

Fallon Paiute-Shoshone Tribe: Water Quality and Program Update



Fallon Paiute-Shoshone
Tribe

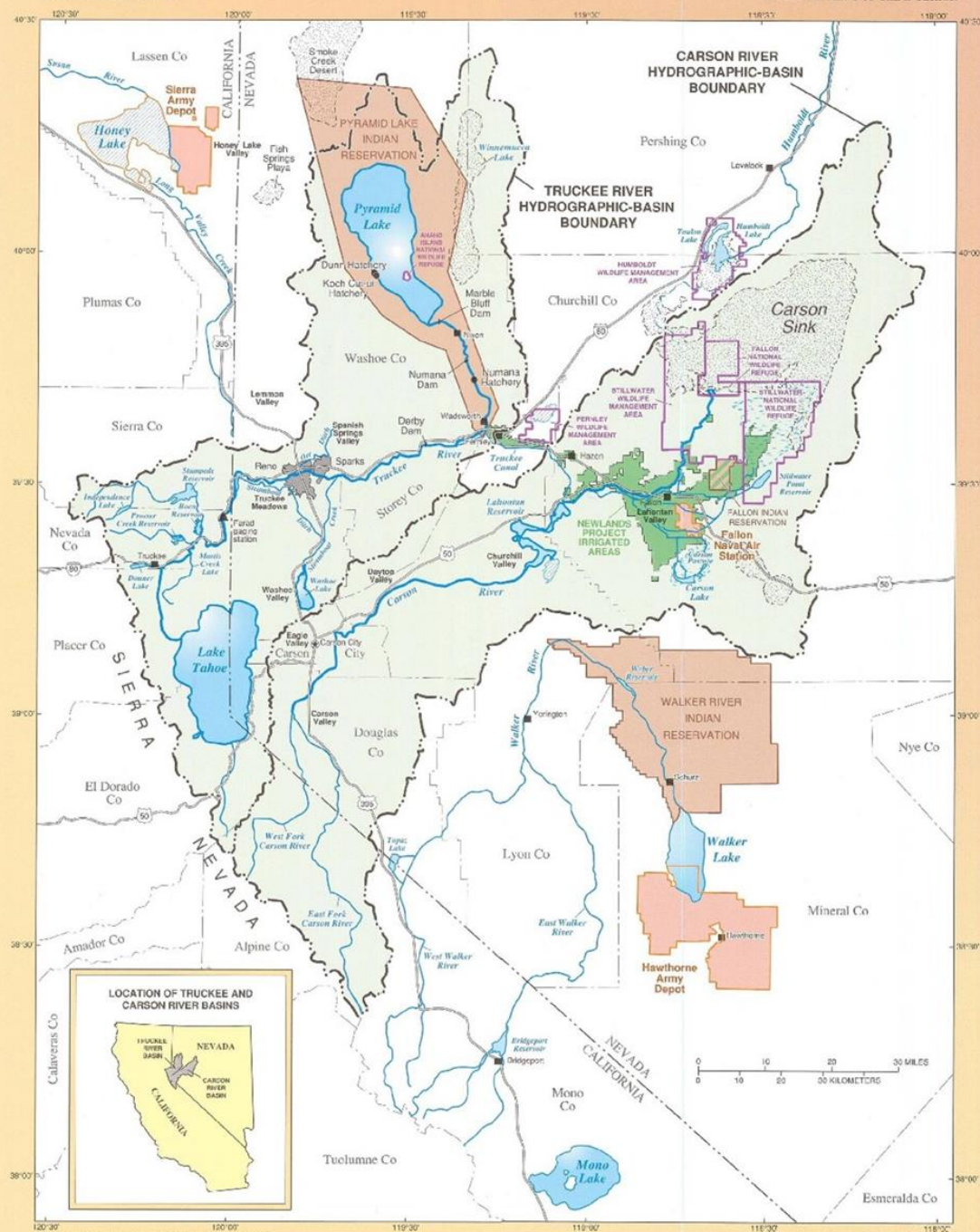
Environmental Protection
Department

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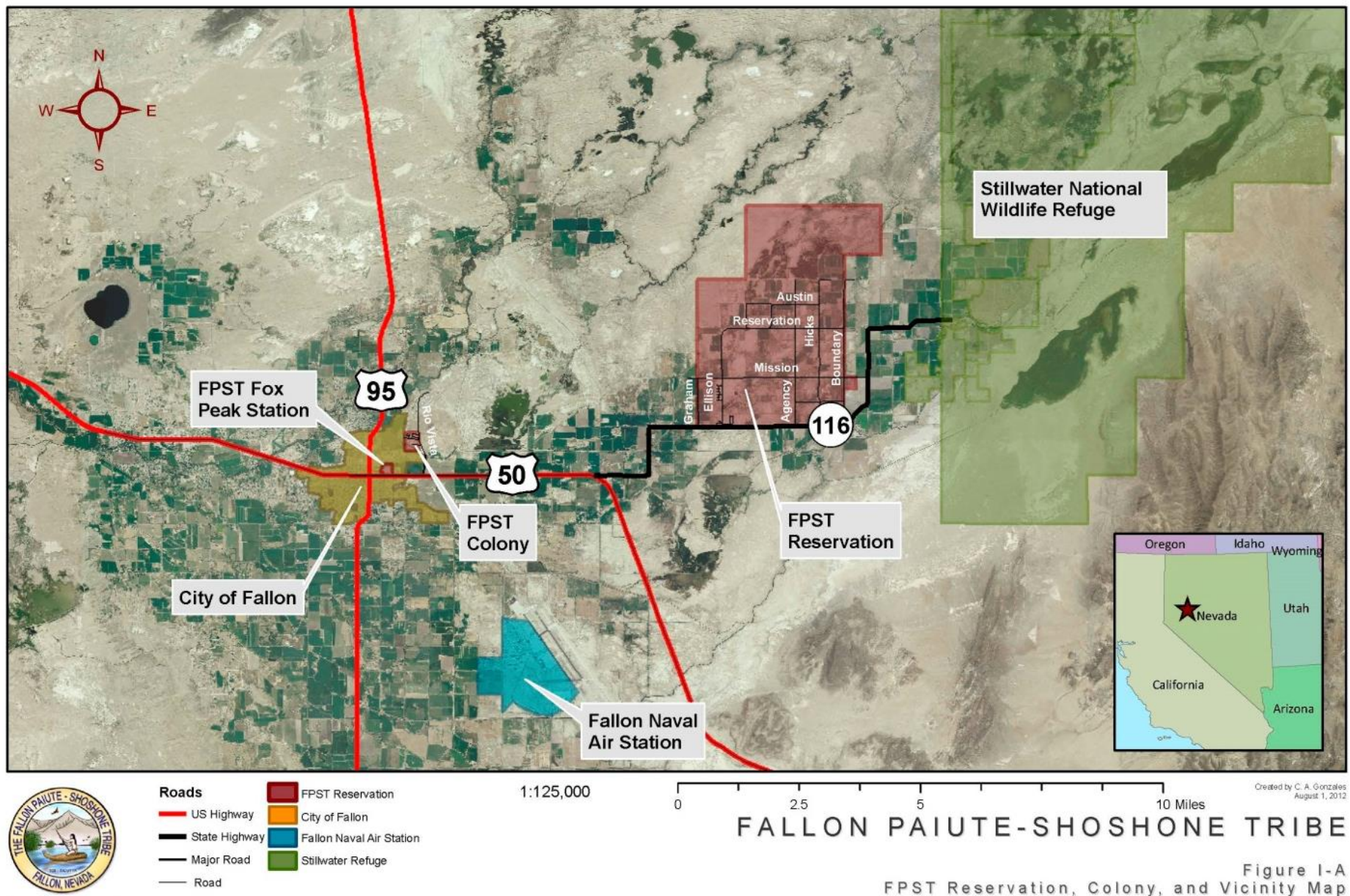
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Presented by Ileana Henry, Environmental Specialist

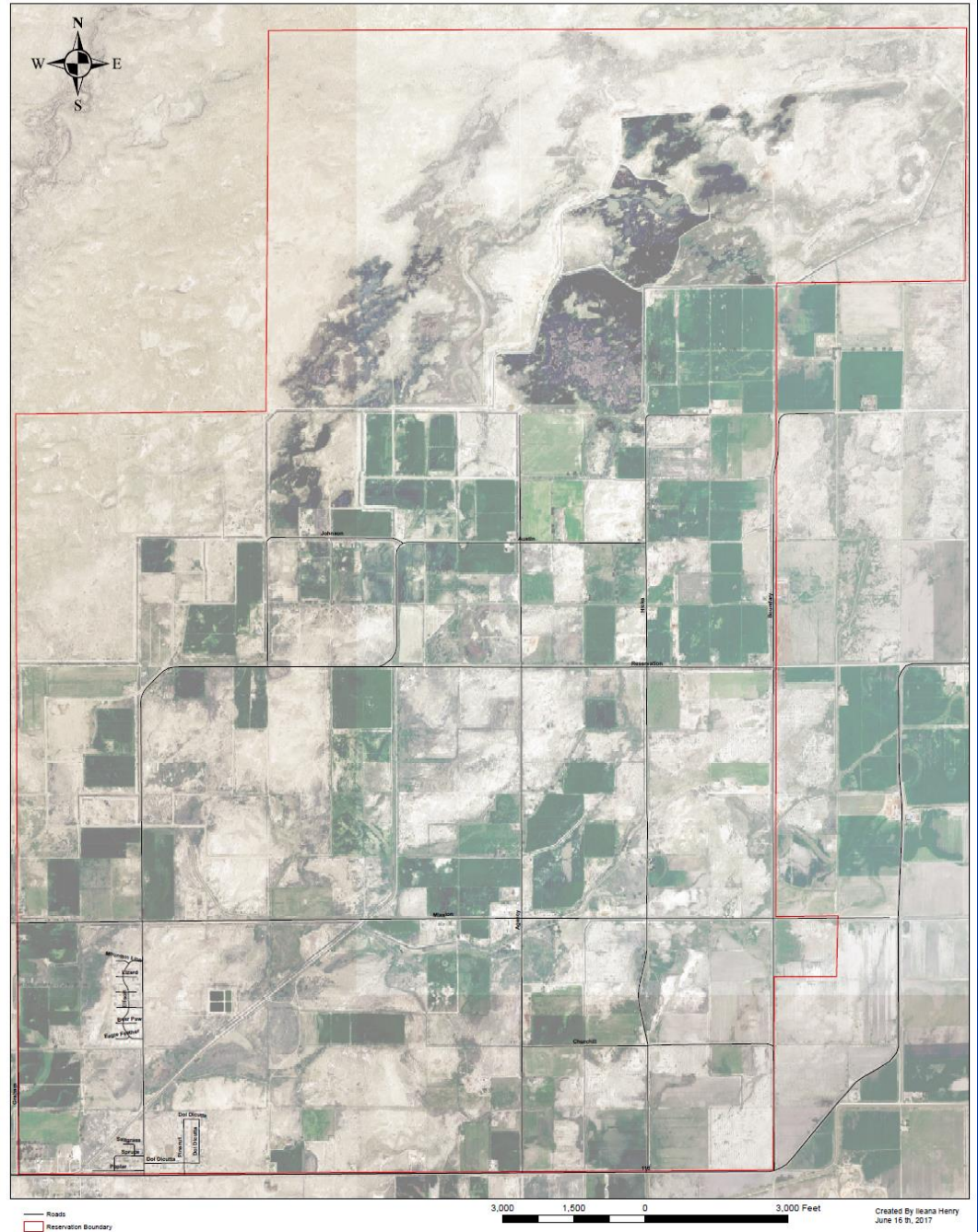


Fallon Paiute-Shoshone Tribe



Tribal Land Use

Tribal Lands	Amount
Grazing land	2815 ac.
Cropland	210 ac.
Surface Water	480 ac.
Tribal Wetlands	480 ac
Drainage Ditches	29 stream miles
Irrigation Canals	26 stream miles



Uses for Surface Water Include:

- ❖ Cultural uses
- ❖ Hunting
- ❖ Aquatic habitat
- ❖ Crop Irrigation
- ❖ Secondary recreation contact



Fallon Paiute-Shoshone Tribe Water Quality Program

It is the primary goal of the FPST to
effectively protect and work toward
the improvement of water quality on
Tribal lands.



Water Quality Monitoring Program Goals and Objectives:

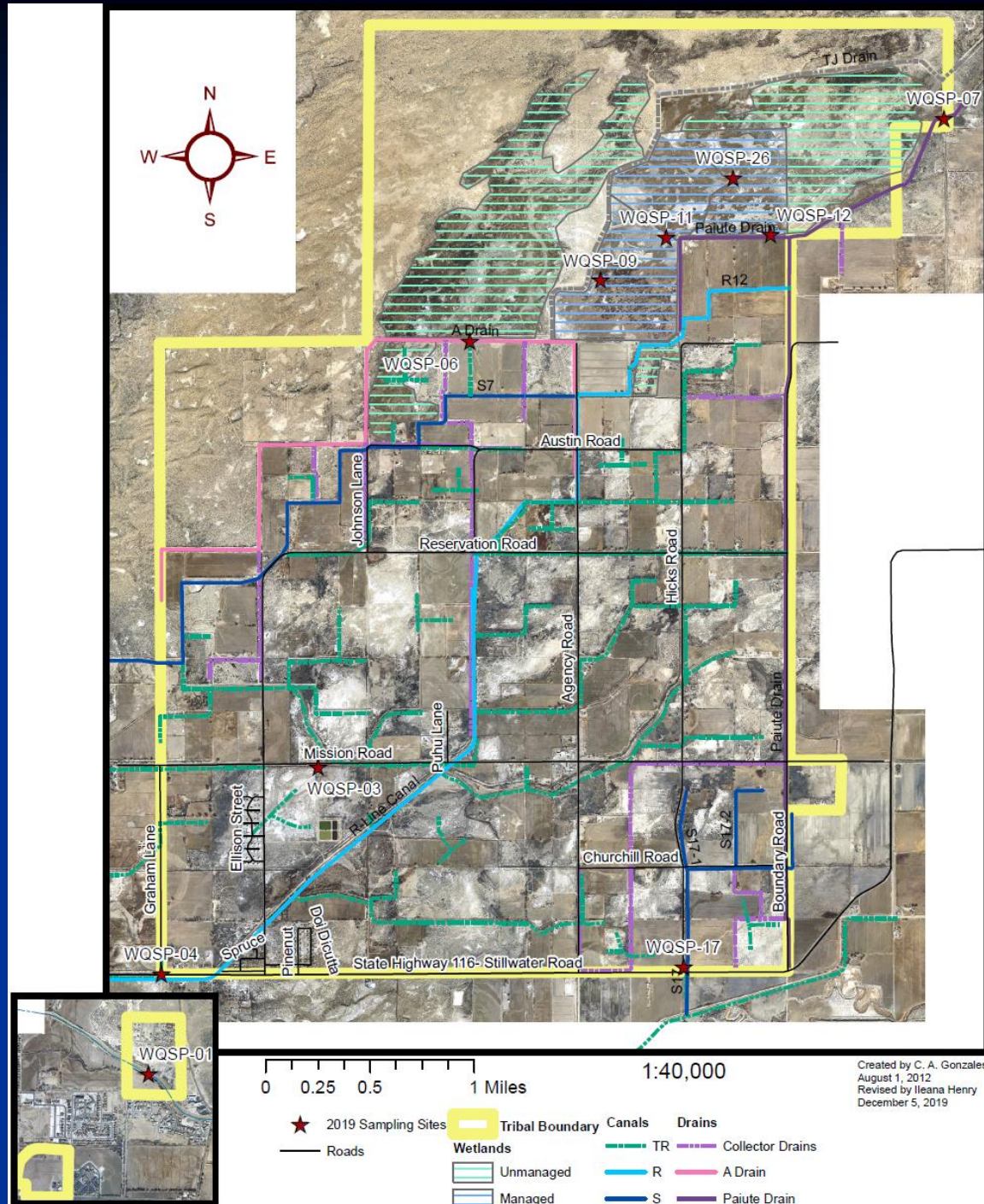
- Protect and improve water quality of the water bodies on tribal lands.
- Increase water quality monitoring program capabilities.
- Attain EPA- approved water quality standards for water bodies on tribal lands.
- Reduce nonpoint source pollution impacts on surface water, ground water, aquatic and riparian habitat.





Sampling Locations

Site Name	Water Body Type	Water Body Name	Distance/Area Monitored
WQSP-01	Canal	S Canal	0.8 mi.
WQSP-03	Drain	Paiute Drain	1.0 mi.
WQSP-04	Canal	R Canal	0.5 mi.
WQSP-06	Drain	A Drain	0.1 mi.
WQSP-07	Drain	Paiute Drain	0.8 mi.
WQSP-09	Wetland	Wetland Cell 1- West	62.4 ac.
WQSP-11	Wetland	Wetland Cell 1- North	114.2 ac.
WQSP-12	Wetland	Wetland Cell 3	29.5 ac.
WQSP-17	Canal	S-17 Canal	0.2 mi.
WQSP-26	Wetland	Wetland Cell 2	89.4 ac.



Sampling Frequency

Sampling QAPP –

- ❖ Four separate events spaced equally over a period of time.
- ❖ Water bodies are flowing and accessible.
- ❖ Collected at ten sampling sites
- ❖ May – August, based on water delivery schedules



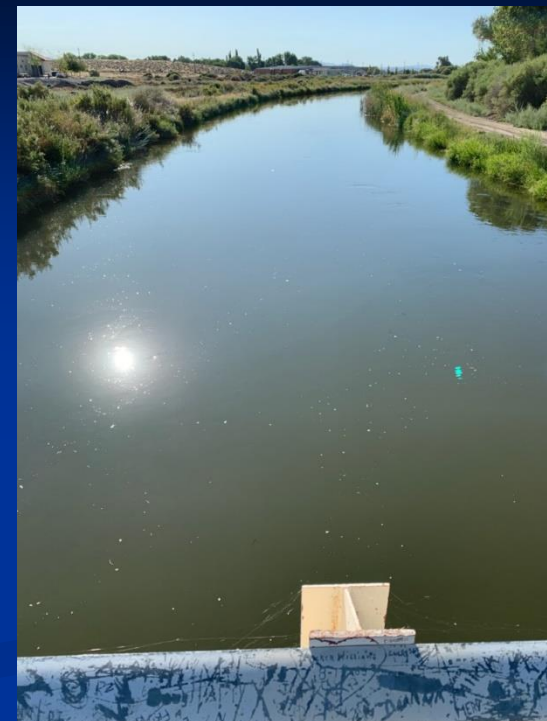
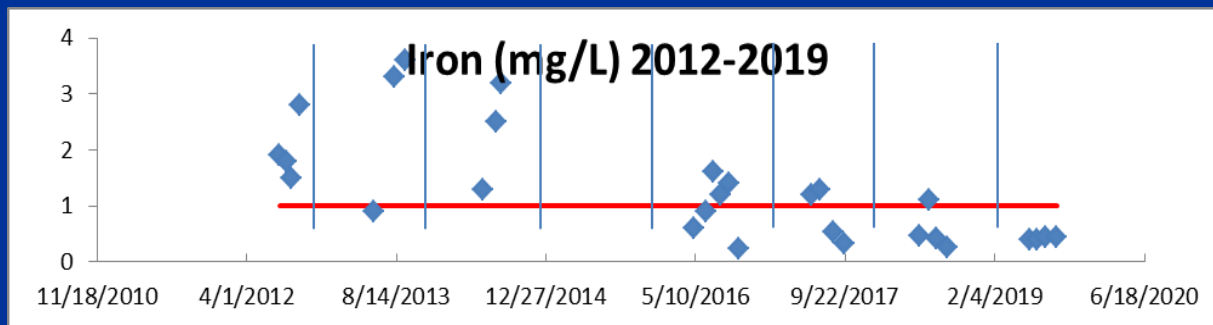
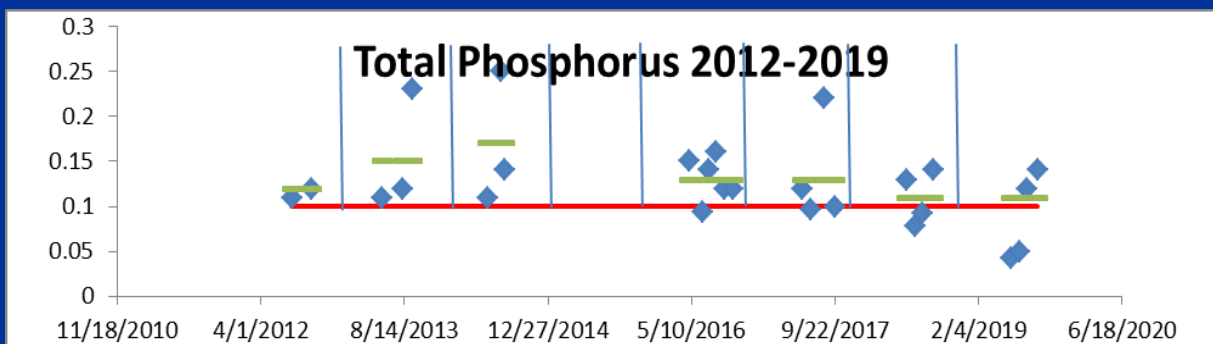
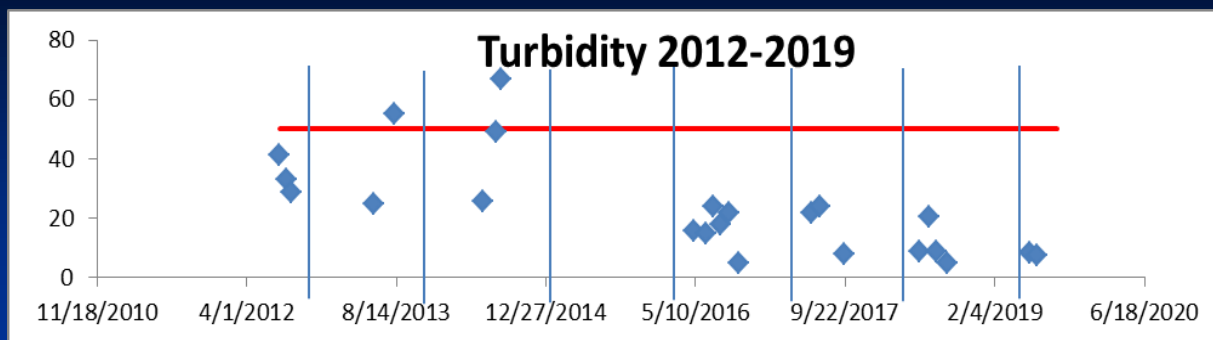
Parameters Assessed

Pollutant	Criteria	Recommended Criteria Source
pH	6.5 - 9	EPA Gold Book
Temperature	32°C	EPA Gold Book – Upper tolerance for benthic
Dissolved Oxygen	≥5 mg/L	EPA Gold Book
Turbidity	50 NTU	EPA WQS Criteria Summaries Sept. 1980
Phosphorus	0.1 mg/L	EPA Gold Book
Total Nitrogen	.38 mg/L	EPA Rivers and Streams in Nutrient Ecoregion 3
E coli	<235 per 100 mL	EPA Gold Book
Total Dissolved Solids	500 mg/L	EPA Gold Book
Iron	1 mg/L	EPA Gold Book
Arsenic	0.15 mg/L	EPA National Recommended WQ Criteria

Impaired Water Bodies

Site ID	Impairment Status	Impaired Parameters
WQSP-01	Impaired – seasonal	Total Phosphorus, Total Nitrogen
WQSP-03	Impaired - seasonal	Dissolved Oxygen, Total Phosphorus, Total Nitrogen, e.Coli, Total Dissolved Solids
WQSP-04	Impaired – seasonal	pH, Total Phosphorus, Total Nitrogen, e.Coli
WQSP-06	Impaired – seasonal	Dissolved Oxygen, Total Phosphorus, Total Nitrogen, Total Dissolved Solids
WQSP-07	Impaired – seasonal	Total Phosphorus, Total Nitrogen, e.Coli, Total Dissolved Solids, Iron
WQSP-17	Impaired – seasonal	Total Nitrogen, Iron, pH, Turbidity
WQSP-09	Impaired year round	Total Nitrogen, e.Coli, Iron
WQSP-11	Impaired year round	Total Nitrogen, Iron
WQSP-12	Impaired year round	pH, Total Nitrogen, Iron
WQSP-26	Impaired year round	pH, Dissolved Oxygen, Total Phosphorus, Total Nitrogen, Iron

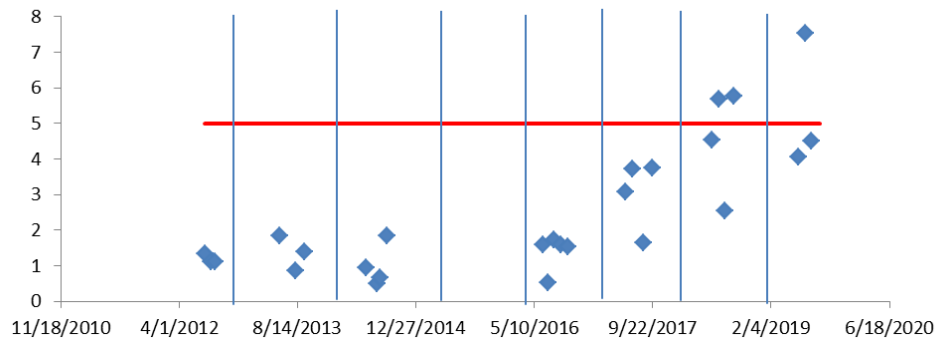
WQSP-01 IMPROVED



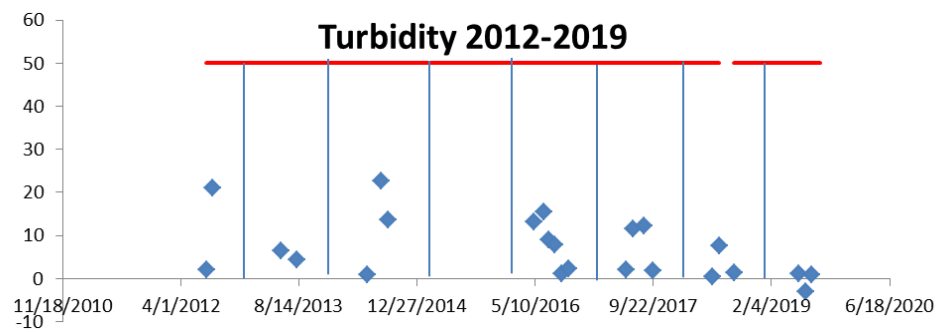
Pollutant	Criteria	Recommended Criteria Source
pH	6.5 - 9	EPA Gold Book
Temperature	32°C	EPA Gold Book – Upper tolerance for benthic
Dissolved Oxygen	≥5 mg/L	EPA Gold Book
Turbidity	50 NTU	EPA WQS Criteria Summaries Sept. 1980
Phosphorus	0.1 mg/L	EPA Gold Book
Total Nitrogen	.38 mg/L	EPA Rivers and Streams in Nutrient Ecoregion 3
E coli	<235 per 100 mL	EPA Gold Book
Total Dissolved Solids	500 mg/L	EPA Gold Book
Iron	1 mg/L	EPA Gold Book
Arsenic	0.15 mg/L	EPA National Recommended WQ Criteria

WQSP-03 IMPROVEMENT

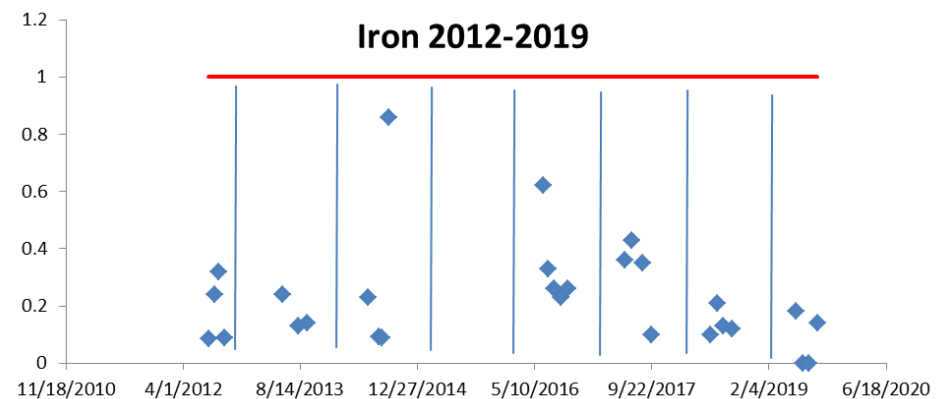
Dissolved Oxygen 2012-2019



Turbidity 2012-2019

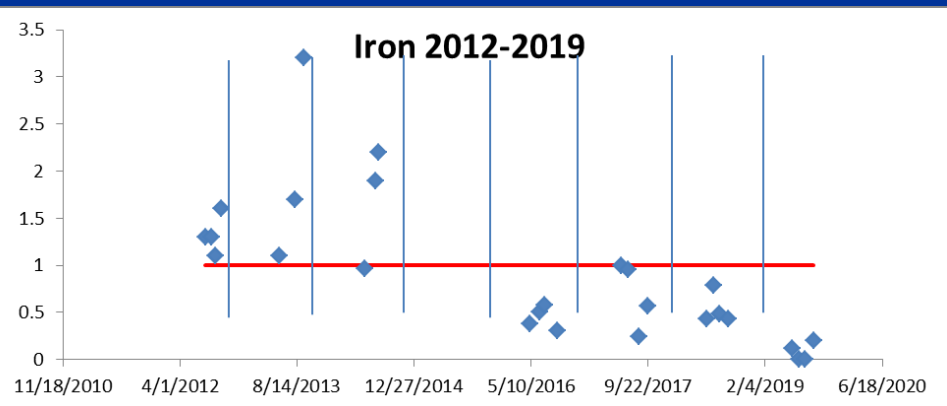
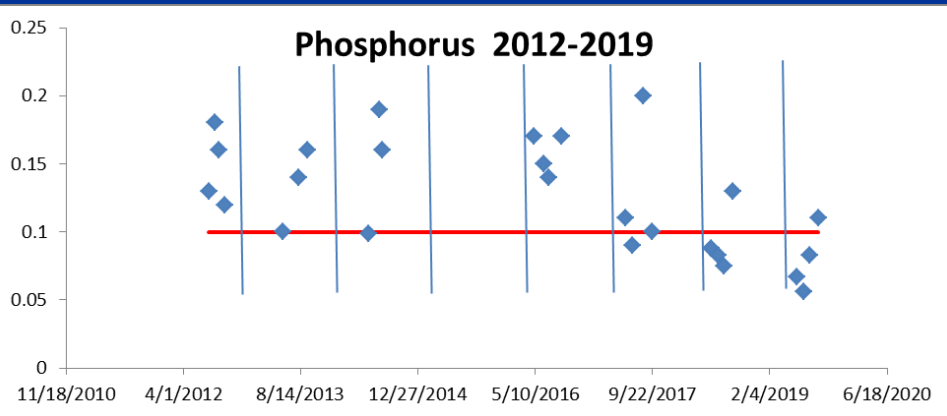
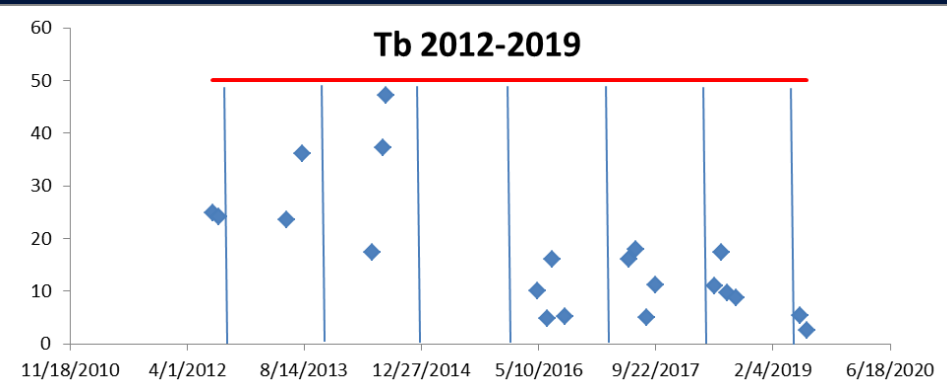


Iron 2012-2019



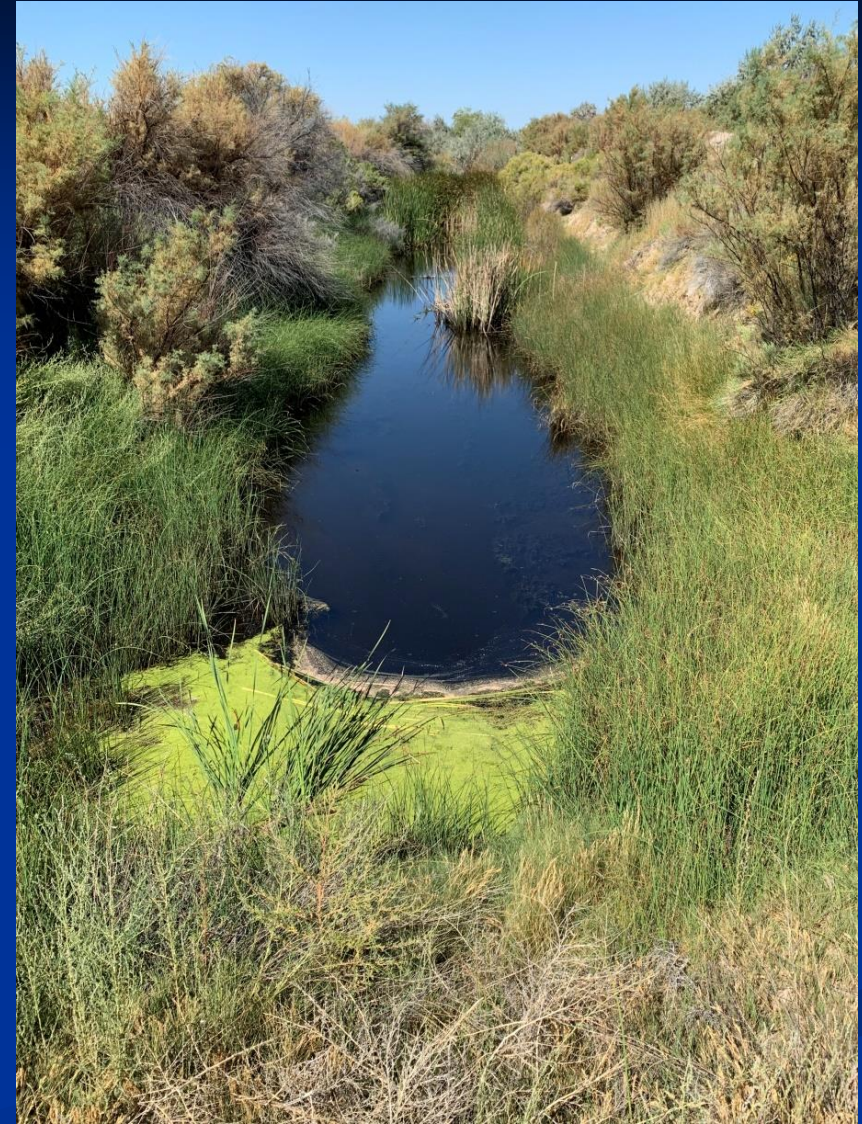
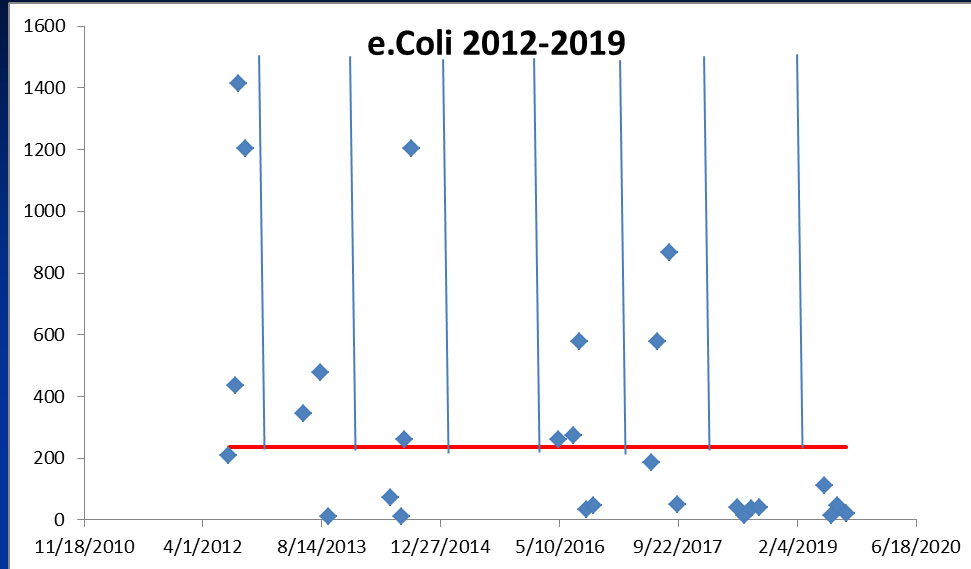
Pollutant	Criteria	Recommended Criteria Source
pH	6.5 - 9	EPA Gold Book
Temperature	32°C	EPA Gold Book – Upper tolerance for benthic
Dissolved Oxygen	≥5 mg/L	EPA Gold Book
Turbidity	50 NTU	EPA WQS Criteria Summaries Sept. 1980
Phosphorus	0.1 mg/L	EPA Gold Book
Total Nitrogen	.38 mg/L	EPA Rivers and Streams in Nutrient Ecoregion 3
E coli	<235 per 100 mL	EPA Gold Book
Total Dissolved Solids	500 mg/L	EPA Gold Book
Iron	1 mg/L	EPA Gold Book
Arsenic	0.15 mg/L	EPA National Recommended WQ Criteria

WQSP-04 IMPROVEMENT



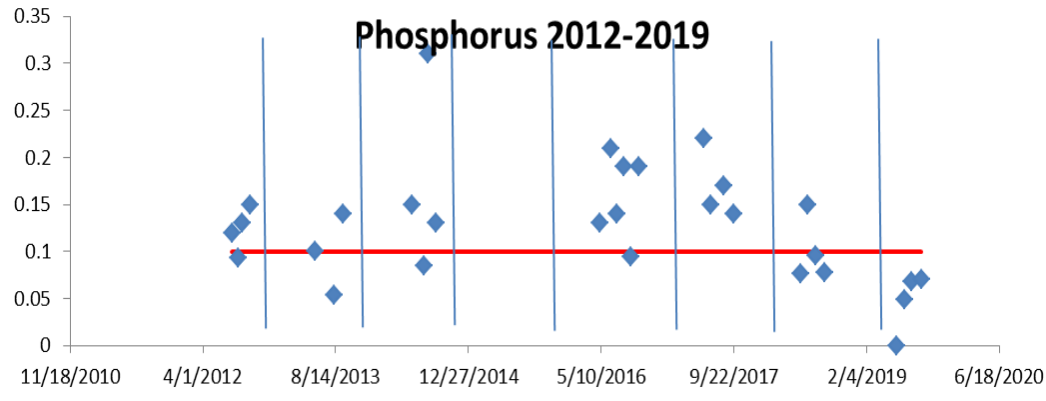
Pollutant	Criteria	Recommended Criteria Source
pH	6.5 - 9	EPA Gold Book
Temperature	32°C	EPA Gold Book – Upper tolerance for benthic
Dissolved Oxygen	≥5 mg/L	EPA Gold Book
Turbidity	50 NTU	EPA WQS Criteria Summaries Sept. 1980
Phosphorus	0.1 mg/L	EPA Gold Book
Total Nitrogen	.38 mg/L	EPA Rivers and Streams in Nutrient Ecoregion 3
E coli	<235 per 100 mL	EPA Gold Book
Total Dissolved Solids	500 mg/L	EPA Gold Book
Iron	1 mg/L	EPA Gold Book
Arsenic	0.15 mg/L	EPA National Recommended WQ Criteria

WQSP-06 IMPROVED



Pollutant	Criteria	Recommended Criteria Source
pH	6.5 - 9	EPA Gold Book
Temperature	32°C	EPA Gold Book – Upper tolerance for benthic
Dissolved Oxygen	≥5 mg/L	EPA Gold Book
Turbidity	50 NTU	EPA WQS Criteria Summaries Sept. 1980
Phosphorus	0.1 mg/L	EPA Gold Book
Total Nitrogen	.38 mg/L	EPA Rivers and Streams in Nutrient Ecoregion 3
E coli	<235 per 100 mL	EPA Gold Book
Total Dissolved Solids	500 mg/L	EPA Gold Book
Iron	1 mg/L	EPA Gold Book
Arsenic	0.15 mg/L	EPA National Recommended WQ Criteria

WQSP-09 IMPROVED



Pollutant	Criteria	Recommended Criteria Source
pH	6.5 - 9	EPA Gold Book
Temperature	32°C	EPA Gold Book – Upper tolerance for benthic
Dissolved Oxygen	≥5 mg/L	EPA Gold Book
Turbidity	50 NTU	EPA WQS Criteria Summaries Sept. 1980
Phosphorus	0.1 mg/L	EPA Gold Book
Total Nitrogen	.38 mg/L	EPA Rivers and Streams in Nutrient Ecoregion 3
E coli	<235 per 100 mL	EPA Gold Book
Total Dissolved Solids	500 mg/L	EPA Gold Book
Iron	1 mg/L	EPA Gold Book
Arsenic	0.15 mg/L	EPA National Recommended WQ Criteria

Data Summary

Site ID	Maintained	Improvement	Degradation
WQSP-01	pH, Temperature, Dissolved Oxygen, e.Coli, Total Dissolved Solids, Arsenic	Turbidity, Total Phosphorus, Total Nitrogen, Iron	
WQSP-03	pH, Temperature, Total Phosphorus, Total Nitrogen, e.Coli, Total Dissolved Solids, Arsenic	Dissolved Oxygen, Turbidity, Iron	
WQSP-04	pH, Temperature, Dissolved Oxygen, Total Nitrogen, e.Coli, Total Dissolved Solids, Arsenic	Turbidity, Total Phosphorus, Iron	
WQSP-06	pH, Temperature, Dissolved Oxygen, Turbidity, Total Phosphorus, Total Nitrogen, Total Dissolved Solids, Iron, Arsenic	e.Coli	
WQSP-07	pH, Temperature, Dissolved Oxygen, Turbidity, Total Phosphorus, Total Nitrogen, e.Coli, Total Dissolved Solids, Arsenic		Iron
WQSP-17	pH, Temperature, Dissolved Oxygen, Turbidity, Total Phosphorus, Total Nitrogen, Total Dissolved Solids, Arsenic	Iron	e.coli
WQSP-09	pH, Temperature, Dissolved Oxygen, Turbidity, Total Nitrogen, Total Dissolved Solids, e.Coli, Iron, Arsenic	Total Phosphorus	
WQSP-11	pH, Temperature, Dissolved Oxygen, Turbidity, Total Phosphorus, Total Nitrogen, Total Dissolved Solids, e.Coli, Iron, Arsenic		
WQSP-12	pH, Temperature, Dissolved Oxygen, Turbidity, Total Phosphorus, Total Nitrogen, Total Dissolved Solids, e.Coli, Arsenic		Iron
WQSP-26	pH, Temperature, Dissolved Oxygen, Turbidity, Total Phosphorus, Total Nitrogen, Total Dissolved Solids, e.Coli, Arsenic		Iron

Potential Sources of Impairment

Categories	Sub-Categories	Potentially Affected Water Bodies
Agriculture	Crop-related Sources- Irrigated Crop Production	A Drain, Paiute Drain, R Canal, S Canal, Wetlands, Groundwater
	Grazing-related Sources- Pasture Grazing	A Drain, Paiute Drain, Wetlands, Groundwater
	Range Grazing- Riparian and/or Upland	Paiute Drain, Wetlands, Groundwater
	Land Development	A Drain, Paiute Drain, R Canal, S Canal, Wetlands
Urban Runoff	Urban Runoff	A Drain, Paiute Drain, R Canal, S Canal
	Highway/Road/Bridge Runoff	A Drain, Paiute Drain, R Canal, S Canal
	Erosion and Sedimentation	A Drain, Paiute Drain, R Canal, S Canal
Land Disposal	Landfills	S Canal, Groundwater
	Inappropriate Waste Disposal/ Wildcat Dumping	A Drain, Paiute Drain, R Canal, S Canal, Wetlands, Groundwater
Hydro-modification	Channelization	R Canal, S Canal, Wetlands
	Upstream Impoundment	R Canal, S Canal, Wetlands
	Flow Regulations/Modification	A Drain, Paiute Drain, R Canal, S Canal, Wetlands
Habitat Modification	Removal of Riparian Vegetation	A Drain, Paiute Drain, R Canal, S Canal, Wetlands
	Bank or Shoreline Modification/Destabilization	A Drain, Paiute Drain, R Canal, S Canal, Wetlands
Erosion of Derelict Land	None	A Drain, Paiute Drain, R Canal, S Canal, Wetlands
Atmospheric Deposition	None	A Drain, Paiute Drain, R Canal, S Canal, Wetlands
Natural Sources	None	A Drain, Paiute Drain, R Canal, S Canal, Wetlands, Groundwater
Groundwater Loadings	None	A Drain, Paiute Drain, Wetlands
Sources off Tribal Lands	None	A Drain, Paiute Drain, R Canal, S Canal, Wetlands, Groundwater

Current and Future Plans



Protecting The Water For Future Generations



Questions?