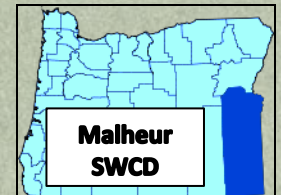


# Fletcher Gulch Irrigation System Transformations



**Malheur Soil & Water Conservation District**  
**Gary Faw – Watershed Technician**

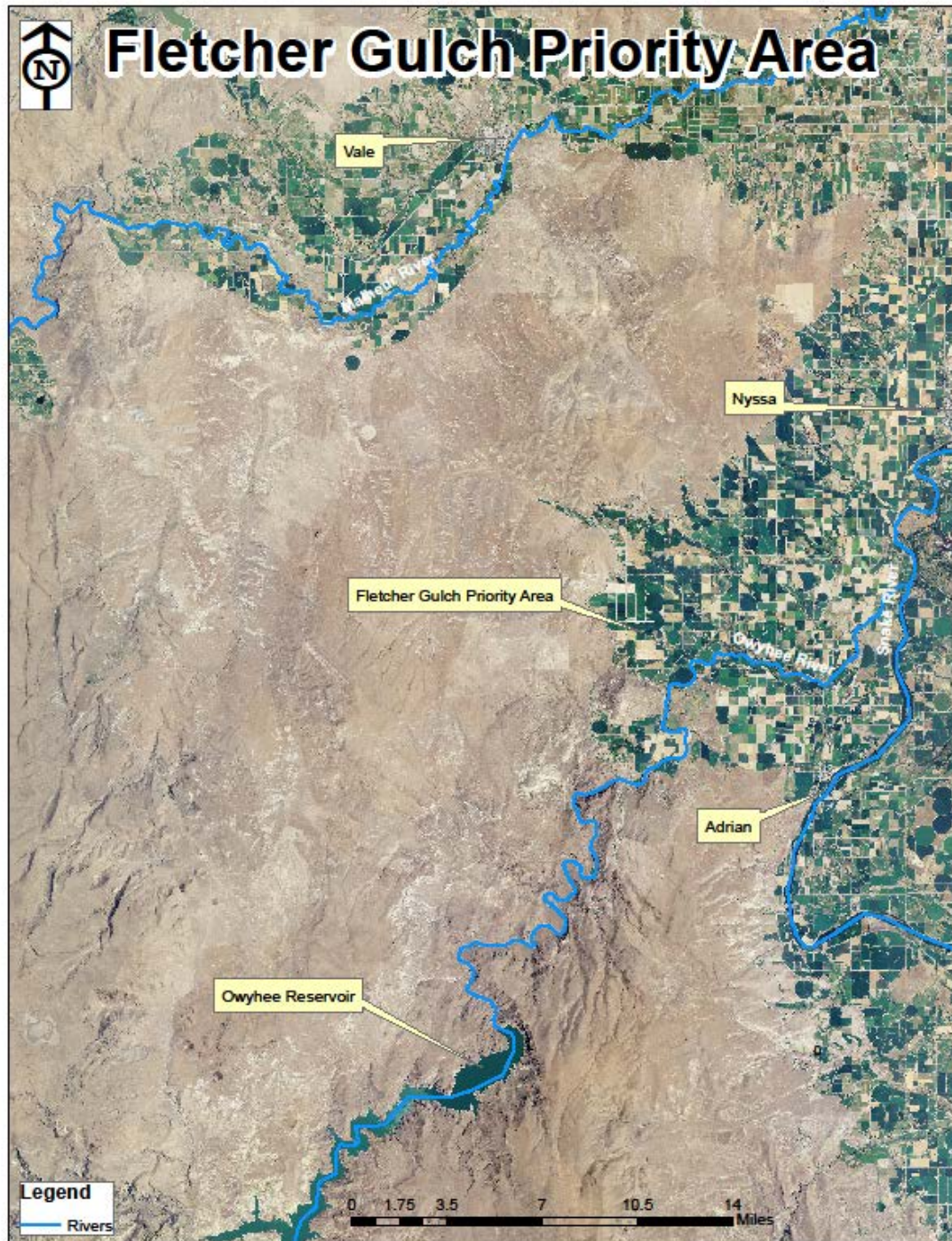
**Owyhee Watershed Council**  
**Nicole Sullivan – Watershed Coordinator**







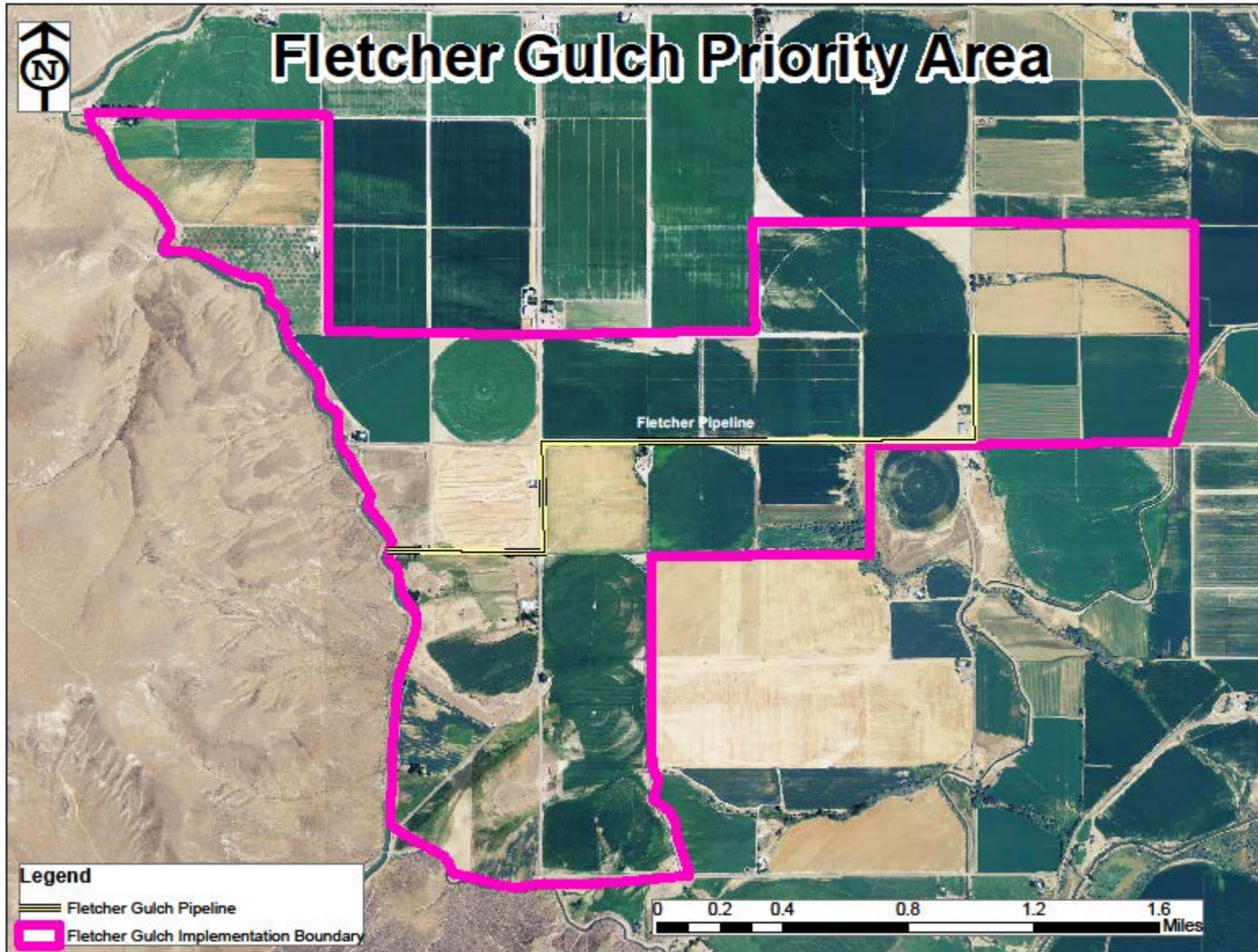
# Fletcher Gulch Priority Area







# Fletcher Gulch Priority Area



## Legend

- Fletcher Gulch Pipeline
- Fletcher Gulch Implementation Boundary

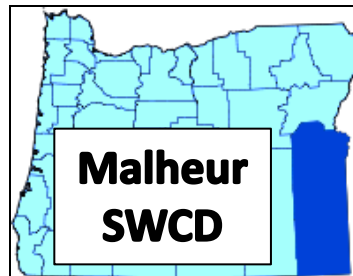
0 0.2 0.4 0.8 1.2 1.6 Miles



# Fletcher Gulch Priority Area

- Fletcher Priority area encompasses approximately 970 irrigated cropland acres
- Primary Crops Grown in Area
  - Onions, Sugar Beets, Beans, Hay seed, and Corn
- Predominate Area Soils Nyssa Silt Loam & Owyhee Silt Loam
  - Soil Erosion rates estimated at 20-30 tons/acre/year
- Collaborative effort with multiple project partners to improve water quality in the Fletcher Drain
- Water Quality Concerns Addressed - Fletcher Drain 303 (d) listed
  - Sediment
  - Nutrient
  - Bacteria
- Reduce Pumping costs and conserve energy

# Project Partners



**Landowners**



# Water Quality Monitoring

**Gary Your On!!!!**





**Total Phosphorus as P**  
**(mg/L)**



Year	N	Maximum	Minimum	Average
2008	16	0.83	0.16	0.34
2009	16	0.42	0.12	0.23
2010	15	0.85	0.13	0.30
2011	11	0.49	0.17	0.31
2012	13	0.62	0.24	0.35

**Total Suspended Solids**  
**(mg/L)**

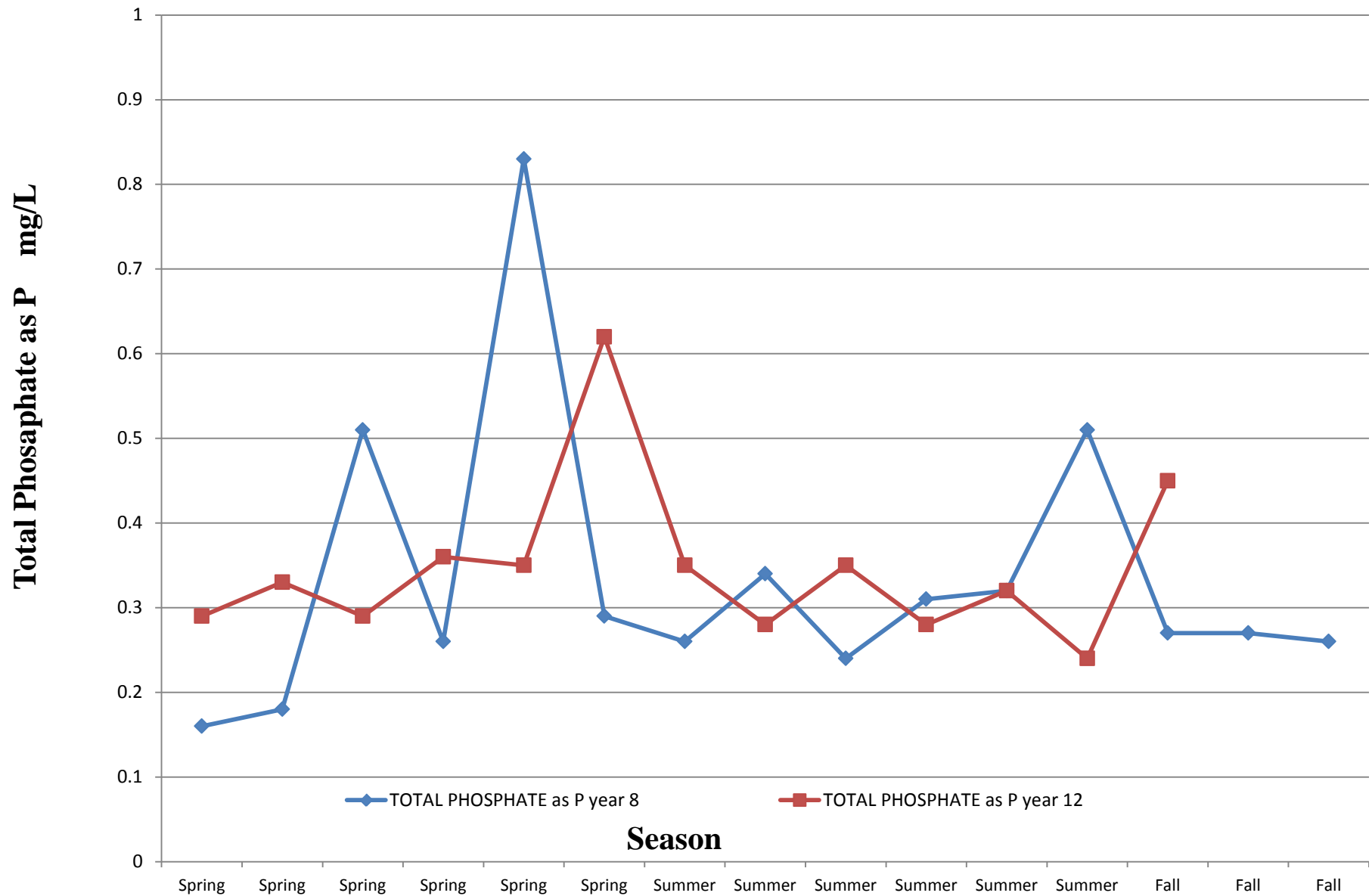
Year	N	Maximum	Minimum	Average
2008	16	3631	6	1265
2009	16	6912	2	1463
2010	15	4570	9	1160
2011	11	5756	36	1358
2012	13	1901	8	680

**E. coli**  
**(Colonies per 100 mg)**

Year	N	Maximum	Minimum	Average
2008	16	2419	201	1380
2009	16	2419	117	1250
2010	15	2419	5	1391
2011	11	2419	155	1545
2012	13	2419	307	1449



## Total Phosphate as P 2008 and 2012



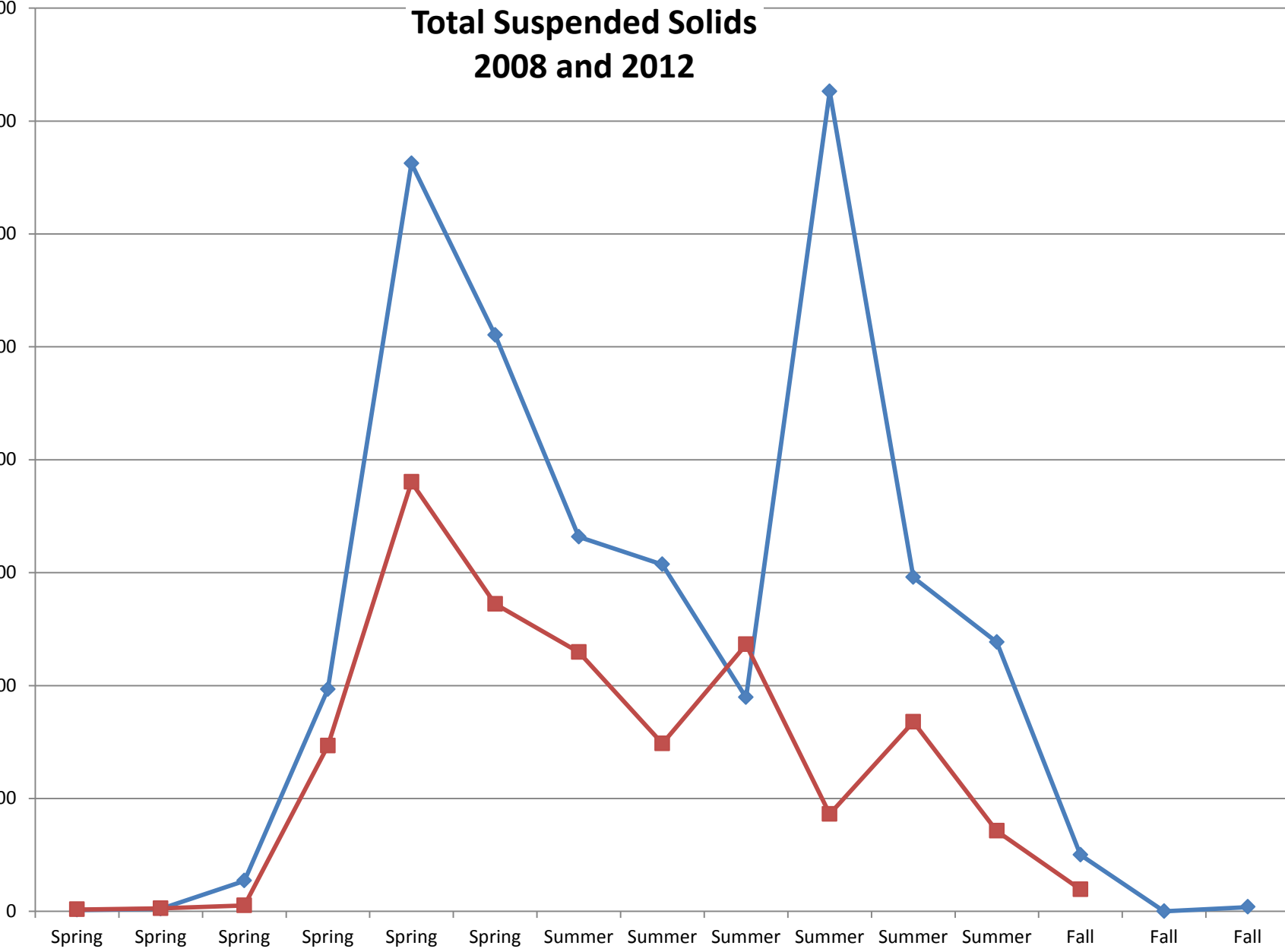
# Total Suspended Solids 2008 and 2012

Total Suspended Solids mg/L

Season

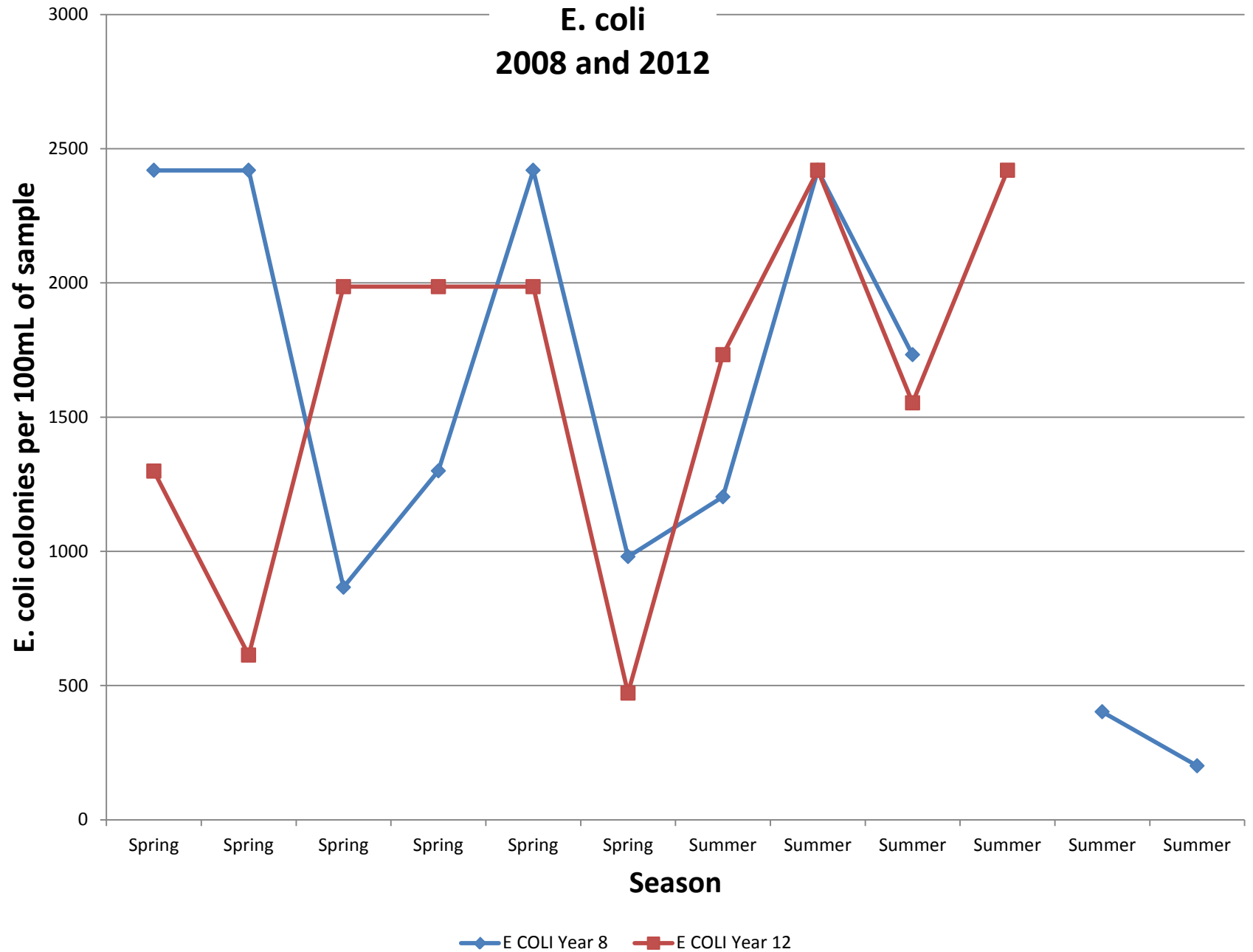
—◆— TOTAL SUSPENDED SOLIDS Year 8

—■— TOTAL SUSPENDED SOLIDS Year 12

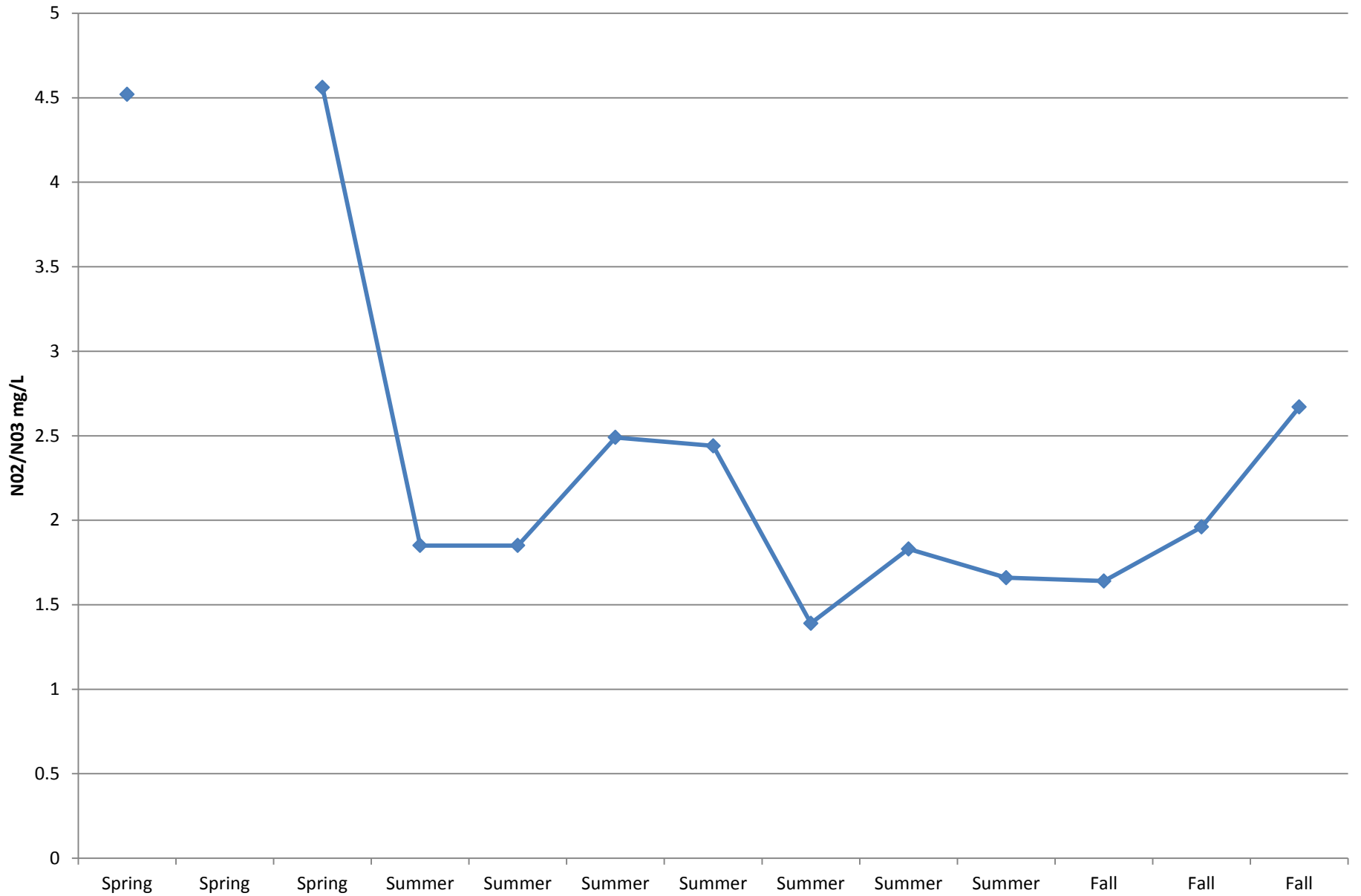




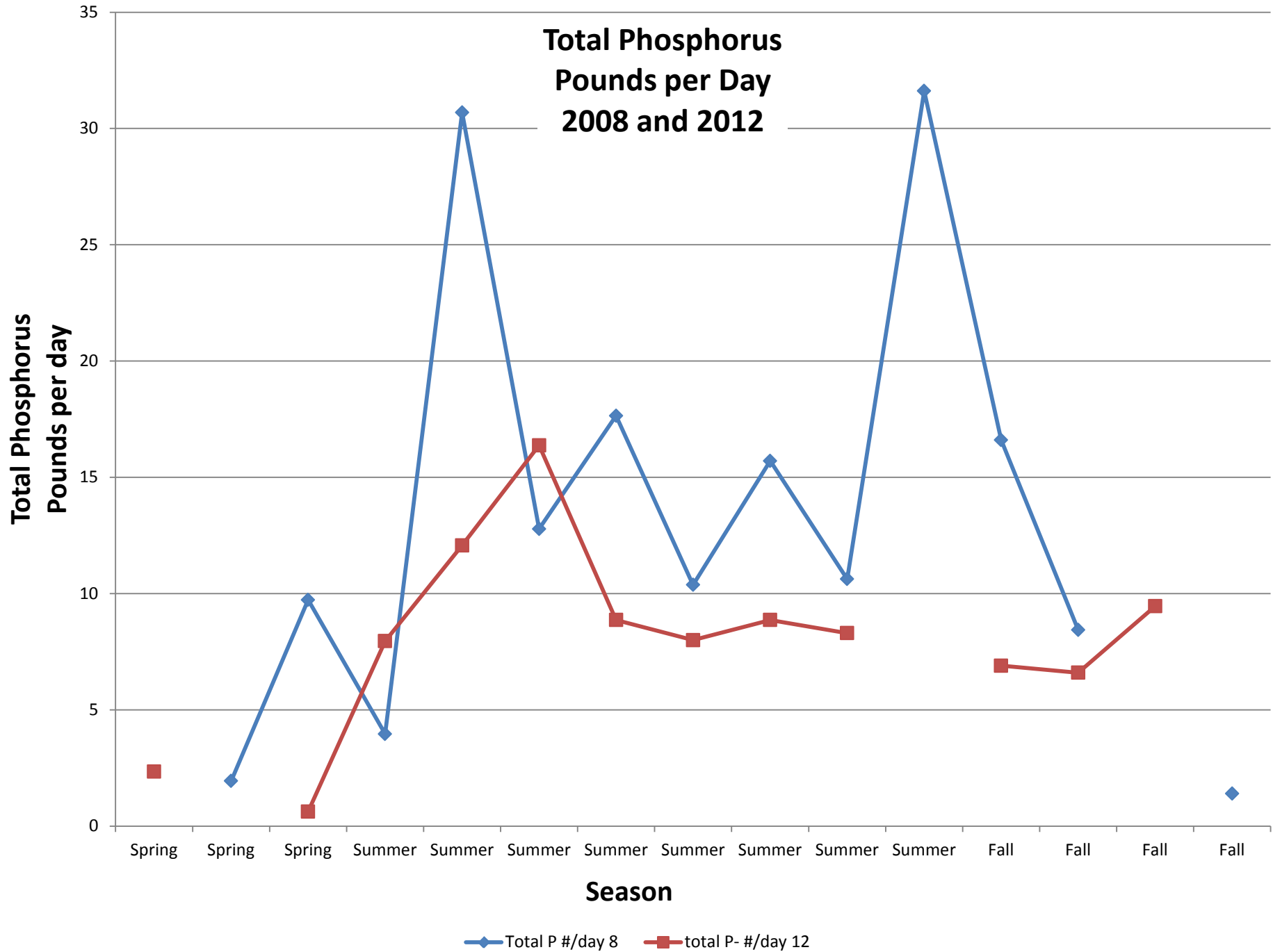
## E. coli 2008 and 2012



# N02/N03 20 12

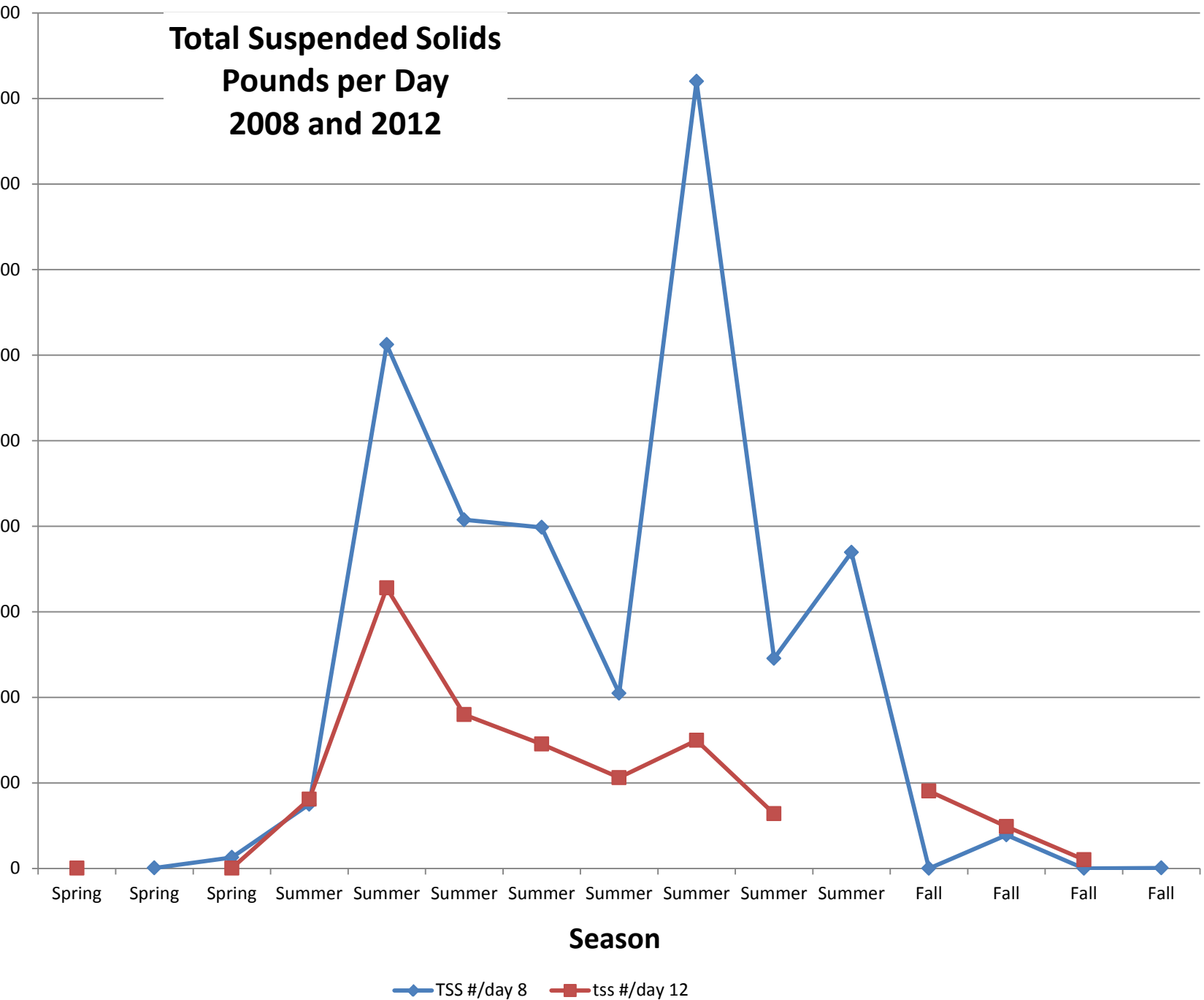






# Total Suspended Solids Pounds per Day 2008 and 2012

Total Suspended Solids  
Pounds per Day





# Fletcher Pipeline Project

- Replaced 9,800 feet of open lateral with pressurized pipeline
- Installed Automated Headgate/screen structure at pipeline inlet
- Project Funding Partners: OWEB, Bureau of Reclamation, Owyhee Irrigation District, Malhuer SWCD, Landowners, Owyhee Watershed Council, and NRCS
- Goals
  - Allow landowners to convert from flood/furrow irrigation to pressurized sprinkler irrigation
  - Reduce pumping costs conserve energy
  - Reduce irrigation induced erosion
  - Reduce sediment, nutrient, and bacteria inputs into Fletcher Drain
  - Water Conservation
    - Increase Irrigation Efficiency
    - Eliminate evaporation and seepage loss





# On Farm Irrigation Projects

- On farm irrigation improvements implemented through the OWEB large grant restoration program and NRCS - EQUIP program
- Irrigation Water Management practices implemented through use of soil moisture monitoring
- Irrigation Improvements with various systems
  - Pivot
  - Linear
  - Drip
  - Wheeline
  - Handline



# Total Priority Area Dollars

## Priority Area Dollars Implemented to Date Including On Farm Individual Projects and Fletcher Pipeline

---

- Landowners = \$221,510.00
- NRCS = \$270,700.00
- Bureau of Reclamation = \$299,946.00
- Owyhee Irrigation District = \$114,340.00
- Oregon Watershed Enhancement Board (OWEB) = \$746,541.00
- Total Estimated Priority Area Dollars = \$1,653,037.00



A large, horizontal, corrugated metal water storage tank is situated in a rural landscape. The tank has a blue pipe protruding from the top and a black pipe at the bottom. The background shows a vast, flat, brown field under a clear sky, with some distant greenery and structures on the horizon.

# Total Sprinkler Conversion Acres

- Total Acres converted from Flood/Furrow to Sprinkler Irrigation = 479
- Total Acres currently funded and in implementation = 200