Apr 6th, 11:30 AM - 11:45 AM

A collaborative approach for evaluating agricultural contributions to nonpoint source pollution in the Deschutes watershed, south Puget Sound

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Building a Team and an Approach to Assess Potential Agricultural Non-Point Source Water Pollution

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Thurston GeoData Center

Project goals

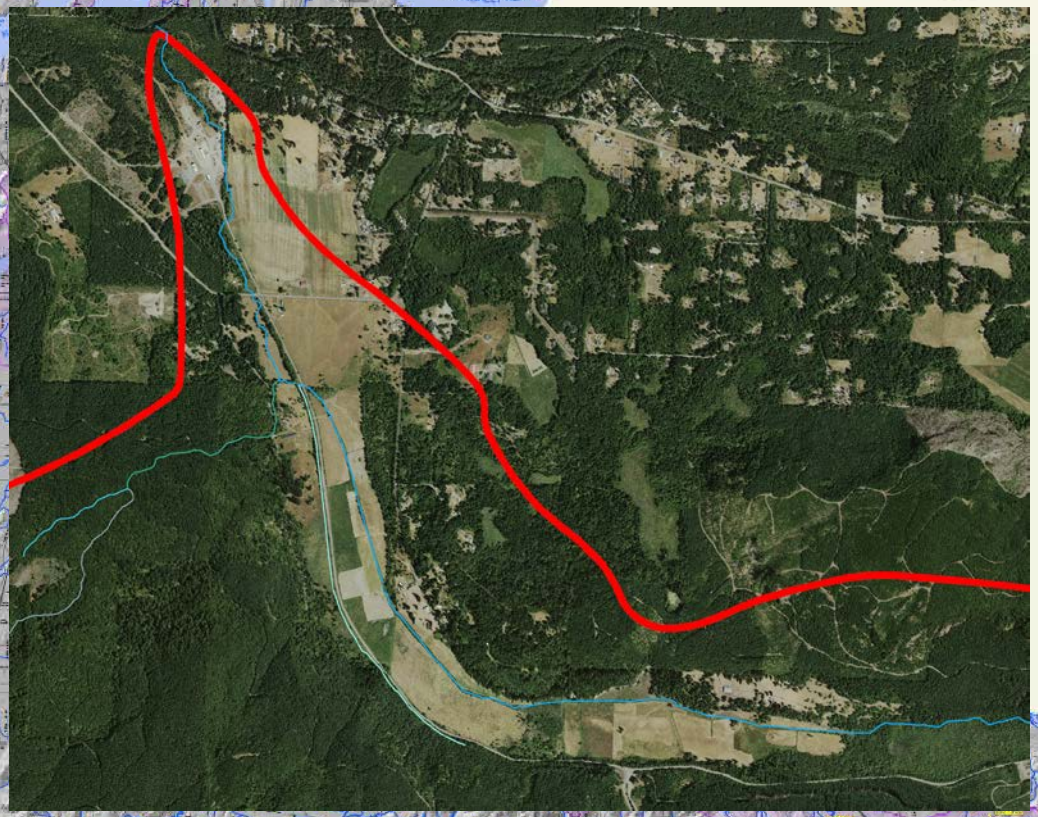
1. find opportunities for improving water quality as impacted by farming,

2. develop a protocol to integrate natural resource and farm management data, and

3. craft this data collection in a manner that would later enable procurement of cost-share dollars in the form of grants for farmers, thereby incentivizing voluntary stewardship

THURSTON COUNTY

Deschutes Watershed, Sub-Basins, & Water Quality Monitoring Sites



WaterQualityMonitoringSites
Streams
Waterbodies

0 1 2 3 4 5
Miles

Deschutes River, Percival Creek, and Budd Inlet Tributaries Temperature, Fecal Coliform Bacteria, Dissolved Oxygen, pH, and Fine Sediment Total Maximum Daily Load

Water Quality Improvement Report and Implementation Plan - FINAL

The federal Clean Water Act (CWA) requires that a TMDL be developed for each of the water bodies on the 303(d) list of impaired waters.

DEPARTMENT OF ECOLOGY
State of Washington

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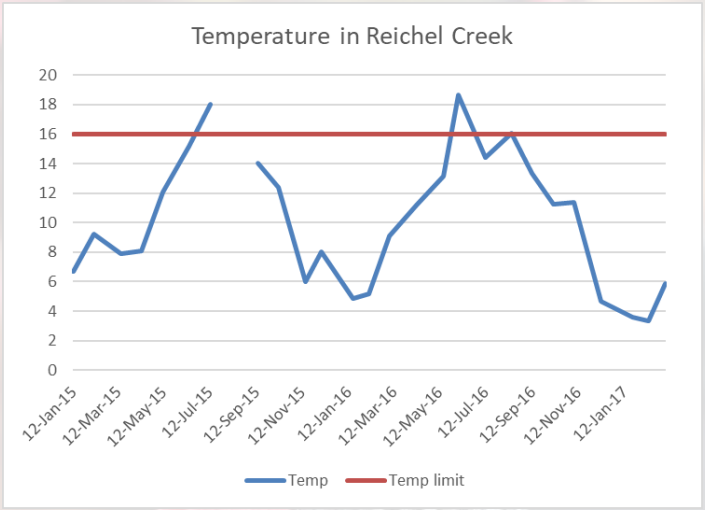
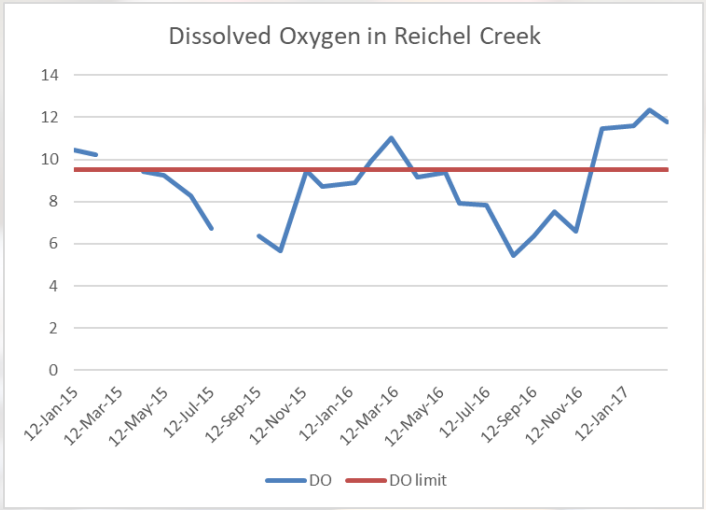
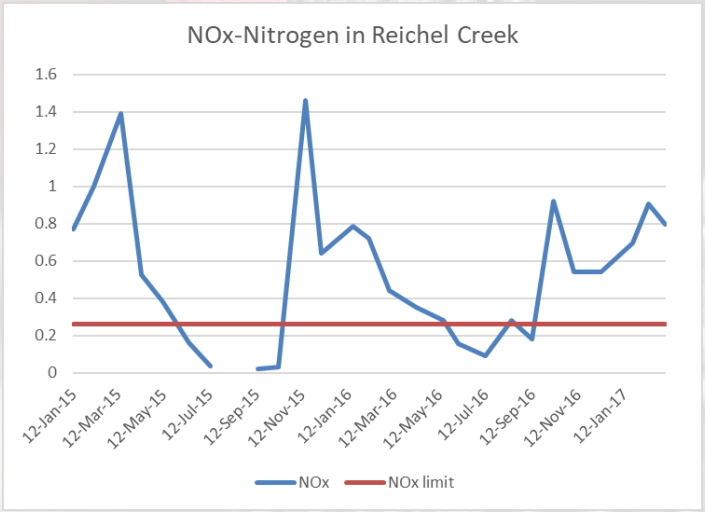
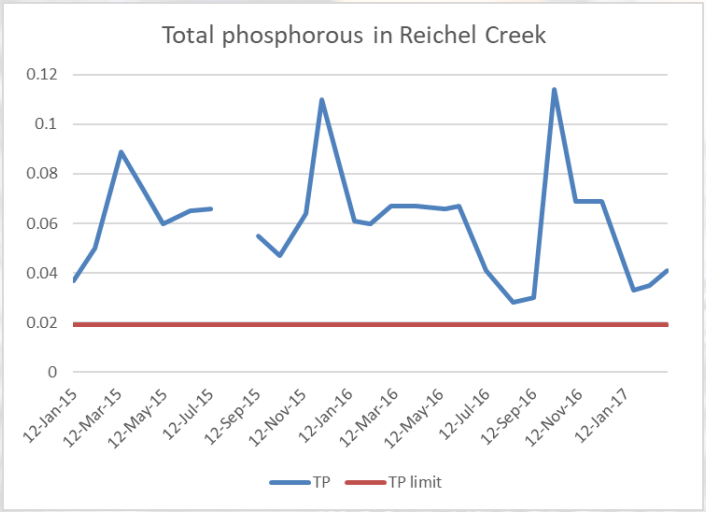
Water Quality Thresholds and Measurements









Point source discharges

Non-point source discharges

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Project Activities

1. Hire a part-time **rural-working lands conservation technician**

2. Utilize partner (TCD, Sate agencies, County, other) source material to aggregate existing watershed-level information concerning nutrient and bacteria **loads**, and farm types.

3. Develop a **watershed-level farm characterization** including farm numbers and types, and underutilized nutrient resources and associated bacteria loads on ag lands.

Team building and Approach Quiz

D'ja hear the new yahoo at extension is building a farm pollution map?

This project will quantify:

A. Ag non-point pollution
B. Underutilized farm resources

A project deliverable will be a:

A. Parcel-level database of farming activity
B. Basin-level level summaries of farming activity

Data will be stored at:

A. WSU Extension
B. Thurston Conservation District
C. Thurston County

A primary outcome of this project is to:

A. Help secure grants for voluntary cost-share programs
B. Develop a pollution identification and control program

Farmers need to be:

A. Regulated into submission
B. Paid for the ecosystem service work that society is asking of them

Activity 1: Hire a working lands conservation technician

1. protocol for data collection and storage
2. trust with farmers/landowners
3. protocol for farm evaluation work (pasture, nutrient assessment, windshield surveys)
4. span divide between farming and conservation
5. partner/lead for outreach and implementation
6. …need to know farming

Activity 2. Aggregate existing watershed-level data

Department of Ecology:

- Deschutes Total Daily Maximum Load Report 2012
- Deschutes Water Quality Improvement and Implementation Plan 2015
- Puget Sound Characterization 2016

Thurston County:

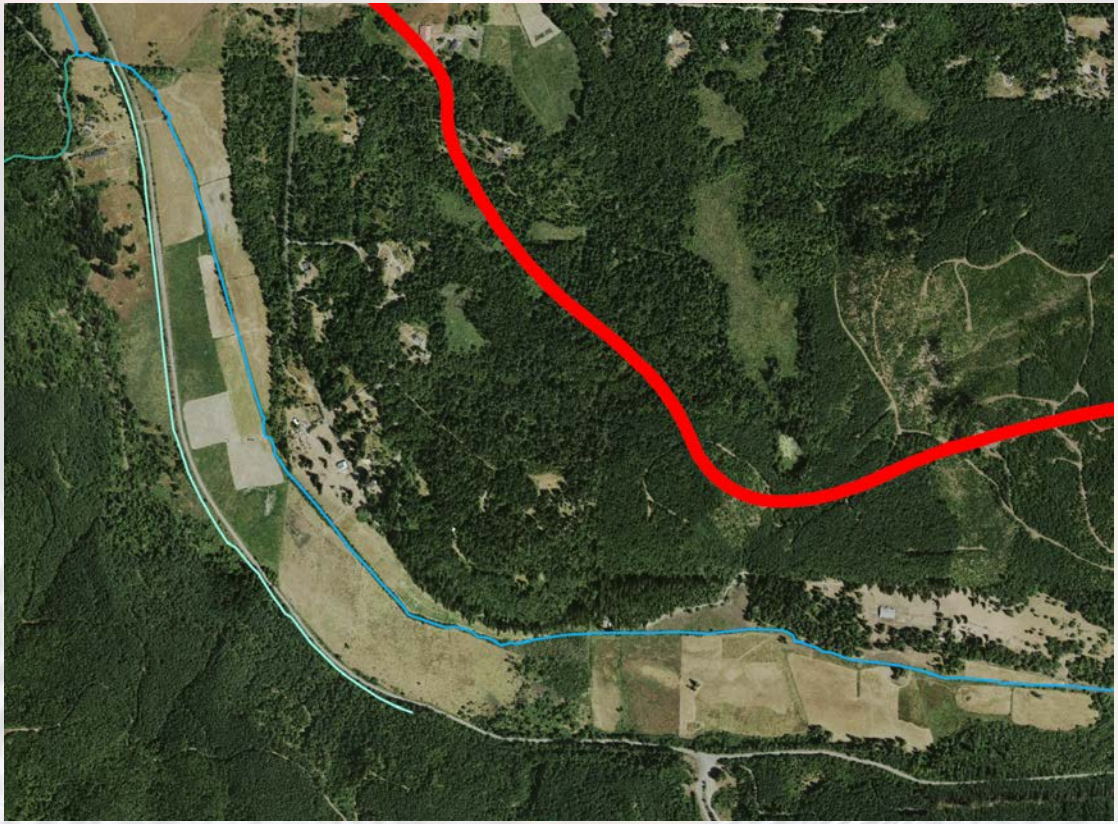
- Deschutes Watershed Land Use Analysis: Current Conditions Report 2015
- Deschutes Watershed Characterization Study 2011

Department of Ecology and the Department of Health:

- Available Water Quality Data 2004 - 2017
  - Bacteria
  - Dissolved oxygen
  - Temperature
  - pH
  - Total Nitrogen
  - Total Phosphorous

Activity 3. Aggregate existing watershed-level data

1. Inventory existing farm plans at TCD
2. Review available GIS data
3. Collect windshield survey data



Aggregate parcel-to-parcel level agricultural activity

Develop basin-level agricultural activity summaries

FARM WINDSHIELD SURVEY FORM

Farm Plan Candidate – Yes No Existing Farm Plan: Year _____

Priority – High Medium Low

Critical Areas Present – Geological Hazardous Areas Wetlands Critical Fish and Wildlife Habitat

Critical Recharge Area Frequently Flooded

Slope – Flat Moderate Steep

-

Watershed _____ **Date**_____
Parcel # _____ **Acreage** _____
Address _____
Mailing Address _____
Owner _____ **Operator** _____
Farm Size – Commercial Private Personal
Farm Type – Pasture Hay Woodland Cropland Wetland Prairie Habitat

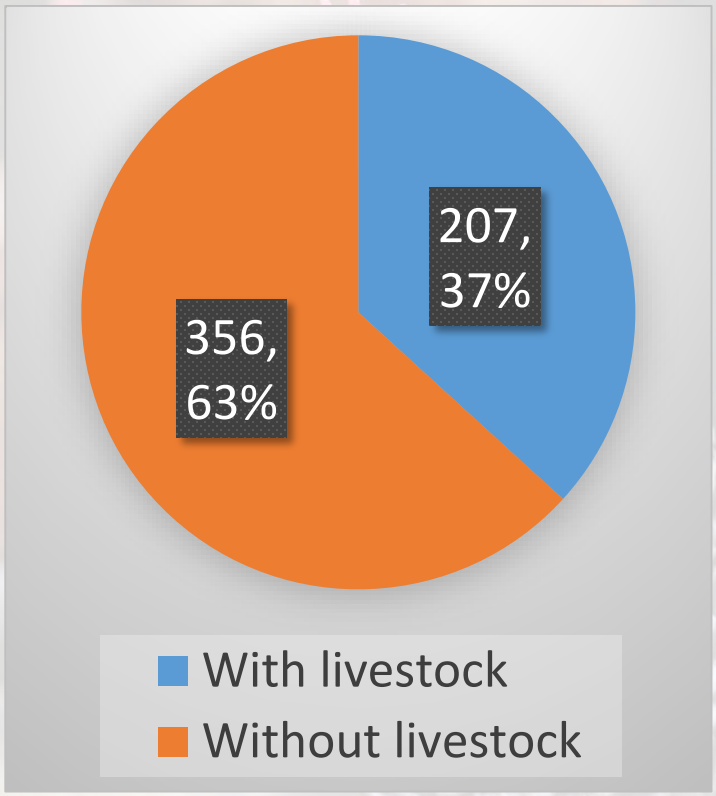
Livestock Type –	**Estimated Head Count –**

Crop Type – Row Crop Grains Timber Orchard Berries Hay
Bare Crop Land? Yes No
Noxious/Invasive Weeds – Knotweed Scotch Broom Blackberry Reed Canary Grass
Other: _____
Pasture Condition – Excellent Good Fair Poor
Additional Pasture Comments

Data story lines, or data clusters

Reichel Sub-basin

Agricultural Activity



Total agricultural acreage: 563 acres (of 5,045)

Total in pasture or hay: 100%
Total with livestock: 37%
Total without livestock: 63%

Number of cattle: 135
Number of horses: 4
Number of goats: 6

Total A.U.s: 176

1. **Land use**
2. **Ag activity**
3. **Animal density distribution**
4. **Livestock stream access**
5. **Known/unknown Ag characterization**

Next steps

Use of the data, team and approach:

- Evaluate connection of ag activity & water quality data - geographic
- Identify risk categories
- Enable assessment of change over time
- Critical areas overlap
- Landowner outreach
- Cost-share $ (infrastructure, restoration, other)
- Expand analysis to whole watershed

Thank you

Lessons learned:

- Outreach opportunity, not pollution quantification (or even unused resources quantification)
- Need GIS modeling to expand approach to whole watershed