

## CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	12/27/2011
<b>PRACTICE: Cross Wind Trap Strips 589C</b>		Baseline Setting:			
		Appropriate Land Use(s): Crop			
<b>RESOURCES, CONSIDERATIONS AND CONCERNS</b>	<b>PHYSICAL EFFECTS</b>		<b>RATIONALE</b>		
<b>SOIL - EROSION</b>					
Sheet and Rill	Not Applicable		Not applicable.		
Wind	Moderate to Substantial Improvement		Vegetative strips oriented across the prevailing wind erosion direction trap saltating soil particles.		
Ephemeral Gully	Not Applicable		Not applicable.		
Classic Gully	Not Applicable		Not applicable.		
Streambank	Not Applicable		Not applicable.		
Shoreline	Not Applicable		Not applicable.		
Irrigation Induced	Not Applicable		Not applicable.		
Mass Movement	Not Applicable		Not applicable.		
Road, Roadsides, and Construction Sites	Not Applicable		Not applicable.		
<b>SOIL – CONDITION</b>					
Organic Matter Depletion	Slight to Moderate Improvement		Vegetative strips decrease organic matter loss by reducing wind erosion		
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		Vegetative strips reduce soil erosion from wind and the resulting soil deposition.		
<b>WATER – QUANTITY</b>					
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	Not Applicable		Not applicable.		

Land		
Reduced Capacity of Conveyances by Sediment Deposition	Moderate to Substantial Improvement	Reduces soil erosion from wind and the resulting soil deposition.
Reduced Storage of Water Bodies by Sediment Accumulation	Moderate to Substantial Improvement	Reduces soil erosion from wind and the resulting soil deposition.
Aquifer Overdraft	Not Applicable	Not applicable.
Insufficient Flows in Water Courses	Not Applicable	Not applicable.
<b>WATER – QUALITY</b>		
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	Slight to Moderate Improvement	The action reduces soil erosion from wind.
• Excessive Nutrients and Organics	Slight to Moderate Improvement	The action reduces soil erosion from wind which decreases the potential for transport of soil-adsorbed nutrients to surface water.
• Excessive Suspended Sediment and Turbidity	Slight Improvement	Vegetative strips reduce soil erosion from wind and the resulting offsite sediment transport.
• Excessive Salinity	Slight Improvement	The action can reduce the transport of wind-borne saline particles to surface water bodies.
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.
• Harmful Temperatures	Not Applicable	Not applicable.
• Harmful Levels of Pathogens	Not Applicable	Not applicable.
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
<b>AIR – QUALITY</b>		
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Improvement	Strips of vegetation that trap saltating soil particles stop the wind erosion process.
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Improvement	Strips of vegetation that trap saltating soil particles stop the wind erosion process.
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 <sub>2</sub> (Carbon Dioxide)	Not Applicable	Not applicable.
• N <sub>2</sub> O (Nitrous Oxide)	Not Applicable	Not applicable.
• CH <sub>4</sub> (Methane)	Not Applicable	Not applicable.
Ammonia (NH <sub>3</sub> )	Not Applicable	Not applicable.
Chemical Drift	Not Applicable	Not applicable.

Objectionable Odors	Not Applicable	Not applicable.
Reduced Visibility	Slight to Moderate Improvement	Reduces fugitive dust emissions
Undesirable Air Movement	Neutral	Strips disrupt the saltation process but do not slow winds.
Adverse Air Temperature	Not Applicable	Not applicable.
<b>PLANTS – SUITABILITY</b>		
Plants not Adapted or Suited	Substantial Improvement	Plants selected are adapted and suited.
<b>PLANTS - CONDITION</b>		
Productivity, Health, and Vigor	Slight to Substantial Improvement	The reduction of wind erosion decreases physical plant damage and maintains soil quality.
Threatened or Endangered Plant Species:		
• Plant Species Listed or Proposed for Listing Under the Endangered Species Act	Not Applicable	Not applicable.
• Declining Species, Species of Concern	Not Applicable	Not applicable.
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.
<b>ANIMALS - FISH AND WILDLIFE</b>		
Inadequate Food	Slight to Moderate Improvement	Increased quality and quantity of vegetation provides more food for wildlife.
Inadequate Cover/Shelter	Slight to Moderate Improvement	Increased quality and quantity of vegetation provides more cover for wildlife.
Inadequate Water	Not Applicable	Not applicable.
Inadequate Space	Slight to Moderate Improvement	Increased cover will increase space for wildlife. May be used to connect other cover areas.
Habitat Fragmentation	Slight to Moderate Improvement	Increased cover will increase space for wildlife. May be used to connect other cover areas.
Imbalance Among and Within Populations	Not Applicable	Not applicable.
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.
<b>ANIMALS – DOMESTIC</b>		
Inadequate Quantities and Quality of Feed and Forage	Slight Improvement	There may be some use of the planting for feed and forage by livestock.

Inadequate Shelter	Not Applicable	Not applicable.
Inadequate Stock Water	Not Applicable	Not applicable.
Stress and Mortality	Not Applicable	Not applicable.
<b>HUMAN – ECONOMICS</b>		
Land - Change in Land Use	Slight.	
Land – Land in Production	Slight decrease	
Capital – Change in Equipment	Negligible	
Capital - Total Investment Cost	Moderate.	
Capital – Annual Cost	Slight increase.	
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Slight to moderate increase	Slight to moderate increase, more time required for tillage operations.
Labor – Change in Management Level	Slight increase.	
Risk - Yield	Slight Increase	Slight increase from land use conversion, slight increase from reduction of wind sediment.
Risk - Flexibility	Slight Increase	Slight increase due to incorporating strips into cropping system.
Risk - Timing	Substantial Increase	Substantial increase - strips must be established prior to critical erosion period.
Risk – Cash Flow	Slight Increase	Slight increase due to establishment costs.
Profitability – Change in Profitability	Situational	Slight decrease or increase.
<b>HUMAN - CULTURAL</b>		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Slight to Substantial Decrease	Historic properties in agricultural context can be protected from erosion.
<b>HUMAN – ENERGY</b>		
Depletion of Fossil Fuel Resources	Not Applicable	Not applicable.
Underutilization of Non-Fossil Energy Resources	Not Applicable	Not applicable.

## Human Considerations Explanation

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