

Nutrients – A Watershed Perspective

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Snohomish Conservation District

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528 91st Ave NE, Ste A, Lake Stevens, WA 98258-2538 425-335-5634 www.snohomishcd.org

“Local Solutions to Local Problems”

A Little Background



Photo source:
<http://www.nrcs.usda.gov/about/history/>

Dust Bowl of 1930s

- Drought in the Great Plains = Dust Storms
- Conservation Districts formed
- Local, subdivision of state government, under Washington State Conservation Commission
- Work closely with U.S. Dept. of Ag - Natural Resource Conservation Service
- Celebrating 78 years of service in Snohomish County



District Summary

- Locally led conservation
- Local, State and Federal Partnerships
- Serving Snohomish County & Camano Island
- Working with landowners on a voluntary, non-regulatory basis, to preserve natural resources and improve water quality.



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Connecting with Land Managers

- Education and Outreach
- Workshops, Fairs and Festivals
- Presence in the Field
- Personal (Agricultural) Staff Experience
- Meeting landowner goals



Snohomish CD Nutrient Programs

➤ Programs

- Farm Planning
- Soil Health
- Stormwater Solutions
- Youth Education
- Habitat Restoration



Snohomish CD Projects

(Relating to Nutrients)

➤ Projects

- Janicki Advanced Distillation and Nutrient Separation (ADNS)
- Manure Storage
- Nutrient Management
 - Soil Testing
 - Manure Spreader Program
 - Nutrient Mgmt. Planning



Nutrients/SCD Farm Planning & Projects

Our Local CIG Project - Demonstration of Advanced Distillation Treatment Technology for Dairy Wastewater

- **Stillaguamish Tribe of Indians / Demonstration of an Innovative Distillation and Nutrient Separation Processor for Dairy Wastewater**
- Partners: Janicki Bioenergy, Natural Milk Dairy, Snohomish Conservation District, WSU
- Partners will demonstrate and evaluate a Vapor Recompression Distillation (VRD) processor for the whole treatment of dairy manure.
- The VRD processor will convert manure wastewater in real time into distilled recycled water, concentrated liquid ammonia, and a pathogen-free, dry, organic fertilizer or nutrient product.

Manure Storage (Beef Cattle)

Bedded Pack Barn

BEFORE

- Uncovered winter confinement area
- Nutrient runoff to nearby surface waters a problem
- Livestock health and comfort issues



AFTER

- Runoff from area has been eliminated
- Cow comfort and herd health greatly improved
- Compost provides a more stable product for field application during the growing season



Horse Manure Storage

Before –

- Horse manure out in the elements
- Nutrient runoff from this area contributing to surface waters down slope



After –

- Covered manure bin that keeps manure dry minimizing runoff
- Chore efficiency improved
- Composted manure more stable to apply during the growing season



Horse Manure Storage

Before



After



Soil Health Program

Fall Seeded Cover Crops

- Cover Crop - Why Bother?
 - Reduce Erosion to Surface Waters
 - Maintain/Increase Organic Matter
 - Plant Uptake of Nutrients
 - Reduction of NO_3 in Ground and Surface Water
 - No bare ground going into rainy season



Soil Health Program Cost Share



- RCPP/EQIP Fall Planted Cover Crops
- Seed Purchase Reimbursement Program

Fall Seeded Cover Crop



Perennial Rye, Vetch and
Triticale



Fava Bean Ryegrass Mix

Stormwater Runoff

(Our Largest Rain Garden to Date)

- Qualco Dairy
- Total area is 10,000 sf.
- Runoff flows in from impervious areas
- Capacity is 120,000 gallons
- The treatment capacity of 5,500 gallons per hour



Qualco cont'd



Qualco cont'd



Why is Nutrient Management Important?

- Nitrogen supports our food future
- Support farmers bottom line
- Agronomic use/balance supports water quality
- **Puget Sound doesn't need any extra nutrients**

Funding

- Existing Sources
 - Washington State Conservation Commission
 - Snohomish County Rates and Charges
 - Limited amount
 - NRCS EQIP (Larger Scale Projects)
 - Department of Ecology- Watershed Scale
 - Difficult to Implement – Tied to Buffer Requirements

Time For Questions

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