The open house that was held in August was publicized in the following manner:

- Spreading Times newsletter- publication reaching over 700 farmers and industry people in 5 Vermont counties
- Rutland Conservation District Annual newsletterpublication reaching ~200 people in Rutland County
- Vermont Pasture Network calendar- publication of 950 people
- Posted on the UVM Extension website
- Direct email to over 30 government, industry and university people in Vermont and New York.
- 6. Direct email to 15 farmers
- Direct mailing to 460 farmers in Addison, Rutland and Bennington counties in Vermont and Washington County New York.

A handout was developed for the open house to discuss the SARE grant including equipment set up, field set up, growth monitoring etc.



SPREADING TIMES

Southern Vermont Nutrient Management Program

Nutrient Management Planning Class

Is anyone out there interested in learning how to write their own Nutrient Management Plan? The Southern Vermont Nutrient Management Program, its participating Conservation Districts and the Otter Creek District are well-bear working a 5 week class on how to write an NRCS 590 compliant Nutrient Management Plan. The class would be located wherever there is the most interest and be taught by Dr. Heather Darby of UVM Extension. It will meet one day a week for approximately 3hrs for, we are hoping, little upfront cost to the farmers. The best part?? If you apply for and receive approval for a Nutrient Management Planning Grant from the Agency of Agriculture, you can receive partial reimbursement for your soil tests, manure test and get PAID (yes PAID) to write your plan.

"This class is not something that can be organized overnight so we need to know ASAP if there are any interested farmers out there (we need at least 7 people in order to run the class and the class will be limited to 15 people). The farm would need to have current **MODIFIED MORGANS** soils tests (no older than 3 years old), current manure tests, and maps prior to the start of the class.

"This class would not be taught until late fall/ early winter after harvest time. It is NOT limited to dairy farms.

For more information or to sign up for the class contact:

"Sylvia Harris 802-254-5323 ext 105, or Jennifer Durham 802-287-2250



SARE GRANT Open House:

Broadcast versus In-Furrow banding of fertilizer in spring wheat.

On Monday August 6th from 11 to 2pm there will be an open house at the Grembowicz Farm, Creek Road, Clarendon to discuss aspects of no-till wheat production and in-furrow versus broadcast fertilization of wheat including equipment modifications.

CCA Credit available

Lunch provided by CaroVail Seed and Fertilizer

For more information and to **RSVP by August 1st** call Jennifer at 802-287-2250 or email jad0403@vermontel.net

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NOTICE FOR ALL MEDIUM FARMS:

The Notice of Intent to Comply (NOIC) must be received at the Agency of Ag by 4:30pm on Monday August 13th 2007.

For more info on the MFO Program contact:

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Chittenden, Caledonia, Grand Isle, Orange, Orleans, Washington, Windsor and Windham Counties Abbi Pajak at 802-828-1397 or abbi.pajak@state.vt.us

Addison, Bennington and Rutland Counties

Dave Weber at 802-828-0459 or david.webber@state.vt.us



Contact Information

Rutland NRCD Nanci McGuire 802-775-7192 x 14

Bennington NRCD Shelly Stiles 802-446-2275

Windham NRCD Jolene Hamilton 802-254-5323 x104

Ottauquechee NRCD 802-295-7942 x11

White River NRCD

Poultney- Mettowee NRCD

> **SVNMP Office** 802-287-2250

Consultant's Corner: Bruce Howlett

Summer Manure Spreading By Bruce Howlett, Consultant

Many Vermont farms, particularly those with liquid manure, have shifted to spreading a substantial portion of their manure supplies on hay fields during the summer months. This practice is definitely advised, for both environmental and economic reasons.

For annual crops, the best strategy is to spread manure just before the field is tilled, incorporating manure nutrients into the soil rather than leaving them on the surface subject to erosion. However, this leaves a narrow window for spreading and can result in phosphorus overloads if certain fields frequently get heavy manure applications.

On many farms, some manure needs to go to other fields during other months. Some manure can be spread on crop fields during the fall, particularly where fall tillage is used. But soils can be wet, particularly late in the season, allowing rutting and compaction by heavy spreaders. Manure left on the surface for the winter is subject to runoff, fertilizing surface waters rather than crops. During summer, the hay fields available may not seem the preferred targets for manure since they have lower nutrient demands and lower-value production than corn (and other annual crop) fields.

However, most VT farms include a significant haylage or hay component in their rations and grass and legume crops certainly respond to nutrient application with increased growth. Actively-growing forage crops quickly take up the nutrients applied, increasing their production with a minimal increase in pollution risk. Generally dry and firm soils mean minimal impacts from the spreading equipment. For fields that rotate between forage crops and annual crops, improved soil nutrient status and nutrients released from plowed-down grasses and legumes mean higher fertility for later crops. Obvious disadvantages of this approach include that sufficient manure must be reserved for crop fields, and some manure may have to be spread in fall or early spring to avoid overflowing storage structures. Also, machinery traffic will injure or growing alfalfa crowns, so alfalfa fields should have manure spread immediately (1-2 days) after cutting.

"Water, Water, Is It Everywhere? "Part 2 (Continued from ST Issue 11)

Sylvia Harris

Ag Resource Specialist and Basin Planner

ii In the 1960's growing awareness of the need to control water pollution led to the passing of the national Clean "Water Act of 1972. This law made it illegal to dump wastes into waters of the US without a permit and set water " quality standards. There are water quality standards for various water uses. For example, some water is ok to " swim in but not to drink.

"Natural processes as well as human activities can affect water quality. The season, climate, soil type and plants "species can affect water quality. Some of the human activities that can harm water quality include discharge of wastes from sewage plants, business, agriculture runoff and stormwater runoff from residential areas. All of these activities, however, can be improved to meet water quality standards.

"In Vermont, the improvement of water quality is being driven by local participation and conservation efforts within each basin. Each of Vermont's 17 basins will have a separate basin management plan developed by the Depart-"ment of Environmental Conservation. These basin plans will lay out strategies for, improving and protecting water "quality.

"------

To be continued

11



ducation Niche: Jennifer Durham

So the saga continues with the poison ivy. If were reading the ST last summer you might remember my bit on poison ivy. I finally decided to use the glysophate on it rather then use the "natural" remedy as I am just too allergic to and paranoid of the stuff.

Where I sprayed last year there is no poison ivy...YEA!! Unfortunately, I did not do a follow up inspection (shame on me) and some was missed. We now have another beautiful stand of it although much smaller than last year. I have applied glysophate again and will be doing a

follow up inspection in a week to see what is happening. I get itchy just talking about it.

So, lets shift gears form itchy weeds to nutrient management plans (NMP). Lets look at the NMP history in Vermont. In 1999, large farms needed to be permitted and have a NMP. In 2006, the Medium Farm Permit was enacted and medium farms need to have a NMP by March 31, 2008. So how long do you think it will be before all farms have to have one? I am not just talking dairy farms either. Truth be told I can't predict the future but if you look at past trends, what is going on in other states, the amount of development in this state, and the EPA, I would hazard a guess that at it's going to happen. (My bosses are popping grey hairs at me actually putting that in writing!)

A Nutrient Management Plan does not have to be a hugely complicated manual that puts you to sleep when you look at it. It is a snap shot of what you are doing at the time the plan is written. It should be a guidance document...a written record of what you are and should be doing. I understand that record keeping may not be much fun, but it is a necessary part of doing business and farming is a business. Having the information "in your head" does not help anyone if something unexpected happens to you. A NMP is not a perfect document. As things change on the farm the plan needs to be updated to reflect the changes.

From past experience, having looked at a NMP without having any background on the farm or where the info contained in it came from, it was confusing and a bit intimidating! Now, being in the process of becoming a technical service provider for writing NMP's (YIKES!), it makes much more sense and I can see how a farm could benefit from ving one.



Armyworm Out Break!

Armyworm outbreaks have been reported in the NE Kingdom, Franklin Co, Grand Island Co, Chittenden Co and Addison Co. Please don't panic, but do go out and scout your corn and grass fields for armyworms. When full grown, the caterpillars can be almost 1.5 inches long. The caterpillars are usually greenish or brownish, but can be almost black. The sides and back of the caterpillar have light colored stripes running along the body. The caterpillars normally feed at night and much damage can occur before they mature. The preferred foods are grasses including corn, grains, and timothy. They will feed on other plants if grasses are unavailable. Feeding will start on the lower leaves and move upwards. A large population can strip an entire field in just a few days. When the field is eaten they "march' to adjacent fields. Corn fields that are minimum or no-tilled into grass sod or fields infested with grass weeds are most susceptible. For more information on scouting and control options please contact Dr. Heather Darby at the University of Vermont Extension at (802) 524-6501.

Additional Services through SVNMP

Funding for the SVNMP changes yearly and sometimes impacts what services we can provide at no charge. Farmers should remember that any nutrient management services are still available for a fee of \$30 per hour. This can include soil testing, consulting services, nutrient management review, assistance with any conservation programs as well as other options. Contact the SVNMP office at 802-287-2250 for additional information on available services or to schedule a visit.

uote for the Month:

Frank and explicit—that is the right line to take when you wish to conceal your own mind and confuse the minds of others.

Benjamin Disrali-British Statesman and Prime Minister Born 1804

UPCOMING EVENTS:

July

- 26 UVM Crops and Soils Field Day w/ Pig Roast at Roger Rainville's Farm in Auburg VT 10am to 3pm RSVP to Dr. Heather Darby (802) 524-6501.
- 28 Green Mountain Draft Horse Field Day Shelburne Farm 802-985-8686 www.shelburnefarms.org

August

- No-Till Wheat production at the Grembowicz Farm 11am till 2pm. CCA credit available, Lunch provided. See front page RSVP by August 1
- 7 From the ground up: Beginning Farmer workshop: Soil improvement and maintenance, pest control, season extension, grazing systems for small diverse farms. Cerridwen Farm at Green Mountain Farm, Poultney VT \$25 Early registration, \$30 after July 31st. Contact UVM Sustainable Ag at 802-656-5459 or email at susagctr@uvm.edu
- 7-11 Addison County Field Days
- 9-13 FAMACHA Training: Learning to detect and manage parasite infection. Pre-Registration Required \$25 and includes FAMACHA card and certification. Chet Parsons 802-524-5601 chester.parsons@uvm.edu www.uvm.edu/livestock for more info
- 13 NOIC forms due to the Agency of Ag for all Medium Farms and Small farms seeking coverage under the MFO Permit.
- 20 to 26 Washington County Fair, Greenwich NY
- 20 Organic Grazing workshop
- 25 to Sept 3 Champlain Valley Expo
- 31 to Sept 9 Vermont State Fair

Sept

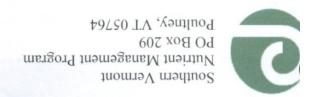
8-9 19th Annual Sheep and Wool Festival at Champlain Valley Expo. Admission Adults \$5, Seniors \$3 Kids under 12 \$1 Contact: (802) 446-3325 or www.vermontsheep.org

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Spring/Summer 2007

Conservation News

Vol. 9, No. 1

MISSION STATEMENT

The mission of the Rutland Natural Resources Conservation District is to enhance the planning, conservation, and proper development of the District's natural resources and to involve landowners and the general public with this process through increased program visibility.

Meet Your New Land Treatment Planner

Cindy Watrous, new Land Treatment Planner for Rutland County, grew up on a 75-cow dairy farm in Piermont, NH. After high school Cindy attended Becker Jr. College and graduated with an Associate's in Applied Science majoring in vet assistant. Cindy and her husband George ran a 35cow dairy farm for 9 years.

She was a Milk Supervisor for 23 years with VT Dairy Herd Improvement Association. Cindy has also worked for Farm Service Agency doing their GIS map work for 8 years. Cindy also manages a flock of sheep with her two daughters. She has been very active in the 4-H sheep program in the state, helping with Sheep Camp, Sheep Quiz Bowl, Blocking and Fitting Workshops, Shearing School and running the sheep show at Addison County Fair and Field Day. She has been Green-Up Chairman in Orwell for 13 years.

Starting this past December, Cindy took the job with the District as Land Treatment Planner for farmers in Addison, Rutland and Bennington counties. A land treatment plan is a component of the comprehensive nutrient management plans now being required of medium farm operations (MFO). If you have questions regarding services that Cindy provides, please contact the District office at 802-775-8034 ext. 17.

Meet Your New Supervisor

Russell Reay of Shrewsbury was appointed supervisor in November of 2006 to fill the unexpired term of Mark Skakel. A 1970 graduate of the University of Vermont, Russell began work in 1970 for the VT Dept. of Forests, Parks and Recreation as Assistant County Forester in Chittenden County, and State Lands Forester in the Rutland District since 1978. He retired in 2003 and now provides consulting forestry services to private landowners. He has operated Paxton Greens nursery and Christmas tree farm in Cuttingsville since 1990 and is past president of the New Hampshire-Vermont Christmas Tree Association. Russell's wife, Donna, was a mortgage lender for the Chittenden Bank and Heritage Family Credit Union until her retirement in September, 2006. Their children are Jennifer, manager of the Peace and Justice gift shop in Burlington, and Heather, operations manager for the Colorado Builders Group in Denver.

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Essex High School Team Places First in Vermont Envirothon

Students from Essex High School earned first-place honors in the 2007 Vermont **Envirothon**, held May 16th at Farm and Wilderness in Plymouth, Vermont. Second place was Mill River High School from Clarendon, Vermont. The five-member student teams competed against other high school aged student teams from across Vermont demonstrating their knowledge about the environment at outdoor testing stations. They also completed a 20-minute presentation about recommendations for alternative energy solutions for their community and school.

The **Envirothon** is a partnership of many Federal and State agencies and organizations that work in conservation and stewardship of natural resources. The program offers natural resource education with a focus on local environmental issues related to forestry, wildlife, soils, and water resources. Each year there is an area of emphasis that the students study and then prepare a community-related investigation and presentation about their findings. The program provides an opportunity for in-class activities and hands-on field experiences with resource professionals throughout the school year and culminates with the annual day-long Vermont **Envirothon** event in May. The winning team represents Vermont at the North American Canon **Envirothon**.

"This year, our Envirothon Teams studied



'Renewable and Alternative Energy," said Kathleen Diehl, Conservation Education Coordinator for the Green Mountain National Forest. "It was an issue that proved to be a hot item, since there has been so much breaking news about the U.S. addiction to oil in the news over the last year."

Mark Scott, a conservation educator with the Vermont Fish and Wildlife Department, spoke of the value of the **Envirothon**: "The **Envirothon** is a fun way for Vermont's young people to learn about the natural world around them," he said. "The program is also valuable because students learn to recognize the importance of science-based investigations in helping to resolve environmental issues."

Rain Garden Demonstration

During the summer of 2006, the District in cooperation with Ethan Swift, Watershed Coordinator with the Agency of Natural Resources, Department of Environmental Conservation, coordinated with staff from the Vermont Achievement Center (VAC) and Emma Melvin with the Lake Champlain Sea Grant to install a demonstration rain garden at the Vermont Achievement Center on Park Street in Rutland.

What is a rain garden you ask? Simply stated, a rain garden is a cluster of deeper-rooted plants set into a shallow depression into which rainwater runoff is diverted. The purpose of this moisture-friendly



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La Valley BUILDING SUPPLY, INC.

Route 7 South Rutland, VT 05701 1-802-775-0834 www.lavalleys.com Homes Garages Kitchens Flooring Tools Design garden is to trap that otherwise whooshing rainwater, so that plants and soil microorganisms can sanitize and detoxify polluted runoff before it reaches a water body. Design of the garden was done by Emma Melvin with the Lake Champlain Sea Grant. VAC staff, teachers and students participated in the planting of approximately 40 different perennials, shrubs and bulbs that will facilitate the bio-filtration of stormwater runoff from the VAC parking lot. This project addresses stormwater issues that are being prioritized by the City of Rutland and the Upper Otter Creek Watershed Council.

The rain garden was installed with funding from the VT Department of Environmental Conservation; Division of Water Quality (Clean & Clear). Labor to install the garden was provided by a Vermont Youth Conservation Crew, with technical assistance from Ethan Swift and Emma Melvin.

Nutrient Management Training

The Rutland District in cooperation with the Otter Creek and Poultney Mettowee Natural Resources Conservation Districts are looking for farmers interested in writing their own nutrient management plans. The District will coordinate a five-week session led by Dr. Heather Darby, UVM Extension Agronomist, to create their own Nutrient Management Plan (NMP).

The course will consist of 5 sessions held once per week. Each session will be approximately 3 hours long and will cover specific aspects of the NMP. NRCS and Conservation District staff will also be available to provide assistance with running calculations for soil loss and making maps. At the end of the course the participants will have a completed NMP.

Why: Writing your own NMP means you have all the knowledge and information to manage nutrients cost effectively and for optimum plant growth. You will make better use of your manure and other nutrients and not over fertilize fields which can be costly in terms of both time and money.

This Workshop is not restricted to Medium Farm Operations (MFO), although these operations are required to have plans in place by March 2008.

Date: Either late Fall or early Winter 2007.

Where: A central location is yet to be determined by the geographic distribution of participants. Likely classes will be held in the Rutland area.

Please contact Nanci McGuire at the Rutland Natural Resources Conservation District office if you are interested in attending 802-775-8034 ext. 17

Portable Skidder Bridges for Rent

The Rutland Natural Resources Conservation
District in cooperation with the Watershed Forestry
Program of the Agency of Natural Resources received funding through the State of Vermont's Clean
& Clear Program to construct portable skidder
bridges to rent to loggers and consulting foresters in
Rutland, Addison, and Bennington Counties.

Portable skidder bridges, when properly installed and used as a temporary stream crossing structure, will reduce streambank and streambed disturbance as compared to other alternatives, thus minimizing the potential for sedimentation. Successful skidder bridge programs have been developed by several



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state public forest agencies throughout the eastern United States. The Vermont Department of Forests, Parks and Recreation are using portable skidder bridges as demonstration projects for timber sales on publicly owned land.

Bridge materials were logged, sawn and milled locally which will enhance efforts to preserve the working landscape of the Otter Creek watershed. The bridges were constructed by forestry students from the Stafford Technical Center with supervision by teacher Mark Skakel.

This project is dedicated to the memory of Shawn Poczobut, who was a strong advocate of improving silvicultural best management practices. Proceeds generated from the rental of these bridges will be used for maintenance of the bridges, and any excess will be donated to the Stafford Technical Center Forestry Program in Shawn Poczobut's name.

If you are interested in further information regarding this project or interested in renting a skidder bridge please contact Nanci McGuire at the Conservation District office at 802-775-8034 ext. 17.

Don't "P" on Your Lawn

In 2002 the Environmental Protection Agency (EPA) approved a plan submitted by Vermont and New York to reduce the amount of phosphorous in Lake Champlain called the Lake Champlain Phosphorous TMDL (Total Maximum Daily Load).

Essentially a TMDL is the maximum amount of a single pollutant from all contributing sources that a water body can receive and still meet water quality standards. A TMDL is required for Lake Champlain because phosphorus concentrations in many segments of the lake are higher than the levels allowed.

Phosphorous is a naturally occurring nutrient essential for plant growth. It is found in all living and once living things including leaves, lawn clippings. and animal wastes. It is also common in fertilizers and in some automatic dishwashing detergents. Too much phosphorous in water causes algae blooms that can be a health hazard for swimmers or animals that drink the water. Algae blooms block sunlight and prevent oxygen-producing underwater plants from growing. When the algae dies and decays, it uses up oxygen leaving little for fish.

About 10% of the phosphorus in the Lake comes from wastewater treatment and industrial discharges (point sources). About 90% of the phosphorus comes from runoff from roads and developed areas, and from lawns, farmlands, and other rural areas (nonpoint sources). Of these nonpoint sources about 56% is from agricultural land, 7% is from forested land and 37% is from urban and other developed

That 37% of phosphorous pollution from "urban" and other developed land" is generated from activities such as washing cars on roads and driveways, not cleaning up pet waste, using automatic dishwashing detergents that contain phosphorous, and overfertilizing lawns and gardens.

In 2006, as required by the TMDL, the Vermont Legislature passed a bill requiring the State to develop a campaign to reduce phosphorous in the Lake by discouraging the excessive use of phosphorous fertilizers on YOUR lawn.

Green Lawns, Not Green Waters

It's possible to have an attractive lawn while keeping phosphorous fertilizer out of stormwater runoff. The following steps will help you keep your soil and grass healthy while still protecting our waters

Fertilize Only as Needed: If a soil test confirms a need for extra nutrients, apply organic fertilizer at appropriate times of year. If a soil test is not taken and you want to apply fertilizer, assume that soils have enough phosphorous and apply a phosphorousfree fertilizer. (For information about soil testing, visit www.lcbp.org/garden.htm). Avoid or reduce summer applications. The best once-a-year application is in late summer or early fall. Use a drop spreader if possible, and don't fertilize before a rain. Look for the Middle Number: A string of three numbers on a fertilizer bag shows its analysis—the middle number being phosphate (phosphorous) content. A "zero in



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the middle" means phosphorous free fertilizer.

Watering: Water in early morning when there is less than 1 inch a week of rain during the growing

Planting Grass Seed: Use seed that includes a mixture of grasses that do well in your setting (soil, light, activity). Add or rely on a legume (such as common white clover) among the grass to add nitrogen. Apply grass seed to existing lawns in fall and spring to out compete weeds.

Aerate: Heavily compacted lawns once a year in early fall to encourage infiltration rather than runoff.

Mowing: Try to maintain a height of 3 to 4 inches. Remove no more than 1/3 of the grass blade and leave clippings on lawn.

Weeding: Weed by hand when possible. Keep soils and plants healthy to out compete weeds and avoid pests. Use an integrated pest management plan (call the UVM Master Gardener Help Line 800-639-2230 for more information).

Article written by Jessica Andreoletti, Winooski NRCD, Lawn care information provided by Karen Bates, DEC; Sid Bosworth, UVM; and Metro Watershed Partners

Who Takes Care of Vermont's Trees?

Vermont's forests are a valuable resource. Covering more than 4.6 million acres, Vermont is 78 percent forested, making us the fourth most heavily forested state in the country. Vermont's forests are managed by the Vermont Division of Forestry. Each county in Vermont is assigned a forester to oversee regional forestry practices. The Otter Creek Watershed foresters are:

Eric Hansen, Rutland County Forester

Chris Olson, Addison County Forester

County foresters provide land stewardship assistance to homeowners. This may include technical assistance in regards to logging, hunting, tree diseases, permitting, law and ordinance compliance, and general habitat education. County foresters also spend much of their time assisting developers who are seeking permits and approving Forest Management Plans.

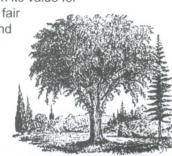
Forests Have to "Pay for Themselves"

Land is valued based on how much it is worth if it were developed (fair market value). If land is not developed, and left forested, the tax on the land is adjusted based on how the forest is utilized, i.e. maple sugaring, logging, fire wood, etc. The landowner then pays the adjusted property tax amount to their town and the State of Vermont pays the difference. This concept, called Use Value Appraisal, therefore provides an incentive to keep land forested while still allowing towns to receive property tax dollars according to the fair market value.

Use Value Appraisal Program

This program, also called "Current Use" or "Land Use," enables landowners who practice long-term forest management to have their land appraised for property taxes based on its value for

forestry, rather than its fair market value. When land is enrolled, the State attaches a permanent lien to the deed. Productive forestland appraised under this program receives this assessment as long as it is actively man-



aged according to its Forest Management Plan. If enrolled forestland is developed or harvested improp-

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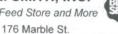
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erly, a land-use change tax is levied on the developed portion and all or a portion will be discontinued from the Use Value Appraisal Program.

Forest Management Plan

To be enrolled, forestland must have an approved Forest Management Plan updated every ten years. This document prepared by a private consulting forester should express the landowner's long-term forest management goals, describe forest stand conditions, silvicultural objectives, and include both a detailed map and schedule for silvicultural treatments. County foresters who are employed by the State do not write use-value plans. Their role is to advise landowners and consulting foresters, review and approve management plans and Forest Management Activity Reports, and to conduct on-site monitoring.

City Trees

Trees along streets, in parks and town greens, and on municipal forest lands are our community forests. These trees are cared for by the VT Urban & Community Forest Program (U&CF). This program provides assistance to communities for the planning and care of street trees and town greenscape trees. For more information contact **Danielle Fitzko**, U&CF State Coordinator danielle.fitzko@state.vt.us or 802-241-3673.

Article written by Jessica Andreoletti, Winooski NRCD

Alternative Energy from Field and Forest

By Robert Drachman, RNRCD, Chairman
Rutland Natural Resources Conservation District,
Annual Meeting, 2-1-07

Speakers: Governor James Douglas Dan Scruton, Agency of Agriculture, Food and Markets

Paul Frederick, Vermont Department of Forests, Parks, and Recreation

Compilation of presentations:

Convergence of many factors on the global scene

and locally have made the search for alternative energy sources of vital concern to all. Global warming and the escalating price of fossil fuels has made certain alternative fuels, formerly too costly, economically attractive by comparison now. Farmers, particularly, are potentially in a very advantageous position to take advantage of the renewed interest in renewable energy sources for use on the farm or for sale elsewhere. At the same time farmers have seen a very steep climb in on-the-farm production costs for fuel and animal feeds, among other supplies, making additional income a very attractive prospect.

Many of these alternative energy sources and production techniques are still in their infancy, and for many, economic viability is yet not at all clear. However, the explorations and demonstrations have begun and Vermont is playing a vital role in these efforts. Farmers and other landowners should be encouraged to participate in demonstration projects aimed at gaining a better understanding of renewable energy products and how best to produce them as economically as possible.

Renewable plant-based energy sources whether agricultural feed stocks or woody biomass are also of vital importance in the effort to reduce the release of greenhouse gases into the atmosphere, among their other advantages. Renewable energy sources remove carbon dioxide, a major greenhouse gas, from the atmosphere and with water and other minor nutrients synthesize sugars, starches, and other carbohydrates with energy from the sun. Subsequently, when used as energy sources, plant materials release carbon dioxide back into the atmosphere where sometime before it had resided thereby creating a renewable carbon cycle of synthesis and combustion.

Fossil fuels, coal, natural gas, and petroleum, on the other hand contain carbon sequestered many millions of years before and therefore when burned release *new* carbon dioxide into the atmosphere adding to the total of greenhouse gases present. This is the difference between the carbon dioxide released from a wood burning stove, using a renewable resource, compared to that released by an oil burning furnace using fossil fuel.

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A few of the more familiar products and technologies are briefly described below:

Anaerobic digestion of manure and other organic feeds or bedding materials produce methane, a flammable gas which may be used to generate heat and/or electricity by driving a generator. Biodigestion units must be airtight to exclude oxygen which creates conditions conducive to the production of combustible methane. As more of these units have been purchased, the price has declined placing them in reach of the larger medium sized dairy farms. The solids remaining after digestion may be used for animal bedding and the much less odoriferous liquid spread as a soil amendment.

Biodiesel is vegetable oil that has been treated with ethanol and lye and heat to produce a chemical reaction that results in a product far more combustible than the original oil. Indeed, biodiesel can be used in most diesel engines or can be combined with varying percentages of petroleum diesel oil. Substrates for this process may be spent cooking oil from restaurant deep fry vats or oil pressed from various oil seed crops such as canola, rape seed, mustard, or soybeans. The residual high protein solids can be used for animal feeds. The simplicity of this process makes it economically feasible to produce relatively small batches of biodiesel. Several Vermont farms are now test growing several oil seed crops in the search for those most adaptable to our climate and soil conditions.

Ethanol has long been mixed with gasoline to reduce the emission of pollutants, particularly carbon dioxide. Commercially, it has been produced by the fermentation of corn starch. Recent increased demands for ethanol for blended vehicular fuels has resulted in the construction of expanded production facilities. Not surprisingly, the price of corn for animal feeds has also significantly increased. In the not too distant future other farm crops may be fermented for ethanol. Sugar beets have high concentrations of sugar and in Europe are processed for ethanol. Certain grasses may be used for so-called cellulosic ethanol. This process can also make use of discarded farm wastes such as cornstalks or other organic materials. These processes will require large investments in equipment. Indeed, in

experimental studies algae grown in farm ponds have been far more productive of ethanol than conventional crops.

Wood in all its forms is a more accessible on-farm source of renewable energy. Cord wood may be supplemented with wood chips which are easier to handle on-site and are saleable to large volume commercial users. They can produce wood chips with portable chippers using tops and branches left over from logging or new blow downs and truck these to the wood fired facility.

Options in the renewable energy field are evolving so quickly that opportunities in the near future may be remarkably numerous. However, significant levels of start-up funding may be required for some configurations of production facilities. Several State agencies are tracking developments and hopefully will be able to advise individual farmers and other landowners in the near future on practical applications.

Useful references: Farm Energy Handbook. A Guide to Renewable Energy Opportunities. VT Environmental Consortium, VT Dairy Task Force, 2006.

Call for copies: 802-828-3835. Contains much useful information and sources for more up-to-date information.

The VT Energy Digest. An Inventory of Renewable Energy and Efficiency.

VT Council on Rural Development, 2007. Call for copies: 802-828-6022

Upper Otter Creek Watershed Council (UOCWC) **Update and Activities**

The District and UOCWC were awarded laboratory analytical services through a grant for volunteer water quality monitoring from the State of Vermont, Department of Environmental Conservation. This summer marks the 5th year for members of the UOCWC volunteering to collect water quality samples on the Otter Creek and major and minor tributaries in need of further assessment. Again this year waters are being sampled twice a month for phosphorus,



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nitrogen, turbidity, total suspended solids, and E. coli (as an indicator of the possible presence of disease-causing bacteria).

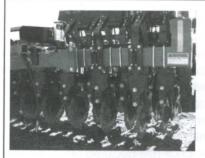
Funding for the Summer Water Quality Monitoring Program was also provided by the Waterwheel Foundation.

Projects completed with funding by State Clean & Clear Program and VT DEC River Corridor grants are:

- A restoration project design and Alternatives Analysis of the Mussey Brook in Rutland which runs through the Vermont State Fairgrounds. The purpose of this project is to improve the riparian condition (river corridor) of the Mussey Brook through the Fairgrounds. The Mussey Brook has been identified as not meeting Vermont Water Quality Standards due to stormwater runoff and the lack of aquatic habitat.
- A Phase 1 Stream Geomorphic Assessment on the Clarendon River, Mill Brook and Ira Brook.

These Assessments were completed by following protocols specified in the VT Agency of Natural Resources Stream Geomorphic Assessment Phase 1 Handbook. In addition, the Rutland Regional Planning Commission is contracting to do a Phase 2 geomorphic assessment of the East Creek. For questions regarding the UOCWC volunteer opportunities and projects, please contact Nanci McGuire at 802-775-8034.

Members of the UOCWC will continue to identify immediate projects, prioritize issues and develop strategies to be included in a draft of the Basin Plan for the Upper Otter Creek with guidance from the VT Department of Environmental Conservation and technical assistance from other state, federal, and local agencies.





SARE GRANT Open House: Broadcast versus In-Furrow banding of fertilizer in spring wheat.

When: Monday August 6th

Time: 11-2pm

Where: Grembowicz Farm

2375 Creek Rd, Clarendon VT

On Monday, August 6th from 11 to 2pm there will be an open house at the Grembowicz Farm, 2375 Creek Road, Clarendon, to discuss aspects of no-till wheat production and in-furrow versus broadcast fertilization of wheat including equipment modifications.

CCA Credit available

Lunch will be provided.

RSVP by August 1st

For more information and to RSVP call: Jennifer at 802-287-2250 or 802-558-6470 Or email: jad0403@vermontel.net

The District would like to thank all of the towns, businesses, landowners and others who have helped support our many projects/programs this year.

We greatly appreciate your support!



Vermont Pasture Network Calendar

CENTER FOR SUSTAINABLE AGRICULTURE

Events in August 2007 and Beyond

	Events in August 2007 and Dejona
JULY 30-AUGUST 2	HUMAN-EQUINE WORKING PARTNERSHIPS Fair Winds Farm, Brattleboro, VT
	How do horses learn? How can we work with their instincts and learning patterns to develop a willing, responsive partnership? This workshop will cover these questions and more on both practical and theoretical levels. Applicable for those who work with horses of any age.
	CONTACT: Fair Winds Farm, fairwind@sover.net, (802) 254-9067
	AMERICAN CHEESE SOCIETY CONFERENCE AND CHEESE COMPETITION Sheraton Hotel, Burlington Vermont
	Enjoy the world of quality cheese-making by taste and by workshops! Pre-conference tours along VT's Cheese Trail, workshops on taste, quality, farmstead sustainability.
	CONTACT: http://www.cheesesociety.org for full agenda and registration
AUGUST 1	ORGANIC DAIRY GRAZING AND ANIMAL HEALTH MANAGEMENT WORKSHOP Butterworks Farm, Westfield, VT
10 AM TO 2 PM COST: \$8 NOFA- VT MEMBERS, \$12 NON-MEMBERS, FREE FOR ORGANIC &:	Covers all aspects of rotational and intensive grazing livestock nutrition, paddock design, management strategies, animal health, soil quality and other topics of interest to livestock farmers. Lunchtime discussion of organic livestock management, healthcare, fly control, record keeping, grazing, forage quality and more. Resource materials and books from the NOFA-VT bookstore will be available. Co-sponsored by the UVM Center for Sustainable Agriculture's Vermont Pasture Network program.
TRANSITIONING DAIRY FARMERS	Hosted by organic dairy and non-dairy livestock farmers and facilitated by NOFA-VT's Dairy & Livestock Technical Assistance Program staff team (Willie Gibson, Lisa McCrory, Sarah Flack,
BYO LUNCH, REFRESHMENTS PROVIDED	Dave Rogers). CONTACT: NOFA-VT, (802) 434-4122; info@nofavt.org, www.nofavt.org
AUGUST 6	BROADCAST VERSUS IN-FURROW BANDING OF FERTILIZER IN SPRING WHEAT Grembowicz Farm, Clarendon VT
11 AM TO 2 PM	SARE grant open house to discuss aspects of no-till wheat production and infurrow versus broadcast fertilization of wheat including equipment modifications. CCA Credit available.
LUNCH PROVIDED	
RSVP BY AUGUST 1	CONTACT: Jennifer Durham, (802) 287-2250 or (802) 558-6470, jad0403@vermontel.net









Vermont Crops and Soils

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What's New

Upcoming Events

UVM Crops and Soils Field Day, Borderview Farm, July 26, 10 - 3, Alburg, VT Small Grain Field Day, Grembowicz Farm, Aug. 6, 11 - 2, Clarendon, VT Animal-Power Field Days, Tunbridge, VT Sept 29-30

Calendars

UVM Extension Calendar

UVM Center for Sustainable Agriculture Calendar of Events

New or Timely Articles/Topics

Ergot Alert

Armyworm Update for 2007

Potato Leafhoppers in Alfalfa

Managing Flood Damaged Crops in Vermont

The Impact of Summer Thunderstorms on Corn Yield

Western and Northern Corn Rootworms

Assessing On-Farm Pasture Availability and Forage Quality for Dairy Feed Planning

Using Farm Records to Determine Pasture Production and Growth Rate

Vermont Forage Report

Weekly Crop Report for New England

Back to top This site is maintained by Sid.Bosworth@uvm.edu, Plant & Soil Science Department, University of Vermont.

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