



Prepared by



USDA Natural Resources
Conservation Service
Nebraska

Turkey Creek Watershed Improvement Plan Summary

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A detailed assessment and conservation plan for the Turkey Creek Watershed in Saline County was recently completed by a landowner planning committee with assistance from the Natural Resources Conservation Service (NRCS), Lower Big Blue NRD (LBBNRD), the Nebraska Department of Environment & Energy (NDEE), and Nebraska Extension (UNE). Multiple years of sampling indicate that Turkey Creek has contaminants that need to be cleaned up. The results of this assessment identified a priority sub-watershed area that if treated with conservation activities could result in significant water quality benefits and elimination surface water impairments.

The NRCS has established Environmental Quality Incentive Program (**EQIP**) specific funding for agricultural lands within the identified priority watershed. A list of conservation practices and management techniques have been selected as having the greatest potential to improve Turkey Creek water quality while also attempting to **increase farm management efficiency and farm economics**.

Contaminant Descriptions

The elevated level of Atrazine in Turkey Creek is negatively affecting aquatic species lifecycles and poses health threats to humans. Atrazine applications that coincide with rainfall runoff events is the predominant factor causing Atrazine to reach surface waters in the Turkey Creek Watershed. Due to Atrazine's weak adsorption characteristics over 90% of the Atrazine that leaves the field is in solution (runoff water). The risk of runoff loss is greatest on sloping fields with fine-textured soils with low permeability and inadequate setbacks from adjacent surface water.



E. coli concentrations in water samples from Turkey Creek indicate the stream water is carrying an overall high level of pathogen that is commonly resulting from sewage or animal waste contaminations. These increased pathogen concentrations make recreational use of Turkey Creek a health risk.

E. coli produced from livestock, wildlife and humans is recognized as the source of the contamination. Agricultural land uses that generate or utilize livestock manure have the potential for *E. coli* and pathogen contamination of surface water during storm or spring runoff from farmstead lots, manure storage areas, cropland and pastureland. Non-functioning septic systems are also considered the point source of *E. coli* contaminations.

The recent surface water samples indicate levels of Atrazine and *E. coli* in Turkey Creek exceed the state water quality standards. The (LBBNRD) and (NDEE) are continuing to monitor surface water in Turkey Creek to track contaminant levels.



Turkey Creek Watershed Improvement Goals

- ✓ Increase the awareness and understand of the contaminations and how to best prevent these contaminants from reaching Turkey Creek
- ✓ Regardless of how large or small the contribution, ask every landowner and operator within the watershed to assist with this conservation effort.
- ✓ Implement and maintain conservation management systems and practices that reduce Atrazine, *E. coli*, nitrogen, phosphorus and sediment loads from entering the watercourse.
- ✓ Reduce Atrazine and *E. coli* to levels below the state limit so future generations can carry on conservation efforts to maintain clean water and avoid the need to implement regulations to solve water quality issues.

USDA PROGRAM APPLICATION DEADLINES

EQIP	Tentative Application Deadline 1 st – 2 nd week of March 2020	The Turkey Creek Project boundary and Conservation Practices that address water quality improvement will be prioritized.
CSP	Tentative Application Deadline Mid – March 2020	General Sign-up
General CRP	Open until February 28, 2020	General Sign-up is underway until February 28, and will start back up in December 2020 and run through February 2021
Continuous CRP	Open until Mid-August 2020	Continuous Sign-up is active until late August. Contiguous CRP practices are smaller sub-field practices like Filter Strips, Prairie Strips, Pollinator Habitat etc.

If you are interested in learning more about this watershed plan, USDA program eligibility or would like specific information on how to apply conservation to your land, please contact

Scott Bohaty, NRCS Resource Conservationist in Wilber (402) 821-3292 ext. 3

Priority Conservation Practices

This is not a complete list, contact the NRCS for a complete list of all eligible conservation practices and EQIP practice cost share rates for 2020

Controlling Atrazine Runoff		
Practice	Practice Description	EQIP Incentive
Integrated Pest Management	Field specific plan to reduce pesticides specifically Atrazine from moving off the field. The practice will establish in-field management procedures and, as necessary, the integration of perennial grass buffers and/or establish setbacks to achieve the intended level of contamination prevention.	\$16.79 / acre
Crop Rotation	Adding small grains or forages that do not require atrazine as a pest control measure will increase the time interval between atrazine applications and decrease overall atrazine application rates.	\$9.42 / acre
Cover Crop	Mixes or single species will be used as a weed suppression tool on a whole field basis. This practice can also have accumulative long-term soil health benefits. Long-term benefits include reduced compaction, increased organic matter content and increased infiltration that can ultimately result in less water runoff, reducing the potential for Atrazine runoff.	\$32.01 / acre Mix \$23.79/ acre Single species
Critical Area Planting	This practice will be used as a supporting practice to establish vegetation on waterway, terraces, basins, diversions and other structures. This practice may also be applied on severely eroded slopes or area where structural practices are infeasible. Additionally, this practice will be applied on stream banks and field edges to remove concentrated flows patterns and create sheet flow conditions to facilitate filter strip and riparian buffer establishment.	\$162.15 / acre \$730.46 / acre Heavy Grading
Filter Strip	Purpose is to control and trap dissolved contaminants and suspended solids in stiff stem sod-forming grasses. Located adjacent the stream bank between the cropland and stream.	\$352.82 / acre Seeding only
Riparian Herbaceous Cover	The function is similar to a filter strip but applied on floodplains, adjacent to stream banks. This practice will increase infiltration and water storage capability to trap contaminants before entering surface water.	\$132.99 / acre Seeding only
Grassed Waterway	A vegetated open channel that prevents gully formation in concentrated flow areas and functions as an outlet for terraces and diversions.	\$3,246.92 / acre waterway
Diversion	Purpose is to collect and direct concentrations of water on sloping cropland to a vegetated outlet or relocate to a point where flows can be spread through a filter strip or vegetated buffer in a sheet flow pattern.	\$2.12/ CuYd
Grade Stabilization Structure	Used to control head-cut erosion and channel downcutting. This practice will be required to be used in conjunction with a vegetative (grass buffer) practice to achieve the reduction in pathogens (E. coli) and herbicides (Atrazine).	Variable (contact NRCS)

Controlling E. coli Runoff

Practice	Practice Description	EQIP Incentive
Prescribed Grazing	Maintaining an animal / forage balance that sustains grass health and productivity. Rotational grazing has been shown to reduce E. coli transport to streams.	\$15.86 / acre Small Ranch Unit
Access Control	Excluding livestock from the floodplain for a portion of the grazing season (late fall into early spring) to reduce manure concentrations during high runoff periods.	\$40.70 / acre
Vegetated Treatment Area	Permanent vegetative area adjacent to a livestock production area where wastewater runoff is properly collected and released into vegetation. The vegetation is harvested to remove nutrients on a regular basis.	\$685.30 / acre Minor Shaping
Fence	Pasture/Grassland: Cross fence and exclusion fence will create rest and recovery of forages and avoid continuous use in riparian areas and channels. Farmsteads: Fence will be installed to manage the movement of livestock. New fence will be aligned to improve efficiency of the operation and control access to adjacent filtering practices.	\$1.33 / foot Barbed Wire, Multi-strand
Stream Crossing	A stabilized area or structure constructed across a stream to provide a crossing for livestock that prevent channel and bank deterioration.	Variable (contact NRCS)
Diversion	On farmsteads, the collection and relocation of concentrated flows of water to a location where flows can be spread through a filter strip or vegetated buffer in a sheet flow pattern or divert clean water way from lots or pens to reduce runoff potential.	\$2.12 / CuYd
Obstruction Removal	The removal and disposal of fence, feeding areas, buildings and structures further from streams to facilitate the installation of new conservation practices.	\$1.79 / foot – fence, feedlot \$3 to \$6 / SqFt Structures
Water Well	These practices will move and create water sources to new locations that will reduce livestock use of surface water and distribute livestock away from season long use of riparian areas and stream channels.	~ \$12 / foot
Water Tank		\$0.51 / gallon
Livestock Pipeline		\$1.35 / foot
Heavy Use Area Protection	Stabilization of areas around water tanks and feeding areas to prevent soil erosion and prevent damages to adjacent conservation practices.	\$196.50 cuyd Concrete \$20.21 cuyd Rock/Gravel
Waste Storage Facility	Temporary storage of manure, wastewater or contaminated runoff. Facilities include: manure stacking pads, concrete walls/floors for bedded packed barns, holding ponds, etc.	Variable (contact NRCS)
Filter Strip	Purpose is to control and trap dissolved contaminants and suspended solids in stiff stem sod-forming grasses. Filter strips are contoured barriers located between cropland or lots/pens and the stream bank.	\$352.82 / acre Seeding only
Riparian Herbaceous Cover	The function is similar to a filter strip but applied on floodplains, adjacent to stream banks. This practice will increase infiltration and water storage capability to trap contaminants before entering surface water.	\$132.99 / acre Seeding only