

## CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	12/27/2011
<b>PRACTICE: Dam 402</b>		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
<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	Not Applicable	Not applicable.			
Ephemeral Gully	Not Applicable	Not applicable.			
Classic Gully	Slight to Substantial Improvement	Stabilization of the gully due to the embankment.			
Streambank	Slight Improvement	Reduced peak flows downstream from embankment.			
Shoreline	Slight to Moderate Worsening	Increase in shoreline.			
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	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	Sediment trapped in pond area behind dam.			
<b>WATER – QUANTITY</b>					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight to Moderate Worsening	Possible seepage from ponding of water.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Runoff and peak flows reduced.			
Excessive Subsurface Water	Slight Worsening	Seepage from ponded water.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Not Applicable	Not applicable.			
Inefficient Water use on Irrigated Land	Slight to Substantial Improvement	Provides permanent water storage for irrigation.			
Inefficient Water use on Non-Irrigated Land	Not Applicable	Not applicable.			

Reduced Capacity of Conveyances by Sediment Deposition	Moderate Improvement	Sediment is trapped behind embankment.
Reduced Storage of Water Bodies by Sediment Accumulation	Neutral	Limited sediment deposition.
Aquifer Overdraft	Slight Improvement	Seepage from the impoundment impacts recharge and water storage reduces demands on aquifer.
Insufficient Flows in Water Courses	Slight Worsening	Controlled release of stored water provides flow downstream of structure.
<b>WATER – QUALITY</b>		
In Groundwater:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Slight Worsening	Nutrients impounded could contaminate groundwater.
• 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	Not Applicable	Not applicable.
• Excessive Suspended Sediment and Turbidity	Slight to Substantial Improvement	Suspended sediments are trapped.
• Excessive Salinity	Not Applicable	Not applicable.
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.
• Harmful Temperatures	Neutral	Water released from impoundments may be warmer or cooler than receiving waters, depending on site conditions.
• Harmful Levels of Pathogens	Slight to Moderate Worsening	Because of aquatic animal feed or decaying vegetation, or from excessive nutrients in runoff
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
<b>AIR – QUALITY</b>		
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	Not Applicable	Not applicable.
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	Not Applicable	Not applicable.
Undesirable Air Movement	Not Applicable	Not applicable.
Adverse Air Temperature	Not Applicable	Not applicable.
<b>PLANTS – SUITABILITY</b>		
Plants not Adapted or Suited	Not Applicable	Not applicable.

<b>PLANTS - CONDITION</b>		
Productivity, Health, and Vigor	Not Applicable	Not applicable.
Threatened or Endangered Plant Species:		
<ul style="list-style-type: none"> <li>Plant Species Listed or Proposed for Listing Under the Endangered Species Act</li> </ul>	Not Applicable	Not applicable.
<ul style="list-style-type: none"> <li>Declining Species, Species of Concern</li> </ul>	Not Applicable	Not applicable.
Noxious and Invasive Plants	Not Applicable	Not applicable.
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	Impounded water improves food availability for some fish and wildlife, but decreases food sources for other species, especially stream dwellers.
Inadequate Cover/Shelter	Slight to Substantial Improvement	Impounded water improves cover and shelter for some fish and wildlife, but decreases it for stream species.
Inadequate Water	Slight Improvement	Although water is impounded for lotic species, passage to upstream and downstream habitats is not possible for fish and other aquatic wildlife.
Inadequate Space	Slight to Moderate Improvement	Ponds and adjacent areas provide additional space for wildlife and pond-dwelling species, but eliminates space for stream species.
Habitat Fragmentation	Moderate to Substantial Worsening	Aquatic and riparian habitats are fragmented.
Imbalance Among and Within Populations	Slight to Moderate Improvement	Structures may fragment habitats and isolate subpopulations, but fish and wildlife habitat enhancement are a focus of this practice.
Threatened and Endangered Fish and Wildlife Species:		
<ul style="list-style-type: none"> <li>Fish and Wildlife Species Listed or Proposed for Listing Under the Endangered Species Act</li> </ul>	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.
<ul style="list-style-type: none"> <li>Declining Species, Species of Concern</li> </ul>	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	Not Applicable	Not applicable.
Inadequate Shelter	Not Applicable	Not applicable.
Inadequate Stock Water	Moderate to Substantial	Dams can also provide stock

	Improvement	water.
Stress and Mortality	Moderate to Substantial Improvement	Available water reduces stress and mortality.
<b>HUMAN – ECONOMICS</b>		
Land - Change in Land Use	Substantial	Substantial, to convert to water & sediment storage.
Land – Land in Production	Moderate to substantial decrease	
Capital – Change in Equipment	Substantial increase.	
Capital - Total Investment Cost	Substantial.	
Capital – Annual Cost	Slight to moderate increase.	
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Slight to substantial decrease	Slight to substantial decrease, less time required for water management.
Labor – Change in Management Level	Moderate to substantial increase.	
Risk - Yield	Not applicable.	Not applicable.
Risk - Flexibility	Slight Increase	Slight increase due to conversion of land to water storage area.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Substantial Increase	Substantial increase due to construction costs.
Profitability – Change in Profitability	Situational	Substantial increase or decrease.
<b>HUMAN - CULTURAL</b>		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Moderate to Substantial Increase	Construction adverse effects; effects of inundation.
<b>HUMAN – ENERGY</b>		
Depletion of Fossil Fuel Resources	Slight to Substantial Decrease	Utilizing stored water for irrigation can save energy associated with pumping.
Underutilization of Non-Fossil Energy Resources	Slight to Substantial Decrease	This practice can be used to facilitate production of hydroelectric power.

## 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.