CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	12/27/2011
PRACTICE: Pest Management 595		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			

RESOURCES, CONSIDERATIONS AND CONCERNS	**PHYSICAL EFFECTS**	**RATIONALE**
SOIL - EROSION		
Sheet and Rill	Slight to Substantial Improvement	Surface runoff is decreased by changing the way pests are managed and/or applying mitigation techniques.
Wind	Slight to Substantial Improvement	Wind erosion is decreased by changing the way pests are managed and/or applying mitigation techniques.
Ephemeral Gully	Slight to Substantial Improvement	Concentrated flow erosion is decreased by changing the way pests are managed and/or applying mitigation techniques.
Classic Gully	Slight to Substantial Improvement	Gully erosion is decreased by changing the way pests are managed and/or applying mitigation techniques.
Streambank	Neutral	Pest management activities generally have a negligible effect on streambank erosion.
Shoreline	Not Applicable	Not applicable.
Irrigation Induced	Slight to Substantial Improvement	Surface runoff is decreased by changing the way pests are managed and/or applying mitigation techniques.
Mass Movement	Not Applicable	Not applicable.
Road, Roadsides, and Construction Sites	Not Applicable	Not applicable.
SOIL – CONDITION		
Organic Matter Depletion	Slight to Moderate Improvement	Organic matter depletion is decreased by changing the way pests are managed and/or applying mitigation techniques.
Rangeland Site Stability	Not Applicable	Not applicable.
Compaction	Slight to Moderate Improvement	Soil compaction is decreased by changing the way pests are managed and/or applying mitigation techniques.
Subsidence	Slight to Moderate Improvement	Oxidation of organic matter is decreased by changing the way psts are managed and/or applying mitigation techniques.
Contaminants:		
• Salts and other Chemicals	Not Applicable	Not applicable.
• Animal Waste and other Organics - N	Not Applicable	Not applicable.
• Animal Waste and other Organics -	Not Applicable	Not applicable.

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• 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	Slight to Substantial Improvement	Residual pesticides are decreased by changing the way pests are managed and/or applying mitigation techniques.
Damage from Sediment Deposition	Slight to Moderate Improvement	Sedimentation is decreased by changing the way pests are managed and/or applying mitigation techniques.
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	Slight Improvement	If this resource concern is negatively impacted by pests, application of pest management (IPM where it is available) may improve the beneficial use of available water.
Inefficient Water use on Non-Irrigated Land	Slight Improvement	Water use is more efficient by changing the way pests are managed and/or applying mitigation techniques.
Reduced Capacity of Conveyances by Sediment Deposition	Slight Improvement	Sedimentation is decreased by changing the way pests are managed and/or applying mitigation techniques.
Reduced Storage of Water Bodies by Sediment Accumulation	Slight Improvement	Sedimentation is decreased by changing the way pests are managed and/or applying mitigation techniques.
Aquifer Overdraft	Not Applicable	Not applicable.
Insufficient Flows in Water Courses	Not Applicable	Not applicable.
WATER – QUALITY		
In Groundwater:		
• Harmful Levels of Pesticides	Substantial Improvement	Residual pesticides are decreased by changing the way pests are managed and/or applying mitigation techniques.
• 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	Substantial Improvement	Residual pesticides are decreased by changing the way pests are managed and/or applying mitigation techniques.
• Excessive Nutrients and Organics	Not Applicable	Not applicable.
• Excessive Suspended Sediment and Turbidity	Slight to Moderate Improvement	Suspended sediment is decreased by changing the way pests are managed and/or applying mitigation techniques.
• Excessive Salinity	Not Applicable	Not applicable.
• 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.
AIR – QUALITY		
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Improvement	The suspension component of wind erosion is decreased by changing the way pests are managed and/or applying mitigation techniques.
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Improvement	The suspension component of wind erosion is decreased by changing the way pests are managed and/or applying mitigation techniques.
Excessive Ozone	Not Applicable	Not Applicable
Excessive Greenhouse Gas:		
• CO_2 (Carbon Dioxide)	Slight to Moderate Improvement	The release of CO2 by ground disturbing activities is decreased by changing the way pests are managed and/or applying mitigation techniques.
• N_20 (Nitrous Oxide)	Not Applicable	Not applicable.
• CH_4 (Methane)	Not Applicable	Not applicable.
Ammonia (NH_3)	Not Applicable	Not applicable.
Chemical Drift	Substantial Improvement	Pesticide drift is decreased by changing the way pests are managed and/or applying mitigation techniques.
Objectionable Odors	Moderate to Substantial Improvement	Objectionable odors are decreased by changing the way pests are managed and/or applying mitigation techniques.
Reduced Visibility	Not Applicable	Not applicable.
Undesirable Air Movement	Not Applicable	Not applicable.
Adverse Air Temperature	Not Applicable	Not applicable.
PLANTS – SUITABLIITY		
Plants not Adapted or Suited	Substantial Improvement	There will be a selection of well-adapted and compatible species, varieties, and/or cultivars for each site.
PLANTS - CONDITION		
Productivity, Health, and Vigor	Substantial Improvement	Pest management (IPM where it is available) reduces plant

		damage and competition from pests.
Threatened or Endangered Plant Species:		
• Plant Species Listed or Proposed for Listing Under the Endangered Species Act	Slight to Substantial Improvement	Reducing pest competition, pest damage, and pest management environmental risks to either threatened or endangered species or their habitat, diminishes the potential for extinction.
• Declining Species, Species of Concern	Slight to Substantial Improvement	Reducing pest competition, pest damage, and pest management environmental risks to either threatened or endangered species or their habitat, diminishes the potential for extinction.
Noxious and Invasive Plants	Substantial Improvement	Pest management (IPM where it is available) reduces plants of concern.
Forage Quality and Palatability	Moderate to Substantial Improvement	Pest management (IPM where it is available) will reduce plant damage and competition from pests resulting in improved forage nutritive value and palatability.
Wildfire Hazard	Slight to Substantial Improvement	Undesired plants are managed thereby reducing hazard.
ANIMALS - FISH AND WILDLIFE		
Inadequate Food	Slight to Substantial Improvement	Pest management (IPM where it is available) reduces plant damage and competition from pests resulting in increased fish and wildlife food quantity and quality.
Inadequate Cover/Shelter	Slight to Substantial Improvement	Pest management (IPM where it is available) reduces plant damage and competition from pests resulting in improved fish and wildlife cover/shelter.
Inadequate Water	Not Applicable	Not applicable.
Inadequate Space	Not Applicable	Not applicable.
Habitat Fragmentation	Not Applicable	Not applicable.
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.
ANIMALS – DOMESTIC		

Inadequate Quantities and Quality of Feed and Forage	Moderate to Substantial Improvement	Pest management (IPM where it is available) reduces plant damage and competition from pests resulting in improved livestock feed and forage quantity and quality.
Inadequate Shelter	Not Applicable	Not applicable.
Inadequate Stock Water	Not Applicable	Not applicable.
Stress and Mortality	Moderate to Substantial Improvement	Reducing pest damage to domestic animals decreases illness and death.
HUMAN – ECONOMICS		
Land - Change in Land Use	Not applicable.	Not applicable.
Land – Land in Production	Not applicable.	Not applicable.
Capital – Change in Equipment	Slight Increase.	
Capital - Total Investment Cost	Not applicable.	
Capital – Annual Cost	Slight increase.	
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Slight to moderate increase	Slight to moderate increase to scout crops.
Labor – Change in Management Level	Moderate to substantial increase	Moderate to substantial increase for selecting control system, timing, calibration & records.
Risk - Yield	Slight to Moderate Decrease	Slight to moderate decrease due to healthier environment for crop production.
Risk - Flexibility	Slight Increase	Slight increase due to closer management capabilities and following chemical label.
Risk - Timing	Substantial Increase	Substantial increase - practice must be applied when needed.
Risk – Cash Flow	Slight Decrease	Slight decrease because of higher yields and reduced costs.
Profitability – Change in Profitability	Situational	Slight decrease or increase.
HUMAN - CULTURAL		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	Not applicable.
HUMAN – ENERGY		
Depletion of Fossil Fuel Resources	No Effect	The energy needed for pest control depends on the mechanisms used.
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.