



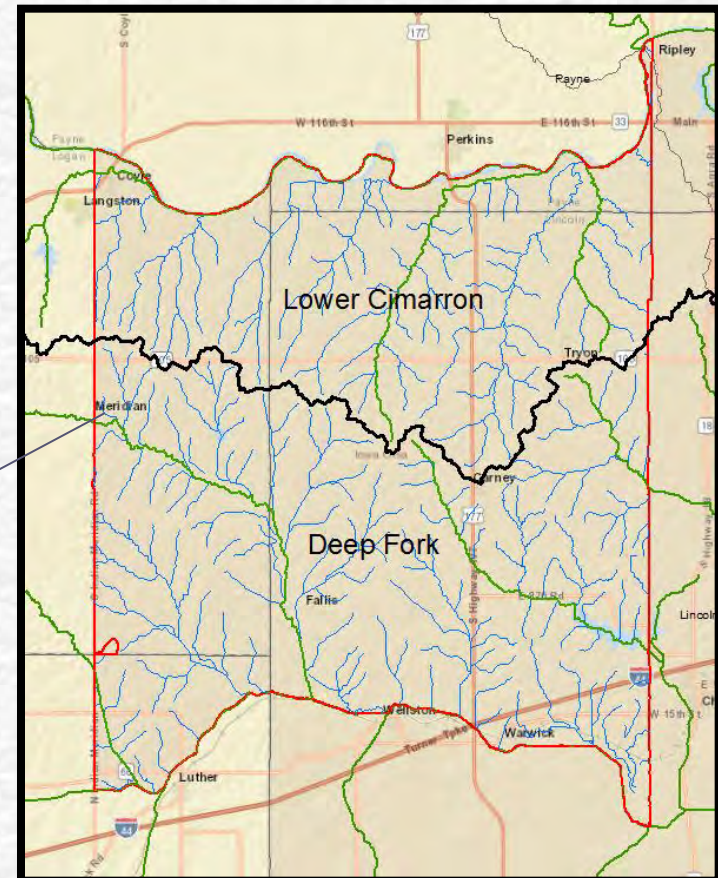
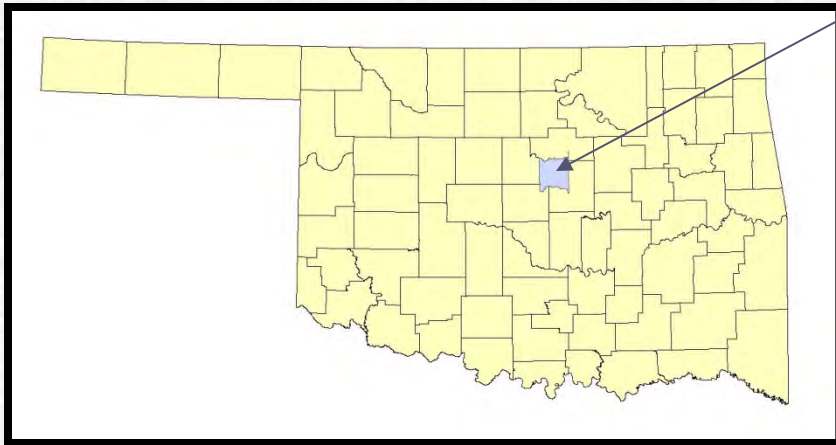
Falling and Rising: Results after Rebuilding a Water Program

Previous Natural Resource Work

- Strong stream monitoring program between ~ late 2000's to mid-2000's.
- Wetlands program from ~ late 2000's to mid-2000's.
- Constructed wetlands and conservation center.



ITO Exterior Boundary Watersheds & Streams



Constructed Wetland Educational Area

Early to Mid-2000's



Current Condition



Former Conservation Area

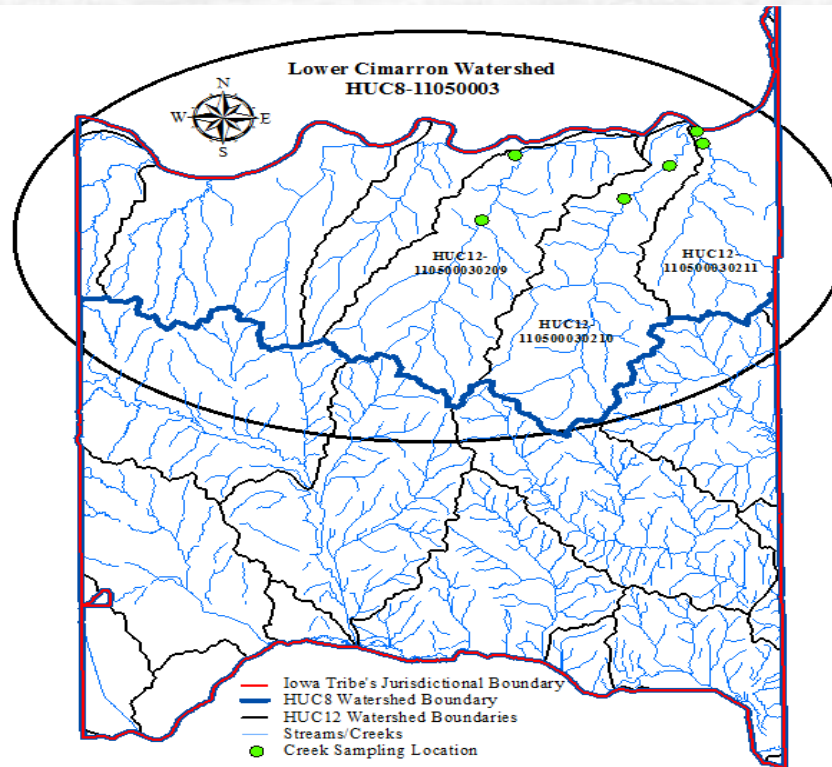


Clean Water Act, Section 106 Program

- ☛ Objectives:
- ☛ Objective 1: Expand the core administrative and financial management capabilities for the Water Pollution Control Program
- ☛ Objective 2: Build capacity of the tribal community by increasing knowledge and awareness about water pollution control problems at the local, regional, and national levels
- ☛ Objective 3: Conduct baseline assessment of water quality from creeks in the Lower Cimarron Watershed in Iowa Indian Country



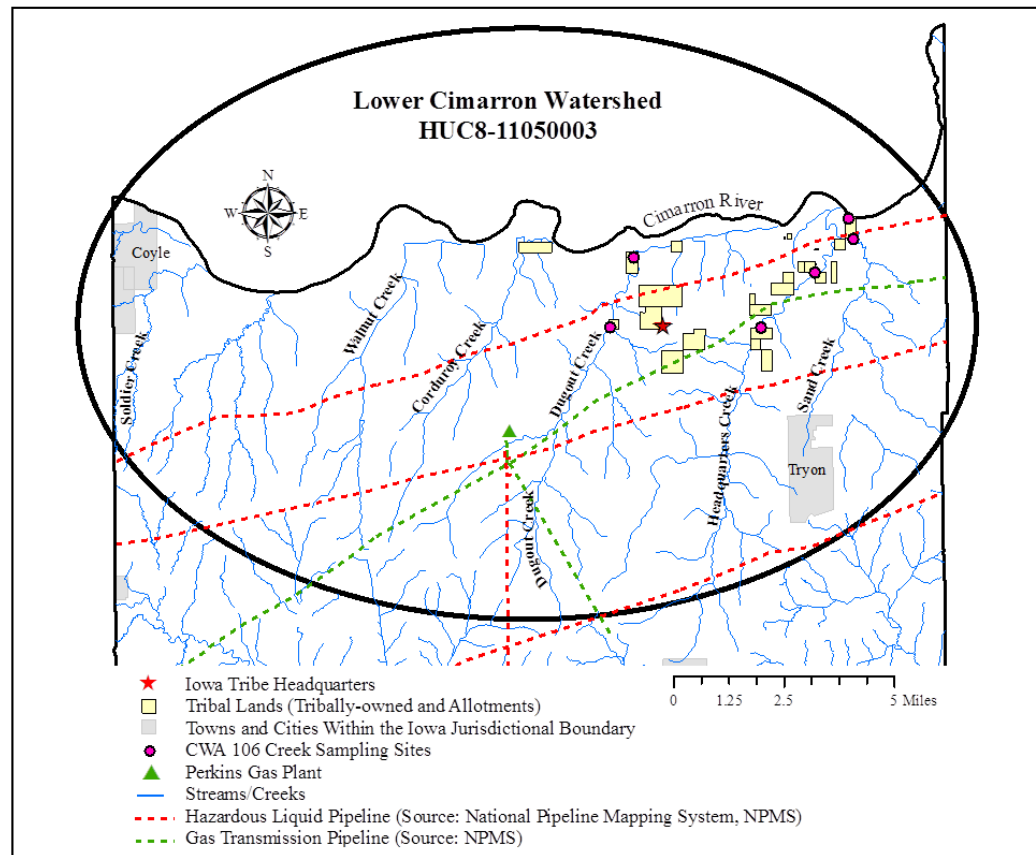
Sampling Sites



Ambient monitoring of three watersheds in the Lower Cimarron Watershed:
* HUC12-110500030209 (Dugout Creek - Cimarron River)
* HUC12-110500030210 (Headquarters Creek)
* HUC12-110500030211 (Sand Creek - Cimarron River)



Tribal Lands



Sand Creek Site 1 & 2



Headquarters Creek Site 1 & 2

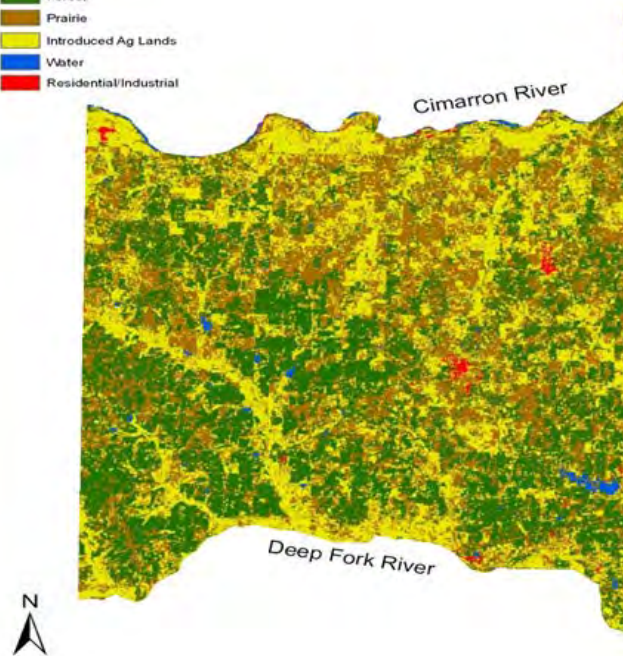


Dugout Creek Site 1 & 2



Land Use Map

Legend
Forest
Prairie
Introduced Ag Lands
Water
Residential/Industrial



Data Collection

Names of Parameters	Dugout Creek-1	Dugout Creek-2	Headquarters Creek-1	Headquarters Creek-2	Sand Creek-1	Sand Creek-2
Temperature	39	39	39	39	39	39
pH	39	39	39	39	39	39
Specific Conductance	39	39	39	39	39	39
Dissolve Oxygen (DO)	39	39	39	39	39	39
Turbidity	39	39	39	39	39	39
Kjeldal Nitrogen (TKN)	10	10	10	10	10	10
Nitrate-nitrite	10	10	10	10	10	10
Ammonia	10	10	10	10	10	10
Total Phosphorus	10	10	10	10	10	10
Total Coliform	28	28	28	28	28	28
E. Coli	28	28	28	28	28	28
Total Alkalinity	10	10	10	10	10	10
Total Hardness	10	10	10	10	10	10



Equipment



Eureka Manta 2 Probe



Quanti Tray Sealer



Buret Titration-Method 8226



Incubator



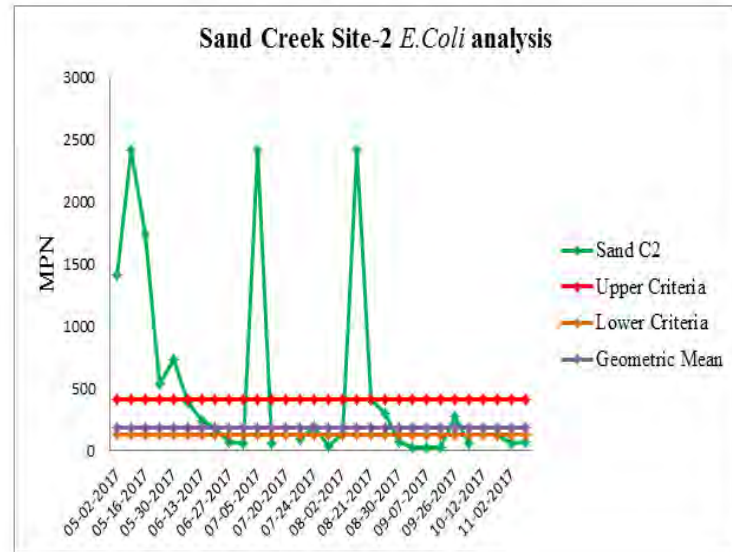
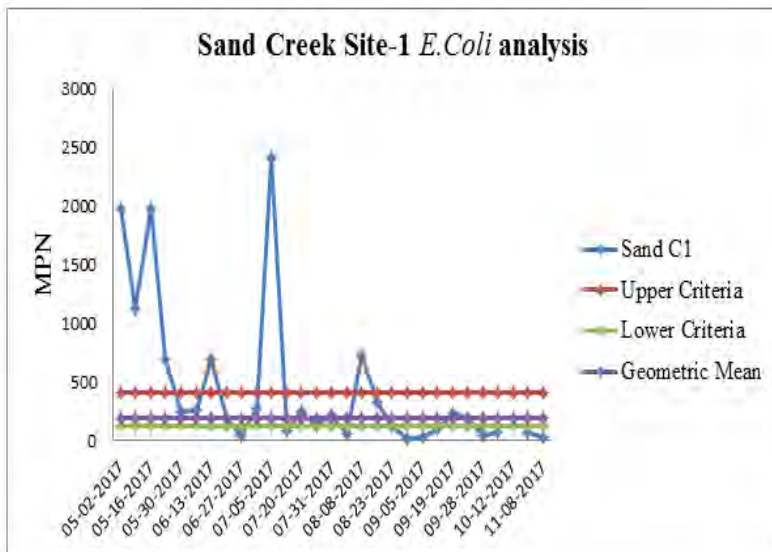
Autoclave



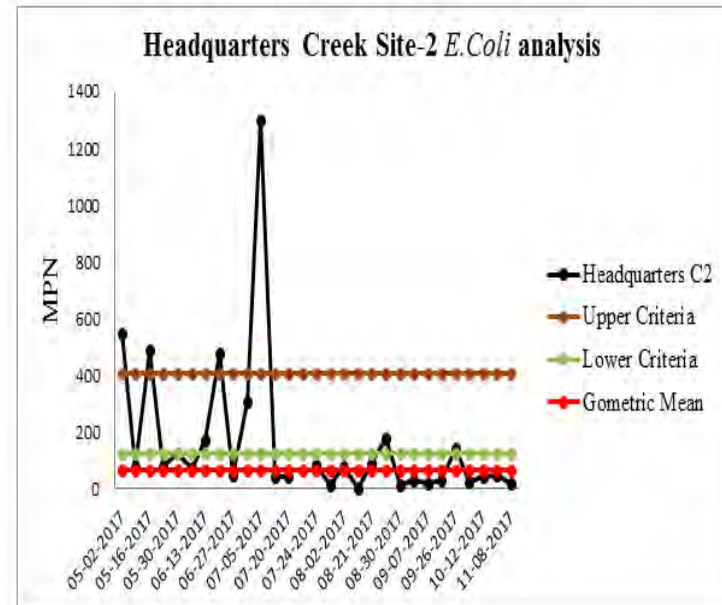
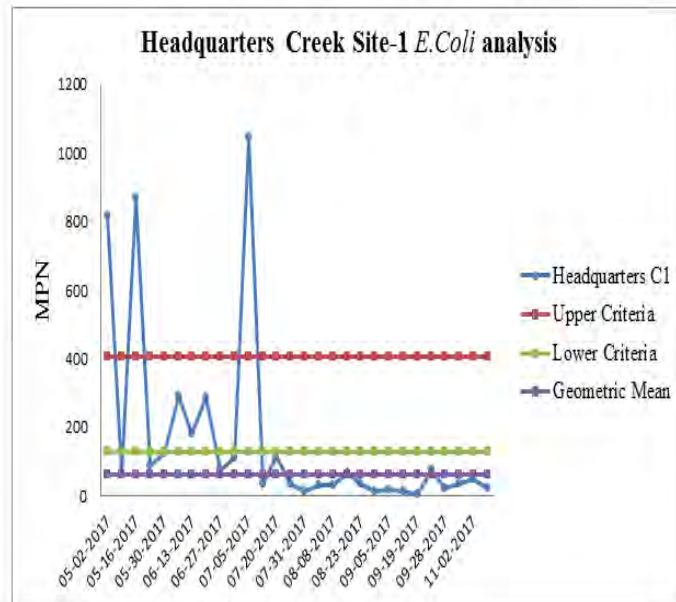
Spectral Pure



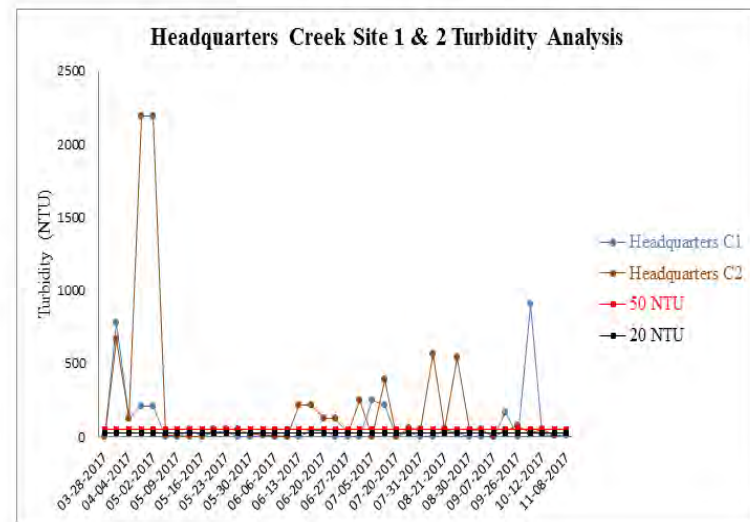
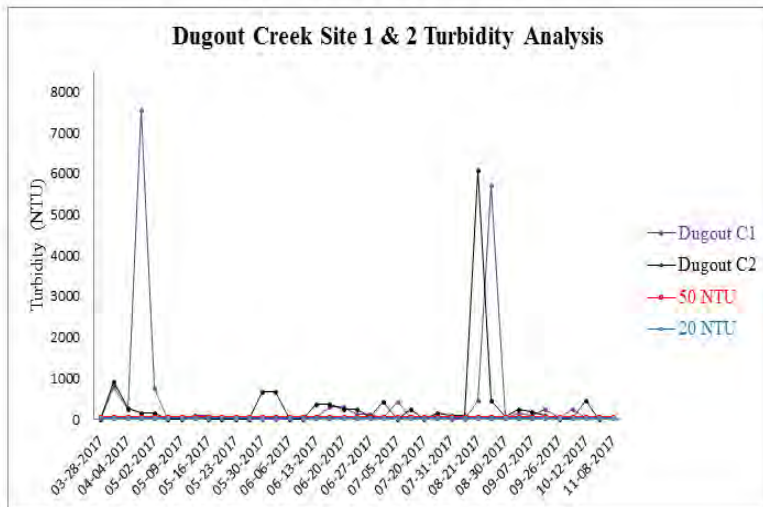
E.coli Results



E.coli Results



Turbidity Results



Summary of Results

Designated Use	Streams/Creeks Assessed	Creeks that Fully Supported Designated goal	Creeks that Didn't Supported Designated goal
Primary Body Contact/Recreation Beneficial Use, (Based On <i>E.coli</i>).	Sand Creek Site-1 Sand Creek Site-2 Headquarters Creek Site-1 Headquarters Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2	Headquarters Creek Site-1 Headquarters Creek Site-2	Sand Creek Site-1 Sand Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2
Warm Water Aquatic Community Beneficial Use, (Based on pH, and DO).	Sand Creek Site-1 Sand Creek Site-2 Headquarters Creek Site-1 Headquarters Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2	Sand Creek Site-1 Sand Creek Site-2 Headquarters Creek Site-1 Headquarters Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2	
Warm Water Aquatic Community Beneficial Use, (Based on Turbidity).	Sand Creek Site-1 Sand Creek Site-2 Headquarters Creek Site-1 Headquarters Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2		Sand Creek Site-1 Sand Creek Site-2 Headquarters Creek Site-1 Headquarters Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2
Agricultural Beneficial Use.	Sand Creek Site-1 Sand Creek Site-2 Headquarters Creek Site-1 Headquarters Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2	Not assessed	Not Assessed
Fish Consumption (Based on <i>E.coli</i>)	Sand Creek Site-1 Sand Creek Site-2 Headquarters Creek Site-1 Headquarters Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2	Headquarters Creek Site-1 Headquarters Creek Site-2	Sand Creek Site-1 Sand Creek Site-2 Dugout Creek Site-1 Dugout Creek Site-2



Water Quality Decision

Names of Creeks	Primary Body Contact/Recreation Beneficial Use	Warm Water Aquatic Community Beneficial Use	Agricultural Beneficial Use	Nutrient Threatened Determination
Sand Creek Site-1	Non-Attainment	Non-Attainment (Turbidity)	Not Assessed	Low Nutrient
Sand Creek Site-2	Non-Attainment	Non-Attainment (Turbidity)	Not Assessed	Low Nutrient
Headquarters Creek Site-1	Attainment	Non-Attainment (Turbidity)	Not Assessed	Not Threatened
Headquarters Creek Site-2	Attainment	Non-Attainment (Turbidity)	Not Assessed	Nutrient Threatened
Dugout Creek Site-1	Non-Attainment	Non-Attainment (Turbidity)	Not Assessed	Low Nutrient
Dugout Creek Site-2	Non-Attainment	Non-Attainment (Turbidity)	Not Assessed	Low Nutrient



Future Plans / Ideas

- Get tribe approved to apply for 319 tribal funds.
 - Currently working for programmatic TAS approval.
 - Hope to use to construct LID stormwater management practices at tribal complex.
- Rebuild the constructed wetland educational area.
 - Hope to get some USFWS funds toward this goal.





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