It seems like Western Washingtonians waited all summer for 'Summer' to arrive, and well . . . here we are talking about winter cover crops. While you may be ready to retire your gardening tools and head indoors with your seed catalogs, one more thing could be missing in your garden - a cover crop. Cover crops are helpful for small garden spaces up to large acreages.



A cover crop, sometimes called green manure or catch crop, is grown for the sole purpose of being tilled back into the soil in the spring. A cover crop can be a grass, cereal grain, or legume. It provides multiple benefits and can be an inexpensive way to build better soil in your gardens.

## What Are The Benefits?

### 1. More Organic Matter

A key component of healthy soil is the presence of organisms. When spring comes and your cover crop is plowed into the soil, that material is consumed by bacteria, fungi and other organisms. However, a portion of the plant is not eaten, and this is what adds organic matter to the soil. Organic matter is essential - it provides storage for plant nutrients, improves soil tilth, and allows more air and water to be exchanged in the soil.

### 2. Improved Soil Protection and Structure

Western Washington receives heavy amounts of rain in the winter months. When your soil is not protected during this time by plants (even weeds), it becomes vulnerable to run off, erosion and compaction. Instead of allowing weeds to move in, plant a cover crop. Its root system will both hold the soil in place, and help penetrate heavy-textured soils to allow for better air and water circulation. The top growth, known as the cover crop canopy, also reduces the pounding of rain drops that can compact soil.

### 3. More Fertile Soil and Cleaner Water

If your soil is left bare, many valuable nutrients can easily leach out of the root zone when it rains and trickle down into the water table. Also, those nutrients can get picked up by rain or melting snow and end up in ditches, streams and ultimately in Puget Sound. This is not where you want them to be. (If you use a cover crop, this problem can be avoided.)

As your cover crop matures, it begins to absorb nutrients left over from previous fertilizer applications and incorporates them into its plant tissues. The nutrients are now safely stored until spring when your cover crop is cut and tilled back into the soil.

As the cover crop begins to decompose, those nutrients will become available to the new planting. Grasses and cereal grains are more efficient nitrogen scavengers because they grow very quickly in the fall. Legumes do not reduce soil nitrate levels because they grow more slowly during this time.

One of the best benefits of a cover crop is 'fixing' nitrogen. Only legumes can provide this because they have a mutually beneficial relationship with rhizobial bacteria. These special bacteria form wart-like nodules on legume roots that transfer nitrogen from the atmosphere down into the soil and make it useable as plant nutrition. In return, the bacteria receive sugar from the legume.

### 4. Suppressing Weeds

Another advantage of a cover crop is weed suppression. A cover crop competes with weeds for light and nutrients. Research has found that many cereal cover crops contain natural herbicides which can reduce the growth of weeds and vegetable crops (from Cogger et al, 1997). This research also showed that when cereal was planted with a legume, the herbicide effect was reduced.

## Which Cover Crop Do I Choose?

As great as all these benefits are, no one cover crop can deliver all of them. You will need to determine which characteristics are most important to you, and choose the appropriate cover crop. Here are some helpful tips:

- Make sure that the cover crop will be well suited for your planting site\*. This is because environmental factors, such as minimum and maximum temperatures, soil type, drainage, rainfall and day length play very important roles in cover crop success.
- Determine the amount of rainfall expected and your soil's drainage ability. This is essential to understand because heavy rainfall can impact the growth of your cover crop as each crop has a different tolerance level for water.
- Choose your cover crop to fit the harvesting time of your last crop. However, be sure to plant within the time frames listed in the 'Cover Crop Seed Guide' found on our website (see below for details). If you plant after these dates, the cover crop may not become established.
- If you have multiple crops being harvested at different times, plant the cover crop by field section. As certain crops are harvested, begin planting your cover crop.
- One popular technique is to mix a cereal grain or grass with a legume. This allows the cereal plant to scavenge nitrogen while the legume is 'fixing' it, and minimizes the risk of a cover crop failure.
- If using a cereal or grass/legume mix, seed the legumes two-thirds the rate than if the legume was your only crop. This ratio lets the cereal crop establish in the fall/winter but not affect the legume's growth in the spring.
- If some plantings won't be harvested until November and December, mulch these areas with straw or compost.

## How Do I Plant a Cover Crop?

After your last crops are harvested, turn soil under and rake it smooth. The smaller the cover crop seed, the smoother your garden bed soil needs to be. Once your seed bed is prepped, broadcast or hand seed. Seeds require good contact with the soil and protection from drying out. To ensure this, cover the seeds with soil one-fourth inch deep. If you use a rototiller, do not go deeper than 2 inches (if planted too deep, the seeds may not sprout). In established gardens, fertilizing is not required -- there should be enough nutrients available. You may need to irrigate a cover crop planted in late August or early September for better germination.

## When Do I Turn it into the Soil?

The best time to turn the cover crop into the soil is when winter is almost behind us and spring is creeping in -- ideally about three weeks before you plan to plant your first crop. This is most critical so the cover crop doesn't go to seed or flower. If the cover crop goes to seed, it might become a weed (especially true for vetch). Do not till your cover crop if the soil is too wet, this can damage your soil structure. However, if you wait too long the cover crop can become woody, which means it will decompose at a much slower rate. If you won't be able to till the cover crop on time, mow or chop it. Be sure to turn (bury) the cover crop to a depth of three to six inches.

## What are the Disadvantages?

Just like everything else in life, there are pros and cons to using a cover crop. These concerns can be minimized by selecting the appropriate crop, and managing it with these concerns in mind.

- A cover crop may delay soil warming and drying, which may delay planting your spring crops.
- Adding a large amount of plant material into the soil may interfere with your planting dates if the cover crop was slow to decompose.
- The cover crop may act as a host to plant diseases and/or other pests.
- The plant chemicals that compete with weeds may slow or harm the growth of your first planting.

The investment of using a cover crop requires money, time and energy to plant, incorporate, and manage to get the benefits you were hoping for. Cover crops can be a great asset for your garden by adding organic matter, fertilizing soil, protecting water quality and suppressing weeds. So, if you find yourself not quite ready to put the tools back in the shed in the next few weeks, give cover crops a try.

\* See our website for a 'Cover Crop Seed Guide' that highlights various cover crops. It can be found on the Newsletter page (<http://snohomishcd.org/newsletters>), under Fall 2011. Also, you can learn more at your local library or University Extension office, or call Megan at 425-335-5634, ext 106.



# Using Compost as Horse Stall Bedding

by Caitlin Price, Farm Planner

In April 2011, the Snohomish Conservation District received a two-year grant from the Western Sustainable Agriculture Research and Education Program to study the benefits of using compost as horse stall bedding in place of the conventional wood shavings or pellets.

As part of this project, the District is working with several stables in Snohomish County to set up aerated micro-bins to compost horse stall waste and manure. A Snohomish company, O2 Compost, provided the aerated micro-bins.

With proper management, the horse stall waste reaches temperatures greater than 131 degrees F while composting. This will kill any pathogens, weed seeds and parasites present in the manure. After 30 days of composting, the material is sorted on-site using a portable machine called a Stall Shifter™. This simple machine uses a shaking screen to separate composted manure from reusable bedding.

The bedding can then be reused in your horse stalls, and the manure is ideal for applying directly on your garden, landscape, or pasture. The recycled bedding would also work well for other livestock, such as goats, alpacas, chickens, and cows.

## While still in the early phase of this trial, the results are promising:

- The recovery rate of re-usable bedding is between 50 to 80 percent, depending on the type and volume of original bedding used. This process works with shavings, sawdust, and wood pellets.
- Composted bedding is darker in color and slightly moist. It has a pleasant but very mild, earthy smell.
- Moisture seems to be the biggest challenge. The compost bins need to have a lid with ventilation, or be located under a roof in order to not be overly saturated (wet).

## On-Farm Demos

We will be hosting on-farm demonstrations of this process throughout the coming months. We are also looking for a few more stables to participate in this project.

For more information on this project or to participate, contact Caitlin Price at 425-335-5634 x 114 or [Caitlin@snohomishcd.org](mailto:Caitlin@snohomishcd.org).



Screening the stall wastes into reusable bedding (under the shifter) and garden compost (in the wheelbarrow).



Screened compost, ready to be used again as stall bedding.



Compost is ready for the garden, pasture, or flower beds.

If you are interested in using recycled bedding and want to participate in this project, email Caitlin Price at [caitlin@snohomishcd.org](mailto:caitlin@snohomishcd.org) to learn more.



## Photo Contest Winners

Here are the winning entries from our 70th anniversary photo contest. Thanks to Pam Grudin, Rott-N-Ridge Ranch, for the before-and-after photos of her waste storage bin project, and to David Capocci at Paca Pride Guest Ranch for his photo of the sheared alpacas and their bright yellow rain coats!



David Capocci at Paca Pride Guest Ranch, near Granite Falls, submitted this photo of their alpacas after the spring shearing. Always resourceful, David created rain coats from plastic he found on the farm.

### Before



This photo, left, shows the old manure pile where Dave and Pam Grudin had been storing wastes from their two horses.

Below, the Grudin's recently added a new manure storage structure to their farm. It makes chore time easier and looks much nicer!

### After



We love to see before and after photos of practices that reduce chore time and help keep wastes contained.

~~~~~  
These bright yellow, recycled rainslickers brought a smile to our faces too!

# Upcoming Events

## Forestry & Wildlife Workshop

Wednesday, October 5, 6:30 PM – 8:30 PM

Arlington City Hall, Council Chambers

How Does Your Forest Grow and Who Lives There? Your wooded property is valuable for many reasons. Learn how to keep your forest stand healthy and more about the wildlife that call your forest home. Protect your property by assessing how your community and your home can become Firewise too!

## Realtors Workshop

Tuesday, October 11, 10 AM – 3:30 PM

Angel of the Winds Casino Restaurant

The Stillaguamish Tribe's Natural Resources Department and Snohomish Conservation District are hosting a class for Realtors who specialize in rural and farm properties. Learn what buyers should look for when buying property if they want to raise livestock, how critical areas and wetlands can impact their plans, and how to assess a property's suitability as a farm business. Cost \$10 for three Realtor clock hours, a buffet lunch and snacks.

## Rainwater is a Resource!

Wednesday, October 12, 6:30 PM – 8:30 PM

Arlington City Hall, Council Chambers

Did mowing your lawn get old this summer or are you looking for ideas to improve your landscape? This class covers rain gardens, rain barrels and other methods of putting stormwater runoff to work in your yard.

## Mud, Manure, and You – Farm & Livestock Workshop

Wednesday, October 19, 6:30 PM – 8:30 PM

Arlington City Hall, Council Chambers

Got Mud? We all will again - as soon as the rains come. Learn from Snohomish Conservation District farm planners about tips and tools to help make life on the farm a little easier. Lots of great take-home materials and time for questions - be prepared for winter, make chores easier, and have healthier animals.

## Save Money, Grow Grass

Wednesday, October 26, 6:30 PM – 8:30 PM

Arlington City Hall, Council Chambers

This pasture management workshop covers proper grazing management to reduce feed costs and improve pasture health. Topics include: soil testing, fertilizer and lime applications, pasture renovation, seed selection, and the use of sacrifice areas. Great information for owners of horses, cows, sheep, goats and other livestock.

All of the above classes are free with the exception of the Realtors class. Register at: [workshops@snohomishcd.org](mailto:workshops@snohomishcd.org) or call 425-335-5634, ext. 123.

## Centennial Trail Rain Garden Planting Event

Saturday, October 22 (as part of Make a Difference Day)

9:30 AM - 12:00 PM

Location: next to McDaniel's Do It Center, Snohomish

(near intersection of 3rd St and Lincoln Ave)

Please bring your own tools and gloves, light refreshments provided.

RSVP to [stacy@snohomishcd.org](mailto:stacy@snohomishcd.org), or 425-335-5634, ext. 112.

## Focus on Farming VIII - Harvesting Opportunity

Thursday, November 3, all day

Comcast Arena, 2000 Hewitt Ave. Everett

This year's event will feature a 17,000 square-foot trade show offering everything from feed to fertilizer. Take advantage of 24 great workshops and special keynote speakers, including Graham Kerr and James Beard-award-winning chef Tamara Murphy, along with their new cookbooks. Topping off this event will be a wine and cheese tasting featuring Washington State wineries and artisan cheese makers. More at: [www.FocusOnFarming.org](http://www.FocusOnFarming.org).

## Sound Living – A One Day Communitarity

Exploring the Connections between Water, Land and People

Saturday, November 5, 9AM – 4 PM

Everett Community College, 2000 Tower Ave, Everett

Registration is \$35. With a keynote speaker and more than 40 presenters, this one-day event will have something for everyone. For more information or to register, contact the Sound Living Planning Team at [sound.living@wsu.edu](mailto:sound.living@wsu.edu) or 425-357-6028, or check the website at [www.beachwatchers.wsu.edu/Snohomish/soundliving.htm](http://www.beachwatchers.wsu.edu/Snohomish/soundliving.htm).

## 2012 Country Living Expo & Cattlemen's Winterschool

Saturday, January 28, all day. Stanwood High School

This increasingly popular event offers more than 150 livestock and country living classes along with a great lunch! Classes include everything from beekeeping to pasture management and woodcarving. If you live in the country, or want to, you won't want to miss this expo! Call 360-428-4270 ext. 0 or visit <http://skagit.wsu.edu/CountryLivingExpo>.

# Recent Rain Garden Projects

The Snohomish Conservation District, with help from several partners, volunteers, and youth, recently completed two rain garden installations. Both are part of a ground-breaking goal to install 12,000 rain gardens throughout Puget Sound by 2016 to protect our local waterways from the largest source of pollution: polluted runoff. Polluted runoff starts as rain that collects metal fragments and chemicals from urban rooftops, driveways, lawns and streets.

In Lake Stevens, the District paired up with a local Boy Scout completing his Eagle Scout project. The City of Lake Stevens provided grant funding to help the project along. In Everett, seven rain gardens were added to a neighborhood with severe drainage issues. Read on to learn more about both projects.

## Lake Stevens

Ryan Olliges, a local Eagle Scout candidate, partnered with the City of Lake Stevens and Snohomish Conservation District to build a 1,200 square foot rain garden in front of the City Shop at 2306 131st Avenue NE.

The rain garden, completed on August 27, is Ryan Olliges' Eagle Scout project and was constructed using donations, volunteers and grant money from the Department of Ecology Stormwater Retrofit and Low Impact Development Grant program. The rain garden collects runoff from the City Shop roof and road adjacent to the shop. This effectively removes pollutants by allowing chemicals and metals to soak into the ground instead of polluting nearby Catherine Creek.

Ryan worked with Conservation District staff to complete the rain garden design, develop a plant list and a planting plan to create year-round interest in the garden. He ordered all the materials and secured hundreds of dollars in discounts. Thanks to Storm Lake Growers, Cedar Grove Compost and Forest Concepts for their discounts and donations, and to all the volunteers who helped plant the rain garden and spread the mulch.



## North Everett



Seven more rain gardens were created on September 24 in North Everett! Through a unique partnership, the City of Everett created the North Everett Rain Garden Pilot Project. Partners include the City, Snohomish Conservation District, Washington State University Extension, and Stewardship Partners, a Seattle-based non-profit.

This pilot project will help reduce flooding and demonstrate how average homeowners can use innovative landscaping to reduce flooding and water pollution flowing into Puget Sound. District staff created the designs, helped with project coordination, and recruited volunteers for planting day. These gardens will reduce the amount of water entering the sewer system to help solve local flooding problems and reduce combined sewer overflows during large storm events. Take a walking tour of the rain gardens next time you're in Everett! You'll find five rain gardens on Lombard Avenue, between 15th and 13th streets, one rain garden in the alley (backyard) in the 1600 block, and one on Oakes Avenue in the 1400 block. See more photos here: <http://www.flickr.com/snohomishcd>.

## Snohomish Conservation District

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