CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	6/18/2009
PRACTICE: Streambank and Shoreline Protection 580		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			

RESOURCES, CONSIDERATIONS AND CONCERNS	**PHYSICAL EFFECTS**	**RATIONALE**
SOIL - EROSION		
Sheet and Rill	Not Applicable	Not applicable.
Wind	Not Applicable	Not applicable.
Ephemeral Gully	Not Applicable	Not applicable.
Classic Gully	Not Applicable	Not applicable.
Streambank	Moderate to Substantial Improvement	Stream banks are stabilized.
Shoreline	Moderate to Substantial Improvement	Shorelines are stabilized.
Irrigation Induced	Not Applicable	Not applicable.
Mass Movement	Moderate to Substantial Improvement	Stabilized side slopes prevents slips associated with mass movement.
Road, Roadsides, and Construction Sites	Not Applicable	Not applicable.
SOIL – CONDITION		
Organic Matter Depletion	Not Applicable	Not applicable.
Rangeland Site Stability	Not Applicable	Not applicable.
Compaction	Not Applicable	Not applicable.
Subsidence	Not Applicable	Not applicable.
Contaminants:		
• Salts and other Chemicals	Not Applicable	Not applicable.
• Animal Waste and other Organics - N	Not Applicable	Not applicable.
• Animal Waste and other Organics - P	Not Applicable	Not applicable.
• Animal Waste and other Organics - K	Not Applicable	Not applicable.
• Commercial Fertilizer - N	Not Applicable	Not applicable.
• Commercial Fertilizer – P	Not Applicable	Not applicable.
• Commercial Fertilizer – K	Not Applicable	Not applicable.
• Residual Pesticides	Not Applicable	Not applicable.
Damage from Sediment Deposition	Slight to Moderate Improvement	Reduction in eroded stream banks and shorelines reduces availability of sediment for deposition.
WATER – QUANTITY		
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.
Excessive Seepage	Not Applicable	Not applicable.
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.
Excessive Subsurface Water	Not Applicable	Not applicable.
Drifted Snow	Not Applicable	Not applicable.
Inadequate Outlets	Not Applicable	Not applicable.
Inefficient Water use on Irrigated Land	Not Applicable	Not applicable.

Inefficient Water use on Non-Irrigated Land	Not Applicable	Not applicable.
Reduced Capacity of Conveyances by Sediment Deposition	Slight to Substantial Improvement	Reduced erosion and stabilized channels result in decrease in offsite deposition.
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Substantial Improvement	Reduced erosion and stabilized channels result in decrease in offsite deposition. Could result in slight to significant increase in off site deposition due to increased sediment transport.
Aquifer Overdraft	Not Applicable	Not applicable.
Insufficient Flows in Water Courses	Not Applicable	Not applicable.
WATER – QUALITY		
In Groundwater:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Not Applicable	Not applicable.
• Excessive Salinity	Not Applicable	Not applicable.
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.
• Harmful Levels of Pathogens	Not Applicable	Not applicable.
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
In Surface Water:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Slight Improvement	Stabilizing eroding banks will reduce the delivery of nutrients and organic material in the soil profile to surface water.
• Excessive Suspended Sediment and Turbidity	Slight to Substantial Improvement	Reduces erosion on banks and shorelines.
• Excessive Salinity	Not Applicable	Not applicable.
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.
• Harmful Temperatures	Slight Improvement	The action includes vegetation along stream courses.
• Harmful Levels of Pathogens	Slight Improvement	Elimination of eroding banks in areas adjacent to feedlots and livestock stream accesses.
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
AIR – QUALITY		
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Not Applicable	Not applicable.
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Not Applicable	Not applicable.
Excessive Ozone	Neutral	There is a minimal reduction of ozone precursors through reduced surface temperatures offered by shade or ground cover, and minimal biofiltering of ozone concentrations due to interception by vegetation.
Excessive Greenhouse Gas:		
• CO_2 (Carbon Dioxide)	Slight Improvement	If used, vegetation residue stores carbon.
• N_20 (Nitrous Oxide)	Not Applicable	Not applicable.

• CH_4 (Methane)	Not Applicable	Not applicable.
Ammonia (NH_3)	Not Applicable	Not applicable.
Chemical Drift	Not Applicable	Not applicable.
Objectionable Odors	Not Applicable	Not applicable.
Reduced Visibility	Not Applicable	Not applicable.
Undesirable Air Movement	Not Applicable	Not applicable.
Adverse Air Temperature	Moderate to Substantial Improvement	Tall vegetation provides shade and moderates temperatures.
PLANTS – SUITABLIITY		
Plants not Adapted or Suited	Moderate to Substantial Improvement	Protection measures create or maintain the desired plant community.
PLANTS - CONDITION		
Productivity, Health, and Vigor	Moderate to Substantial Improvement	Protection measures improves site conditions to enhance plant health and vigor of the desired plant community.
Threatened or Endangered Plant Species:		
• Plant Species Listed or Proposed for Listing Under the Endangered Species Act	Neutral	When threatened or endangered plants are present, protection and recovery are addressed in the planning process.
• Declining Species, Species of Concern	Neutral	When threatened or endangered plants are present, protection and recovery are addressed in the planning process.
Noxious and Invasive Plants	Moderate to Substantial Improvement	Vegetation is installed and managed to control undesired species.
Forage Quality and Palatability	Not Applicable	Not applicable.
Wildfire Hazard	Not Applicable	Not applicable.
ANIMALS - FISH AND WILDLIFE		
Inadequate Food	Slight to Moderate Improvement	Vegetation planted for stabilization can consist of food species.
Inadequate Cover/Shelter	Slight to Moderate Improvement	Vegetation planted for stabilization can consist of cover for wildlife.
Inadequate Water	Neutral	Measures taken are to be compatible with conservation of fish and wildlife habitat components in and adjacent to stream or shore.
Inadequate Space	Slight to Moderate Improvement	Stabilized banks and shoreline increase suitable space for fish.
Habitat Fragmentation	Slight to Moderate Improvement	Stabilized banks and shoreline that were previously fragmenting the stream system increase connectivity.
Imbalance Among and Within Populations	Slight Improvement	Habitat management is implemented to remove limiting factors.

Threatened and Endangered Fish and Wildlife Species:		
• Fish and Wildlife Species Listed or Proposed for Listing Under the Endangered Species Act	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.
• Declining Species, Species of Concern	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.
ANIMALS – DOMESTIC		
Inadequate Quantities and Quality of Feed and Forage	Slight Improvement	Re-establishment of streambank vegetation can provide additional forage.
Inadequate Shelter	Not Applicable	Not applicable.
Inadequate Stock Water	Not Applicable	Not applicable.
Stress and Mortality	Not Applicable	Not applicable.
HUMAN – ECONOMICS		
Land - Change in Land Use	Not applicable.	Not applicable.
Land – Land in Production	Slight decrease	Slight decrease, channel banks out of crop production.
Capital – Change in Equipment	Moderate increase.	
Capital - Total Investment Cost	Substantial.	Substantial.
Capital – Annual Cost	Slight to moderate increase.	
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Substantial increase	
Labor – Change in Management Level	Negligible	
Risk - Yield	Not applicable.	Not applicable.
Risk - Flexibility	Not applicable.	Not applicable.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Moderate Increase	Moderate increase due to construction or establishment costs.
Profitability – Change in Profitability	Moderate decrease.	
HUMAN - CULTURAL		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Slight to Substantial Increase	Construction impacts (mechanical).
HUMAN – ENERGY		
Depletion of Fossil Fuel Resources	Not Applicable	Not Applicable
Underutilization of Non-Fossil Energy Resources	Not Applicable	Not Applicable

Human Considerations Explanation

Considerations	Physical effects indicate:
Land - Change in Land Use	The degree to which implementing the conservation practice is expected to cause a change from one land use to another.
Land - Land in Production	The degree to which implementing the conservation practice is expected to cause an increase or decrease in the amount of land in production.
Capital - Change in Equipment	The degree to which implementing the conservation practice is expected to cause an increase or decrease in the amount of capital equipment required for farm or ranch operations.
Capital - Total Investment Cost	A qualitative measure of the increase in total investment dollars required in order to implement the conservation practice.
Capital - Annual Cost	A qualitative measure of the expected change in annual capital costs required in order to operate and maintain the conservation practice.
Capital - Credit & Farm Program Eligibility	Included to make conservation planners aware of the potential availability of funding for implementing conservation practices.
Labor – Labor	The degree to which implementing the conservation practice is likely to cause an increase or decrease in the total amount of overall farm or ranch labor required for operations.
Labor - Change in Management Level	The degree to which implementing the conservation practice is likely to cause an increase or decrease in the total amount of required active management on a farm or ranch.
Risk – Yield	The degree to which risk, as related to crop or livestock yields, is expected to increase or decrease as a result of implementing the conservation practice.
Risk – Flexibility	The degree to which risk, as related to the flexibility of farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice. For example, converting from flood irrigation to a sprinkler system gives a farmer an increase in flexibility of irrigation, which results in a decrease in the level of risk associated with inflexibility of operations.
Risk – Timing	The degree to which risk, as related to the timing of farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice.
Risk - Cash Flow	The degree to which risk, as related to cash flow in farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice.
Profitability - Change in Profitability	The degree to which farm or ranch profitability is expected to increase or decrease as a result of implementing the conservation practice.
Cultural Resources and/or Historic Properties Present or Suspected to be Present	The degree to which implementation of the conservation practice is expected to increase or decrease the risk of cultural resource disturbance, degradation, or loss.
Depletion of Fossil Fuel Resources	Inefficient use of fossil-originated energy sources (diesel, gasoline, propane, natural gas, coal), lubricants, and other materials.
Underutilization of Non-Fossil Energy Sources	Available and cost-effective alternative energy sources (solar, wind, biofuel, hydroelectric, geothermal) are not being used or are being used inefficiently.