

## CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	12/27/2011
<b>PRACTICE: Shallow Water Development and Management 646</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	Not Applicable		Not applicable.		
Streambank	Not Applicable		Not applicable.		
Shoreline	Moderate Improvement		Wetland vegetation would protect shorelines from wind and wave action.		
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 Improvement		Organic matter oxidation is reduced in flooded areas. Where soil moisture is enhanced vegetative growth will be increased.		
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 Worsening		Sediment will collect in depressions.		
<b>WATER – QUANTITY</b>					
Rangeland Hydrologic Cycle	Not Applicable		Not applicable.		
Excessive Seepage	Not Applicable		Not applicable.		
Excessive Runoff, Flooding, or Ponding	Slight to Substantial Improvement		Provide temporary flood storage.		
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	Not Applicable	Not applicable.
Reduced Storage of Water Bodies by Sediment Accumulation	Moderate Improvement	Shallow water areas trap sediment.
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	Slight Improvement	The action traps nutrients and organics which are broken down and used by wetland plants.
• Excessive Salinity	Slight Worsening	The action requires ponding water which will increase infiltration in ponded areas, which may carry soluble salts to groundwater.
• Harmful Levels of Heavy Metals	Slight Improvement	The action requires ponding water which will increase infiltration in ponded areas. Infiltrating waters may leach heavy metals.
• Harmful Levels of Pathogens	Slight Worsening	The action requires ponding water, which will increase infiltration in ponded areas. Infiltrating waters may leach pathogens.
• 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	The action traps nutrients and organics which are broken down and used by wetland plants.
• Excessive Suspended Sediment and Turbidity	Slight to Moderate Improvement	Ponding slows water velocity, allowing sediment to settle.
• Excessive Salinity	Not Applicable	Not applicable.
• Harmful Levels of Heavy Metals	Slight to Moderate Improvement	Vegetation and anaerobic conditions trap heavy metals.
• 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 Improvement	vegetation, microbes, and sediments may trap
• 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)	Neutral	There is short term carbon

		storage, however, periodic maintenance practices (tillage, burning) can release stored carbon.
• N <sub>2</sub> O (Nitrous Oxide)	Not Applicable	Not applicable.
• CH <sub>4</sub> (Methane)	Slight Worsening	Anaerobic conditions are conducive to the formation of CH <sub>4</sub>
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	Moderate to Substantial Improvement	Moist soil management creates or maintains the desired plant community.
<b>PLANTS - CONDITION</b>		
Productivity, Health, and Vigor	Slight to Substantial Improvement	Plants are selected and managed to maintain optimal productivity and health for their intended use.
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	Slight Improvement	Management of water to establish vegetation desirable for wildlife is expected to retard invasive plants.
Forage Quality and Palatability	Not Applicable	Not applicable.
Wildfire Hazard	Not Applicable	Not applicable.
<b>ANIMALS - FISH AND WILDLIFE</b>		
Inadequate Food	Moderate to Substantial Improvement	Improved availability of wildlife food is created by water and moist soil management.
Inadequate Cover/Shelter	Slight to Substantial Improvement	Improved availability of wildlife food is created by water and moist soil management.
Inadequate Water	Slight to Moderate Improvement	Fish and wildlife habitat is a management objective.
Inadequate Space	Moderate to Substantial Improvement	Shallow water habitat/space is created and/or managed.
Habitat Fragmentation	Slight to Moderate Improvement	Multiple shallow water areas can restore the number and connectivity of this kind of habitat.
Imbalance Among and Within Populations	Substantial Improvement	Management is designed to minimize 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.
<b>ANIMALS – DOMESTIC</b>		
Inadequate Quantities and Quality of Feed and Forage	Slight Improvement	These sites may be used as feed and forage by livestock if the intended purpose is maintained.
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	Not applicable.	Not applicable.
Land – Land in Production	Not applicable.	Not applicable.
Capital – Change in Equipment	Moderate increase.	
Capital - Total Investment Cost	Slight.	Slight.
Capital – Annual Cost	Negligible	
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Negligible to substantial increase	Negligible to substantial increase depending if water level is natural or artificial maintained.
Labor – Change in Management Level	Negligible	
Risk - Yield	Slight to Moderate Decrease	Slight to moderate decrease due to improved habitat.
Risk - Flexibility	Slight to Moderate Increase	Substantial to moderate increase in habitat capabilities.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Slight Increase	Negligible increase because of implementation costs.
Profitability – Change in Profitability	Situational	Slight increase to moderate decrease.
<b>HUMAN - CULTURAL</b>		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Slight to Substantial Increase	Construction impacts (mechanical).
<b>HUMAN – ENERGY</b>		
Depletion of Fossil Fuel Resources	Slight to Moderate Increase	This practice involves pumping water , which requires energy. Northern part of country would let snowmelt, rain, groundwater fill the swamp hence no cost.
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.